BỘ GIÁO DỤC & ĐÀO TẠO BỘ Y TẾ

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

MINH CHỨNG HỒ SƠ GIẢNG VIÊN THAM GIA ĐÀO TẠO THẠC SĨ

Ngành: KHOA HỌC Y SINH

Mã số: 8720101

Hải Phòng – Năm 2025

LÝ LỊCH KHOA HỌC

1. Họ và tên: PHẠM VĂN LINH

2. Năm sinh: 30/05/1971 **3. Giới tính:** Nam

4. Nơi sinh: Xã Phục Lễ, Huyện Thuỷ Nguyên, Hải Phòng

5. Nguyên Quán: Xã Phục Lễ, Huyện Thuỷ Nguyên, Hải Phòng

6. Địa chỉ liên hệ:
Điện thoại: NR_____, Mobile: 0934326888 Fax: _____
Email: pvlinh@gmu.edu.vn

7. Học hàm, học vị:
Năm được công nhận TS: 2010 Nơi cấp bằng: Đại học Paris Descartes (nay là Đại học Paris Cité), Paris, Pháp
Năm được phong GS/PGS: 2013 Nơi phong: Hội đồng giáo sư nhà nước

8. Cơ quan công tác:
Tên cơ quan: Trường Đại học Y Dược Hải Phòng
Khoa/Phòng, Bộ môn, Trung tâm: Bộ môn Sinh lý bệnh – Dị ứng – Miễn dịch, Khoa Y
Địa chỉ cơ quan: 72A Nguyễn Bỉnh Khiêm, Đằng Giang, Ngô Quyền, Hải Phòng
Điện thoại: 0225 3731 707 Fax: 02313.733.315
Email: contact@gmu.edu.vn

9. Quá trình đào tạo

Bậc đào tạo	Nơi đào tạo	Chuyên ngành/Tên khóa luận, luận văn, luận án	Năm tốt nghiệp
Đại học	Đại học Y Hà Nội	Bác sĩ đa khoa	1994
Thạc sĩ	Đại học Y Hà Nội	Miễn dịch học	2002
Tiến sĩ	Đại học Paris Descartes (nay là Đại học Paris Cité), Paris, Pháp	Miễn dịch học	2010

10. Các khoá đào tạo khác (nếu có)

Văn bằng	Tên khoá đào tạo	Nơi đào tạo	Thời gian đào tạo

11. Trình độ ngoại ngữ		
Tên ngoại ngữ	**Văn bằng/Chứng chỉ**	**Năm**
Cử nhân ngôn ngữ Anh	Bằng đại học	2014
Tiếng pháp	B2	

12. Quá trình công tác *(trước khi về Trường và sau khi về Trường)*			
Thời gian	**Vị trí công tác**	**Cơ quan công tác**	**Địa chỉ cơ quan**
1995-2008	Giảng viên Bộ môn Sinh lý bệnh – Dị ứng Bác sĩ điều trị Bệnh viện Hữu nghị Việt Tiệp	Trường Đại học Y Hải Phòng Bệnh viện Hữu Nghị Việt Tiệp	72 A Nguyễn Bỉnh Khiêm, Ngô Quyền, Hải Phòng
2007 – 2010	Nghiên cứu sinh	Trường Đết Paris Descartes	Cộng Hòa Pháp
Từ 2021 đến nay	Phó Hiệu trưởng	Trường Đại học Y Dược Hải Phòng	72 A Nguyễn Bỉnh Khiêm, Hải Phòng
Từ 2021 đến nay	Phó giám đốc bệnh viện Đại học Y Hải Phòng	Bệnh viện Đại học Y Hải Phòng	229C Lạch Tray, Ngô Quyền, Hải Phòng

13. Các công trình khoa học đã công bố

13.1. Bài báo khoa học

- *Tên tác giả: tên các tác giả của bài báo*
- *Tác giả chính: là Tác giả thứ nhất (first author) hoặc Tác giả liên hệ (corresponding author)*
- *Danh mục: WoS/Scopus hoặc Tạp chí trong nước được HDGSNN tính điểm*

TT	Tên bài báo	Tên tác giả	Tác giả chính	Tạp chí	Ngày XB	Số, trang	Danh mục	ISSN (DOI)
1	Nghiên cứu hoàn thiện các quy trình sàng lọc, can thiệp thở áp lực dương cho bệnh nhân mắc hội chứng ngưng thở tắc nghẽn khi ngủ		x		2023			
2	Nghiên cứu sàng lọc các hợp chất có hoạt tính kháng viêm, kháng khuẩn và gây độc tế bào từ vi nấm biển khơi vực Bãi Tà Long		x		2023			

3	Nghiên cứu ảnh hưởng của các tác nhân hóa học và sinh học tới sức khỏe cộng đồng khu vực của sông miền Bắc thuộc đề tài cấp nhà nước theo chương trình KC10.01/16-20 "*Nghiên cứu thực trạng ô nhiễm một số yếu tố hóa học, sinh học trong một trường ảnh hưởng đến sức khỏe cộng đồng ven biển, hải đảo miền Bắc và đề xuất giải pháp xử lý*"		x		2018			
4	Đột biến gen kháng thuốc của HEV, HBV ở đối tượng tiêm chích ma túy, gái mại dâm khu vực phía Bắc Việt Nam		x		2018			
5	Nhiễm HPV và tổn thương tế bào cổ tử cung ở phụ nữ 35 đến 60 tuổi hưởng với chiến lược tổng thể dự phòng thứ phát ung thư cổ tử cung		x		2013			
6	Developing a machine learning-based predictive model for levothyroxine dosage estimation in hypothyroid patients: a retrospective study		x	Front. Endocrinol	2025			doi.org/10.3389/fendo.2025.1413306
7	Fear and Impact of COVID-19 Among Post-Infected Adults: Types and Associations with Quality of Life and Post- Traumatic Stress Symptoms			J Epidemiol Glob Health. [14(4)]	2024	1748-1763		
8	Associations of COVID-19-related fear with kidney disease quality of life and its subscales among hemodialysis patients as modified by health literacy: a			Health Psychol Behav Med	2024			2024; 12(1): 2376581

	multi-hospital survey							
9	Sex Differences in Clustering Unhealthy Lifestyles Among Survivors of COVID-19: Latent Class Analysis			JMIR Public Health Surveill	2024			DOI: 10.21 96/50 188
10	Carotane sesquiterpenes from Peperomia pellucida and their anti-infective activities			Natural Product Research	2023			14786 419.2 023.2 28092 3
11	Metabolic, renal, and hematological changes in chronic hepatitis C patients achieving rapid virologic response after 12 weeks of direct-acting antiviral treatment: A prospective cohort study			PLOS ONE	2023			2023; 10.13 71/jo.0 29023 5
12	Clinical Epidemiology Features and Risk Factors for Acute Diarrhea Caused by Rotavirus A in Vietnamese Children			Int J Pediatr				Nutrie ns.20 23;15(10):22 92
13	Osteoporosis Risk in Hemodialysis Patients: The Roles of Gender, Comorbidities, Biochemical Parameters, Health and Diet Literacy			Nutrients	2022			Nutrie ns.20 22;14(23):51 22
14	The Associations of Suspected COVID-19 Symptoms with Anxiety and Depression as Modified by Hemodialysis Dietary Knowledge: A Multi-Dialysis Center Study			Nutrients	2022			Nutrie ns.20 22;14(12):23 64
15	Determination of Risk Factors Associated with the			BioMed Research	2022			Biom ed Res

	Failure of 12 Weeks of Direct-Acting Antiviral Therapy in Patients with Hepatitis C: A Prospective Study			Internati onal				Int. 2022; 60546 77
16	Negative Impacts of COVID-19 Induced Lockdown on Changes in Eating Behavior, Physical Activity, and Mental Health as Modified by Digital Healthy Diet Literacy and e-Health Literacy			Frontiers in Nutrition	2021			2021; 12:67 74328
17	Single and Combinative Impacts of Healthy Eating Behavior and Physical Activity on COVID-19-like Symptoms among Outpatients: A Multi-Hospital and Health Center Survey			national library of medicine	2021			18:33 80/ma 1329 3258
18	Associations of Underlying Health Conditions With Anxiety and Depression Among Outpatients: Modification Effects of Suspected COVID-19 Symptoms, Health-Related and Preventive Behaviors			Int'l Journ al of Public Health	2021			2021; 66:63 4904
19	Negative Impact of Fear of COVID-19 on Health-Related Quality of Life Was Modified by Health Literacy, eHealth Literacy, and Digital Healthy Diet Literacy: A Multi-Hospital Survey			Internati onal Journ al of Environ mental Research and Public Health	2021			2021; 18(9) 4929
20	Impacts and interactions of COVID-19 response involvement, health-related			BMJ Open	1010			10:e0 4139

	behaviours, health literacy on anxiety, depression and health-related quality of life among healthcare workers: A cross-sectional study							
21	Health Literacy and Preventive Behaviors Modify the Association between Pre-Existing Health Conditions and Suspected COVID-19 Symptoms: A Multi-Institutional Survey			International Journal of Environmental Research and Public Health	2020			2020; 17(23), 8998
22	Determinants of Health Literacy and Its Associations With Health-Related Behaviors, Depression Among the Older People With and Without Suspected COVID- 19 Symptoms: A Multi-Institutional Study			Frontiers in Public Health	2020			2020; 8:581746
23	Healthy Dietary Intake Behavior Potentially Modifies the Negative Effect of COVID-19 Lockdown on Depression: A Hospital and Health Center Survey			Frontiers in Nutrition	2020			2020; 7:581043
24	People with Suspected COVID-19 Symptoms Were More Likely Depressed and Had Lower Health-Related Quality of Life: The Potential Benefit of Health Literacy			Journal of Clinical Medicine	2020			2020; 9(4), 965

13.3. Sách chuyên khảo, giáo trình – tài liệu dạy học:

- *Tên tài liệu: Sách/ Chương sách*
- *Loại hình: Chuyên khảo/ Tham khảo/ Giáo trình/ Tài liệu hướng dẫn*

TT	Tên tài liệu	Tên tác giả	Chủ biên/Đồng chủ biên	Nhà xuất bản	Năm xuất bản	Loại hình	ISBN
1							
2							
...							

14. Báo cáo hội nghị - hội thảo khoa học

Kỷ yếu: Tóm tắt/ Toàn văn

TT	Tên báo cáo	Tên tác giả	Tác giả chính	Tên hội nghị	Thời gian báo cáo (tháng/năm)	Kỷ yếu	ISBN
			x				

15. Bằng sở hữu trí tuệ đã được cấp

Liệt kê các văn bằng bảo hộ: đối tượng sáng chế, giải pháp hữu ích, kiểu dáng công nghiệp, thiết kế bố trí, giống cây trồng...

TT	Tên và nội dung văn bằng	Số, Mã, Ký hiệu	Nơi cấp	Năm cấp
1				
2				
3				
...				

16. Công trình KH&CN được ứng dụng, chuyển giao

TT	Tên công trình	Hình thức	Quy mô	Địa chỉ áp dụng	Giá trị	Thời gian
1						
...						

17. Nhiệm vụ KH&CN các cấp

- *Loại hình: Đề tài/ Dự án / Đề án*
- *Tình trạng nhiệm vụ: Đã nghiệm thu/ Chưa nghiệm thu/ Không hoàn thành*

17.1. Nhiệm vụ KH&CN đã và đang chủ trì

Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình	Tình trạng nhiệm vụ	Ngày			Kinh phí
					Phê duyệt	Dừng kỷ kết quả (nếu có)	Công nhận kết quả	
Làm sáng, chẩn tiêu, kết quả điều trị bệnh nhân sốt xuất huyết Dengue nhập viện tại Bệnh viện Đại học Y Hải Phòng từ 6/2024 - 5/2025		Đề tài cấp cơ sở	Trường Đại học Y Dược Hải Phòng	Chưa nghiệm thu				
Biến thiên huyết áp từ kết quả holter huyết áp 24 giờ trên đối tượng người lớn chưa được chẩn đoán tăng huyết áp		Đề tài cấp cơ sở	Trường Đại học Y Dược Hải Phòng	Đã nghiệm thu				
Các biến luận lứa covid-19 trên đối tượng người lớn có tiền sử mắc covid-19 biểu hiện sớm và trung hình		Đề tài cấp cơ sở	Trường Đại học Y Dược Hải Phòng	Đã nghiệm thu				
Ngưng thở tắc nghẽn khi ngủ trên đối tượng thừa cân, béo phì và kết quả bước đầu của can thiệp điều trị không dùng CPAP		Đề tài cấp cơ sở	Trường Đại học Y Dược Hải Phòng	Đã nghiệm thu				
Nghiên cứu sự kết hợp các bất thường về huyết áp với đích trong ngưng thở tắc nghẽn khi thở tại Bệnh viện Đại học Y Hải Phòng		Đề tài cấp cơ sở	Trường Đại học Y Dược Hải Phòng	Đã nghiệm thu				

17.2. Nhiệm vụ KH&CN đã và đang tham gia

Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình	Tình trạng nhiệm vụ	Ngày			Kinh phí
					Nghiệm thu	Công nhận kết quả	Đăng ký kết quả	

18. Giải thưởng về KH&CN trong và ngoài nước

TT	Tên giải thưởng	Hình thức khen thưởng	Cấp khen thưởng	Năm tặng thưởng
1				

19. Đào tạo sau đại học

+ *Vai trò hướng dẫn: hướng dẫn 1/ hướng dẫn 2*
+ *Bậc đào tạo: Tiến sĩ/Thạc sĩ/BS.NT/ Trả CKII...*

TT	Họ tên học viên	Vai trò	Bậc đào tạo	Chuyên ngành	Nơi đào tạo	Năm cấp bằng
1	Nguyễn Thị Hồng Liên	Hướng dẫn 1	Tiến sĩ	Nội khoa	Trường Đại học Y dược Hải Phòng	2025
2	Võ Đỗ	Hướng dẫn 1	Tiến sĩ	Nội khoa	Trường Đại học Y dược Hải Phòng	2025
3	Phạm Thị Vân Anh	Hướng dẫn 1	Tiến sĩ	Y tế công cộng	Trường Đại học Y dược Hải Phòng	
4	Nguyễn Thị Liên	Hướng dẫn 1	Tiến sĩ	Da liễu	Viện nghiên cứu Y Dược ứng dụng 108	

NHỮNG THÔNG TIN KHÁC VỀ CÁC HOẠT ĐỘNG KHOA HỌC VÀ CÔNG NGHỆ

- Phó chủ tịch hội Y học giấc ngủ Việt Nam
- Phó trưởng ban đào tạo, Ủy viên Ban chấp hành hội Miễn dịch ung thư tế bào

..... ngày ... tháng ... năm ....

XÁC NHẬN CỦA ĐƠN VỊ

NGƯỜI KHAI

(Họ tên và chữ ký)

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

PGS.TS. Phạm Thị Thanh Mai

SOCIALIST REPUBLIC OF VIET NAM
Independence - Freedom - Happiness

THE CHAIRMAN
OF THE STATE COUNCIL FOR PROFESSOR TITLE

- Pursuant to Decision N° 174/2008/QĐ-TTg dated December 31, 2008 and Decision N° 20/2013/QĐ-TTg dated April 21, 2013 by the Prime Minister of the Socialist Republic of Vietnam;
- Pursuant to Resolution N° 01/NQ-HĐCDGSNN dated January 14, 2013 by the State Council for Professor Title;

CONFERS
THE CERTIFICATE OF RECOGNITION

Upon: Mr. *Pham Van Linh*

Born on: *May 30, 1971*

In: *Thuy Nguyen, Hai Phong city*

Having met the standards of associate professor title

In: *Medicine*

Given under the Seal
of the State Council for Professor Title

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

CHỦ TỊCH
HỘI ĐỒNG CHỨC DANH GIÁO SƯ NHÀ NƯỚC

- Căn cứ Quyết định số 174/2008/QĐ-TTg ngày 31/12/2008 và Quyết định số 20/2013/QĐ-TTg ngày 21/4/2013 của Thủ tướng Chính phủ;
- Căn cứ Nghị quyết số 01/NQ-HĐCDGSNN ngày 14/01/2013 của Hội đồng Chức danh giáo sư nhà nước;

CÔNG NHẬN

VỀ TIÊU CHUẨN CHỨC DANH PHÓ GIÁO SƯ

Y học

Ông *Phạm Văn Linh*

Sinh ngày 30 tháng 05 năm 1971

Quán: *Thủy Nguyên, T.p Hải Phòng*

CHỨNG THỰC BẢN SAO ĐÚNG VỚI BẢN CHÍNH

Số chứng thực: 01 Quyển số: 01

Ngày 30 tháng 09 năm 2013

PHÓ CHỦ TỊCH

Hồng Thái Bình

Hà Nội, ngày 20 tháng 09 năm 2013

CHỦ TỊCH HỘI ĐỒNG

Giáo sư Võ Luận

BẢN DỊCH
TRANSLATION

C Ộ N G H Ò A P H Á P

Bộ Giáo dục Đại học và Nghiên cứu

ĐẠI HỌC PARIS 5

BẰNG TIẾN SĨ

Căn cứ luật giáo dục, đặc biệt là điều L.612-7;

Căn cứ luật nghiên cứu, đặc biệt là điều L.412-1;

Căn cứ sắc lệnh số 2002-482 ngày 03/4/2002 về các danh hiệu, học vị đại học và về hệ thống bằng cấp quốc gia;

Căn cứ nghị định ngày 3/9/1998 về biểu chương liên quan tới luận án tiến sĩ;

Căn cứ nghị định ngày 27/05/1981 sửa đổi nội dung thể chế sau sẽ được phép cấp bằng tiến sĩ;

Căn cứ nghị định ngày 7/8/2006 liên quan tới đào tạo tiến sĩ;

Căn cứ các giấy tờ xác nhận về việc đăng kí vào chương trình đào tạo tiến sĩ của ông PHAM VAN LINH, sinh ngày 30/3/1971 tại HAIPHONG (VIETNAM);

Căn cứ biên bản của hội đồng giám khảo xác nhận rằng ông PHAM VAN LINH đã bảo vệ, ngày 30/6/2018, luận án về chủ đề: *Điều tiết đáp ứng miễn dịch bởi các tiết bằng vận đường truyền tín hiệu TLR/IL-1 trong mô hình hen phế quản*, được hiện tại trường đào tạo tiến sĩ 157 *(Sự truyền, tế bào, miễn dịch, bệnh nhiễm trùng và phát triển)*, trước Hội đồng giám khảo do Giáo sư-Bác sĩ ANH TUAN DINH XUAN làm chủ tịch và các thành viên bao gồm Tiến sĩ CATHERINE DUEZ, điều hành nhóm nghiên cứu; Giáo sư FRANCOIS ERARD, Giáo sư GILLES MARCHAL, Tiến sĩ NATHALIE THIEBLEMONT điều hành nhóm nghiên cứu;

Căn cứ nghị quyết của hội đồng giám khảo;

BẰNG TIẾN SĨ, CHUYÊN NGÀNH MIỄN DỊCH HỌC

được trao cho ông **PHAM VAN LINH** cùng tất cả các đặc quyền gắn với học vị này.

Paris, ngày 13 tháng 7 năm 2018

Người nhận bằng	Chủ tịch Đại học Paris 5	Chủ tịch Học viện Đại học Paris
(đã ký)	Axel KAHN	Patrick GERARD
	(đã ký)	*(đã ký và đóng dấu)*

Số PARV 8006378

/2018209900726

RÉPUBLIQUE FRANÇAISE

Ministère de l'enseignement supérieur et de la recherche

UNIVERSITÉ PARIS 5

DOCTORAT

Vu le code de l'éducation, notamment son article L.613-1 ;

Vu le code de la recherche, notamment son article D.412-1 ;

Vu l'arrêté du 7 août 2006 relatif aux grades et titres universitaires et aux diplômes nationaux ;

Vu l'arrêté du 3 septembre 1998 relatif à la charte des thèses ;

Vu l'arrêté du 27 juin 1985 modifié fixant la liste des établissements autorisés à délivrer, seuls, le doctorat ;

Vu l'arrêté du 7 août 2006 relatif à la formation doctorale ;

Vu les pièces justificatives produites par M. LINH PHAM VAN, né le 30 août 1971 à HAI PHONG (VIETNAM), en vue de son inscription au doctorat ;

Vu le procès-verbal du jury attestant que l'intéressé a soutenu, le 30 juin 2010 une thèse portant sur le sujet suivant : Modulation de la réponse immunitaire par des agonistes de la voie de signalisation TLR/IL-1R dans le modèle d'asthme ; conjointe au titre de l'école doctorale 177 physiologie, cellules, biomatériaux, interactions et développement, du titre qui lui est donné par JUAN CLAY GOMES JULIAN, PROFESSEUR DES CNOV – PRATICIEN HOSP et synonyme de CATHERINE DUTZ, CHARGE DE RECHERCHES HDR, FRANÇOIS ERARD, PROFESSEUR, GILLES MARCHAL, PROFESSEUR, NATHALIE THEBLADEMPTE, CHARGE DE RECHERCHES HDR ;

Vu la délibération du jury ;

Le DIPLÔME DE DOCTEUR EN IMMUNOLOGIE

est délivré à **M. LINH PHAM VAN**

et confère le grade de docteur,

ainsi qu'il pour tous les droits et prérogatives qui y sont attachés.

Fait à Paris, le 13 juillet 2010

Le Président

Pour le Ministre et par délégation

Patrick GERARD

N° FAR V 8006 3170

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BỘ GIÁO DỤC VÀ ĐÀO TẠO
CỤC KHẢO THÍ VÀ KIỂM ĐỊNH
CHẤT LƯỢNG GIÁO DỤC

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

Hà Nội, ngày 14 tháng 5 năm 2015

CỤC KHẢO THÍ VÀ KIỂM ĐỊNH
CHẤT LƯỢNG GIÁO DỤC

CÔNG NHẬN

Văn bằng số: PARV 8006378 Ngày cấp: 12/7/2010

Do: **Trường Đại học Paris Descartes, Cộng hòa Pháp**

Cấp cho: **Phạm Văn Linh**

Ngày sinh: 30 tháng 5 năm 1971

Nơi sinh: Hải Phòng

Là bằng tốt nghiệp: **Tiến sĩ**

Đã đăng ký tại Bộ Giáo dục và Đào tạo ngày 14 tháng 5 năm 2015

CỤC TRƯỞNG

Mai Văn Trinh

Đã vào sổ đăng ký số 006402/CNVB-TS

BỘ Y TẾ
Số: 0012620/BYT-CCHN

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

CHỨNG CHỈ HÀNH NGHỀ KHÁM BỆNH, CHỮA BỆNH

BỘ TRƯỞNG BỘ Y TẾ

Căn cứ Luật khám bệnh, chữa bệnh ngày 23/11/2009;
Căn cứ Nghị định số 87/2011/NĐ-CP ngày 27/9/2011 của Chính phủ quy định chi tiết và hướng dẫn thi hành một số điều của Luật khám bệnh, chữa bệnh;
Căn cứ Thông tư số 41/2011/TT-BYT ngày 14/11/2011 của Bộ trưởng Bộ Y tế hướng dẫn cấp chứng chỉ hành nghề đối với người hành nghề và cấp giấy phép hoạt động đối với cơ sở khám bệnh, chữa bệnh;
Xét đề nghị của Cục trưởng Cục Quản lý khám, chữa bệnh - Bộ Y tế,

CẤP CHỨNG CHỈ HÀNH NGHỀ KHÁM BỆNH, CHỮA BỆNH

Họ và tên: **PHẠM VĂN LENH.**
Ngày/ tháng năm sinh: 30/5/1971.
Giấy chứng minh nhân dân số: 030872177.
Ngày cấp: 25/12/2011. Nơi cấp: Công an Hải Phòng.
Chỗ ở hiện nay: Số 14, tổ Trung Hành 5, phường Đằng Lâm, quận Hải An, thành phố Hải Phòng.
Văn bằng chuyên môn: Bác sỹ.
Phạm vi hoạt động chuyên môn: Khám bệnh, chữa bệnh chuyên khoa Nội tổng hợp.

Hà Nội, ngày 16 tháng 11 năm 2013
KT. BỘ TRƯỞNG
THỨ TRƯỞNG

Nguyễn Thị Xuyên

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

BIÊN BẢN
NGHIỆM THU ĐỀ TÀI KHCN CẤP CƠ SỞ NĂM 2023

Tên đề tài: Thiên huyết áp trong ngày trên đối tượng người lớn trẻ tuổi

Chủ nhiệm đề tài: Phạm Văn Linh

Thành viên tham gia:

Giảng viên hướng dẫn (nếu có):

Đơn vị: Sinh lý bệnh - Dị ứng - Miễn dịch

Căn cứ Quyết định số: 2350/QĐ - YDHP ngày 08 tháng 12 năm 2023 của Hiệu trưởng trường Đại học Y Dược Hải Phòng về việc thành lập Tiểu ban Khoa học công nghệ nghiệm thu đề tài nghiên cứu khoa học cấp cơ sở năm 2023, Tiểu ban đã tiến hành họp để đánh giá, nghiệm thu đề tài vào hồi 8h ngày 12 tháng 12 năm 2023 tại trường Đại học Y Dược Hải Phòng.

Các thành viên có mặt:

1. PGS.TS Nguyễn Thị Thu Phương - Trưởng tiểu ban
2. TS. Vũ Mạnh Tân - Ủy viên
3. TS. Phạm Thị Vân Anh - Ủy viên
4. TS. Nguyễn Thanh Hải - Ủy viên thư ký

Thư ký hành chính: BS. Trần Thị Thanh Hằng

Các thành viên vắng mặt:

.....

.....

NỘI DUNG NGHIỆM THU:

1. Đọc quyết định thành lập Tiểu ban: TS. Nguyễn Thanh Hải
2. Trưởng Tiểu ban điều khiển buổi nghiệm thu.
3. Chủ nhiệm đề tài trình bày tóm tắt báo cáo tổng kết đề tài *(có bản sao của toàn văn kèm theo)*.
4. Các thành viên Tiểu ban nhận xét, góp ý *(có bản nhận xét kèm theo)*.
5. Các thành viên trong Tiểu ban và những người được dự buổi nghiệm thu trao đổi về nội dung, phương pháp, kết quả nghiên cứu của đề tài; và thống nhất một số ý kiến sau:

6. Đánh giá kết quả:

6.1. Ban kiểm phiếu gồm:

- TS. Nguyễn Thanh Hải
- BS. Trần Thị Thanh Hằng

6.2. Tiểu ban đã bỏ phiếu đánh giá kết quả như sau:

Tổng số phiếu phát ra : 09 phiếu
Tổng số phiếu thu vào : 09 phiếu
Số phiếu hợp lệ : 0 phiếu
Số phiếu không hợp lệ : 0 phiếu

6.3. Kết quả đánh giá:

Xuất sắc : 0 phiếu
Khá : 0 phiếu
Đạt : 0 phiếu
Không đạt : 0 phiếu

Kết quả đề tài đạt loại: Xuất sắc

7. Kết luận:

Nghiệm thu đề tài

Hải Phòng, ngày 17 tháng 07 năm 2023

Trưởng Tiểu ban	Thư ký
(Ký và ghi rõ họ tên)	(Ký và ghi rõ họ tên)
PGS.TS Nguyễn Thị Thu Phương	TS. Nguyễn Thanh Hải

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Associations of Underlying Health Conditions With Anxiety and Depression Among Outpatients: Modification Effects of Suspected COVID-19 Symptoms, Health-Related and Preventive Behaviors

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Objectives: We explored the association of underlying health conditions (UHC) with depression and anxiety, and examined the modification effects of suspected COVID-19 symptoms (S-COVID-19-S), health-related behaviors (HB), and preventive behaviors (PB).

Methods: A cross-sectional study was conducted on 8,291 outpatients aged 18–85 years, in 18 hospitals and health centers across Vietnam from 14th February to May 31, 2020. We collected the data regarding participant's characteristics, UHC, HB, PB, depression, and anxiety.

Results: People with UHC had higher odds of depression (OR = 2.11; $p < 0.001$) and anxiety (OR = 2.86; $p < 0.001$) than those without UHC. The odds of depression and anxiety were significantly higher for those with UHC and S-COVID-19-S ($p < 0.001$); and were significantly lower for those had UHC and interacted with "unchanged/more" physical activity ($p < 0.001$), or "unchanged/more" drinking ($p < 0.001$ for only anxiety), or "unchanged/healthier" eating ($p < 0.001$), and high PB score ($p < 0.001$), as compared to those without UHC and without S-COVID-19-S, "never/stopped/less" physical activity, drinking, "less healthy" eating, and low PB score, respectively.

Conclusion: S-COVID-19-S worsen psychological health in patients with UHC. Physical activity, drinking, healthier eating, and high PB score were protective factors.

Keywords: COVID-19, underlying health conditions, depression, anxiety, preventive behaviors, physical activity, healthy eating, Vietnam

INTRODUCTION

The COVID-19 pandemic has been influencing unprecedentedly all aspects of life [1, 2]. As the figures of confirmed cases and deaths are increasing ceaselessly, it places enormous challenges on health care systems in all influenced countries [3, 4]. As effective treatment therapies and vaccines are still urgently developed [5], a variety of public health responses was promoted to contain the diffuse of COVID-19 and mitigate the negative impacts on mental health and well-being [6]. Adopting preventive behaviors and healthy lifestyles was strongly advised for the public to stay well during this difficult time [7, 8].

Compliance with preventive measures is the most recommended strategies to effectively control the spread of COVID-19 across countries [9]. Without precaution actions, the disease may spread dramatically, which may cause panic and adverse psychological outcomes in public [10]. The common protective measures, such as washing hands, wearing masks, and practicing physical distance, were highly recommended during the pandemic [11]. Therefore, engaging in preventive behaviors could help to prevent COVID-19 transmission and infection [12], which may also reduce the fear and other mental health problems [13]. Besides, maintaining active health-related behaviors plays a critical role in staying healthy during the global crisis. Recent literature has shown that following to healthy lifestyle such as doing exercise, eat healthier may help boost the immune system, reduces the risk of infection [14–16], which may further help control the unfavorable influences of the pandemic on psychological health.

People with underlying health conditions (UHC) are a vulnerable community during the COVID-19 crisis [17]. Patients with comorbidities were more likely to get serious illnesses and complications after COVID-19 infection [18]. Some recent literature showed that comorbidities were associated with an increased mortality rate among patients with COVID-19 [19–21]. These factors may increase the fear and worry of contracting COVID-19 among people with comorbid conditions. Moreover, the limitation of accessing health care systems, delay treatment, feel lack of social interaction may negatively affect their mental health [3, 22]. Therefore, it is essential to find protective factors that may help protect patients with comorbid conditions from mental illness, thereby generating timely psychological interventions.

In previous studies, we investigated the association of pre-existing health conditions with suspected COVID-19 symptoms [23], the association of lockdown measures with depression symptoms, and modifier factors of these associations [24]. However, the impact of underlying health conditions on anxiety and depression and modifier factors of these associations have not been investigated. Therefore, we conducted this study to explore the strength of the association of underlying health conditions with depression and anxiety, and examine the effect modifications of preventive behaviors, health-related behavior changes, and S-COVID-19-S on these associations among outpatients from 18 medical facilities in Vietnam.

METHODS

Study Design and Settings

We conducted a cross-sectional study from 14th February to May 31, 2020. The study was conducted at 15 hospitals and three

health centers across Vietnam, including 10 hospitals and one health center in the northern region (Military Hospital 103, E Hospital, General Hospital of Agricultural, Thai Nguyen National Hospital, Bac Ninh Obstetrics and Pediatrics Hospital, Hai Phong University of Medicine and Pharmacy Hospital, Kien An Hospital, Quang Ninh General Hospital, Bai Chay Hospital, Quang Ninh Obstetrics and Pediatrics Hospital, Kien Thuy District Health Center), one hospital and one health center in the central region (Da Nang Oncology Hospital, Trieu Phong District Health Center), four hospitals and one health center in the southern region (Thu Duc District Hospital, Hospital District 2, Tan Phu District Hospital, Can Tho University of Medicine and Pharmacy Hospital, Thu Duc District Health Center).

The study was reviewed and approved by the Institutional Ethical Review Committee of Hanoi University of Public Health, Vietnam (IRB No. 029/2020/YTCC-HD3, and IRB No. 133/2020/YTCC-HD3).

Study Sample and Sampling

Consecutively convenience sampling was used to recruit the participants who visited the outpatient departments (OPD) at each hospital and health center. Participants recruited were those aged 18–85 years, be able to communicate using Vietnamese language, without any emergency medical conditions (e.g., stroke, respiratory failure, serious injuries). The total sample of 8,291 participants was analyzed in this study. The number of studied participants in each hospital and health center by geographic location was described in detail in a previous study [23, 24].

Assessments and Measurements

Participants' Characteristics

Participants reported their information regarding age (years), sex (male vs. female), marital status (never married vs. ever married), education (secondary school or below, high school, college/university or higher), occupation (unemployed or dependents vs. employed), ability to pay for treatments (very difficult to very easy), social status (respondents self-assessed their position in the society in terms of education, occupation, and income at three degrees of low vs. middle to high). The national lockdown measure had been applied from 1st to 22nd april across Vietnam [25, 26]. Therefore, participants who had completed the survey during this period were classified as experiencing the lockdown.

Patients self-reported body height (cm), weight (kg). Body mass index (BMI, kg/m^2) was calculated and categorized into two groups, including normal weight (BMI < 25.0) and overweight/obese (BMI ≥ 25.0).

Patients were screened for the suspected COVID-19 symptoms (S-COVID-19-S), including common symptoms (fever, cough, dyspnea), and less common symptoms (myalgia, fatigue, sputum production, confusion, headache, sore throat, rhinorrhea, chest pain, hemoptysis, diarrhea, and nausea/vomiting) [27]. We classified participants as having S-COVID-19-S if they reported any of these symptoms.

Underlying Health Conditions

The underlying health problems were assessed using the Charlson Comorbidity Index items [28]. Participants were asked whether they had one of the following medical conditions, including myocardial infarction, congestive heart failure, peripheral disease, cerebrovascular disease, chronic pulmonary disease, diabetes without complications, taking anticoagulants (for cardiovascular disease, thrombosis), hemiplegia, diabetes with complications, moderate or severe renal disease, tumor without metastasis, moderate or severe liver disease, solid metastatic tumor, HIV/AIDS. We categorized underlying health conditions (UHC) into two groups: with UHC vs. without UHC. Patients were classified as having UHC if they had at least one of these above diseases.

Health Literacy

The short form of the health literacy questionnaire (HLS-SF12) was used to measure health literacy (HL). This questionnaire has been validated and used in Asia [29], including in Vietnam [30] with satisfactory reproductivity and validity. The HLS-SF12 consists of 12 items assessing participant's perceived difficulty on 4-point Likert responses from 1 (very difficult) to 4 (very easy). We transformed the HL score into a standardized index ranging from 0 to 50, with higher scores indicating better health literacy, using the formula:

$$Index = (mean - 1) \times (50/3) \quad (1)$$

In which, *Index* is the standardized HL index score, *mean* is the average score of 12 questionnaire items for each participant, one is the lowest value of the mean, three is the range of the mean, and 50 is the highest value of the index. In the current study, the Cronbach's α score of the HLS-SF12 was 0.94.

Health-Related Behavior Changes

Patients provided their information about current lifestyle behaviors in comparison to before the epidemic. Smoking, drinking, and physical activity were assessed on five responses: never, stopped, less, unchanged, and more. Eating behavior also was reported on three responses scale from less healthy, unchanged, and healthier. Based on the WHO's guideline [9], people were recommended to keep their positive lifestyles (e.g., physical exercise, balanced diet) unchanged or better to stay healthy during the COVID-19 crisis. Thus, we classified the "unchanged or healthier" eating and "unchanged or more" physical activity as healthy behavior changes and "unchanged or more" smoking or drinking as unhealthy behavior changes. Patient's responses were classified into two groups: "never/stopped/less" vs. "unchanged or more" for smoking, drinking, and physical activity, "less healthy" vs. "unchanged or healthier" for the eating behavior.

Preventive Behaviors

Preventive behaviors were evaluated through three items based on the COVID-19 prevention guidelines of the world health organization [9], including 1) washing hands with soap or alcohol-based liquid, 2) wearing masks when getting outside, 3) adherence to at least 2 m physical distance rule. Participants reported how often they followed those preventive behaviors during the pandemic on a 5-point Likert scale ranging from 0

(Never) to 4 (Always). The total score ranges from 0 to 12, with a higher score indicates higher compliance with preventive behaviors. We categorized PB into two categories based on the median value of 9 [31], including low PB score (< 9) and high PB score (≥ 9). The Cronbach's Alpha score of this questionnaire in this study was 0.81.

Psychological Health

Depression was assessed using the Patient health questionnaire (PHQ-9), which was widely used in Vietnam [24]. The PHQ-9 has nine items regarding the frequency of given symptoms that participants had encountered over the past two weeks, and the score of each item is given on a 4-point scale from 0 (not at all) to 3 (almost every day). The total PHQ score ranges from 0 to 27, and scores ≥10 were classified as having depression symptoms [32].

Anxiety was assessed using the Generalized Anxiety Disorder (GAD-7) [33], which was validated and used in Vietnam [34]. The GAD-7 comprises seven items about how often they have been encountered seven symptoms over the last two weeks on the 4-point Likert scale ranging from 0 (not at all) to 3 (nearly every day). The total GAD score ranges from 0 to 21, and scores ≥8 were classified as having anxiety disorders [35]. The Cronbach's Alpha index for the PHQ-9 and the GAD-17 in this study were 0.90 and 0.94, respectively.

Data Collection Procedure

Research assistants (physicians, nurses, and medical students) received a 4 h training session for data collection which conducted by researchers in each medical facility. The infection control training (e.g., mask-wearing, handwashing, distancing) were also provided using guidelines of the Centers for disease Control and Prevention (CDC) [36], and World Health Organization [37].

Research assistants (e.g., physicians, nurses, medical students) invited and asked for voluntary participation of OPD visitors. All eligible participants have signed the informed consent form before conducting the survey. We collected data through a self-administered questionnaire. In the initial period, only printed self-administered questionnaires were used for data collection. However, at the peak of the pandemic, patients can choose to complete the survey by filling in the printed questionnaire or scanning the printed QR codes and completed the survey using their smartphone while waiting for the doctor's visit. During the questionnaire administration, research assistants provided guidance and support if it's necessary. Each survey took about 20–30 min to complete. Finally, the data was cleaned and analyzed by researchers confidentially.

Statistical Analysis

The sample of 4,348 participants was used for analysis of preventive behaviors and anxiety as data of these variables were collected in the peak stage of the pandemic. A sample of 8,291 participants was used for analysis of all other variables which investigated in two stages of the pandemic. First, the Chi-square test was performed to examine the distribution of depression and anxiety among different studied variables. Secondly, the associations of underlying health conditions, S-COVID-19-S, health-related behavior changes and PB with depression and anxiety were tested separately in different models using the simple and adjusted logistic regression models. To reduce the impact of residual confounders, age, gender, and factors associated with outcomes at $p < 0.20$ in the bivariate models were chosen to adjust in multivariate models. To eliminate multicollinearity, the Spearman correlation was utilized to examine correlations between potential confounders. If the correlation between two confounders at rho ≥0.30, one representative confounder was adjusted in final models. The results were presented in **Supplementary Tables S1–S3** in the Supplementary File. Finally, the interaction analyses were performed (using the interaction terms) to examine the effect modification of S-COVID-19-S, health-related behavior changes, and preventive behaviors on the associations of UHC with anxiety and depression. Model 1 (unadjusted model) was performed with three terms, including X1, X2, and X1*X2 (where X1 is the main effect of UHC, and X2 is the main effect of modifying factors. Model 2 (adjusted model) was conducted with three terms in model 1 and adjusted for potential confounders. The interaction models were presented with the odds ratio and the 95% confidence interval of three terms (X1, X2, and the interaction of X1*X2). The p-value < 0.05 was considered significance. We analyzed data using the IBM SPSS Version 20.0 (IBM Corp, Armonk, NY, United States).

RESULTS

Demographic Characteristics

The mean age, HL of the population were 43.6 ± 16.9, 28.1 ± 9.4, respectively. The prevalence of underlying health conditions (UHC), depression, and anxiety disorders were 22.3% (1867/8,291), 12.5% (1,033/8,291), and 16.7% (726/4,348), respectively. Of 8,291 participants, 41% were men, 79.9% ever married, 45.5% had college/university or higher degree, 92.5% had a job, 45.9 reported felt very or fairly easy to pay for treatments, 28.7% participated in surveying during the lockdown period, 11.7% were overweight or obese, and 37.7% had S-COVID-19-S. In the pandemic, the proportions of patients who responded "unchanged/healthier" eating behavior, "unchanged/more" smoking, drinking, and physical activity were 94.9, 9.0, 14.9, and 66.1%, respectively (**Table 1**).

Underlying Health Conditions and Mental Health Outcomes

Table 2 presents the association of underlying health conditions with depression and anxiety symptoms. After adjusted for confounders, multiple logistic regression models showed that participants with UHC had higher odds of experiencing depression (OR, 2.11; 95% CI, 1.81–2.46; $p < 0.001$) and anxiety symptoms (OR, 2.86; 95% CI, 2.37–3.46; $p < 0.001$), as compared to those without comorbidity (**Table 2**). The odds of having depression and anxiety symptoms were significantly lower

TABLE 1 | Characteristics of study participants, Vietnam, 2020.

Variables		Depression (n = 8,291)			Anxiety (n = 4,348)		
	Total (n = 8,291)	PHQ < 10 (n = 7,258)	PHQ ≥ 10 (n = 1,033)	p*	GAD < 8 (n = 3,621)	GAD ≥ 8 (n = 726)	p*
	n (%)	n (%)	n (%)		n (%)	n (%)	
Age, year (mean ± SD)	43.6 ± 16.9	—	—	<0.001	—	—	<0.001
18–39	3,955 (47.7)	3,688 (50.8)	267 (25.8)	—	2014 (55.6)	154 (21.2)	—
40–59	2,473 (29.8)	2,220 (30.6)	253 (24.5)	—	1,075 (29.7)	168 (23.1)	—
≥60	1863 (22.5)	1,350 (18.6)	513 (49.7)	—	532 (14.7)	404 (55.6)	—
Gender	—	—	—	0.906	—	—	0.182
Women	4,890 (59.0)	4,279 (59.0)	611 (59.1)	—	2,260 (62.4)	434 (59.8)	—
Men	3,401 (41.0)	2,979 (41.0)	422 (40.9)	—	1,361 (37.6)	292 (40.2)	—
Marital status	—	—	—	<0.001	—	—	<0.001
Never married	1,635 (19.7)	1,496 (20.7)	139 (13.5)	—	709 (19.7)	63 (8.7)	—
Ever married	6,628 (79.9)	5,734 (79.3)	894 (86.5)	—	2,896 (80.3)	663 (91.3)	—
Education attainment	—	—	—	0.024	—	—	<0.001
Secondary school or below	2,223 (26.8)	1911 (26.4)	312 (30.2)	—	786 (21.7)	221 (30.4)	—
High school	2,277 (27.5)	1995 (27.5)	282 (27.3)	—	986 (27.3)	209 (28.8)	—
College/university or higher	3,776 (45.5)	3,337 (46.1)	439 (42.5)	—	1843 (51.0)	296 (40.8)	—
Occupation	—	—	—	<0.001	—	—	<0.001
Unemployed/ Dependents	623 (7.5)	467 (6.4)	156 (15.1)	—	349 (9.6)	125 (17.2)	—
Employed	7,668 (92.5)	6,791 (93.6)	877 (84.9)	—	3,272 (90.4)	601 (82.8)	—
Ability to pay for treatments	—	—	—	<0.001	—	—	<0.001
Very or fairly difficult	4,475 (54.0)	3,710 (51.2)	765 (74.1)	—	2,115 (58.6)	596 (82.1)	—
Very or fairly easy	3,805 (45.9)	3,537 (48.8)	268 (25.9)	—	1,496 (41.4)	130 (17.9)	—
Social status	—	—	—	<0.001	—	—	<0.001
Low	1,403 (16.9)	1,187 (16.4)	216 (20.9)	—	803 (22.2)	118 (16.3)	—
Middle or high	6,879 (83.0)	6,062 (83.6)	817 (79.1)	—	2,810 (77.8)	608 (83.7)	—
Lockdown measure	—	—	—	<0.001	—	—	<0.001
No	5,915 (71.3)	5,428 (74.8)	487 (47.1)	—	1789 (49.4)	183 (25.2)	
Yes	2,376 (28.7)	1830 (25.2)	546 (52.9)	—	1832 (50.6)	543 (74.8)	
BMI, kg/m^2	—	—	—	0.999	—	—	0.616
Normal weight (BMI <25.0)	7,301 (88.1)	6,394 (88.2)	907 (88.2)	—	3,163 (87.5)	627 (86.8)	—
Overweight/obese (BMI ≥25.0)	974 (11.7)	853 (11.8)	121 (11.8)	—	451 (12.5)	95 (13.2)	—
Underlying health conditions (UHC)	—	—	—	<0.001	—	—	<0.001
Non-UHC	6,434 (77.7)	5,893 (81.3)	541 (52.4)		2,805 (77.5)	298 (41.0)	—
UHC	1848 (22.3)	1,357 (18.7)	491 (47.6)		816 (22.5)	428 (59.0)	—
S-COVID-19-S[a]	—	—	—	<0.001	—	—	<0.001
No	5,162 (62.3)	4,827 (66.5)	335 (32.4)	—	2,375 (65.6)	219 (30.2)	—
Yes	3,129 (37.7)	2,431 (33.5)	698 (67.6)	—	1,246 (34.4)	507 (69.8)	—
Smoking tobacco[b]	—	—	—	0.867	—	—	0.643
Never, stopped, or smoke less	7,541 (91.0)	6,600 (90.9)	941 (91.1)	—	3,323 (91.8)	670 (92.3)	—
Unchanged or smoke more	750 (9.0)	658 (9.1)	92 (8.9)	—	298 (8.2)	56 (7.7)	—
Drinking alcohol[b]	—	—	—	0.680	—	—	0.001
Never, stopped, or drink less	7,044 (85.0)	6,178 (85.1)	866 (84.7)	—	3,372 (93.2)	642 (89.7)	—
Unchanged or drink more	1,235 (14.9)	1,078 (14.9)	157 (15.3)	—	247 (6.8)	74 (10.3)	—
Physical activity[b]	—	—	—	<0.001	—	—	<0.001
Never, stopped, or exercise less	2,778 (33.5)	2,190 (30.3)	588 (57.1)	—	1960 (54.1)	555 (76.4)	—
Unchanged or exercise more	5,480 (66.1)	5,038 (69.7)	442 (42.9)	—	1,661 (45.9)	171 (23.6)	—
Eating behavior[b]	—	—	—	<0.001	—	—	<0.001
Less healthy	383 (4.6)	193 (2.7)	190 (18.4)	—	144 (4.0)	181 (24.9)	—
Unchanged or healthier	7,868 (94.9)	7,026 (97.3)	842 (81.6)	—	3,456 (96.0)	545 (75.1)	—
PB score, median (IQR)c	9.0 (8.0—10.0)	—	—	<0.001	—	—	<0.001
PB score <9.0	1744 (40.1)	1,241 (34.4)	503 (68.1)	—	1,225 (33.8)	519 (71.5)	—
PB score ≥9.0	2,604 (59.9)	2,368 (65.6)	236 (31.9)	—	2,396 (66.2)	207 (28.5)	—
HL score (mean ± SD)	28.1 ± 9.4	—	—	—	—	—	—

PHQ, patient health questionnaire; GAD, Generalized Anxiety Disorder; SD, standard deviation; UHC, underlying health conditions; S-COVID-19-S, suspected corona virus disease-2019 symptoms; BMI, body mass index; PB, preventive behavior; IQR, interquartile range; HL, health literacy.

**Results of the Chi-square test.*

[a]The suspected COVID-19 symptoms including common symptom (fever, cough, dyspnea), less common symptom (myalgia, fatigue, sputum production, confusion, headache, sore throat, rhinorrhea, chest pain, hemoptysis, diarrhea, and nausea/vomiting).

[b]People were asked whether their health-related behaviors are getting worse, better, or unchanged during COVID-19 pandemic as compared to those before the pandemic.

[c]Preventive behaviors was analyzed on the sample of 4,348 participants with two outcomes (depression and anxiety).

TABLE 2 | Associations of underlying health conditions, suspected COVID-19 symptoms, health-related behavior changes, and preventive behaviors with depression, and anxiety using logistic regression models, Vietnam, 2020.

Variable	Depression (PHQ ≥ 10)				Anxiety (GAD ≥ 8)[a]			
	Model 1		Model 2		Model 1		Model 2	
	OR (95% CI)	p	OR (95% CI)	p	OR (95% CI)	p	OR (95% CI)	p
Underlying health conditions								
Non-UHC	1.00	—	1.00	—	1.00	—	1.00	—
UHC	3.94 (3.44, 4.51)	<0.001	2.11 (1.81, 2.46)	<0.001	4.94 (4.18, 5.83)	<0.001	2.86 (2.37, 3.46)	<0.001
S-COVID-19-S								
No	1.00	—	1.00	—	1.00	—	1.00	—
Yes	4.14 (3.60, 4.75)	<0.001	2.84 (2.45, 3.29)	<0.001	4.41 (3.71, 5.24)	<0.001	2.92 (2.42, 3.52)	<0.001
Smoking tobacco								
Never, stopped, or smoke less	1.00	—	1.00	—	1.00	—	1.00	—
Unchanged or smoke more	0.98 (0.78, 1.23)	0.867	1.08 (0.84, 1.38)	0.550	0.93 (0.69, 1.25)	0.643	1.02 (0.73, 1.42)	0.895
Drinking alcohol								
Never, stopped, or drink less	1.00	—	1.00	—	1.00	—	1.00	—
Unchanged or drink more	1.04 (0.86, 1.25)	0.680	1.19 (0.98, 1.45)	0.081	1.57 (1.19, 2.07)	0.001	1.99 (1.45, 2.72)	<0.001
Physical activity								
Never, stopped, or exercise less	1.00	—	1.00	—	1.00	—	1.00	—
Unchanged or exercise more	0.33 (0.28, 0.37)	<0.001	0.53 (0.45, 0.61)	<0.001	0.36 (0.30, 0.44)	<0.001	0.48 (0.39, 0.59)	<0.001
Eating behavior								
Less healthy	1.00	—	1.00	—	1.00	—	1.00	—
Unchanged or healthier	0.12 (0.09, 0.15)	<0.001	0.22 (0.17, 0.28)	<0.001	0.12 (0.10, 0.16)	<0.001	0.20 (0.15, 0.26)	<0.001
Preventive behaviors[b]								
Low PB score (<9.0)	1.00	—	1.00	—	1.00	—	1.00	—
High PB score (≥9.0)	0.25 (0.21, 0.29)	<0.001	0.36 (0.30, 0.44)	<0.001	0.20 (0.17, 0.24)	<0.001	0.28 (0.23, 0.34)	<0.001

PHQ, patient health questionnaire; GAD, Generalized Anxiety Disorder; UHC, underlying health conditions; S-COVID-19-S, suspected corona virus disease-2019 symptoms; PB, preventive behaviors; OR, odd ratio; CI, confidence interval.

Model 1 Association of UHC, S-COVID-19-S, health-related behavior changes, PB with depression, and anxiety.

*Model 2 The model 1 was adjusted for age (for both outcomes), gender (for both outcomes), occupation (for both outcomes), ability to pay for treatments (for depression only), lockdown measure (for both outcomes), and social status (for both outcomes) (**Supplementary Tables S1–S3** in Supplementary File).*

*Independent variables were analyzed separately in different models. Full models for UHC, S-COVID-19-S, smoking, drinking alcohol, physical activity, eating behavior, and PB are presented in **Supplementary Tables S4–S10** in Supplementary File, respectively.*

[a]*Anxiety was analyzed on the sample of 4,348 participants.*

[b]*Participants was asked how often they followed preventive behaviors, including washing hands, wearing masks, and physical distancing, during the pandemic. PB was analyzed on the sample of 4,348 participants with two outcomes (depression and anxiety).*

TABLE 3 | Interactions of underlying health conditions with suspected COVID-19 symptoms on depression, and anxiety, Vietnam, 2020.

Interaction	Depression (PHQ ≥ 10)				Anxiety (GAD ≥ 8)[a]			
	Model 1		Model 2		Model 1		Model 2	
	OR (95% CI)	*p*	OR (95% CI)	*p*	OR (95% CI)	*p*	OR (95% CI)	*p*
Non-UHC × without S-COVID-19-S	1.00	—	1.00	—	1.00	—	1.00	—
UHC × without S-COVID-19-S	1.34 (0.98, 1.81)	0.063	0.84 (0.61, 1.16)	0.293	1.76 (1.19, 2.61)	0.004	0.92 (0.61, 1.39)	0.685
Non-UHC × with S-COVID-19-S	2.34 (1.96, 2.79)	<0.001	1.92 (1.59, 2.31)	<0.001	2.00 (1.56, 2.58)	<0.001	1.50 (1.15, 1.96)	0.003
UHC × with S-COVID-19-S	2.77 (1.94, 3.94)	<0.001	2.62 (1.81, 3.79)	<0.001	2.18 (1.38, 3.45)	0.001	3.12 (1.92, 5.07)	<0.001

PHQ, patient health questionnaire; GAD, Generalized Anxiety Disorder; OR, odd ratio; CI, confidence interval; UHC, underlying health conditions; S-COVID-19-S, suspected corona virus disease-2019 symptoms.

Model 1 Simple logistic regression to test the main effect of UHC, the main effect of S-COVID-19-S, and the interaction of UHC with S-COVID-19-S on anxiety and depression.

*Model 2 The model 1 was adjusted for age (for both outcomes), gender (for both outcomes), occupation (for both outcomes), ability to pay for treatments (for depression only), lockdown measure (for both outcomes), and social status (for both outcomes) (**Supplementary Tables S1–S3** in Supplementary File). The full model is presented in **Supplementary Table S11** in Supplementary File.*

[a]*Anxiety was analyzed on the sample of 4,348 participants.*

in patients who had a high PB score (OR, 0.36; 95% CI, 0.30–0.44; $p < 0.001$) and (OR, 0.28; 95% CI, 0.23–0.34; $p < 0.001$), who had physical activity at "unchanged or more" level (OR, 0.53; 95% CI, 0.45–0.61; $p < 0.001$) and (OR, 0.48; 95% CI, 0.39–0.59; $p < 0.001$), who ate "unchanged or healthier" (OR, 0.22; 95% CI, 0.17–0.28; $p < 0.001$) and (OR, 0.20; 95% CI, 0.15–0.26; $p < 0.001$), respectively, as compared to counterparts. The odds of depression and anxiety symptoms were significantly higher in patients with S-COVID-19-S (OR, 2.84; 95% CI, 2.45–3.29); $p < 0.001$) and (OR, 2.92; 95% CI, 2.42–3.52; $p < 0.001$),

TABLE 4 | Interactions of underlying health conditions with health-related behavior changes on depression, and anxiety, Vietnam, 2020.

Interaction	Depression (PHQ ≥10)				Anxiety (GAD ≥8)[a]			
	Model 1		Model 2		Model 1		Model 2	
	OR (95% CI)	*p*	OR (95% CI)	*p*	OR (95% CI)	*p*	OR (95% CI)	*p*
Interaction of comorbidity with drinking alcohol								
Non-UHC × never, stopped, or drink less	—	—	—	—	1.00	—	1.00	—
UHC × never, stopped, or drink less	—	—	—	—	5.71 (4.77, 6.83)	<0.001	3.31 (2.71, 4.05)	<0.001
Non-UHC × unchanged or drink more	—	—	—	—	3.05 (2.21, 4.21)	<0.001	3.26 (2.28, 4.65)	<0.001
UHC × unchanged or drink more	—	—	—	—	0.25 (0.12, 0.48)	<0.001	0.34 (0.16, 0.69)	0.003
Interaction of comorbidity with physical activity								
Non-UHC × never, stopped, or exercise less	1.00	—	1.00	—	1.00	—	1.00	—
UHC × never, stopped, or exercise less	5.26 (4.34, 6.39)	<0.001	3.03 (2.45, 3.74)	<0.001	6.08 (4.96, 7.46)	<0.001	3.46 (2.76, 4.35)	<0.001
Non-UHC × unchanged or exercise more	0.58 (0.48, 0.69)	<0.001	0.77 (0.64, 0.94)	0.010	0.68 (0.53, 0.86)	0.002	0.75 (0.58, 0.97)	0.027
UHC × unchanged or exercise more	0.36 (0.27, 0.48)	<0.001	0.42 (0.30, 0.56)	<0.001	0.34 (0.23, 0.50)	<0.001	0.42 (0.28, 0.64)	<0.001
Interaction of comorbidity with eating behavior								
Non-UHC × less healthy	1.00	—	1.00	—	1.00	—	1.00	—
UHC × less healthy	10.92 (6.79, 17.56)	<0.001	4.27 (2.57, 7.08)	<0.001	16.97 (9.78, 29.45)	<0.001	6.27 (3.46, 11.35)	<0.001
Non-UHC × unchanged or healthier	0.30 (0.21, 0.42)	<0.001	0.36 (0.25, 0.52)	<0.001	0.35 (0.23, 0.53)	<0.001	0.36 (0.23, 0.56)	<0.001
UHC × unchanged or healthier	0.28 (0.17, 0.45)	<0.001	0.42 (0.25, 0.72)	0.001	0.21 (0.12, 0.38)	<0.001	0.37 (0.20, 0.68)	0.002

PHQ, patient health questionnaire; GAD, Generalized Anxiety Disorder; OR, odd ratio; CI, confidence interval; UHC, underlying health conditions.
Model 1 Simple logistic regression to test the main effect of UHC, the main effect of health-related behavior changes, and the interaction of UHC with health-related behavior changes on anxiety and depression.
*Model 2 The model 1 was adjusted for age (for both outcomes), gender (for both outcomes), occupation (for both outcomes), ability to pay for treatments (for depression only), lockdown measure (for both outcomes), and social status (for both outcomes) (**Supplementary Tables S1–S3** in Supplementary File).*
*Full models for drinking alcohol, physical activity, and eating behaviors are presented in **Supplementary Tables S12–S14** in Supplementary File.*
[a]*Anxiety was analyzed on the sample of 4,348 participants.*

TABLE 5 | Interactions of underlying health conditions with preventive behaviors on depression, and anxiety, Vietnam, 2020[a].

Interaction	Depression (PHQ ≥ 10)				Anxiety (GAD ≥ 8)			
	Model 1		Model 2		Model 1		Model 2	
	OR (95% CI)	*p*	OR (95% CI)	*p*	OR (95% CI)	*p*	OR (95% CI)	*p*
Non-UHC × PB score <9.0	1.00	—	1.00	—	1.00	—	1.00	—
UHC × PB score <9.0	9.83 (7.75, 12.46)	<0.001	5.32 (4.11, 6.89)	<0.001	11.46 (9.02, 14.58)	<0.001	6.24 (4.80, 8.11)	<0.001
Non-UHC × PB score ≥9.0	0.49 (0.38, 0.62)	<0.001	0.57 (0.44, 0.73)	<0.001	0.48 (0.37, 0.61)	<0.001	0.55 (0.43, 0.71)	<0.001
UHC × PB score ≥9.0	0.21 (0.15, 0.30)	<0.001	0.31 (0.21, 0.45)	<0.001	0.14 (0.09, 0.19)	<0.001	0.18 (0.12, 0.27)	<0.001

PHQ, patient health questionnaire; GAD, Generalized Anxiety Disorder; OR, odd ratio; CI, confidence interval; UHC, underlying health conditions; PB, preventive behaviors.
Model 1 Simple logistic regression to test the main effect of UHC, the main effect of preventive behaviors, and the interaction of UHC with preventive behaviors on anxiety and depression.
*Model 2 The model 1 was adjusted for age (for both outcomes), gender (for both outcomes), occupation (for both outcomes), ability to pay for treatments (for depression only), lockdown measure (for both outcomes), and social status (for both outcomes) (**Supplementary Tables S1–S3** in Supplementary File). The full model is presented in **Supplementary Table S15** in Supplementary File.*
[a]*PB score and Anxiety were analyzed on the sample of 4,348 participants.*

respectively. Besides, the odds of suffering from anxiety symptoms were significantly larger in patients who drunk at "unchanged or more" level (OR, 1.99; 95% CI, 1.45–2.72; $p < 0.001$).

Effect Modifications of S-COVID-19-S, Health-Related and Preventive Behaviors

In the interaction analysis models, we found that as compared to participants without UHC and without S-COVID-19-S, those without UHC and with S-COVID-19-S had 1.92 times higher likelihood of having depressive symptoms (OR, 1.92; 95% CI, 1.59–2.31; $p < 0.001$), and 1.50 times higher likelihood of anxiety symptoms (OR, 1.50; 95% CI, 1.15–1.96; $p = 0.003$); while those with both UHC and S-COVID-19-S had 2.62 times higher depressive symptoms likelihood (OR, 2.62; 95% CI, 1.81–3.79; $p < 0.001$), and 3.12 times higher anxiety symptoms likelihood (OR, 3.12; 95% CI, 1.92–5.07; $p < 0.001$; **Table 3**).

In comparison to patients without UHC and drinking at "never/stopped/less" level, those without UHC and drinking at "unchanged or more" level had 3.26 times higher likelihood of having anxiety symptoms (OR, 3.26; 95% CI, 2.28–4.65; $p < 0.001$); those with UHC and drinking at "never/stopped/less" level had 3.31 times higher likelihood of developing anxiety disorders (OR, 3.31; 95% CI, 2.71–4.05; $p < 0.001$); while participants with UHC and drinking at "unchanged or more" level had 66% lower likelihood of experiencing anxiety symptoms (OR, 0.34; 95% CI, 0.16–0.69; $p = 0.003$; **Table 4**).

In comparison to patients without UHC and had physical activity at "never/stopped/less" level, those without UHC and did physical activity at "unchanged or more" level had a 23% lower likelihood of depressive symptoms (OR, 0.77; 95% CI, 0.64–0.94; $p = 0.01$) and a 25% lower anxiety symptoms likelihood (OR, 0.75; 95% CI, 0.58–0.97; $p = 0.027$); those with UHC and had physical activity at "never/stopped/less" level had 3.03 times higher likelihood of depressive symptoms (OR, 3.03; 95% CI, 2.45–3.74; $p < 0.001$) and 3.46 times higher anxiety symptoms likelihood (OR, 3.46; 95% CI, 2.76–4.35; $p < 0.001$); while patients with UHC and had physical activity at "unchanged or more" level had 58% lower depressive symptoms likelihood (OR, 0.42; 95% CI, 0.30–0.56; $p < 0.001$) and 58% lower anxiety symptoms likelihood (OR, 0.42; 95%CI, 0.28–0.64; $p < 0.001$; **Table 4**).

In comparison to people without UHC and ate "less healthy"; those without UHC and ate "unchanged or healthier" had a 64% lower likelihood of developing depressive symptoms (OR, 0.36; 95% CI, 0.25–0.52; $p < 0.001$), and a 64% lower likelihood of having anxiety symptoms (OR, 0.36; 95% CI, 0.23–0.56; $p < 0.001$); those with UHC and ate "less healthy" had 4.27 times higher likelihood of depressive symptoms (OR, 4.27; 95% CI, 2.57–7.08; $p < 0.001$) and 6.27 times higher likelihood of anxiety disorders (OR, 6.27; 95% CI, 3.46–11.35; $p < 0.001$); while patients with UHC and ate "unchanged or healthier" had 58% lower likelihood of depressive symptoms (OR, 0.42; 95% CI, 0.25–0.72; $p = 0.001$), and a 63% lower anxiety symptoms likelihood (OR, 0.37; 95% CI, 0.20–0.68; $p = 0.002$; **Table 4**).

In comparison to participants without UHC and with a low PB score; those without UHC and with a high PB score had a 43% lower likelihood of depressive symptoms (OR, 0.57; 95% CI, 0.44–0.73; $p < 0.001$) and a 45% lower anxiety symptoms likelihood (OR, 0.55; 95% CI, 0.43–0.71; $p < 0.001$); those with UHC and with a low PB score had 5.32 times higher likelihood of depressive symptoms (OR, 5.32; 95% CI, 4.11–6.89; $p < 0.001$) and 6.24 times lower anxiety symptoms likelihood (OR, 6.24; 95% CI, 4.80–8.11; $p < 0.001$); while participants with UHC and with a high PB score had 69% lower depressive symptoms likelihood (OR, 0.31; 95% CI, 0.21–0.45; $p < 0.001$) and 82% lower anxiety symptoms likelihood (OR, 0.18; 95% CI, 0.12–0.27; $p < 0.001$; **Table 5**).

DISCUSSION

The present study showed that individuals with underlying health conditions are more likely to have depression and anxiety symptoms. The results were similar to results from previous studies [38, 39]. This association could be explained that underlying diseases may directly develop mental illnesses [40]. In addition, in the pandemic, people with comorbidities are vulnerable to severity and mortality after COVID-19 infection [19–21, 41]. They also were recommended to stay at home as much as possible to reduce the chance of infection. Therefore, the feeling of isolation and the fear of catching COVID-19 may harm their mental health during the pandemic [42].

In the interaction analysis, we found that people who had both underlying health conditions and suspected COVID-19 symptoms had higher odds of depression and anxiety symptoms than those without. Previous studies found that individuals with suspected COVID-19 symptoms, and those who had chronic conditions were positively associated with suffering from psychological illnesses during the pandemic [39, 43, 44]. Thus, it is understandable that individuals suffering from double burden may more likely experience adverse psychological consequences in the pandemic.

We also found that people with comorbidities who highly adhered to preventive behaviors had lower odds of experiencing depressive and anxiety symptoms than those who less adhered to. Previous research in Turkey found that compliance with preventive behaviors was associated with better psychological outcomes in the pandemic [13]. The benefits of handwashing and mask-wearing on reducing the harmful impact of the pandemic on psychological health also was discussed in previous studies [39, 45]. Preventive measures such as washing hands, wearing a mask, and physical distancing may help reduce the risk of coronavirus transmission, especially for people with underlying medical conditions who often access healthcare services for treatments. Although physical distancing reduces social interaction [42, 46], which may negatively influence mental health, for high-risk populations like people with underlying health conditions, preventing coronavirus infection is more critical [19]. Generally, preventive behaviors may help patients with comorbid conditions decrease the fear and worry of serious infections, which may improve their mental health. Therefore, governments should encourage the public to adhere to preventive behaviors to control the disease and reduce adverse psychological effects, particularly in low and middle-income countries, when the proportion of handwashing was still low [47].

The current study shows that keeping positive behaviors, including physical activity and healthy eating, unchanged or better could help reduce the negative impacts of underlying health conditions on psychological health during the pandemic. Previous studies showed that individuals doing exercise routinely were associated with better health outcomes across various physical diseases [48, 49], which may help ameliorate psychological health. Physical activities also were recommended as an effective therapy for depression [50]. Better nutrition also was also associated with a declined occurrence of functional disability and mortality rate [51]. Besides, the effect of higher quality diets on reducing the risk of being depressed has been discussed in previous studies [52, 53]. Notably, in the COVID-19 epidemic, staying physical activities and better diets have been suggested to enhance the immune system and alleviate the harmful effects of being isolated [54–56]. A recent study has shown that healthy dietary intake help reduces the occurrence of depression in the outpatient sample during the lockdown period [24]. Moreover, other studies have indicated that people with higher health literacy are more likely to maintain physical exercise and healthy eating behaviors [57, 58]. Therefore, timely health education strategies with the participation of the government and health professionals should be promoted to reduce sedentary lifestyle and improve meal quality for high-risk groups during and after the COVID-19 pandemic.

In multiple logistic regression, our findings found that patients who kept drinking habits unchanged or more had a higher likelihood of developing anxiety symptoms during a pandemic, which is consistent with findings from previous studies [59]. However, in interaction analyses, "unchanged or more" drinking could help people with comorbidities mitigate anxiety symptoms. Previous studies found that individuals with greater stress or fear of COVID-19 were more likely to drink more alcohol as a coping method during the pandemic [60–62]. Drinking may immediately help reduce tension and worry in uncomfortable circumstances [63, 64]. However, in the long term, alcohol abuse may have a harmful effect on both physical and mental health [65, 66], particularly people with underlying medical conditions. Therefore, other effective coping strategies should be proposed to improve mental health and reduce coping-motivated drinking for high-risk groups during the pandemic.

This study has some limitations. First, as the investigation was carried out at the time of the COVID-19 crisis, both research assistants and studied patients were at great risk of COVID-19 infection. Thus, all medical facilities, researchers were required to strictly follow the national guidelines of self-prevention throughout the data-collecting process to avoid the spread of COVID-19. During the pandemic, people exposed to the risks were immediately quarantined, and people infected were immediately isolated in the authorized institutions. Therefore, we could not approach those people to investigate their real experiences. In addition, there was no new confirmed case of COVID-19 reported in studied hospitals during the period of the study [67]. Secondly, in this study, we investigated the drinking behavior changes but not alcohol abuse or drinking frequency which may not provide the in-depth analysis of the association. In addition, the cultural aspect was also not investigated. Future studies should take these aspects into account of measurements. Thirdly, the socially desirable responses regarding healthy behavior in the context of a healthcare facility may cause the reporting bias. To minimize this bias, we encouraged participants to provide the most accurate information and ensured confidentiality. In this study, we used two types of the administered questionnaire for data collection, including the printed version and the online version. Therefore, we created a new dummy variable for the type of the administered questionnaire (online version vs. printed version) and adjusted it with other confounders in the final models. There is no significant difference in the results of the final models. These results were presented in **Supplementary Tables S16–S19** in the Supplementary File. Finally, a causal relationship cannot be drawn from a cross-sectional study. However, with relatively large sample size, our findings might be helpful to raise an important phenomenon and provide evidence for developing appropriate interventions to minimize the psychological effects of individuals, especially those with comorbidity during the COVID-19 pandemic. Future studies need to perform with a longitudinal design to confirm the current findings.

Conclusion

In the current study, we found that people with underlying health conditions are more vulnerable to depression and anxiety symptoms. Having S-COVID-19-S made these patients more depressed and anxious. However, positive changes in lifestyles (e.g., doing more physical exercising, healthier eating) and adherence to protective measures showed benefits for mental health in those with underlying diseases. Unexpectedly, the constant or increase drinking behavior was found as a coping behavior to protect patients against psychological illnesses during the pandemic. Our findings could be helpful for governments and health organizations to develop appropriate strategies to alleviate the harmful impact of the pandemic on mental health, especially in patients with underlying health conditions.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available on reasonable request to the corresponding authors.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by the study was reviewed and approved by the Institutional Ethical Review Committee of Hanoi University of Public Health, Vietnam (IRB No. 029/2020/YTCC-HD3, and IRB No. 133/2020/YTCC-HD3). The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

MN, TDu, and CB analyzed the data and drafted the manuscript. MN, TP, LP, DP, TT, HoN, HuN, TH, HD, PN, MT, TDo, HN, TN, NN, CT, KT, TTD, TN, KP, LN, TV, BD, ND, TL, ND, HN, TM, DH, HN, KN, CB, and TDu contributed to conceptualization, investigation, methodology, validation, writing review and editing. MN, TP, LP, DP, TT, HoN, HuN, TH, HD, PN, MT, TDo, HN, TN, NN, CT, KT, TTD, TN, KP, LN, TV, BD, ND, TL, ND, HN, TM, DH, HN, KN, and TDu conducted data curation. All authors have read and agreed to the published version of the manuscript.

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CONFLICT OF INTEREST

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.ssph-journal.org/articles/10.3389/ijph.2021.634904/full#supplementary-material

REFERENCES

1. VanderWeele, TJ. Challenges Estimating Total Lives Lost in COVID-19 Decisions. *Jama* (2020). 324:445–6. doi:10.1001/jama.2020.12187
2. Watkins, J, and Wulaningsih, W. Three Further Ways that the COVID-19 Pandemic Will Affect Health Outcomes. *Int J Public Health* (2020). 65:519–20. doi:10.1007/s00038-020-01383-6
3. Armocida, B, Formenti, B, Ussai, S, Palestra, F, and Missoni, E. The Italian Health System and the COVID-19 challenge. *The Lancet Public Health* (2020). 5:E253. doi:10.1016/S2468-2667(20)30074-8
4. Miller, IF, Becker, AD, Grenfell, BT, and Metcalf, CJE (2020). Disease and Healthcare burden of COVID-19 in the United States. *Nat Med* 26:1212, 7-+. doi:10.1038/s41591-020-0952-y
5. Linares-Fernández, S, and Raguindin, PF. Vaccine Development in the SARS-CoV-2 Pandemic: a Balancing Act on Accuracy and Speed. *Int J Public Health* (2020). 65:1433–4. doi:10.1007/s00038-020-01511-2
6. Pfefferbaum, B, and North, CS. Mental Health and the Covid-19 Pandemic. *N Engl J Med* (2020). 383:510–2. doi:10.1056/NEJMp2008017
7. Bavel, JJV, Baicker, K, Boggio, PS, Capraro, V, Cichocka, A, Cikara, M, et al. Using Social and Behavioural Science to Support COVID-19 Pandemic Response. *Nat Hum Behav* (2020). 4:460–71. doi:10.1038/s41562-020-0884-z
8. Kraemer, MUG, Yang, C-H, Gutierrez, B, Wu, C-H, Klein, B, Pigott, DM, et al. (2020). The Effect of Human Mobility and Control Measures on the COVID-19 Epidemic in China. *Science* 368:493, 7-+. doi:10.1126/science.abb4218
9. World Health Organisation. *Coronavirus Disease (COVID-19) Advice for the Public* (2020a). Available at: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public (Accessed May 10, 2020).
10. Maier, BF, and Brockmann, D (2020). Effective Containment Explains Subexponential Growth in Recent Confirmed COVID-19 Cases in China. *Science* 368:742, 6-+. doi:10.1126/science.abb4557
11. World Health Organization. *Transmission of SARS-CoV-2: Implications for Infection Prevention Precautions* (2020b). Available at: https://www.who.int/news-room/commentaries/detail/transmission-of-sarscov-2-implications-for-infection-prevention-precautions (Accessed July 9, 2020).
12. Chu, DK, Akl, EA, Duda, S, Solo, K, Yaacoub, S, Schünemann, HJ, et al. Physical Distancing, Face Masks, and Eye protection to Prevent Person-To-Person Transmission of SARS-CoV-2 and COVID-19: a Systematic Review and Meta-Analysis. *The Lancet* (2020). 395:1973–87. doi:10.1016/s0140-6736(20)31142-9
13. Yıldırım, M, and Güler, A. COVID-19 Severity, Self-Efficacy, Knowledge, Preventive Behaviors, and Mental Health in Turkey. *Death Stud* (2020). 16: 1–8. doi:10.1080/07481187.2020.1793434
14. Childs, CE, Calder, PC, and Miles, EA. Diet and Immune Function. *Nutrients* (2019). 11:1933. doi:10.3390/nu11081933
15. Laddu, DR, Lavie, CJ, Phillips, SA, and Arena, R. Physical Activity for Immunity protection: Inoculating Populations with Healthy Living Medicine in Preparation for the Next Pandemic. *Prog Cardiovasc Dis* (2021). 64:102–4. doi:10.1016/j.pcad.2020.04.006
16. Nieman, DC, and Wentz, LM. The Compelling Link between Physical Activity and the Body's Defense System. *J Sport Health Sci* (2019). 8:201–17. doi:10.1016/j.jshs.2018.09.009
17. World Health Organisation. *COVID-19: Vulnerable and High Risk Groups* (2020b). Available at: https://www.who.int/westernpacific/emergencies/covid-19/information/high-risk-groups (Accessed May 08, 2020).
18. Yang, J, Zheng, Y, Gou, X, Pu, K, Chen, Z, Guo, Q, et al. Prevalence of Comorbidities and its Effects in Patients Infected with SARS-CoV-2: a Systematic Review and Meta-Analysis. *Int J Infect Dis* (2020). 94:91–5. doi:10.1016/j.ijid.2020.03.017
19. Clark, A, Jit, M, Warren-Gash, C, Guthrie, B, Wang, HHX, Mercer, SW, et al. Global, Regional, and National Estimates of the Population at Increased Risk of Severe COVID-19 Due to Underlying Health Conditions in 2020: a Modelling Study. *Lancet Glob Health* (2020). 8:e1003–1017. doi:10.1016/S2214-109x(20)30264-3
20. Harrison, SL, Fazio-Eynullayeva, E, Lane, DA, Underhill, P, and Lip, GYH. Comorbidities Associated with Mortality in 31,461 Adults with COVID-19 in the United States: A Federated Electronic Medical Record Analysis. *Plos Med* (2020). 17:e1003321. doi:10.1371/journal.pmed.1003321
21. Pasquariello, P, and Stranges, S. Excess Mortality from COVID-19: a Commentary on the Italian Experience. *Int J Public Health* (2020). 65: 529–31. doi:10.1007/s00038-020-01399-y
22. Lazzerini, M, Barbi, E, Apicella, A, Marchetti, F, Cardinale, F, and Trobia, G. Delayed Access or Provision of Care in Italy Resulting from Fear of COVID-19. *Lancet Child Adolesc Health* (2020). 4:E10–E11. doi:10.1016/S2352-4642(20)30108-5
23. Nguyen, TT, Le, NT, Nguyen, MH, Pham, LV, Do, BN, Nguyen, HC, et al. Health Literacy and Preventive Behaviors Modify the Association between Pre-existing Health Conditions and Suspected COVID-19 Symptoms: A Multi-Institutional Survey. *Ijerph* (2020c). 17:8598. doi:10.3390/ijerph17228598
24. Pham, KM, Pham, LV, Phan, DT, Tran, TV, Nguyen, HC, Nguyen, MH, et al. Healthy Dietary Intake Behavior Potentially Modifies the Negative Effect of COVID-19 Lockdown on Depression: A Hospital and Health Center Survey. *Front Nutr* (2020). 7:230. doi:10.3389/fnut.2020.581043
25. Prime Minister of Vietnam. *Gov't Extends Social Distancing for at Least One Week in 28 Localities* (2020a). Available at: http://news.chinhphu.vn/Home/Govt-extends-social-distancing-for-at-least-one-week-in-28-localities/20204/39735.vgp (Accessed April 20, 2020).
26. Prime Minister of Vietnam. *PM Orders Strict Nationwide Social Distancing Rules*. starting April 1 (2020b). Available at: https://vietnamlawmagazine.vn/pm-orders-strict-nationwide-social-distancing-rules-starting-april-1-27108.html (Accessed March 31, 2020).
27. BMJ Editorial Team. *Overview of Novel Coronavirus (2019-nCoV)*. BMJ Best Practice (2020). Available at: https://bestpractice.bmj.com/topics/en-gb/3000165 (Accessed March 10, 2020).
28. Charlson, ME, Pompei, P, Ales, KL, and MacKenzie, CR. A New Method of Classifying Prognostic Comorbidity in Longitudinal Studies: Development and Validation. *J Chronic Dis* (1987). 40:373–83. doi:10.1016/0021-9681(87)90171-8
29. Duong, TV, Aringazina, A, Kayupova, G, Nurjanah, fnm, Pham, TV, Pham, KM, et al. Development and Validation of a New Short-form Health Literacy Instrument (HLS-SF12) for the General Public in Six Asian Countries. *HLRP: Health Literacy Res Pract* (2019a). 3:e91–e102. doi:10.3928/24748307-20190225-01
30. Duong, TV, Nguyen, TTP, Pham, KM, Nguyen, KT, Giap, MH, Tran, TDX, et al. Validation of the Short-form Health Literacy Questionnaire (HLS-SF12) and its Determinants Among People Living in Rural Areas in Vietnam. *Ijerph* (2019b). 16:3346. doi:10.3390/ijerph16183346
31. Iacobucci, D, Posavac, SS, Kardes, FR, Schneider, MJ, and Popovich, DL. Toward a More Nuanced Understanding of the Statistical Properties of a Median Split. *J Consumer Psychol* (2015). 25:652–65. doi:10.1016/j.jcps.2014.12.002
32. Kroenke, K, Spitzer, RL, and Williams, JBW. The PHQ-9. *J Gen Intern Med* (2001). 16:606–13. doi:10.1046/j.1525-1497.2001.016009606.x
33. Ruiz, MA, Zamorano, E, García-Campayo, J, Pardo, A, Freire, O, and Rejas, J. Validity of the GAD-7 Scale as an Outcome Measure of Disability in Patients with Generalized Anxiety Disorders in Primary Care. *J Affective Disord* (2011). 128:277–86. doi:10.1016/j.jad.2010.07.010
34. Pollack, AA, Weiss, B, and Trung, LT. Mental Health, Life Functioning and Risk Factors Among People Exposed to Frequent Natural Disasters and Chronic Poverty in Vietnam. *BJPsych open* (2016). 2:221–32. doi:10.1192/bjpo.bp.115.002170

35. Kroenke, K, Spitzer, RL, Williams, JBW, Monahan, PO, and Löwe, B. Anxiety Disorders in Primary Care: Prevalence, Impairment, Comorbidity, and Detection. *Ann Intern Med* (2007). 146:317–25. doi:10.7326/0003-4819-146-5-200703060-00004
36. National Center for Immunization and Respiratory Diseases. *What Healthcare Personnel Should Know about Caring for Patients with Confirmed or Possible 2019-nCoV Infection* (2020). Available at: https://www.cdc.gov/coronavirus/2019-ncov/hcp/caringfor-patients.html (Accessed June 15, 2020).
37. World Health Organization. *Novel Coronavirus (2019-nCoV) Technical Guidance* (2020a). Available at: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technicalguidance (Accessed April 15, 2020).
38. Mazza, C, Ricci, E, Biondi, S, Colasanti, M, Ferracuti, S, Napoli, C, et al. A Nationwide Survey of Psychological Distress Among Italian People during the COVID-19 Pandemic: Immediate Psychological Responses and Associated Factors. *Ijerph* (2020). 17:3165. doi:10.3390/ijerph17093165
39. Wang, C, Pan, R, Wan, X, Tan, Y, Xu, L, Ho, CS, et al. Immediate Psychological Responses and Associated Factors during the Initial Stage of the 2019 Coronavirus Disease (COVID-19) Epidemic Among the General Population in China. *Ijerph* (2020a). 17:1729. doi:10.3390/ijerph17051729
40. Østergaard, SD, and Foldager, L. The Association between Physical Illness and Major Depressive Episode in General Practice. *Acta Psychiatr Scand* (2011). 123:290–6. doi:10.1111/j.1600-0447.2010.01668.x
41. Jain, V, and Yuan, J-M. Predictive Symptoms and Comorbidities for Severe COVID-19 and Intensive Care Unit Admission: a Systematic Review and Meta-Analysis. *Int J Public Health* (2020). 65:533–46. doi:10.1007/s00038-020-01390-7
42. Giallonardo, V, Sampogna, G, Del Vecchio, V, Luciano, M, Albert, U, Carmassi, C, et al. The Impact of Quarantine and Physical Distancing Following COVID-19 on Mental Health: Study Protocol of a Multicentric Italian Population Trial. *Front Psychiatry* (2020). 11. doi:10.3389/fpsyt.2020.00533
43. Chew, NWS, Lee, GKH, Tan, BYQ, Jing, M, Goh, Y, Ngiam, NJH, et al. A Multinational, Multicentre Study on the Psychological Outcomes and Associated Physical Symptoms Amongst Healthcare Workers during COVID-19 Outbreak. *Brain Behav Immun* (2020). 88:559–65. doi:10.1016/j.bbi.2020.04.049
44. Nguyen, HC, Nguyen, MH, Do, BN, Tran, CQ, Nguyen, TTP, Pham, KM, et al. People with Suspected COVID-19 Symptoms Were More Likely Depressed and Had Lower Health-Related Quality of Life: The Potential Benefit of Health Literacy. *Jcm* (2020a). 9:965. doi:10.3390/jcm9040965
45. Wang, C, Pan, R, Wan, X, Tan, Y, Xu, L, McIntyre, RS, et al. A Longitudinal Study on the Mental Health of General Population during the COVID-19 Epidemic in China. *Brain Behav Immun* (2020b). 87:40–8. doi:10.1016/j.bbi.2020.04.028
46. Galea, S, Merchant, RM, and Lurie, N. The Mental Health Consequences of COVID-19 and Physical Distancing. *JAMA Intern Med* (2020). 180:817–8. doi:10.1001/jamainternmed.2020.1562
47. Loftus, MJ, Guitart, C, Tartari, E, Stewardson, AJ, Amer, F, Bellissimo-Rodrigues, F, et al. Hand hygiene in Low- and Middle-Income Countries. *Int J Infect Dis* (2019). 86:25–30. doi:10.1016/j.ijid.2019.06.002
48. Fletcher, GF, Landolfo, C, Niebauer, J, Ozemek, C, Arena, R, and Lavie, CJ. Promoting Physical Activity and Exercise. *J Am Coll Cardiol* (2018). 72:1622–39. doi:10.1016/j.jacc.2018.08.2141
49. Lavie, CJ, Lee, D-c., Sui, X, Arena, R, O'Keefe, JH, Church, TS, et al. Effects of Running on Chronic Diseases and Cardiovascular and All-Cause Mortality. *Mayo Clinic Proc* (2015). 90:1541–52. doi:10.1016/j.mayocp.2015.08.001
50. Kvam, S, Kleppe, CL, Nordhus, IH, and Hovland, A. Exercise as a Treatment for Depression: A Meta-Analysis. *J Affective Disord* (2016). 202:67–86. doi:10.1016/j.jad.2016.03.063
51. Wei, K, Nyunt, MSZ, Gao, Q, Wee, SL, and Ng, TP. Long-term Changes in Nutritional Status Are Associated with Functional and Mortality Outcomes Among Community-Living Older Adults. *Nutrition* (2019). 66:180–6. doi:10.1016/j.nut.2019.05.006
52. Li, Y, Lv, M-R, Wei, Y-J, Sun, L, Zhang, J-X, Zhang, H-G, et al. Dietary Patterns and Depression Risk: A Meta-Analysis. *Psychiatry Res* (2017). 253:373–82. doi:10.1016/j.psychres.2017.04.020
53. Molendijk, M, Molero, P, Ortuño Sánchez-Pedreño, F, Van der Does, W, and Angel Martínez-González, M. Diet Quality and Depression Risk: A Systematic Review and Dose-Response Meta-Analysis of Prospective Studies. *J Affective Disord* (2018). 226:346–54. doi:10.1016/j.jad.2017.09.022
54. Gasmi, A, Noor, S, Tippairote, T, Dadar, M, Menzel, A, and Bjørklund, G. Individual Risk Management Strategy and Potential Therapeutic Options for the COVID-19 Pandemic. *Clin Immunol* (2020). 215:108409. doi:10.1016/j.clim.2020.108409
55. Naja, F, and Hamadeh, R. Nutrition amid the COVID-19 Pandemic: a Multi-Level Framework for Action. *Eur J Clin Nutr* (2020). 74:1117–21. doi:10.1038/s41430-020-0634-3
56. Ranasinghe, C, Ozemek, C, and Arena, R. Exercise and Well-Being during COVID 19 - Time to Boost Your Immunity. *Expert Rev Anti-infective Ther* (2020). 18:1195–200. doi:10.1080/14787210.2020.1794818
57. Do, BN, Nguyen, P-A, Pham, KM, Nguyen, HC, Nguyen, MH, Tran, CQ, et al. Determinants of Health Literacy and its Associations with Health-Related Behaviors, Depression Among the Older People with and without Suspected COVID-19 Symptoms: A Multi-Institutional Study. *Front Public Health* (2020). 8:694. doi:10.3389/fpubh.2020.581746
58. Duong, TV, Pham, KM, Do, BN, Kim, GB, Dam, HTB, Le, V-TT, et al. Digital Healthy Diet Literacy and Self-Perceived Eating Behavior Change during COVID-19 Pandemic Among Undergraduate Nursing and Medical Students: A Rapid Online Survey. *Ijerph* (2020). 17:7185. doi:10.3390/ijerph17197185
59. Mathiesen, EF, Nome, S, Eisemann, M, and Richter, J. Drinking Patterns, Psychological Distress and Quality of Life in a Norwegian General Population-Based Sample. *Qual Life Res* (2012). 21:1527–36. doi:10.1007/s11136-011-0080-8
60. Nguyen, HT, Do, BN, Pham, KM, Kim, GB, Dam, HTB, Nguyen, TT, et al. Fear of COVID-19 Scale-Associations of its Scores with Health Literacy and Health-Related Behaviors Among Medical Students. *Ijerph* (2020b). 17:4164. doi:10.3390/ijerph17114164
61. Rodriguez, LM, Litt, DM, and Stewart, SH. Drinking to Cope with the Pandemic: The Unique Associations of COVID-19-Related Perceived Threat and Psychological Distress to Drinking Behaviors in American Men and Women. *Addict Behaviors* (2020). 110:106532. doi:10.1016/j.addbeh.2020.106532
62. Wardell, JD, Kempe, T, Rapinda, KK, Single, A, Bilevicius, E, Frohlich, JR, et al. Drinking to Cope during COVID-19 Pandemic: The Role of External and Internal Factors in Coping Motive Pathways to Alcohol Use, Solitary Drinking, and Alcohol Problems. *Alcohol Clin Exp Res* (2020). 44:2073–83. doi:10.1111/acer.14425
63. Ivan, MC, Amspoker, AB, Nadorff, MR, Kunik, ME, Cully, JA, Wilson, N, et al. Alcohol Use, Anxiety, and Insomnia in Older Adults with Generalized Anxiety Disorder. *Am J Geriatr Psychiatry* (2014). 22:875–83. doi:10.1016/j.jagp.2013.04.001
64. MacAndrew, C. An Examination of the Relevance of the Individual Differences (A-Trait) Formulation of the Tension-Reduction Theory to the Etiology of Alcohol Abuse in Young Males. *Addict Behaviors* (1982). 7:39–45. doi:10.1016/0306-4603(82)90023-5
65. Churchill, SA, and Farrell, L. Alcohol and Depression: Evidence from the 2014 Health Survey for England. *Drug Alcohol Depend* (2017). 180:86–92. doi:10.1016/j.drugalcdep.2017.08.006
66. Rehm, J, Gmel, GE, Gmel, G, Hasan, OSM, Imtiaz, S, Popova, S, et al. The Relationship between Different Dimensions of Alcohol Use and the burden of Disease-An Update. *Addiction* (2017). 112:968–1001. doi:10.1111/add.13757
67. Vietnam Ministry of Health. *Coronavirus Disease (COVID-19) Outbreak in Vietnam* (2020). Available at: https://ncov.moh.gov.vn/ (Accessed June 07, 2020).

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Associations of COVID-19-related fear with kidney disease quality of life and its subscales among hemodialysis patients as modified by health literacy: a multi-hospital survey

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ABSTRACT

Background: Receiving hemodialysis treatment makes end-stage renal disease (ESRD) patients highly vulnerable amidst the COVID-19 pandemic. Hence, their kidney disease quality of life (KDQOL) is affected. We aimed to examine the association between fear of COVID-19 (FCoV-19) and KDQOL, and the effect modification of Health literacy (HL) on this association.

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Material and Methods: A survey was conducted at 8 hospitals from July 2020 to March 2021 on 972 patients. Data collection includes socio-demographic factors, clinical parameters, HL, digital healthy diet literacy (DDL), hemodialysis diet knowledge (HDK), FCoV-19, suspected COVID-19 symptoms (S-COVID-19-S), and KDQOL.
Results: Higher HL scores B = 0.13 (95% CI = 0.06–0.21, $p = 0.001$) and HDK scores B = 0.58 (95% CI = 0.31–0.85, $p = 0.001$) were associated with higher KDQOL scores. Whereas, S-COVID-19-S B = −6.12 (95% CI = −7.66 to − 4.58, $p = 0.001$) and FCoV-19 B = −0.91 (95% CI = −1.03 to − 0.80, $p = 0.001$) were associated with lower KDQOL scores. Notably, higher HL scores significantly attenuate the negative impact of FCoV-19 on overall KDQOL and the kidney disease component summary.
Conclusions: In hemodialysis patients, FCoV-19 and S-COVID-19-S were associated with a lower KDQOL. Health literacy significantly mitigates the negative impact of FCoV-19 on KDQOL. Strategic public health interventions to improve HL are suggested to protect patient's KDQOL during the pandemic.

component summary; kidney disease component summary

Introduction

The COVID-19 pandemic heavily affected individuals' physical and mental well-being worldwide (Chen et al., 2022; WHO, 2022). Within vulnerable populations such as patients undergoing hemodialysis, the fear and anxiety stemming from COVID-19 can impair their quality of life (QOL) (Nguyen et al., 2021; Park & Park, 2023), and exacerbate their existing health concerns (Fishbane et al., 2015). Understanding the factors that modify the impact of fear on the quality of life in hemodialysis patients is crucial to developing targeted interventions and support strategies.

Health literacy is a concept that encompasses an individual's knowledge, motivation, and skills to access, understand, evaluate, and use health information effectively (Sørensen et al., 2012). It has been shown to influence patients' ability to navigate the healthcare system, make informed decisions, and effectively manage their health conditions (Al Sayah et al., 2013). Given the complexity of hemodialysis treatment and the need for self-care management, HL was particularly important for hemodialysis patients in the context of fear related to COVID-19.

While previous studies examined the impact of COVID-19-related fear on the quality of life in various populations, limited research focused on hemodialysis patients (Beisland et al., 2021; Nguyen et al., 2021; Yeni et al., 2022). Furthermore, the potential moderating role of HL remains to be explored. Therefore, we aimed to investigate the negative impact of COVID-19-related fear on kidney disease quality of life and its subscales, and explore the potential modifying effect of HL on that association in hemodialysis patients.

Methods

Study design and participants

From July 2020 to March 2021, a cross-sectional study was conducted at eight hospitals in Vietnam, including four at the national level and four at the provincial level, to ensure

representation from various regions in Vietnam. Eligible participants were hemodialysis patients aged between 18 and 85 who could read and respond to the survey. Patients who had received hemodialysis treatment for less than 3 months were excluded from the study. Importantly, no positive cases of COVID-19 were reported among the patients during the study period. Prior to participating in the research, patients were required to provide informed consent. This study was approved by the Institutional Review Board of Hanoi University of Public Health in Vietnam (IRB No. 225/2020/YTCC-HD3). The study included a total sample size of 972 patients.

Data collection was described in previous studies (Dang et al., 2022; Le et al., 2023). In brief, a team comprising nephrologists, nurses, and students underwent training to ensure consistent and accurate data collection. Strict COVID-19 control measures, such as the mandatory use of masks, regular hand washing, and maintenance of physical distancing, were implemented throughout the study. The survey took approximately 30 minutes to be completed. Next, the collected data underwent a rigorous process of coding, cleaning, and analysis. This involved assigning appropriate codes to the data, identifying and rectifying any inconsistencies or errors, and preparing the dataset for analysis.

Measurements

Outcome variables

The KDQOL was evaluated using the KDQOL 36-item short-form survey (KDQOL-36; version 1.3), developed by RAND Corporation (Health, 2012), which was validated in Vietnam (Vo et al., 2018; Vu et al., 2021). The KDQOL-36 consists of 5 distinct subscales: the physical component summary (PCS), mental component summary (MCS), burden of kidney disease (BKD), symptoms and problems of kidney disease (SPKD), and effects of kidney disease (EKD). The kidney disease component summary (KDCS) consists of BKD, SPKD, and EKD. Therefore, the overall KDQOL and three scales (MCS, PCS, and KDCS) were analyzed in our study, with the score potentially ranging from 0 to 100 (Cohen et al., 2019; Manavalan et al., 2017), with higher scores indicating better KDQOL (Ishiwatari et al., 2020; Jung et al., 2019).

Fear of COVID-19

The fear of COVID-19 was assessed using the 7-item Fear of COVID-19 Scale (FCoV-19S). Respondents were asked to indicate their level of agreement with each item on a scale ranging from 1 to 5, where 1 corresponds to 'strongly disagree,' 2 to 'disagree,' 3 to 'neither agree nor disagree,' 4 to 'agree,' and 5 to 'strongly agree.' The composite score encompasses values between 7 and 35, with higher scores denoting a greater sense of fear (Nguyen, Do et al., 2020). This tool was validated in Vietnam (Doan et al., 2021; Nguyen et al., 2022).

Health literacy and digital healthy diet literacy

The HL and DDL indices were evaluated using the 12-item short form of the Health Literacy Questionnaire (HLS-SF12) (Duong et al., 2019) and the Digital Healthy Diet Literacy Scale (DDL-4) (Duong et al., 2020), respectively. Respondents rated the perceived difficulty of each item on a 4-point scale, with 1 representing 'very difficult,'

2 for 'fairly difficult,' 3 for 'fairly easy,' and 4 for 'very easy.' The HL and DDL indices were derived using the following formula:

$$\text{Index} = (\text{Mean} - 1) \times (50/3)$$

In this equation, 'Index' stands for the specific index calculated, 'Mean' denotes the mean of all item ratings for each participant. The scores range from 0 to 50, with higher scores indicating elevated levels of HL or DDL. These scales have been validated and used in Vietnam (Sørensen et al., 2015; Van Hoa et al., 2020).

Covariates

Patient demographic information, such as age, gender, education, working status, marital status, and social status, along with medication payment ability, were collected. Social status was determined through a self-reported question asking participants to assess their social status based on factors such as education, occupation, and income, with response options including 'low,' 'middle,' and 'high.'

Clinical parameters were assessed, including comorbidity, suspected COVID-19 symptoms (S-COVID-19-S), hemodialysis vintage (HD vintage, length of time on dialysis) (Chertow et al., 2000), edema, hypothyroidism, hyperthyroidism, hospitalization with one month and fear of COVID-19. S-COVID-19-S was identified if participants exhibited any of the following symptoms: fever, cough, fatigue, dyspnea, myalgia, sputum production/expectoration, sore throat, runny nose, confusion, headache, chest pain, rhinorrhea, diarrhea, and/or nausea/vomiting (Practice, 2020). Body mass index (BMI) was classified into 2 levels using the cutoff value at 24 kg/m^2. This cutoff value was also used in previous studies on hemodialysis patients (Dang et al., 2022; Le et al., 2023). Physical activiy was assessed using the International Physical Activity Questionnaire short version (IPAQ-SF). The details were described in our previous publications (Dang et al., 2022; Le et al., 2023). The physical activity score (metabolic equivalent task-MET) was calculated by multiplying minutes spent on activities (sitting, walking, moderate, and vigorous activity) by 1.0, 3.3, 4.0, and 8.0, respectively. The MET was scored in minutes per week (MET-min/wk) and classified by tertiles.

Comorbidities were assessed using the Charlson comorbidity index (CCI) items which were modified in ESRD patients (Hemmelgarn et al., 2003). Each comorbid condition was assigned a specific score, e.g. 1 point was given to Peripheral vascular disease, Dementia, Chronic lung disease, Rheumatologic disease, Peptic ulcer disease, Diabetes with complications; 2 points were given to Myocardial infarction, Congestive heart failure, Cerebral vascular disease, Diabetes, Moderate/severe liver disease, Leukemia; 5 points were given to Lymphoma; and 10 points were given to Metastatic disease. The total score is calculated by summing up the scores of all the comorbidities present in a patient. The higher the score, the higher the predicted risk of mortality (Charlson et al., 2022).

Hemodialysis dietary knowledge (HDK) was evaluated using a 10-question scale that assessed participants' knowledge about the hemodialysis diet, specifically focusing on water, potassium, phosphorus, sodium, and protein (Ryu et al., 2014). Each question had three response options: 'correct,' 'incorrect,' and 'not sure.' The correct answer was treated as 'correct', 1 point was given, and incorrect or 'not sure' answers were

treated as 'incorrect', 0 point was given. The average score ranged from 0 to 1, with higher scores indicating greater knowledge. This questionnaire has been validated and utilized in previous research in hemodialysis patients (Le et al., 2022).

Statistical analysis

The distributions of variables were analyzed and presented as count (n), percentage (%), mean, and standard deviation (SD) appropriately. Group differences in KDQOL scores were explored using t-tests or one-way ANOVA tests. To identify factors associated with KDQOL and its subscales, bivariate linear regression analysis was conducted. Based on a simulation study on confounder-selection strategies, factors showing an association with KDQOL at a p-value < 0.2 in the bivariate model were included in the multivariate model to eliminate the residual effects of the studied factors (Maldonado & Greenland, 1993). Prior to performing the multivariate linear regression, correlations among the independent variables were examined to avoid issues of multi-collinearity. Independent variables with Spearman correlation coefficients below 0.3 were considered acceptable for inclusion in the multivariate model (Supplementary Tables S1–S4). Interaction analyses, utilizing interaction terms, were conducted to investigate the modifying effect of HL on the association between fear of COVID-19 and overall KDQOL and its subscales. Models 1 and 2 involved three terms, namely X1, X2, and X1*X2, where X1 represents the main effect of fear of COVID-19, X2 represents the main effect of the modifying factor, and X1*X2 represents the interaction between the two factors.

Finally, we employed PROCESS 4.2 within SPSS to delve into the modified impact of HL on the association between fear of COVID-19 and overall KDQOL or KDCS. To enhance comprehension of the simple slope analysis, we employed figures to visually elucidate the results. These plots were created by computing the anticipated outcomes (overall KDQOL and KDCS) across three HL values: one standard deviation above the mean (+1 SD), the mean, and one standard deviation below the mean (−1 SD). All statistical analyses were performed using IBM SPSS Version 26.0 (IBM Corp., Armonk, NY, USA), with statistical significance was established at $p < 0.05$.

Results

Participants' characteristics

Table 1 presents participants' characteristics with 517 men (53.5%), 450 women (46.54%), 585 patients (60.2%) aged 18–59 years. Kidney disease quality of life was significantly varied across several variables, including age, gender, social status, medication payment ability, suspected COVID-19 symptoms, edema, hyperthyroidism, hospitalization within one month, level of physical activity, and HD vintage ($p < 0.05$). Specifically, the mental component summary (MCS) score was significantly varied by social status, medication payment ability, suspected COVID-19 symptoms, edema, hospitalization within one month, and physical activity. Similarly, the physical component summary (PCS) score was significantly varied by age, education level, marital status, social status, medication payment ability, suspected COVID-19 symptoms, hyperthyroidism, hospitalization within one month, and physical activity. Additionally, the kidney

Table 1. Patients' characteristics, kidney disease quality of life, and subscales (N = 972).

Variables	Total n (%)	MCS (Mean ± SD)	PCS (Mean ± SD)	KDCS (Mean ± SD)	KDQOL (Mean ± SD)
Age					
18–59	585 (60.2)	41.0 ± 9.8	34.8 ± 9.2	57.3 ± 14.9	50.8 ± 11.3
60–85	387 (39.8)	40.8 ± 10.3	32.4 ± 8.5	53.8 ± 16.4	48.1 ± 12.5
Gender					
Male	517 (53.5)	41.1 ± 9.9	34.2 ± 9.2	57.1 ± 15.8	48.7 ± 11.7
Female	450 (46.5)	40.6 ± 10.1	33.4 ± 8.9	54.5 ± 15.3	50.6 ± 11.9
Education					
Illiterate or elementary	399 (44.0)	40.7 ± 10.3	32.8 ± 8.9	56.4 ± 15.9	49.8 ± 12.3
Junior high school	281 (31.0)	41.5 ± 8.3	34.6 ± 8.2	54.9 ± 15.3	49.3 ± 11.3
Senior high school or above	226 (25.0)	41.6 ± 10.6	34.2 ± 9.4	55.1 ± 16.5	49.4 ± 12.5
Working status					
Not working	334 (34.4)	41.3 ± 7.9	33.4 ± 7.7	55.5 ± 16.8	49.4 ± 12.6
Working	638 (65.6)	40.7 ± 10.9	34.1 ± 9.6	56.2 ± 14.9	44.9 ± 11.5
Married status					
Never married	86 (8.8)	41.9 ± 9.8	36.5 ± 9.7	56.8 ± 16.2	50.9 ± 12.50
Ever married	886 (91.2)	40.8 ± 9.9	33.6 ± 8.9	55.8 ± 15.6	49.6 ± 11.8
Social status					
Low	274 (28.2)	38.3 ± 10.6	31.9 ± 9.5	49.7 ± 15.0	44.8 ± 11.5
Middle & high	698 (71.8)	42.0 ± 9.5	34.6 ± 8.7	58.4 ± 15.1	51.7 ± 11.50
Medication payment ability					
Very or fairly difficult	726 (75.9)	39.3 ± 9.4	33.2 ± 9.0	52.6 ± 14.4	47.2 ± 10.9
Very or fairly easy	231 (24.1)	46.0 ± 9.9	36.0 ± 8.6	66.0 ± 14.8	57.7 ± 11.4
S-COVID-19-S					
Without S-COVID-19-S	274 (28.2)	43.3 ± 11.1	35.7 ± 10.7	63.1 ± 15.1	55.2 ± 12.0
With S-COVID-19-S	698 (71.8)	39.8 ± 9.2	32.9 ± 7.9	52.5 ± 14.6	47.1 ± 10.9
BMI, kg/m^2					
BMI < 24	876 (90.1)	40.8 ± 9.8	33.8 ± 9.1	56.7 ± 15.5	49.6 ± 11.8
BMI ≥ 24	96 (9.9)	41.9 ± 11.2	33.9 ± 8.1	58.1 ± 16.8	51.3 ± 12.9
Edema					
No	527 (54.2)	42.6 ± 10.7	33.5 ± 9.0	57.5 ± 16.2	51.0 ± 12.6
Yes	445 (45.8)	39.0 ± 8.6	34.2 ± 9.0	54.1 ± 14.6	48.2 ± 10.8
Hypothyroidism					
No	961 (98.9)	40.9 ± 10.0	33.8 ± 9.0	56.0 ± 15.5	49.8 ± 11.8
Yes	11 (1.1)	42.2 ± 9.1	32.6 ± 10.8	48.2 ± 19.7	44.6 ± 14.0
Hyperthyroidism					
No	930 (95.8)	40.9 ± 10.1	34.0 ± 9.1	56.3 ± 15.6	50.0 ± 11.9
Yes	41 (4.2)	42.6 ± 7.7	30.6 ± 7.3	47.5 ± 14.7	43.9 ± 11.2
Hospitalization within one month					
No	906 (93.3)	41.2 ± 9.6	34.0 ± 8.7	56.6 ± 14.9	50.3 ± 11.4
Yes	65 (6.7)	37.4 ± 13.7	31.4 ± 13.1	46.3 ± 20.6	42.4 ± 15.9
Physical activity, MET-min/wk					
Tertile 1 (MET ≤ 178)	232 (31.8)	38.0 ± 8.9	31.8 ± 8.2	52.9 ± 14.0	46.9 ± 10.2
Tertile 2 (178 < MET ≤ 912)	249 (34.2)	41.2 ± 10.8	33.2 ± 9.1	58.4 ± 14.6	51.3 ± 11.4
Tertile 3 (MET > 912)	248 (34.0)	44.5 ± 12.0	35.5 ± 9.9	62.4 ± 17.0	54.9 ± 13.1
HD vintage, years					
HD vintage ≤ 5	550 (56.7)	41.5 ± 9.8	34.4 ± 8.9	56.1 ± 15.8	50.1 ± 12.0
5 < HD vintage ≤ 10	276 (28.5)	40.5 ± 11.1	33.2 ± 9.7	57.5 ± 14.8	50.6 ± 11.6
HD vintage ≥ 10	144 (14.8)	39.6 ± 8.1	33.1 ± 8.0	52.0 ± 15.8	46.8 ± 11.6
CCI (Mean ± SD)	2.1 ± 3.0				
Fear of COVID-19 (Mean ± SD)	20.6 ± 6.0				
HL index (Mean ± SD)	25.0 ± 9.2				
DDL index (Mean ± SD)	24.1 ± 11.6				
HDK (Mean ± SD)	5.4 ± 2.5				

Abbreviation: KDQOL: kidney disease quality of life; MCS: mental component summary; PCS: physical component summary; KDCS: kidney disease component summary; S-COVID-19-S: suspected COVID-19 symptoms; BMI: body mass index; HD: hemodialysis; CCI: Charlson Comorbidity index; DDL: digital health diet literacy; HDK: hemodialysis dietary knowledge.

disease component summary (KDCS) score was significantly varied by age, gender, social status, medication payment ability, suspected COVID-19 symptoms, edema, hyperthyroidism, hospitalization within one-month, physical activity, and HD vintage (Table 1).

Associated factors of kidney disease quality of life

Table 2 showed the results of bivariate and multivariate linear regression models of overall KDQOL. In the bivariate model, the determinants of overall KDQOLwere age, gender, social status, medication payment ability, suspected COVID-19 symptoms, BMI, edema, hypothyroidism, hyperthyroidism, hospitalization within one month, level of physical activity, HD vintage, CCI, fear of COVID-19, HL index, DDL index, and HDK. We found that medical payment ability was correlated with physical activity at *rho* = 0.31, CCI was correlated with edema at *rho* = 0.34, and HL was correlated with DDL at *rho* = 0.75 (Table S1). Therefore, edema, physical activity, and HL were analyzed in the multivariate model together with other factors that show a significant association with overall KDQOL in the bivariate model. The results show that the factor associated with higher the overall KDQOL score was social status 'unstandardized regression coefficient', B = 2.70 (95% confidence interval, 95% CI = 1.13–4.28, $p = 0.001$), edema B = 1.14 (95% CI = 0.01–2.88, $p = 0.049$), physical activity B = 1.33 (95% CI = 0.43–2.22, $p = 0.004$), HL B = 0.13 (95% CI = 0.06–0.21, $p = 0.001$), HDK B = 0.58 (95% CI = 0.31–0.85, $p = 0.001$). Conversely, S-COVID-19-S B = − 6.12 (95% CI = −7.66 to − 4.58, $p = 0.001$), hyperthyroidism B = −6.84 (95% CI = −10.58 to − 3.10, $p = 0.001$), hospitalization within one month B = − 6.74 (95% CI = −9.79 to −3.68, $p = 0.001$), and fear of COVID-19 B = −0.91 (95% CI = −1.03 to −0. 80, $p = 0.001$) were associated with lower the overall KDQOL score.

Factors associated with subscales of kidney disease quality of life

In the bivariate analysis, the determinants of MCS were social status, medication payment ability, suspected COVID-19 symptoms, edema, hospitalization within one-month, physical activity, HD vintage, CCI, fear of COVID-19, HL index, and DDL index. We found that medical payment ability was correlated with physical activity at *rho* = 0.31, CCI was correlated with edema at *rho* = 0.34, and HL was correlated with DDL at *rho* = 0.75 (Table S2). Therefore, CCI, HL index, and physical activity were analyzed in the multivariate model together with other factors that showed a significant association with MCS in the bivariate model. The results show that factors associated with higher MCS scores were physical activity B = 1.19 (95% CI = 0.18–2.19, $p = 0.021$). Conversely, S-COVID-19 S B = −2.36 (95% CI = − 4.01 to −0.71, $p = 0.005$), hospitalization with one month B = −5.63 (95% CI = −9.04 to −2.22, $p = 0.001$), HD vintage B = −1.33 (95% CI = −2.40 to −0.26, $p = 0.015$), CCI B = − 0.43 (95% CI = −0.67 to −0.19, $p = 0.001$), and fear of COVID-19 B = −0.51 (95% CI = −0.64 to − 0.38, $p = 0.001$) were associated with lower MCS scores (Table 3).

In the bivariate analysis, the determinants of PCS were age, gender, education, married status, social status, medication payment ability, S-COVID-19 S, hyperthyroidism, hospitalization within one-month, physical activity, HD vintage, CCI, fear of COVID-19, HL index, and DDL index. We found that medical payment ability was

Table 2. Associated factors of kidney disease quality of life via bivariate and multivariate linear regression analysis.

	KDQOL			
	Bivariate		Multivariate	
Variables	B (95% CI)	p	B (95% CI)	p
Age				
18–59				
60–85	− 2.72 (− 4.24, − 1.20)	0.001*	− 1.26 (− 2.60, 0.09)	0.067
Gender				
Male				
Female	− 1.88 (−3.38, − 0.38)	0.014*	− 0.37 (− 170, 0.95)	0.581
Education				
Illiterate/elementary				
Junior high school	− 0.55 (− 2.39, 1.29)	0.558		
Senior high school or above	− 0.46 (− 2.43, 1.51)	0.646		
Working status				
Not working				
Working	0.48 (− 1.10, 2.05)	0.553		
Married status				
Never married				
Ever married	− 1.25 (− 3.90, 1.40)	0.354		
Social status				
Low				
Middle & high	6.82 (5.22, 8.43)	0.001*	2.70 (1.13, 4.28)	0.001*
Medication payment ability				
Very or fairly difficult				
Very or fairly easy	10.52 (8.89, 12.15)	0.001*		
S-COVID-19-S				
Without S-COVID-19-S				
With S-COVID-19-S	− 8.08 (− 9.60, − 6.56)	0.001*	− 6.12 (− 7.66, − 4.58)	0.001*
BMI, kg/m^2				
BMI < 24				
BMI ≥ 24	1.77 (− 0.74, 4.29)	0.167	1.78 (− 0.34, 3.89)	0.100
Edema				
No				
Yes	− 2.78 (− 4.27, − 1.29)	0.001*	1.44 (0.01, 2.88)	0.049*
Hypothyroidism				
No				
Yes	− 5.20 (− 12.26, 1.87)	0.149	1.91 (− 3.99, 7.82)	0.525
Hyperthyroidism				
No				
Yes	− 6.10 (− 9.80, − 2.39)	0.001*	− 6.84 (− 10.58, − 3.10)	0.001*
Hospitalization within one month				
No				
Yes	− 7.92 (− 10.87, − 4.96)	0.001*	− 6.74 (− 9.79, − 3.68)	0.001*
Physical activity, MET-min/wk				
Tertile 1 (MET ≤ 178)				
Tertile 2 (178 < MET ≤ 912)	4.41 (2.33, 6.50)	0.001*		
Tertile 3 (MET > 912)	8.03 (5.94, 10.12)	0.001*	1.33 (0.43, 2.22)	0.004*
HD vintage, years				
HD vintage ≤ 5				
5 < HD vintage ≤ 10	0.51 (− 1.20, 2.23)	0.556		
HD vintage ≥ 10	− 3.30 (− 5.47, − 1.12)	0.003*	− 0.24 (− 1.24, 0.77)	0.644
CCI	− 0.57 (− 0.82, − 0.32)	0.001*		
Fear of COVID-19	− 1.11 (− 1.22, − 1.01)	0.001*	− 0.91 (− 1.03, − 0.80)	0.001*
HL index	0.32 (0.24, 0.40)	0.001*	0.13 (0.06, 0.21)	0.001*
DDL index	0.16 (0.09, 0.22)	0.001*		
HDK	0.72 (0.42, 1.02)	0.001*	0.58 (0.31, 0.85)	0.001*

Abbreviation: KDQOL: kidney disease quality of life; S-COVID-19-S: suspected COVID-19 symptoms; BMI: body mass index; MET: metabolic equivalent task; HD: hemodialysis; CCI: Charlson Comorbidity index; HL: health literacy; DDL: digital health diet literacy; HDK: hemodialysis dietary knowledge; B: unstandardized regression coefficient; CI: confidence interval. * The statistically significant results with a p-value < 0.05.

Table 3. Associated factors of subscales of kidney disease quality of life via bivariate and multivariate linear regression analysis.

	MCS				PCS				KDCS			
	Bivariate		Multivariate		Bivariate		Multivariate		Bivariate		Multivariate	
Variables	B (95% CI)	p	B (95% CI)	p	B (95% CI)	p	B (95% CI)	p	B (95% CI)	p	B (95% CI)	p
Age												
18–59												
60–85	− 0.27 (−1.55, 1.02)	0.684			− 2.32 (− 3.47, −1.17)	0.001*	−1.48 (− 2.84, −1.13)	0.031*	− 3.44 (−5.44, − 1.45)	0.001*	− 2.03 (− 3.81, − 0.24)	0.026*
Gender												
Male												
Female	− 0.53 (−1.80, 0.73)	0.407			− 0.83 (− 1.98, 0.31)	0.153	− 0.83 (− 2.14, 0.47)	0.211	− 2.49 (− 4.46, − 0.52)	0.013*	− 0.33 (−2.09, 1.43)	0.715
Education												
Illiterate/ elementary												
Junior high school	0.87 (− 0.62, 2.37)	0.253			1.82 (0.47, 3.17)	0.008*			− 1.48 (− 3.91, 0.94)	0.230		
Senior high school or above	0.98 (0.62, 2.57)	0.231			1.45 (0.01, 2.90)	0.048*	− 0.84 (−1.66, − 0.01)	0.047*	− 1.30 (− 3.89, 1.29)	0.325		
Working status												
Not working												
Working	− 0.64 (−1.97, 0.68)	0.339			0.70 (− 0.49, 1.90)	0.249			0.71 (− 1.26, 2.78)	0.503		
Married status												
Never married												
Ever married	−1.09 (− 3.30, 1.13)	0.335			− 2.94 (− 4.94, − 0.95)	0.004*	− 0.98 (− 3.28, 1.32)	0.403	− 0.91 (− 4.39, 2.56)	0.606		
Social status												
Low												
Middle & high	3.62 (2.24, 5.00)	0.001*	1.06 (− 0.66, 2.77)	0.226	2.69 (1.44, 3.95)	0.001*	0.96 (− 0.67, 2.60)	0.247	8.66 (6.55, 10.78)	0.001*	3.46 (1.37, 5.55)	0.001*
Medication payment ability												
Very or fairly difficult												

(*Continued*)

Table 3. Continued.

	MCS				PCS				KDCS			
	Bivariate		Multivariate		Bivariate		Multivariate		Bivariate		Multivariate	
Variables	B (95% CI)	p	B (95% CI)	p	B (95% CI)	p	B (95% CI)	p	B (95% CI)	p	B (95% CI)	p
Very or fairly easy S-COVID-19-S	6.67 (5.26, 8.07)	0.001*			2.73 (1.41, 4.05)	0.001*			13.42 (11.36, 15.57)	0.001*		
Without S-COVID-19-S												
With S-COVID-19-S	− 3.53 (−4.86, −2.20)	0.001*	− 2.36 (− 4.01, − 0.71)	0.005*	− 2.74 (− 3.95, − 1.53)	0.001*	− 0.77 (− 2.23, 0.68)	0.298	− 10.55 (− 12.54, − 8.55)	0.001*	− 8.21 (−10.25, − 6.17)	0.001*
BMI, kg/m^2												
BMI < 24												
BMI ≥ 24	1.14 (−0.96, 3.25)	0.287			0.09 (−1.82, 1.99)	0.925			2.40 (− 0.91, 5.70)	0.155	2.14 (− 0.67, 4.95)	0.135
Edema												
No												
Yes	−3.63 (− 4.87, −2.39)	0.001*			0.68 (− 0.47, 1.82)	0.245			− 3.44 (− 5.40, −1.48)	0.001*	2.46 (0.56, 4.37)	0.011*
Hypothyroidism												
No												
Yes	1.24 (− 470, 7.18)	0.682			−1.20 (− 6.58, 4.17)	0.661			− 7.81 (− 18.08, 1.47)	0.099	1.06 (− 6.77, 8.90)	0.790
Hyperthyroidism												
No												
Yes	1.78 (−1.35, 4.91)	0.264			− 3.39 (− 6.21, − 0.57)	0.019*	− 5.07 (−8.57, − 1.60)	0.005*	− 8.75 (− 13.61, − 3.89)	0.001*	− 9.94 (− 14.91, − 4.98)	0.001*
Hospitalization within one month												
No												
Yes	−3.78 (−6.28, −1.27)	0.003*	− 5.63 (− 9.04, −2.22)	0.001*	− 2.62 (− 4.89, − 0.35)	0.024*	− 4.77 (− 7.98, − 1.55)	0.004*	− 10.28 (− 14.16, − 6.40)	0.001*	− 6.93 (− 10.98, − 2.87)	0.001*
Physical activity, MET-min/wk												
Tertile 1 (MET ≤ 178)												

Tertile 2 (178 < MET ≤ 912)	3.13 (1.22, 5.05)	0.001*			1.42 (− 0.21, 3.05)	0.087			5.48 (2.74, 8.22)	0.001*		
Tertile 3 (MET > 912)	6.50 (4.59, 8.42)	0.001*	1.19 (0.18, 2.19)	0.021*	3.70 (2.07, 5.33)	0.001*	1.44 (0.56, 2.32)	0.001*	9.51 (6.77, 12.26)	0.001*	1.41 (0.23, 2.60)	0.020*
HD vintage, years												
HD vintage ≤ 5												
5 < HD vintage ≤ 10	−1.08 (−2.52, 0.37)	0.143			− 1.20 (− 2.50, 0.11)	0.072			1.36 (− 0.89, 3.61)	0.237		
HD vintage ≥ 10	−1.96 (−3.79, −0.12)	0.036*	−1.33 (− 2.40, − 0.26)	0.015*	− 1.25 (− 2.90, 0.41)	0.141	− 0.92 (− 1.90, 0.06)	0.066	− 4.15 (−7.00, − 1.29)	0.004*	0.33 (− 1.00, 1.66)	0.626
CCI	− 0.69 (− 0.90, − 0.49)	0.001*	− 0.43 (−0.67, − 0.19)	0.001*	− 0.22 (− 0.41, − 0.03)	0.021*	0.025 (−0.24, 0.29)	0.856	− 0.63 (− 0.95, − 0.30)	0.001*		
Fear of COVID-19	− 0.54 (− 0.64, − 0.44)	0.001*	− 0.51 (− 0.64, − 0.38)	0.001*	− 0.33 (− 0.42, − 0.23)	0.001*	− 0.22 (− 0.33, − 0.10)	0.001*	− 1.45 (− 1.59, − 1.31)	0.001*	− 1.19 (− 1.34, − 1.03)	0 .001*
HL index	0.12 (0.05, 0.19)	0.001*	0.06 (− 0.02, 0.14)	0.122	0.18 (0.12, 0.24)	0.001*	0.13 (0.05, 0.20)	0.001*	0.40 (0.30, 0.51)	0.001*	0.15 (0.05, 0.25)	0.003*
DDL index	0.07 (0.01, 0.12)	0.017*			0.09 (0.04, 0.14)	0.001*			0.19 (0.11, 0.28)	0.001*		
HDK	0.15 (− 0.10, 0.40)	0.242			0.09 (− 0.14, 0.31)	0.461			1.02 (0.63, 1.40)	0.001*	0.80 (0.44, 1.16)	0 .001*

Abbreviation: MCS: mental component summary; PCS: physical component summary; KDCS: kidney disease component summary; S-COVID-19-S: suspected COVID-19 symptoms; BMI: body mass index; MET: metabolic equivalent task; HD: hemodialysis; CCI: Charlson Comorbidity index; HL: health literacy; DDL: digital health diet literacy; HDK: hemodialysis dietary knowledge; B: unstandardized regression coefficient; CI: confidence interval.

* The statistically significant results with a p-value < 0.05.

correlated with physical activity at *rho* = 0.31, and HL was correlated with DDL at *rho* = 0.75 (Table S3). Therefore, CCI and HL were analyzed in the multivariate model together with other factors that showed a significant association with PCS in the bivariate model. The results show that factors associated with higher PCS scores were physical activity B = 1.44 (95% CI = 0.56–2.32, $p = 0.001$) and HL B = 0.13 (95% CI = 0.05–0.20, $p = 0.001$). Conversely, age B = −1.48 (95%CI = −2.84 to −1.13, $p = 0.031$), education B = −0.84 (95% CI = −1.66 to −0.01, $p = 0.047$), hyperthyroidism B = −5.07 (95% CI = −9.57 to −1.60, $p = 0.005$), hospitalization within one month B = −4.77 (95% CI = −7.98 to −1.55, $p = 0.004$), and fear of COVID-19 B = −0.22 (95% CI = −0.33 to −0.10, $p = 0.001$) were associated with lower PCS scores. However, we didn't find a significant association between HL and either MCS scores or PCS scores (Table 3).

In the bivariate analysis, the determinants of KDCS were age, gender, social status, medication payment ability, S-COVID-19-S, BMI, edema, hypothyroidism, hyperthyroidism, hospital within one-month, physical activity, HD vintage, CCI, fear of COVID-19, HL index, DDL index, and HDK. We found that medical payment ability was correlated with physical activity at *rho* = 0.31, CCI was correlated with edema at *rho* = 0.34, and HL was correlated with DDL at *rho* = 0.75 (Table S4). Therefore, edema, physical activity, and HL were analyzed in the multivariate model together with other factors that show a significant association with QOL in the bivariate model. The results show that factors associated with higher KDCS scores were social status B = 3.46 (95%CI = 1.37–5.55, $p = 0.001$), edema B = 2.46 (95% CI = 0.56–4.37, $p = 0.011$), physical activity B = 1.41 (95% CI = 0.23–2.60, $p = 0.02$), HL B = 0.15 (95% CI = 0.05–0.15, $p = 0.003$), and HDK B = 0.80 (95%CI = 0.44–1.16, $p = 0.001$). Conversely, age B = −2.03 (95%CI = −3.81 to −0.24, $p = 0.026$), S-COVID-19 S B = −8.21 (95% CI = −10.25 to −6.17, $p = 0.001$), hyperthyroidism B = −9.94 (95%CI = −14.91 to −4.98, $p = 0.001$), hospitalization within one month B = −6.93 (95% CI = −10.98 to −2.97, $p = 0.001$), and fear of COVID-19 B = −1.19 (95% CI = −1.34 to −1.03, $p = 0.001$) were correlated with lower scores of KDCS (Table 3).

Interaction of health literacy with fear of COVID-19 on kidney disease quality of life

Table 4 illustrates how the association between fear of COVID-19 and KDQOL was modified by HL. Specifically, patients with one score increment in both fear of

Table 4. Interaction of health literacy with fear of COVID-19 on KDQOL and KDCS.

	KDQOL*		KDCS *	
	B (95% CI)	*p*	B (95% CI)	*p*
Fear of COVID-19 (lowest score) x HL (lowest score)	ref		ref	
Fear of COVID-19 (one score increment) x HL (lowest score)	− 1.182 (− 1.466, −0.898)	0.001	− 1.550 (− 1.927, − 1.174)	0.001
Fear of COVID-19 (lowest score) x HL (one score increment)	− 0.081 (− 0.302, 0.139)	0.469	− 0.140 (− 0.433, 0.152)	0.347
Fear of COVID-19 (one score increment) x HL (one score increment)	0.011 (0.000, 0.021)	0.042	0.015 (0.001, 0.028)	0.038

Abbreviation: KDQOL: kidney disease quality of life, KDCS: kidney disease component summary; HL: health literacy; CI: confidence interval. * These models were adjusted for age, gender, social, S-COVID-19 S, hyperthyroidism, Physical activity, HD vintage, edema, HDK, hospitalization, BMI, and hypothyroidism.

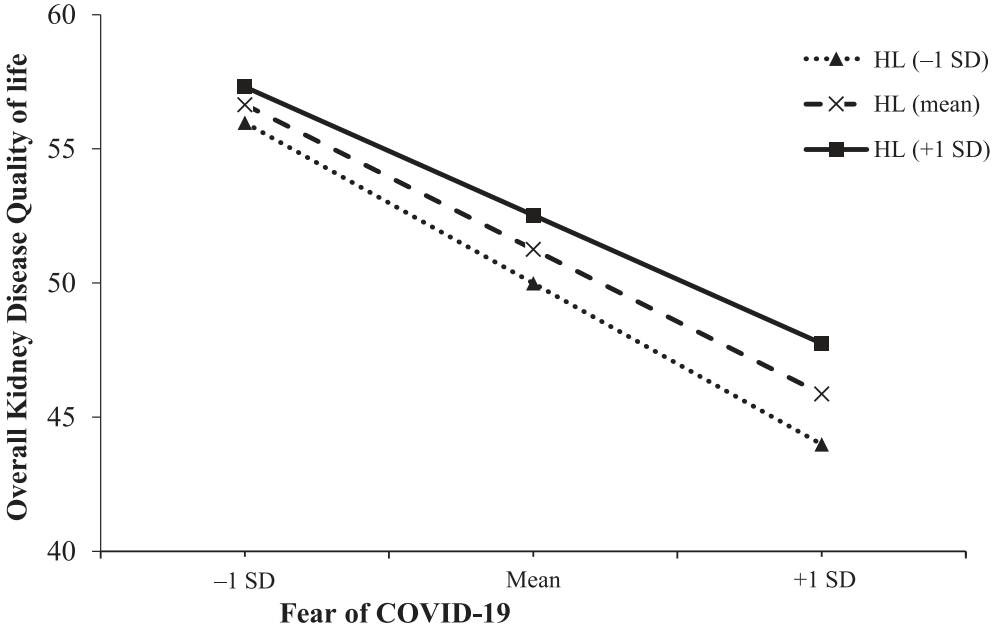

Figure 1. Simple slope plot of interaction between health literacy and fear of COVID-19 on overall kidney disease quality of life. SD, standard deviation; HL, health literacy.

COVID-19 and health literacy exhibited higher overall KDQOL B = 0.011 (95%CI = 0.000–0.021, $p = 0.042$), and KDCS B = 0.015 (95%CI = 0.001–0.028, $p = 0.038$).

Figure 1 illustrates the results of the simple slope analysis, revealing that as HL increased, the association between fear of COVID-19 and overall KDQOL diminished. A higher HL score mitigates the negative impact of COVID-19-related fear on overall KDQOL, transitioning from B = −1.01 (95%CI = −1.16 to −0.86, $p = 0.001$) at one standard deviation below the mean, to B = −0.91 (95%CI = −1.03 to −0.79, $p = 0.001$) at the mean, and B = −0.81 (95%CI = −0.96 to −0.65, $p = 0.001$) at one standard deviation above the mean.

Similarly, Figure 2 demonstrates that as HL increased, the association between fear of COVID-19 and KDCS diminished. A higher HL score mitigates the negative impact of COVID-19-related fear on KDCS, transitioning from B = −1.32 (95%CI = −1.52 to −1.12, $p = 0.001$) at one standard deviation below the mean, to B = −1.18 (95%CI = −1.34 to −1.03, $p = 0.001$) at the mean, and B = −1.04 (95%CI = −1.25 to −0.84, $p = 0.001$) at one standard deviation above the mean.

Discussion

In the current study, the results showed that more fear of COVID-19 was associated with a lower overall KDQOL score and its subscales (PCS, MCS, and KDCS), indicating the detrimental impact of fear on the well-being of these patients. This finding is consistent with previous studies that have examined the impact of fear of COVID-19 on the quality of life in hemodialysis patients (Parlak & Akgün Şahin, 2021), as well as in other populations, such as inpatients, outpatients, general publics, and healthcare workers (Abdelghani et al., 2022; Baysal et al., 2022; Demirbas & Kutlu, 2022; Nguyen et al., 2021).

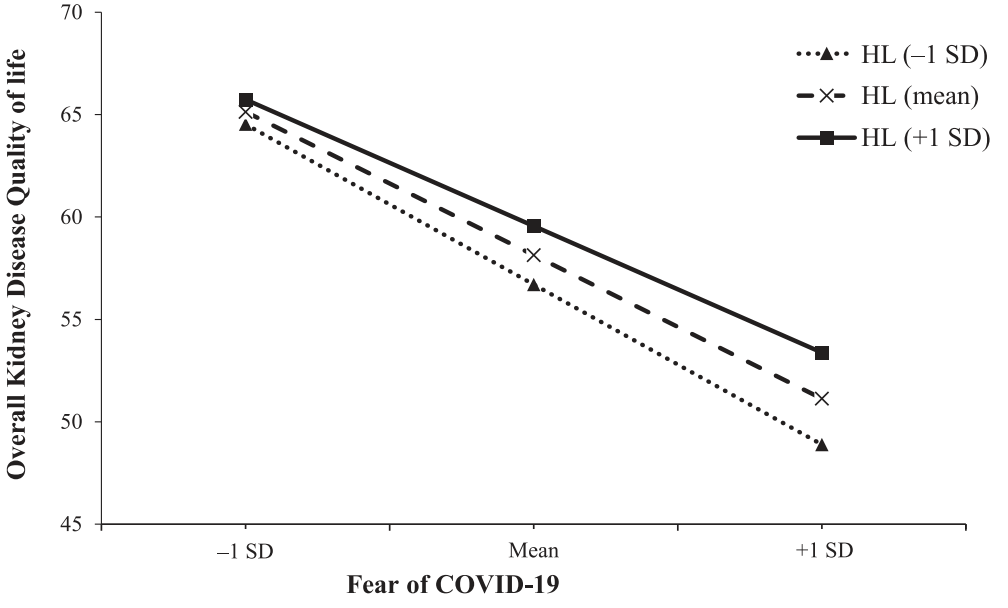

Figure 2. Simple slope plot of interaction between health literacy and fear of COVID-19 on kidney disease component summary. SD, standard deviation; HL, health literacy.

Fear of COVID-19 can affect the quality of life of hemodialysis patients through increased stress, anxiety, and psychological distress (Beaini et al., 2021; Lee et al., 2020). The fear and anxiety surrounding the pandemic can lead to stress and emotional strain, which can negatively impact their mental health and overall quality of life. Hemodialysis patients were particularly vulnerable when they accessed the treatment weekly (2-3 times a week) in the dialysis center which may cause more fear, panic, and increased risk of infection (Lee et al., 2020). During the pandemic, patients with the less social support, limited access to resources, and feelings of loneliness and isolation, all of which can contribute to a decline in their quality of life (Hwang et al., 2020). Furthermore, Fear of COVID-19 further exacerbates existing health concerns among hemodialysis patients (Nadort et al., 2022). The stress and anxiety associated with the pandemic can impact patient's physical well-being, potentially leading to disrupted sleep patterns, increased fatigue, and decreased overall functional capacity (Lee et al., 2020). This further diminishes their quality of life and negatively impacts their ability to cope with the challenges of managing their kidney disease. By identifying fear of COVID-19, and its impact on quality of life, our study emphasizes the need for targeted interventions and support strategies to mitigate the negative impact of COVID-19-related fear in hemodialysis patients.

The higher HL levels were associated with higher overall KDQOL scores and all subscales. HL further diminishes the negative impact of COVID-19-related fear on overall KDQOL and KDCS components. HL was found to play a critical role in shaping health outcomes and patients' ability to effectively manage their health conditions (Chow et al., 2024; Liu et al., 2020).

During the data analysis, the protective effect of HL against the negative impact of fear on the MCS and PCS of quality of life was not found in the current study. This may be influenced by several factors. In contrast, the MCS and PCS components of the KDQOL™−36 are more generic measures of mental and physical well-being and may be influenced by a wider range of factors beyond fear and HL alone. Take into account, HL may have a more specific influence on certain dimensions of QOL, particularly those related to kidney disease and its management. In light of a previous study, HL was proven to reduce anxiety among hemodialysis patients (Yoon & Lee, 2023). This finding suggests that interventions aimed at improving HL in hemodialysis patients may have a positive impact on their quality of life, especially in the face of fear and anxiety related to COVID-19.

Besides, we found that S-COVID-19-S was negatively associated with overall KDQOL and all subscales. This result is similar to the previous study in the outpatients (Nguyen, Nguyen et al., 2020). Suspected COVID-19 symptoms, such as fever, cough, fatigue, dyspnea, myalgia, and others, can cause physical discomfort and hinder daily activities (Sharp et al., 2021). These symptoms can directly impact a person's ability to engage in routine tasks. Experiencing symptoms associated with COVID-19 can induce anxiety, fear, and psychological distress. The fear of having a potentially severe illness or the uncertainty surrounding the symptoms can negatively affect a person's mental well-being. Taken together, these lead to a decrease in their quality of life.

Among the clinical factors considered, edema had a negative impact on the overall KDQOL and its subscales in hemodialysis patients, apart from the PCS subscale. It has been observed that individuals dealing with chronic edema experience diminished health conditions and a more pronounced influence on various aspects of HRQOL (Moffatt et al., 2017). Our findings are consistent with a previous study (Pretto et al., 2020) conducted on hemodialysis patients, where a connection between edema and a diminished quality of life was established. The negative effect of edema on quality of life suggests that the presence of edema is associated with poorer well-being and functioning in various aspects of the patients' lives. However, it is important to note that the impact of edema on quality of life may vary across different subscales. In the case of the PCS subscale, which primarily focuses on the physical health and functioning of individuals, the presence of edema may not show a significantly negatively association. This could imply that the impact of edema may show the impact on other aspects of quality of life, such as mental well-being, emotional functioning, and the burden of kidney disease-related symptoms.

Moreover, we also explored that a longer HD vintage and a higher CCI score were associated with a lower overall KDQOL score. Specifically, patients with more than 10 years of HD vintage had lower quality of life across all subscales, except PCS. A previous study showed a significant decrease in the PCS score as dialysis vintage lengthened, while no association was found with a change in the MCS score. The MCS score declined over time in older patients, particularly those aged 80 years and older, after 2 years of follow-up (Ishiwatari et al., 2020). However, in our population, individuals aged 18–59 accounted for 60.2%. Therefore, HD vintage seems to have a greater effect on MCS than PCS in young HD patients. Conversely, intensive physical activity was positively associated with overall KDQOL. Physical activity has also been proven to relate to a higher overall KDQOL in other populations (Anokye et al., 2012; Puciato et al., 2018;

Wei et al., 2022), specifically in hemodialysis patients with comorbidities, where improvement can be achieved through early intervention involving regular moderate-intensity physical activity (Wu et al., 2022). Recent studies have also shown the positive effects of intradialytic exercise on quality of life (Greenwood et al., 2021). Therefore, we need to encourage HD patients to engage in more physical activity.

The results of this study have important implications for healthcare professionals, policymakers, and patient advocacy groups in designing tailored interventions and educational programs to address the unique needs of hemodialysis patients during the COVID-19 pandemic and beyond. Recognizing the significant impact of COVID-19-related fear on overall KDQOL, healthcare providers can prioritize interventions. These may include providing protective measures for both COVID-19 and non-COVID-19 patients, implementing vaccination programs for all patients, and offering support to alleviate fear and anxiety within this population (Chirico & Teixeira da Silva, 2023). Furthermore, considering the potential moderating role of HL, interventions aimed at its enhancement may positively influence quality of life. To achieve this, patient education programs tailored specifically to hemodialysis patients should be implemented. These programs ought to encompass crucial topics, including kidney disease, hemodialysis treatment procedures, dietary restrictions, medication management, and recognizing signs of complications. Additionally, one-on-one counseling sessions should be offered by healthcare providers, nurses, dietitians, and pharmacists to address patients' specific questions and concerns regarding their treatment plans, medications, and lifestyle adjustments (Murdeshwar & Anjum, 2024). Peer support groups can also be facilitated, allowing hemodialysis patients to connect with others facing similar challenges, exchange experiences, and offer practical advice for managing their condition. Regular assessments of patients' health literacy levels should be conducted to pinpoint areas for improvement, enabling tailored educational interventions (Dineen-Griffin et al., 2019).

Despite its contributions, this study has some limitations. First, the cross-sectional design of the study limits the ability to establish causal relationships between the variables of interest. Longitudinal studies are suggested that will provide more robust evidence on the temporal associations between fear of COVID-19, HL, and KDQOL in hemodialysis patients. Secondly, the study was conducted in Vietnam, which may limit the generalizability of the findings to other cultural and healthcare contexts. Finally, the study relied on self-reported measures, which are subject to recall and social desirability biases. The inclusion of objective measures and additional sources of data would enhance the validity of the findings. Future research should aim to replicate these findings in diverse populations and settings, utilizing more comprehensive and disease-specific questionnaires for HL.

Conclusions

In this study, fear of COVID-19, symptoms like COVID-19, hemodialysis vintage, and comorbid conditions were negatively associated with KDQOL and subscales. Fortunately, HL, DDL, and physical activity were positively associated with overall KDQOL and its subscales. In addition, a higher health literacy score was linked to a mitigation of the negative impact fear of COVID-19 on both overall KDQOL and KDCS. These

results provide significant evidence supporting the implementation of targeted measures aimed at alleviating fear and improve quality of life in hemodialysis patients.

Institutional Review Board Statement

The study was conducted in accordance with the Declaration of Helsinki and was approved by an Institutional Review Board/Ethics committee. See details under Methods

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Disclosure statement

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References

Abdelghani, M., Hamed, M. G., Said, A., & Fouad, E. (2022). Evaluation of perceived fears of COVID-19 virus infection and its relationship to health-related quality of life among patients

with diabetes mellitus in Egypt during pandemic: A developing country single-center study. *Diabetology International*, *13*(1), 108–116. https://doi.org/10.1007/s13340-021-00511-8

Anokye, N. K., Trueman, P., Green, C., Pavey, T. G., & Taylor, R. S. (2012). Physical activity and health related quality of life. *BMC Public Health*, *12*(1), 624. https://doi.org/10.1186/1471-2458-12-624

Baysal, E., Selçuk, A. K., Aktan, G. G., Andrade, E. F., Notarnicola, I., Stievano, A., & Blanque, R. R. (2022). An examination of the fear of COVID-19 and professional quality of life among nurses: A multicultural study. *Journal of Nursing Management*, *30*(4), 849–863. https://doi.org/10.1111/jonm.13550

Beaini, C., Aoun, M., El Hajj, C., Sleilaty, G., Haber, N., Maalouf, G., & Abi Rached, E. (2021). The impact of the SARS-CoV-2 pandemic on the mental health of hemodialysis patients in Lebanon. *Journal of Medicine and Life*, *14*(4), 523–530. https://doi.org/10.25122/jml-2020-0165

Beisland, E. G., Gjeilo, K. H., Andersen, J. R., Bratås, O., Bø, B., Haraldstad, K., Hjelmeland, I. H. H., Iversen, M. M., Løyland, B., Norekvål, T. M., Riiser, K., Rohde, G., Urstad, K. H., Utne, I., Fløtlo, T. N., & the, L. n. (2021). Quality of life and fear of COVID-19 in 2600 baccalaureate nursing students at five universities: A cross-sectional study. *Health and Quality of Life Outcomes*, *19*(1), 198. https://doi.org/10.1186/s12955-021-01837-2

Charlson, M. E., Carrozzino, D., Guidi, J., & Patierno, C. (2022). Charlson comorbidity index: A critical review of clinimetric properties. *Psychotherapy and Psychosomatics*, *91*(1), 8–35. https://doi.org/10.1159/000521288

Chen, X., Lin, F., Gao, H., & Zou, Y. (2022). Stratified changes in emotional distress during the COVID-19 pandemic: Evidence from a longitudinal survey of residents in Hubei province, China. *Journal of Psychosomatic Research*, *160*, 110959. https://doi.org/10.1016/j.jpsychores.2022.110959

Chertow, G. M., Johansen, K. L., Lew, N., Lazarus, J. M., & Lowrie, E. G. (2000). Vintage, nutritional status, and survival in hemodialysis patients. *Kidney International*, *57*(3), 1176–1181. https://doi.org/10.1046/j.1523-1755.2000.00945.x

Chirico, F., & Teixeira da Silva, J. A. (2023). Evidence-based policies in public health to address COVID-19 vaccine hesitancy. *Future Virology*, https://doi.org/10.2217/fvl-2022-0028

Chow, B. C., Jiao, J., Duong, T. V., Hassel, H., Kwok, T. C. Y., Nguyen, M. H., & Liu, H. (2024). Health literacy mediates the relationships of cognitive and physical functions with health-related quality of life in older adults. *Frontiers in Public Health*, *12*), https://doi.org/10.3389/fpubh.2024.1355392

Cohen, D. E., Lee, A., Sibbel, S., Benner, D., Brunelli, S. M., & Tentori, F. (2019). Use of the KDQOL-36™ for assessment of health-related quality of life among dialysis patients in the United States. *BMC Nephrology*, *20*(1), 112. https://doi.org/10.1186/s12882-019-1295-0

Dang, L. T., Luong, T. C., Nguyen, D. H., Hoang, T. A., Nguyen, H. T., Nguyen, H. C., Duong, T. H., Tran, T. T., Pham, L. V., & Ngo, T. V. (2022). The associations of suspected COVID-19 symptoms with anxiety and depression as modified by hemodialysis dietary knowledge: A multi-dialysis center study. *Nutrients*, *14*(12), 2364. https://doi.org/10.3390/nu14122364

Demirbas, N., & Kutlu, R. (2022). Effects of COVID-19 fear on society's quality of life. *International Journal of Mental Health and Addiction*, *20*(5), 2813–2822. https://doi.org/10.1007/s11469-021-00550-x

Dineen-Griffin, S., Garcia-Cardenas, V., Williams, K., & Benrimoj, S. I. (2019). Helping patients help themselves: A systematic review of self-management support strategies in primary health care practice. *PLoS One*, *14*(8), e0220116. https://doi.org/10.1371/journal.pone.0220116

Doan, Q. H., Tran, N. N., Than, M. H., Nguyen, H. T., Bui, V. S., Nguyen, D. H., Vo, H. L., Do, T. T., Pham, N. T., Nguyen, T. K., Cao, D. C., Nguyen, V. T., Tran, T. T., Pham, B. H., Tran, A. L., Nguyen, V. T., Nguyen, V. T., Tran, X. T., Nguyen, T. L., … Otsu, S. (2021). Associated factors with perceived fear of COVID-19 among Vietnamese hospital healthcare workers during fourth wave of the COVID-19 pandemic: Policy implications for interconnected and social- and personal-based health support. *Healthcare (Basel)*, 9(12). https://doi.org/10.3390/healthcare9121713

Duong, T. V., Aringazina, A., Kayupova, G., Nurjanah Pham, T. V., Pham, K. M., Truong, T. Q., Nguyen, K. T., Oo, W. M., Su, T. T., Majid, H. A., Sørensen, K., Lin, I.-F., Chang, Y., Yang, S.-H.,

& Chang, P. W. S. (2019). Development and validation of a New short-form health literacy instrument (HLS-SF12) for the general public in Six Asian countries. *HLRP: Health Literacy Research and Practice*, *3*(2), e91–e102. https://doi.org/10.3928/24748307-20190225-01

Duong, T. V., Pham, K. M., Do, B. N., Kim, G. B., Dam, H. T. B., Le, V.-T. T., Nguyen, T. T. P., Nguyen, H. T., Nguyen, T. T., Le, T. T., Do, H. T. T., & Yang, S.-H. (2020). Digital healthy diet literacy and self-perceived eating behavior change during COVID-19 pandemic among undergraduate nursing and medical students: A rapid online survey. *International Journal of Environmental Research and Public Health*, *17*(19), 7185. https://doi.org/10.3390/ijerph17197185

Fishbane, S., Hazzan, A. D., Halinski, C., & Mathew, A. T. (2015). Challenges and opportunities in late-stage chronic kidney disease. *Clinical Kidney Journal*, *8*(1), 54–60. https://doi.org/10.1093/ckj/sfu128

Greenwood, S. A., Koufaki, P., Macdonald, J., Bhandari, S., Burton, J., Dasgupta, I., Farrington, K., Ford, I., Kalra, P. A., Kean, S., Kumwenda, M., Macdougall, I. C., Messow, C. M., Mitra, S., Reid, C., Smith, A. C., Taal, M. W., Thomson, P. C., Wheeler, D. C., … Mercer, T. H. (2021). The PrEscription of intraDialytic exercise to improve quAlity of life in patients with chronic kidney disease trial: Study design and baseline data for a multicentre randomized controlled trial. *Clinical Kidney Journal*, *14*(5), 1345-1355. https://doi.org/10.1093/ckj/sfaa107

Health, R. (2012). Kidney Disease Quality of Life Instrument (KDQOL).

Hemmelgarn, B. R., Manns, B. J., Quan, H., & Ghali, W. A. (2003). Adapting the charlson comorbidity index for use in patients with ESRD. *American Journal of Kidney Diseases*, *42*(1), 125–132. https://doi.org/10.1016/S0272-6386(03)00415-3

Hwang, T. J., Rabheru, K., Peisah, C., Reichman, W., & Ikeda, M. (2020). Loneliness and social isolation during the COVID-19 pandemic. *International Psychogeriatrics*, *32*(10), 1217–1220. https://doi.org/10.1017/S1041610220000988

Ishiwatari, A., Yamamoto, S., Fukuma, S., Hasegawa, T., Wakai, S., & Nangaku, M. (2020). Changes in quality of life in older hemodialysis patients: A cohort study on dialysis outcomes and practice patterns. *American Journal of Nephrology*, *51*(8), 650–658. https://doi.org/10.1159/000509309

Jung, H.-Y., Jeon, Y., Park, Y., Kim, Y. S., Kang, S.-W., Yang, C. W., Kim, N.-H., Choi, J.-Y., Cho, J.-H., Park, S.-H., Kim, C.-D., & Kim, Y.-L. (2019). Better quality of life of peritoneal dialysis compared to hemodialysis over a Two-year period after dialysis initiation. *Scientific Reports*, *9*(1), 10266. https://doi.org/10.1038/s41598-019-46744-1

Le, L. T., Dang, L. T., Wang, T.-J., Do, T. G., Nguyen, D. H., Hoang, T. A., Pham, M. D., Do, B. N., Nguyen, H. C., & Tran, T. T. (2022). Osteoporosis risk in hemodialysis patients: The roles of gender, comorbidities, biochemical parameters, health and diet literacy. *Nutrients*, *14*(23), 5122. https://doi.org/10.3390/nu14235122

Le, L. T. H., Tran, T. T., Duong, T. V., Dang, L. T., Hoang, T. A., Nguyen, D. H., Pham, M. D., Do, B. N., Nguyen, H. C., Pham, L. V., Nguyen, L. T. H., Nguyen, H. T., Trieu, N. T., Do, T. V., Trinh, M. V., Ha, T. H., Phan, D. T., Nguyen, T. T. P., Nguyen, K. T., & Yang, S.-H. (2023). Digital healthy diet literacy and fear of COVID-19 as associated with treatment adherence and Its subscales among hemodialysis patients: A multi-hospital study. *Nutrients*, *15*(10), 2292. https://doi.org/10.3390/nu15102292

Lee, J., Steel, J., Roumelioti, M. E., Erickson, S., Myaskovsky, L., Yabes, J. G., Rollman, B. L., Weisbord, S., Unruh, M., & Jhamb, M. (2020). Psychosocial impact of COVID-19 pandemic on patients with End-stage kidney disease on hemodialysis. *Kidney360*, *1*(12), 1390–1397. https://doi.org/10.34067/KID.0004662020

Liu, C., Wang, D., Liu, C., Jiang, J., Wang, X., Chen, H., Ju, X., & Zhang, X. (2020). What is the meaning of health literacy? A systematic review and qualitative synthesis. *Family Medicine and Community Health*, *8*(2), https://doi.org/10.1136/fmch-2020-000351

Maldonado, G., & Greenland, S. (1993). Simulation study of confounder-selection strategies. *American Journal of Epidemiology*, *138*(11), 923–936. https://doi.org/10.1093/oxfordjournals.aje.a116813

Manavalan, M., Majumdar, A., Harichandra Kumar, K. T., & Priyamvada, P. S. (2017). Assessment of health-related quality of life and its determinants in patients with chronic kidney disease. *Indian Journal of Nephrology*, *27*(1), 37–43. https://doi.org/10.4103/0971-4065.179205

Moffatt, C. J., Aubeeluck, A., Franks, P. J., Doherty, D. C., Mortimer, P., & Quere, I. (2017). Psychological factors in chronic edema: A case–control study. *Lymphatic Research and Biology*, *15*(3), 252–261. https://doi.org/10.1089/lrb.2017.0022

Murdeshwar, H. N., & Anjum, F. (2024). Hemodialysis. In *Statpearls*. StatPearls Publishing.

Nadort, E., Rijkers, N., Schouten, R. W., Hoogeveen, E. K., Bos, W. J. W., Vleming, L. J., Westerman, M., Schouten, M., Dekker, M. J. E., Smets, Y. F. C., Shaw, P. C., Farhat, K., Dekker, F. W., van Oppen, P., Siegert, C. E. H., & Broekman, B. F. P. (2022). Depression, anxiety and quality of life of hemodialysis patients before and during the COVID-19 pandemic. *Journal of Psychosomatic Research*, *158*, 110917. https://doi.org/10.1016/j.jpsychores.2022.110917

Nguyen, M. H., Do, T. X., Nguyen, T. T., Pham, M. D., Pham, T. T. M., Pham, K. M., Kim, G. B., Do, B. N., Nguyen, H. T., Nguyen, N.-M., Dam, H. T. B., Nguyen, Y. H., Nguyen, K. T., Nguyen, T. T. P., Nguyen, T. T., & Duong, T. V. (2022). Fear of COVID-19, healthy eating behaviors, and health-related behavior changes as associated with anxiety and depression among medical students: An online survey [original research]. *Frontiers in Nutrition*, *9*. https://doi.org/10.3389/fnut.2022.938769

Nguyen, H. T., Do, B. N., Pham, K. M., Kim, G. B., Dam, H. T. B., Nguyen, T. T., Nguyen, T. T. P., Nguyen, Y. H., Sørensen, K., Pleasant, A., & Duong, T. V. (2020). Fear of COVID-19 scale—associations of Its scores with health literacy and health-related behaviors among medical students. *International Journal of Environmental Research and Public Health*, *17*(11), 4164. https://doi.org/10.3390/ijerph17114164

Nguyen, H. C., Nguyen, M. H., Do, B. N., Tran, C. Q., Nguyen, T. T. P., Pham, K. M., Pham, L. V., Tran, K. V., Duong, T. T., Tran, T. V., Duong, T. H., Nguyen, T. T., Nguyen, Q. H., Hoang, T. M., Nguyen, K. T., Pham, T. T. M., Yang, S. H., Chao, J. C., & Duong, T. V. (2020). People with suspected COVID-19 symptoms were more likely depressed and Had lower health-related quality of life: The potential benefit of health literacy. *Journal of Clinical Medicine*, *9*(4), https://doi.org/10.3390/jcm9040965

Nguyen, M. H., Pham, T. T. M., Nguyen, K. T., Nguyen, Y. H., Tran, T. V., Do, B. N., Dao, H. K., Nguyen, H. C., Do, N. T., Ha, T. H., Phan, D. T., Pham, K. M., Pham, L. V., Nguyen, P. B., Nguyen, H. T. T., Do, T. V., Ha, D. T., Nguyen, H. Q., Ngo, H. T. M., … Duong, T. V. (2021). Negative impact of fear of COVID-19 on health-related quality of life Was modified by health literacy, eHealth literacy, and digital healthy diet literacy: A multi-hospital survey. *International Journal of Environmental Research and Public Health*, *18*(9). https://doi.org/10.3390/ijerph18094929

Park, Y., & Park, K. (2023). Health-related quality of life and depressive symptoms of patients with chronic diseases and the general population before and during the COVID-19 pandemic in Korea. *Frontiers in Psychology*, *14*), https://doi.org/10.3389/fpsyg.2023.1117369

Parlak, A. G., & Akgün Şahin, Z. (2021). The effect of COVID-19 fear on quality of life in hemodialysis patients: A correlation study in Turkey. *Samsun Sağlık Bilimleri Dergisi*, *6*, 367–382. https://doi.org/10.47115/jshs.882164

Practice, B. B. (2020). *Coronavirus Disease 2019 (COVID-19), History and Exam*. https://bestpractice.bmj.com/topics/en-gb/3000201/history-exam (accessed on 29 December 2022).

Pretto, C. R., Winkelmann, E. R., Hildebrandt, L. M., Barbosa, D. A., Colet, C. F., & Stumm, E. M. F. (2020). Quality of life of chronic kidney patients on hemodialysis and related factors. *Revista Latino-Americana de Enfermagem*, *28*, e3327. https://doi.org/10.1590/1518-8345.3641.3327

Puciato, D., Rozpara, M., & Borysiuk, Z. (2018). Physical activity as a determinant of quality of life in working-Age people in wrocław, Poland. *International Journal of Environmental Research and Public Health*, *15*(4), https://doi.org/10.3390/ijerph15040623

Ryu, H., Jeon, H. J., Sun, H.-K., Han, K. H., Whang, C. G., & Han, S. Y. (2014). Repeated education improves diet compliance in maintenance hemodialysis patients. *International Urology and Nephrology*, *2*, 63–68.

Sayah, A., Majumdar, F., Williams, S. R., Robertson, B., Johnson, S., & A, J. (2013). Health literacy and health outcomes in diabetes: A systematic review. *Journal of General Internal Medicine*, *28* (3), 444–452. https://doi.org/10.1007/s11606-012-2241-z

Sharp, A. L., Huang, B. Z., Broder, B., Smith, M., Yuen, G., Subject, C., Nau, C., Creekmur, B., Tartof, S., & Gould, M. K. (2021). Identifying patients with symptoms suspicious for COVID-19 at elevated risk of adverse events: The COVAS score. *The American Journal of Emergency Medicine*, *46*, 489–494. https://doi.org/10.1016/j.ajem.2020.10.068

Sørensen, K., Pelikan, J. M., Röthlin, F., Ganahl, K., Slonska, Z., Doyle, G., Fullam, J., Kondilis, B., Agrafiotis, D., Uiters, E., Falcon, M., Mensing, M., Tchamov, K., Broucke, S. v. d., Brand, H., & Consortium, o. b. o. t. H.-E. (2015). Health literacy in Europe: Comparative results of the European health literacy survey (HLS-EU). *The European Journal of Public Health*, *25*(6), 1053–1058. https://doi.org/10.1093/eurpub/ckv043

Sørensen, K., Van den Broucke, S., Fullam, J., Doyle, G., Pelikan, J., Slonska, Z., Brand, H., Health Literacy, C., & Project, E. (2012). Health literacy and public health: A systematic review and integration of definitions and models. *BMC Public Health*, *12*(1), 80. https://doi.org/10.1186/1471-2458-12-80

Van Hoa, H., Giang, H. T., Vu, P. T., Van Tuyen, D., & Khue, P. M. (2020). Factors associated with health literacy among the elderly people in Vietnam. *BioMed Research International*, *2020*, 3490635. https://doi.org/10.1155/2020/3490635

Vo, T. Q., Tran, T. Q., Duong, K. N. C., & Pham, K. C. (2018). Impact of chronic kidney disease on health-related quality of life: A prospective observational study using the KDQOL-36 instrument. *Journal of Clinical and Diagnostic Research*, *12*(6), LC66–LC71.

Vu, L. N., Nghia, N. Q., Tuan, T. M., Phuong, T. H., Vo, H. L., Viet, K. N., & Giang, T. B. (2021). Measuring health-related quality of life in Vietnamese patients after kidney transplantation. *Frontiers in Surgery*, *8*, 646629. https://doi.org/10.3389/fsurg.2021.646629

Wei, L., Hu, Y., Tao, Y., Hu, R., & Zhang, L. (2022). The effects of physical exercise on the quality of life of healthy older adults in China: A systematic review. *Frontiers in Psychology*, *13*), https://doi.org/10.3389/fpsyg.2022.895373

WHO. (2022). The impact of COVID-19 on mental health cannot be made light of. *World Health Organization*. https://www.who.int/news-room/feature-stories/detail/the-impact-of-covid-19-on-mental-health-cannot-be-made-light-of

Wu, Y. H., Hsu, Y. J., & Tzeng, W. C. (2022). Physical activity and health-related quality of life of patients on hemodialysis with comorbidities: A cross-sectional study. *International Journal of Environmental Research and Public Health*, *19*(2), https://doi.org/10.3390/ijerph19020811

Yeni, K., Tulek, Z., & Terzi, M. (2022). A year with the fear of COVID-19 in multiple sclerosis patients: Examination of depression, sleep quality and quality of life before and after the pandemic. *Multiple Sclerosis and Related Disorders*, *57*, 103370. https://doi.org/10.1016/j.msard.2021.103370

Yoon, I. J., & Lee, S. J. (2023). Health literacy and anxiety among hemodialysis patients during the coronavirus disease pandemic. *Psychology Research and Behavior Management*, 16:1051–1061. doi:10.2147/PRBM.S395479

PLOS ONE

RESEARCH ARTICLE

Metabolic, renal, and hematological changes in chronic hepatitis C patients achieving rapid virologic response after 12 weeks of direct-acting antiviral treatment: A prospective cohort study

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Abstract

The impact of direct-acting antivirals (DAA) therapy on lipid and glucose metabolism and kidney function in patients with hepatitis C virus (HCV) infection, along with its side effects on blood cells, remains controversial. Therefore, we conducted a study that enrolled 280 patients with HCV infection who achieved sustained virologic response after treatment with DAA therapy without ribavirin to evaluate the metabolic changes, renal function, and anemia risk based on real-world data. This study was an observational prospective study with a follow-up period of 12 weeks after the initiation of DAA therapy. Data on biochemical tests, renal function, blood counts, viral load, and host genomics were recorded before treatment and after 12 weeks of treatment with DAAs. DAA therapy reduced fibrosis-4 scores and improved liver function, with significant reductions in aspartate transaminase, alanine aminotransferase, and total bilirubin levels. However, DAA therapy slightly increased uric acid, cholesterol, and low-density lipoprotein cholesterol levels. It significantly reduced fasting blood glucose levels and hemoglobin A1C index (HbA1C) in the study group, while hemoglobin (Hb) and hematocrit (HCT) concentrations decreased significantly (4.78 ± 21.79 g/L and 0.09% ± 0.11%, respectively). The estimated glomerular filtration rate (eGFR) decreased by 12.89 ± 39.04 mL/min/1.73m^2. Most variations were not related to the genotype, except for Hb, HCT, and HbA1C. Anemia incidence increased from 23.58% before treatment to 30.72% after treatment. Patients with HCV-1 genotype had a higher rate of anemia than did patients with genotype 6 (36.23% vs. 24.62%). Multivariate analysis showed that the risk of anemia was related to female sex, cirrhosis status, fibrosis-4 score, pretreatment eGFR, and pretreatment Hb level. The results of our study can provide helpful information to clinicians for the prognosis and treatment of HCV infection.

Abbreviations: BMI, Body mass index; CI, Confidence interval; LDL, Low-density lipoprotein; OR, Odds ratio; RVR, Rapid virologic response; SVR, Sustained virologic response; APRI, Aminotransferase-to-platelet ratio index; FIB-4, fibrosis-4 factor index; AST, Alanine aminotransferase; DAA, Direct-acting antiviral; HCV, Hepatitis C virus.

Introduction

Hepatitis C virus (HCV) infection is a leading cause of chronic hepatocellular damage, cirrhosis, and hepatocellular carcinoma. The goal of treatment of this disease is a sustained virologic response (SVR), which is defined as undetectable viral ribonucleic acid (RNA) at six months after the end of treatment [1]. Rapid virologic response (RVR) and complete early virological response (cEVR) were reported to be related to SVR to HCV infection treatment. Patients who fail to achieve a cEVR (defined as the absence of detectable HCV RNA after 12 weeks of treatment) or a partial early virological response (pEVR; defined as a $\geq$2-$\log_{10}$ decrease from pretreatment level in HCV RNA at the 12th week of treatment) have a lower likelihood of achieving SVR with an additional 36 weeks of treatment [2,3].

Interferon-containing regimens, which were first developed for the treatment of HCV infection, are correlated with low cure proportions and multiple adverse events [4]. The advent of direct-acting antivirals (DAAs) has resulted in major improvements, with cure rates for HCV infection reaching approximately 100%, along with a short mean duration of therapy and with relatively fewer side effects [5]. The early 21st century saw a significant change in hepatitis C treatment guidelines with the introduction of DAAs. DAAs target key stages of the HCV life cycle, thus leading to a higher treatment response with fewer side effects than those observed with traditional therapy with interferon and ribavirin (RBV).

HCV is a single-stranded RNA virus that is classified into eight major genotype groups (HCV genotype 1 [HCV-1] to HCV genotype 8 [HCV-8]) [6,7]. There is no evidence of viral-encoded RNA-dependent RNA polymerase; therefore, these viruses evolve rapidly and the sequence diversity is extremely high, with a 31%–33% difference among genotypes and a 20%–25% difference among subtypes [8]. Although some other genotypes are also widely distributed, clear epidemiological and geographic patterns are associated with other genotypes, such as the predominance of genotype 6 in Southeast Asia and South China [9]. Different HCV genotypes have different clinical manifestations, fatty liver severity, viral loads, and variations in regulation of lipid metabolism [10,11]. Chronic infection with HCV-1 and HCV-3 genotypes differentially manifest as fatty liver and virological responses to therapies containing interferons and DAAs. Induction of lipogenic, lipolytic, and interferon-stimulated gene pathways was reportedly enriched in HCV-1 injury, whereas a broad range of immune-associated pathways is associated with HCV-3 genotype injury [12].

Variations in lipid and glucose profiles in patients with HCV infection who receive DAA therapy have been reported in several studies [13–15]. The impact of DAA therapy on lipid and glucose metabolism and on kidney function and its side effects on blood cell count remains controversial. Therefore, we conducted a prospective observational study to evaluate changes in the general metabolic processes, renal function, and blood cell count (erythrocytes and platelets) in patients with chronic HCV infection who were treated with DAA therapy and followed up for 12 weeks, as well as to determine the association between these changes and HCV genotypes.

Materials and methods

Study design

This study was an observational and prospective study with a follow-up period of 12 weeks after the initiation of DAA therapy. The study was conducted at Hai Phong International General Hospital from January 25, 2019, to December 30, 2022. Research data were collected from electronic medical records and via medical examination by physicians. Patients were examined, and their drug compliance and test indicators were assessed.

Participants

Our study recruited patients from the Gastroenterology and Hepatobiliary Clinic of Hai Phong International General Hospital from January 25, 2019, to December 30, 2022, using the following inclusion criteria:

- Patients aged ≥18 years
- DAA-naive patients with HCV infection
- Patients prescribed DAAs
- Patients achieve SVR after 12 weeks of DAA treatment

Patients with the following criteria were excluded from the study:

- Patients with current hepatocellular carcinoma
- Patients with renal failure with an estimated glomerular filtration rate (eGFR) of <30 mL/min/1.73 m^2
- Patients indicated for other regimens of HCV treatment.
- Patients prescribed drugs that are known to have drug-drug interactions with DAAs (screening by using UpToDate®) [16].

Chronic HCV infection was defined as the presence of detectable viral replication for at least six months [17]. DAA therapy in our study consisted of Ledvir (LDV)/sofosbuvir (SOF; Mylan Laboratories Limited; 90 mg/400 mg) and velpatasvir (VEL)/SOF (Epclusa, Gilead Sciences; 100 mg/400 mg). Medication adherence of patients was defined in terms of the amount of therapy received. Patients receiving the "full dose" of DAA therapy were considered as being adherent to treatment. Daily adherence was assessed by a daily questionnaire and by performing pill counts at each visit. HCV patients were tested and treated based on the guidelines of Study of Liver Diseases and the Infectious Diseases Society of America [18–20]. Other medications for co-morbid disease were continued.

Data collection

For all patients, the following data were collected: demographic characteristics such as age, sex, weight, and height at baseline; characteristics of disease status; comorbidities; cirrhosis status; aspartate aminotransferase-to-platelet ratio index (APRI) score; fibrosis-4 factor (FIB-4) index; coinfection with hepatitis B virus; coinfection with human immunodeficiency virus; aspartate aminotransferase (AST); alkaline phosphatase (ALP); total bilirubin (BILT); direct bilirubin (BILD); alpha-fetoprotein; acid uric; cholesterol; high-density lipoprotein (HDL) cholesterol; low-density lipoprotein (LDL) cholesterol; triglyceride; fasting glucose; hemoglobin A1C (HbA1C); hemoglobin (Hb); hematocrit; platelet count; serum creatinine; viral load; and HCV genotype at baseline and after 12 weeks of treatment. In a dedicated section of the electronic case report form, the APRI was calculated as follows [21]:

$$\text{APRI} = \frac{\text{AST/ULN}}{\textit{Platelet count} \text{ x } 100}$$

FIB-4 was calculated as follows:[22]

$$\text{FIB} - 4 = \frac{(\text{age x AST})}{\text{Platelet count x } \sqrt{\text{ALT}}}$$

Note: *ULN = upper limit of normal range (34 U/L for female and 36 U/L for male patients)

eGFR was calculated using the following formula: [23]

$$\text{eGFR (mL/min/1.73 m}^2\text{)} = [(140 - \text{age}) \times \text{Wt}/(0.814 \times \text{S.Cr in } \mu\text{mol/L})] \times (0.85 \text{ if female patient})$$

Note: Wt: weight; S.Cr: serum creatinine level

Anemia was defined as Hb levels < 12.0 g/dL in female patients and <13.0 g/dL in male patients [24]. Mean corpuscular volume (MCV) was defined as a measure of the average volume of a red blood cell; anemia was classified into three categories depending on the patients' MCV level: macrocytic anemia (>100 fl), normocytic anemia (80–100 fl), and microcytic anemia (<80 fl).

SVR12 was defined as cEVR achievement (undetectable HCV RNA at 12 weeks posttreatment).

HCV RNA concentration (viral load) was assessed using Roche COBAS AmpliPrep/ COBAS TaqMan version 2 (Roche, Pleasanton, CA, USA) according to the manufacturer's instructions, with a lower limit of quantification and detection of 15 IU/mL before (baseline viral load) and after 12 weeks of treatment with DAA therapy. For HCV genotyping, viral RNA from HCV RNA-positive samples was reverse transcribed using the Superscript III RT and RNaseOUT kit (Invitrogen Life Technologies, Paisley, UK), as described previously [9].

Statistical analysis

A logistic regression model was built using R statistical software version 3.2.4 (R Core Team, Vienna, Austria) [25]. We used forward selection based on the chi-squared test of the change in residual deviance. Differences among groups were analyzed using the chi-squared test for qualitative variables, one-way analysis of variance for continuous variables with normal distributions, and the nonparametric Kruskal–Wallis test for continuous variables with nonstandard distributions. Analysis of variance was used to compare the differences in clinical laboratory indicators (such as AST, ALP, BILT, and BILD) among genotypes. The comparison between baseline and after 12 weeks of treatment with DAA was performed according to McNemar's test. Differences were considered statistically significant if $P \leq 0.05$.

Ethical considerations

The study protocols were reviewed and approved by the Institutional Review Board (IRB) of Hai Phong International Hospital, Vietnam (IRB.20.302). The study was conducted in accordance with the Declaration of Helsinki and International Conference on the Harmonization of the Technical Requirements for the Registration of Pharmaceuticals for Human Use—Good Clinical Practice guidelines. Prior to data collection, ethical approval was obtained from the ethics subcommittees of Hai Phong International Hospital. All patients provided written informed consent prior to the commencement of the study.

Results

After screening 567 patients diagnosed with HCV infection, 280 patients who met the inclusion criteria were enrolled in our study (Fig 1).

Table 1 summarizes the clinical and demographic characteristics of the study patients. Half of the patients in our study were older than 49 years (median [IQR] = 49 [26]). Overall, 32% of the patients were male, with a mean body mass index (BMI) of 19 ± 3 kg/m^2. The mean systolic

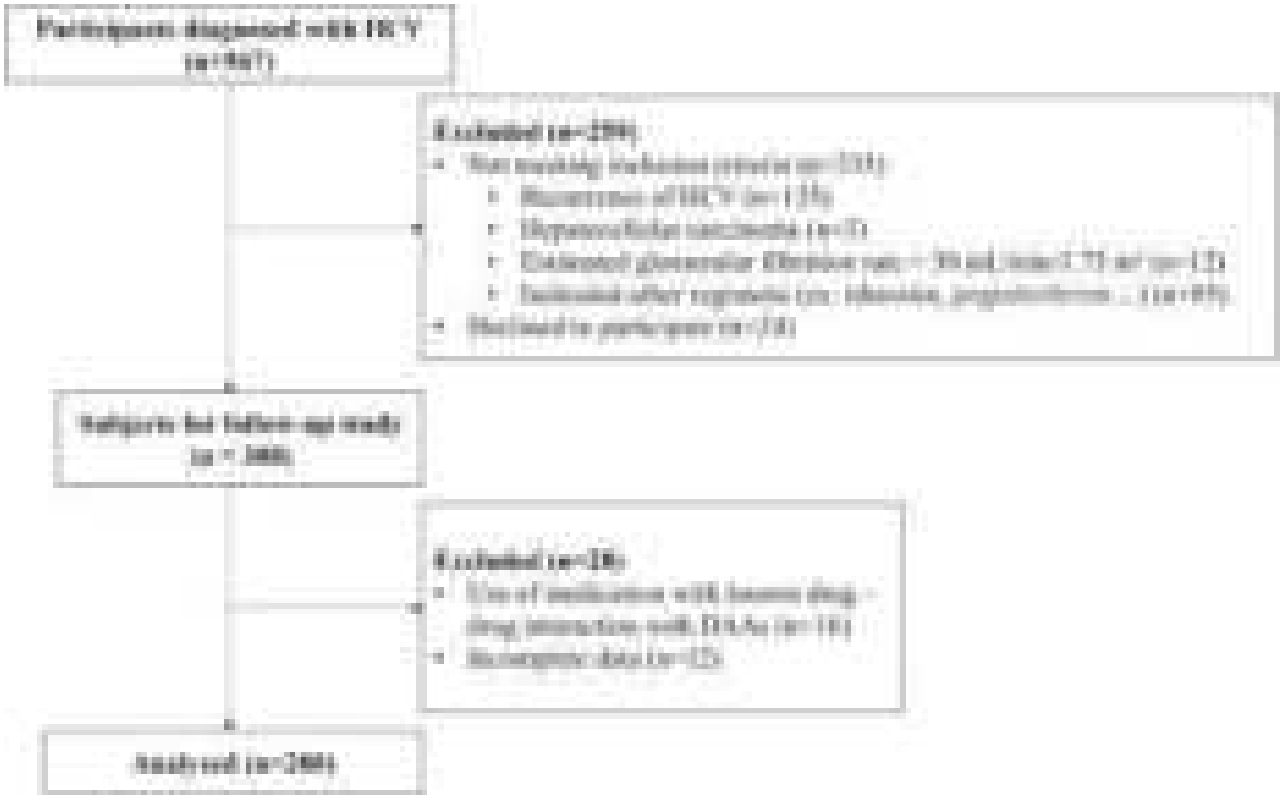

Fig 1. Flowchart of the study.

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and diastolic blood pressures before treatment were 122.86 mmHg and 73.33 mmHg, respectively. The median viral load was 4.48 $\log_{10}$ IU/mL (IQRs range 3.47–5.1 IU/mL).

Among the 280 patients with HCV infection, 25 had diabetes, 18 had hypertension, 13 had hepatitis B virus infection, 5 had gastric ulcers, and 6 had malignant cancer (excluding patients diagnosed with liver cancer). We found no HCV patients who developed HCC after 12 weeks of DAA treatment. Regarding drug regimens, 66.43% of the patients received DAA therapy with the active ingredient being LDV/SOF, whereas the remaining 33.58% received DAA therapy with the active ingredient being VEL/SOF. No patient received ribavirin in our study. Overall, RVR was achieved in 37 patients (13.22%) after 12 weeks of treatment. Among the 308 patients with HCV infection, 280 patients met the study inclusion criteria and attained SVR12 via DAA therapy. The median APRI and FIB-4 scores before treatment were 0.67 and 2.1, respectively. Regarding HCV genotypes, 46% of the patients had genotype 6, 45% had genotype 1.5%, 5% had genotype 2, and 3% had genotype 3.

The comparison of hepatobiliary, renal, and metabolic functions before treatment and after 12 weeks of treatment is shown in Table 2 and Fig 2. The FIB-4 score of the study group tended to decrease by approximately 1.06 ± 2.18 after 12 weeks of treatment with DAA therapy. Liver function improved significantly after 12 weeks of treatment, as shown by the AST (IU/mL) and ALT (IU/mL) levels, which decreased sharply from a median of 50.82 and 61.73 before treatment to 28.77 and 27.25, respectively ($p < 0.001$), after treatment. The BILT concentration of patients in the study group reduced by 41.41 ± 84.66 mg/dL after treatment compared with the concentration before treatment (from an average of 55.17 mg/dL to 13.77 mg/dL) ($p < 0.001$). However, the levels of BILD and alpha-fetoprotein did not change significantly

Table 1. Clinical and demographic characteristics of the patients (n = 280).

Demographic data	Finding
Age, years, median (IQR)	49 (42,59)
Sex (male), n (%)	91 (32)
Weight, kg, mean (SD)	58.77±9.71
Height, cm, mean (SD)	161.64±7.86
BMI, mean (SD)	19±3
baseline SBP, mmHg, mean (SD)	122.86±14.8
baseline DBP, mmHg, mean (SD)	73.33±9.46
Viral load log_{10} IU/mL, median (IQR)	4.48 (3.47, 5.1)
Cirrhosis, n (%)	37 (13.16)
HCC incidence, n (%)	0 (0)
Comorbidity	
Diabetes, n (%)	25 (9)
Hypertension, n (%)	18 (6)
Ulcer, n (%)	5 (2)
HBV-HCV co-infection, n (%)	13 (5)
Malignancy (not including HCC)	6 (2)
DAA regimens	
LDV/SOF, n (%)	186 (66.43)
VEL/SOF, n (%)	94 (33.58)
Ribavirin, n (%)	0 (0)
RVR, n (%)	37 (13.22)
ARPI score, median (IQR)	0.67 (0.42, 1.33)
FIB-4 score, median (IQR)	2.09 (1.26, 3.55)
HCV genotype	
Genotype 1, n (%)	127 (45)
Genotype 2, n (%)	14 (5)
Genotype 3, n (%)	9 (3)
Genotype 6, n (%)	130 (46)

RVR: Rapid virologic response; HBV: Hepatitis B virus; HCV: Hepatitis C virus; HCC: Hepatocellular carcinoma; LDV/SOF: Ledipasvir/sofosbuvir; VEL/SOF: Velpatasvir/sofosbuvir; APRI: Aspartate aminotransferase-to-platelet ratio index; FIB-4: Fibrosis index based on four factors; BMI: Body mass index; SBP: Systolic blood pressure; DBP: Diastolic blood pressure.

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($p > 0.05$). After comparing the changes in the profile of serum glucose, lipid, and uric acid metabolism between before treatment and after 12 weeks of treatment with DAA therapy, uric acid concentration increased slightly from 347.98 ± 82.66 μmol/L to 392.34 ± 144.29 μmol/L ($p < 0.001$). Although the total cholesterol levels of the patients increased slightly from 4.39 mmol/L to 5.35 mmol/L ($p < 0.001$), the LDL cholesterol concentration increased significantly from 3.17 mmol/L to 5.4 mmol/L ($p < 0.001$). Additionally, HDL cholesterol concentration significantly increased from 1.08 mmol/L to 1.54 mmol/L ($p < 0.001$). Statistical analysis showed that after 12 weeks of treatment with DAAs, triglyceride levels did not change significantly. When comparing the glucose metabolism status of patients, we found that the fasting blood glucose concentration and HbA1C index of patients with HCV infection decreased significantly (from 7.98 mmol/L to 6.29 mmol/L and from 8.14% to 6.16%, respectively) ($p < 0.001$). When analyzing the changes in blood counts, patients tended to have decreased Hb concentration and hematocrit index (140.99 to 136.58 g/L and from 0.42 g/L to 0.34 g/L,

Table 2. Data at baseline and after 12 weeks of treatment with DAA therapy (n = 280).

	Baseline (n = 280)	At 12th week (n = 280)	Δ*	p-value#
Changes in hepatobiliary function				
FIB-4 score, median (IQR)	2.09 (1.26,3.55)	1.26 (0.89,1.90)	-1.06±2.18	<0.001
AST (IU/L) (median (IQR))	50.82 (34.64,91.56)	28.77 (21.41,43.08)	-88.52±272.2	<0.001
ALP (IU/L) (median (IQR))	61.73 (38.16,119.81)	27.25 (16.75,57.8)	-61.45±255.98	<0.001
BILT (mg/dL) (mean ± SD)	55.17±82.51	13.77±20.22	41.41±84.66	<0.001
BILD (mg/dL) (mean ± SD)	5.71±14.68	4.36±13.47	-1.36±13.84	0.26
Alpha-fetoprotein (ng/mL) (mean ± SD)	16.08±107.16	23.83±134.47	7.76±165.48	0.452
Changes in glucose, lipid, and uric acid metabolism				
Uric acid (μmol/L) (mean ± SD)	347.98±82.66	392.34±144.29	44.36±174.56	<0.001
Cholesterol (mmol/L) (mean ± SD)	4.39±0.91	5.35±3.21	0.96±3.29	<0.001
HDL cholesterol (mmol/L) (mean ± SD)	1.08±0.52	1.54±1.08	0.46±1.2	<0.001
LDL cholesterol (mmol/L) (mean ± SD)	3.17±1.02	5.4±3.53	-2.24±3.49	<0.001
Triglyceride (mmol/L) (mean ± SD)	1.86±1.83	2.23±3.18	0.38±3.55	0.085
Glucose (mmol/L) (mean ± SD)	7.98±5.69	6.29±2.79	1.69±6.06	<0.001
HbA1C (%) (mean ± SD)	8.14±2.05	6.16±1.77	-1.98±2.92	<0.001
Changes in blood count				
Hemoglobin (g/L) (mean ± SD)	140.99±17.96	136.58±19.68	-4.78±21.79	0.004
Hematocrit (%) (mean ± SD)	0.42±0.06	0.34±0.08	-0.09±0.11	<0.001
MCV (fl) (median, min, max)	88.68 (80.27,96.92)	87.39 (80.26,96.85)		0.094
Platelet count (g/L) (mean ± SD)	217.7±67.56	230.92±81	13.23±80.81	0.037
Changes in kidney function				
Serum creatinine (μmol/L) (mean ± SD)	75.91±38.93	85.24±81.48	9.33±80.69	0.09
GFR (mL/min) (mean ± SD)	93.07±43.05	80.08±23.28	-12.89±39.04	<0.001

#: Student's t-test for mean comparison and Wilcoxon rank sum test for median comparison.

*: Δ = level at 12th week–level at baseline.

AST: Aspartate aminotransferase; ALP: Alkaline phosphatase; HDL: High-density lipoprotein; LDL: Low-density lipoprotein; HbA1C: Hemoglobin A1C; GFR: Glomerular filtration rate; MCV: Mean corpuscular volume.

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respectively, $p < 0.05$) after 12 weeks of treatment with DAAs. Similarly, platelet counts decreased slightly from 230.92 g/L to 217.7 g/L ($p = 0.037$). When analyzing the changes in kidney function, although the increase in creatinine concentration in the study group was not statistically significant, the clear decrease in the eGFR from 93.07 mL/min/1.73m^2 to 80.08 mL/min/1.73m^2 was statistically significant ($p < 0.001$).

Regarding differences in the clinical laboratory indicators among genotypes, changes in the hepatobiliary function of the patients were not related to the HCV genotypes ($p > 0.05$). Similarly, the changes in lipid profiles after 12 weeks of treatment with DAAs (cholesterol, HDL cholesterol, LDL cholesterol, and triglycerides) did not differ among the genotypes ($p > 0.05$). Regarding changes in blood glucose profiles and HbA1C index, although the analysis of blood glucose levels among genotypes did not show a statistically significant difference ($p = 0.302$), the change in HbA1C index after 12 weeks of treatment showed a statistically significant difference among the various HCV genotypes ($p = 0.041$) (Table 3). Hemoglobin and hematocrit levels after 12 weeks of treatment with DAAs in all HCV genotypes were reduced when compared with pre-treatment data (Table 3). Additionally, these reductions were significantly different between genotypes ($p<0.05$).

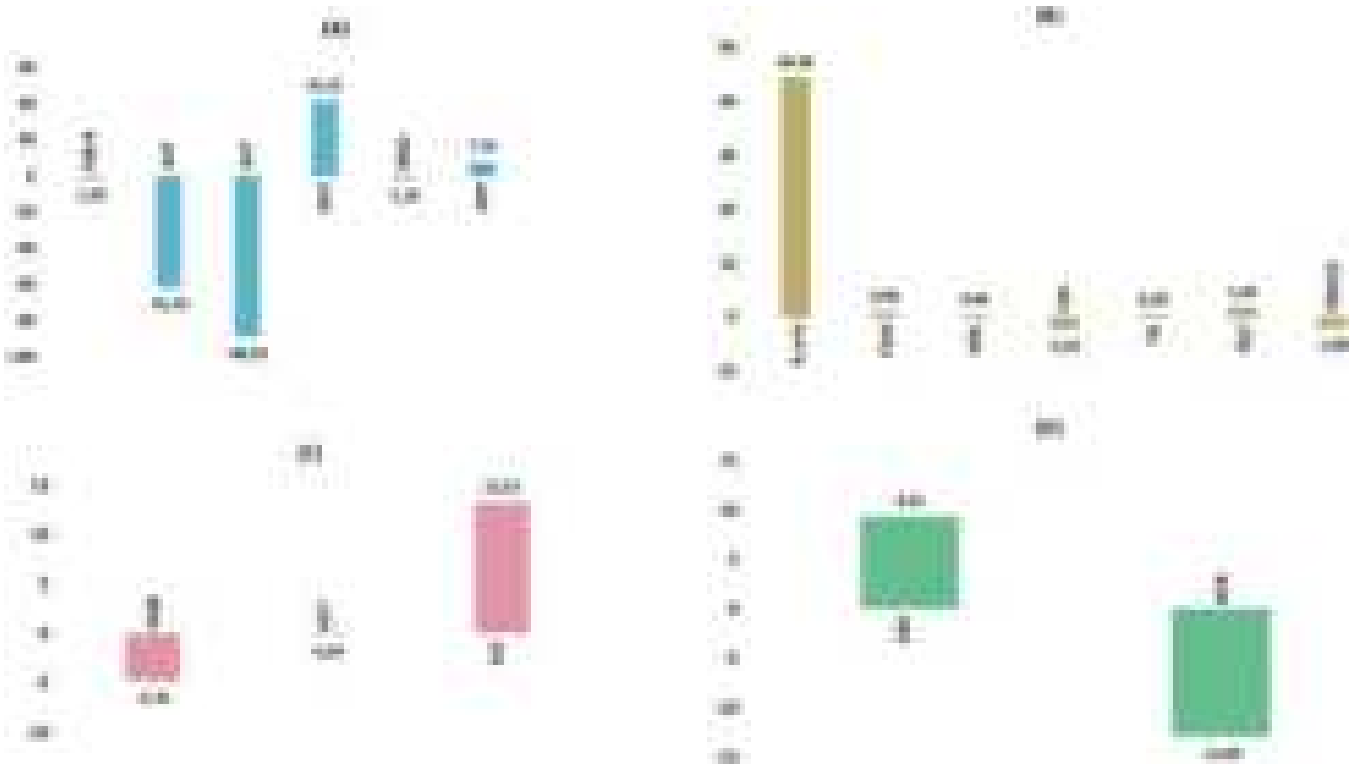

Fig 2. Metabolic, renal, and hematological changes after 12 weeks of direct-acting antiviral treatment (n = 280). AST: Aspartate aminotransferase; ALP: Alkaline phosphatase; HDL: High-density lipoprotein; LDL: Low-density lipoprotein; HbA1C: Hemoglobin A1C; GFR: Glomerular filtration rate; PLT: Platelet count; CRE: Creatinine; HCT: Hematocrit; BILT: Total bilirubin; A.uric: Acid uric; TG: Triglycerid; GLC: Glucose; Chol: Total cholesterol.

https://doi.org/10.1371/journal.pone.0290235.g002

Table 3. Relationship between changes in clinical laboratory r and hepatitis C viral genotypes (n = 280).

Index	HCV-1	HCV-2	HCV-3	HCV-6	p (ANOVA)	r^2
ΔALP (IU/L, mean ± SD)	-77.5±232	-39.7±75.9	28.4±25.5	-108.8±326.6	0.303	0.004
ΔAST (IU/L, mean ± SD)	-70.7±285.4	-25±55.2	-16.9±14.5	-59.5±249	0.803	0.001
ΔBILT (mg/dL, mean ± SD)	-41.6±87	-54.5±97.9	-65.7±96.8	-38.2±81	0.662	0.001
ΔUric acid (μmol/L, mean ± SD)	43±181.8	38.1±173.5	40.6±101.1	46.8±173.8	0.847	0.001
ΔChol (mmol/L, mean ± SD)	1.2±3.3	2±5.8	-0.3±1.8	0.8±3.2	0.283	0.005
ΔHDL cholesterol (mmol/L, mean ± SD)	0.5±1.3	0.4±0.4	1.1±2.2	0.5±1.1	0.416	0.011
ΔLDL cholesterol (mmol/L, mean ± SD)	-2.1±3.5	-1.2±3.3	-4±3.6	-2.5±3.6	0.244	0.015
ΔGlucose (mmol/L, mean ± SD)	-2±7.2	-3.6±7.3	-0.1±2.1	-1.4±4.9	0.302	0.004
ΔHbA1C (%, mean ± SD)	-2.6±2.9	-0.8±3.9	-2±3.6	-1.6±2.8	0.041	0.01
ΔHGB (g/L, mean ± SD)	-8±21.2	-0.5±23.9	-15.9±20	-1.5±21.9	0.031	0.032
ΔHCT (%, mean ± SD)	-0.11±0.11	-0.04±0.12	-0.08±0.13	-0.07±0.11	0.041	0.03
ΔPLT (g/L, mean ± SD)	-14.6±88.2	-32±69.7	-22.3±131.9	-9.3±70.4	0.754	0.005
ΔCRE (g/L, mean ± SD)	4.4±22.3	8.9±14.2	4.7±25.9	14.6±116.4	0.315	0.004
ΔGFR (mL/min, mean ± SD)	-8.6±34.4	-10.9±20.1	-11.6±44.6	-17±44.1	0.344	0.011

Δ = level after 12 weeks of treatment–level at baseline; AST: Aspartate aminotransferase; ALP: Alkaline phosphatase; HDL: High-density lipoprotein; LDL: Low-density lipoprotein; HbA1C: Hemoglobin A1C; GFR: Glomerular filtration rate; PLT: Platelet count; CRE: Creatinine; HCT: Hematocrit; BILT: Total bilirubin; Chol: Total cholesterol.

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Table 4. Comparison of anemia incidence before and after 12 weeks of treatment with DAAs in the study population and among HCV genotypes (n = 280).

	Baseline		p-value*	After the 12th week		p-value*	p-value#
	anemia (n [%])	non-anemia (n [%])		anemia (n [%])	non-anemia (n [%])		
Total (n = 280)	66 (23.58)	214 (76.43)		86 (30.72)	194 (69.29)		0.047
HCV-1 (n = 127)	26 (20.48)	101 (79.53)	0.09 (HCV-2) 0.03 (HCV-3) 0.54 (HCV-6)	46 (36.23)	81 (63.78)	0.56 (HCV-2) 0.63 (HCV-3) 0.04 (HCV-6)	0.004
HCV-2 (n = 14)	6 (42.86)	8 (57.15)	1 (HCV-3)	4 (28.58)	10 (71.43)	0.43 (HCV-3)	0.683
HCV-3 (n = 9)	3 (33.34)	6 (66.67)	0.69 (HCV-6)	4 (44.45)	5 (55.56)	0.24 (HCV-6)	1
HCV-6 (n = 130)	31 (23.85)	99 (76.16)	0.19 (HCV-2)	32 (24.62)	98 (75.39)	0.75 (HCV-2)	1

*: Comparison among HCV genotypes at baseline or after 12 weeks of treatment with DAAs, Fisher's exact test

#: Comparison between baseline and after 12 weeks of treatment with DAA, according to McNemar's test.

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Table 4 shows the comparison of anemia incidence before and after treatment in the 280 patients and according to HCV genotypes. Upon comparing the anemia status of patients newly diagnosed with HCV infection, we observed that among the 280 patients, the number of those with anemia increased from 66 (23.58%) before treatment to 86 (30.72%) after treatment ($p = 0.047$). Before treatment, the incidence of anemia in patients with HCV-1 infection was not different from that of patients with HCV-2 infection and HCV-6 infection ($p > 0.05$), but this incidence was lower than that of patients with HCV-3 (20.48% vs. 33.34%, $p = 0.03$). After 12 weeks of treatment with DAAs, the incidence of anemia in patients with HCV-1 infection was only slightly different from that of patients with HCV-6 infection (36.23% vs. 24.62%, $p = 0.04$). In the 14 patients with HCV-2, HCV-3, and HCV-6, the incidence of anemia before and after treatment and among genotypes was not significantly different ($p > 0.05$).

Multivariate logistic regression analysis showed that the anemia status of patients with HCV infection after week 12 of treatment was dependent on sex (odds ratio [OR] with 95% confidence interval [CI] = 5.87 [2.87, 12.83], $p = 0.001$), cirrhosis status (OR [95% CI]: 2.21 [1.98, 5], $p = 0.047$); FIB-4 (OR [95% CI]: 1.18 [1.02, 1.4], $p = 0.046$), baseline eGFR (OR [95% CI]: 0.99 [0.99, 1], $p = 0.004$), and baseline Hb concentration (OR [95% CI]: 0.97 [0.95, 0.99], $p = 0.001$) before treatment (Table 5).

Discussion

We evaluated the changes in metabolic processes, renal function, and blood counts of patients with chronic HCV infection who were treated with DAA therapy and followed up for 12

Table 5. Multiple logistic regression analysis showing the factors associated with anemia in patients with HCV infection after 12 weeks of DAA therapy (n = 280).

Coefficients	Estimate	Odds ratio (95% CI)	p-value
Sex (female)	1.77	5.87 (2.87, 12.83)	0.001
Cirrhosis (yes/no)	0.8	2.21 (1.98, 5)	0.036
FIB-4	0.16	1.18 (1.02, 1.4)	0.046
Baseline viral load (log_{10} IU/mL)	0.11	1.11 (0.89, 1.41)	0.379
Baseline eGFR (mL/min)	-0.02	0.99 (0.99, 1)	0.004
Baseline Hb (g/L)	-0.04	0.97 (0.95, 0.99)	0.001

CI: Confidence interval; FIB-4: Fibrosis index based on four factors; eGFR: Glomerular filtration rate; Hb: Hemoglobin.

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weeks. Our prospective study of 280 patients with HCV infection treated with DAAs revealed changes in metabolism and blood counts after treatment when compared with findings before treatment. Our study showed that HCV-1 infection accounted for approximately 45% of the 280 patients with chronic HCV infection. This rate is quite similar to the results of a previous multicenter study of 282 patients, which showed that 60% of patients with HCV were infected with HCV-1 [27]. In addition, this study showed that HCV-6 (73.9%) was quite common in the group of patients requiring dialysis and multi-transfusion; however, HCV-6 was noted in 46% of patients in the current study. We also found two rare genotypes in Vietnamese individuals: HCV-2, which infected 14/280 patients, and HCV-3, which infected 9/280 patients. In total, 1.8% (n = 5) and 0.4% (n = 1) of patients with HCV-6 and HCV-3, respectively, were detected among the 282 Vietnamese patients of the previous study [27].

FIB-4 index is a simple noninvasive test that is based on routine biochemical results, including platelet count, AST, ALT, and age. It can be used to assess the degree of liver fibrosis and has been shown to be consistent with the FibroTest [11]. The median index (IQR) of the FIB-4 score of the 280 patients in our study was 2.09 (1.26, 3.55). A previous multicenter retrospective study of 6,632 patients with sustained virological chronic HCV infection showed a mean FIB-4 index of 2.66 ± 1.98 before treatment [28]. Similarly, a study of 392 patients who received DAA therapy for chronic hepatitis C infection revealed that the mean FIB-4 score decreased significantly from 2.54 (1.65, 4.43) to 1.80 (1.23, 2.84) ($p < 0.001$) [29]. Our study also showed a significant decrease in FIB-4 scores from 2.09 (1.26, 3.55) to 1.26 (0.89, 1.90).

Our study showed a decrease in AST, ALT, and BILT levels after treatment compared with the levels before treatment. Our research results also agree with those of studies by other authors. In a retrospective study of 115 patients with HCV infection who achieved SVR12, 85.5% and 83.9% of patients showed normalization of ALT and AST levels, respectively. After 12 weeks of treatment, the percentage of the normalization of ALT and AST levels increased to 90.8% [30].

A previous cross-sectional observational study of 97 patients with HCV infection who were treated with DAAs showed that after 12 weeks of DAA therapy, the gamma-glutamyl transferase, AST, and ALT levels decreased ($p < 0.001$) [15]. Both ALT and AST are biochemical indicators of liver damage, including HCV-mediated hepatocellular injury. Our research shows that DAA therapy not only clears HCV RNA but also improves liver function and restores liver cells. Our study showed that the serum uric acid concentration of patients increased after treatment compared with the concentration before treatment ($p < 0.001$). In a previous study, 15.8% of the 373 patients with chronic hepatitis receiving antiviral therapy had hyperuricemia [31]. In a previous study, logistic regression analysis revealed that factors associated with hyperuricemia in male patients included BMI and advanced fibrosis, whereas factors associated with hyperuricemia in female patients included eGFR and diabetes mellitus. Furthermore, hyperuricemia was observed in 7.5% of patients with chronic hepatitis C infection, and this was associated with LDL cholesterol level, arterial hypertension, eGFR, and severity of steatosis, according to multivariate logistic regression analysis [32].

Our study showed an increase in total cholesterol levels of approximately 0.96 mmol/L after 12 weeks of treatment with DAAs. LDL cholesterol and HDL cholesterol levels increased from 3.17 ± 1.02 mmol/L to 5.4 ± 3.53 mmol/L and from 1.08 ± 0.52 mmol/L to 1.54 ± 1.08 ($p < 0.001$), whereas triglycerides levels remained unchanged. A systematic review and meta-analysis of 14 studies (n = 1,537 patients) indicated an increase in total cholesterol levels at 12 weeks after initiation of treatment (+15.86 mg/dL; $p < 0.001$) [14]. The LDL trend was similar to the change in total cholesterol levels in the overall analysis. In a previous study, a mean increase in the HDL cholesterol level of 3.36 mg/dL (95% CI: 0.92, 5.79; p = 0.07) was observed after 12 weeks of treatment. Furthermore, DAAs induced mild lipid changes in patients with

chronic hepatitis C infection who were treated with DAAs [14]. Furthermore, our study showed that fasting serum glucose concentration and HbA1C index decreased significantly after 12 weeks of treatment with DAAs. In contrast to our study findings, a prospective study of 105 patients who achieved SVR and were treated with DAAs demonstrated no change in blood glucose levels [33]. A previous prospective observational cohort study of 128 patients with HCV infection and type 2 diabetes showed that both fasting blood glucose levels and HbA1C index decreased after 12 weeks of treatment with a minimal reduction of 0.5% in the HbA1C index [34].

Our study showed a decline in renal function at the early stage of treatment with DAAs, with a reduction in eGFR from 93.07 ± 43.05 mL/min/1.73m^2 to 80.08 ± 23.28 mL/min/1.73m^2 ($p < 0.001$). Similar to our study, a cohort study of 1,536 patients with chronic HCV infection treated with DAAs also showed a decrease in eGFR. Furthermore, a previous study performed multivariate analysis for renal function decline from baseline to SVR24 and showed that liver transplantation, hypertension, and baseline eGFR of <60 mL/min/1.73 m^2 were independent risk factors [35]. However, O'Donnell A et al analyzed data from 1,390 electronic health records of DAA-naive patients and found that DAAs may not be nephrotoxic; furthermore, in the short-term, HCV clearance may not improve CKD [36]. In a study by Huang CF et al., they examined the effects of sofosbuvir-based and non-sofosbuvir-based regimens on 12,995 patients with chronic hepatitis C (CHC) from the Taiwan nationwide real-world HCV Registry Program. Among the participants, 6,802 were treated with sofosbuvir-based regimens, while 6,193 received non-sofosbuvir-based regimens. They found that both sofosbuvir and non-sofosbuvir-based regimens restored renal function in CHC patients with CKD, especially in those with significant renal impairment. Multivariate adjusted analysis demonstrated that baseline eGFR >90 mL/min/1.73 m^2 was the only factor that was independently associated with significant slope coefficient differences of eGFR (−1.98 mL/min/1.73 m^2; 95% confidence interval, −2.24 to −1.72; P < .001). Notably, the use of sofosbuvir was not independently associated with changes in eGFR [37]. In contrast, another study evaluated the renal function of 96 diabetic and 187 non-diabetic patients after the completion of DAA treatment. The results showed that DAAs improved renal function in diabetic patients with HCV who had an eGFR < 60 mL/min/1.73 m^2 or were ≥ 65 years of age, irrespective of the antiviral regimen administered [38].

Anemia is a well-documented occurrence in patients with HCV infection receiving pegylated interferon and RBV regimens [39–41]. A previous retrospective study involving 152 patients receiving RBV + DAA revealed that the incidence of anemia was 15.1%. Multivariable logistic regression analysis showed that eGFR, baseline Hb level, duration of 12 weeks of treatment, and decrease in Hb% (weeks 0–2) were significantly associated with the likelihood of developing anemia ($p < 0.05$) [42]. Additionally, the relative incidences of anemia for specific DAAs were 10% for sofosbuvir/ledipasvir and between 7.5% and 10.5% for ombitasvir/paritaprevir/ritonavir plus dasabuvir, depending on the duration of treatment (12 or 24 weeks), respectively [38,43].The incidence of anemia in our study population was quite high because it increased from 23.58% before treatment to 30.72% after treatment ($p = 0.047$). Anemia is one of the most common problems encountered in clinical practice. The causes of normocytic anemia with an MCV of 80–100 fL include acute bleeding, iron deficiency, anemia of chronic disease/inflammation, bone marrow suppression (cancer, aplastic anemia, infection), chronic renal insufficiency, hypothyroidism, hypopituitarism, malabsorption/malnutrition, excess alcohol, and copper deficiency/zinc poisoning. Some of these factors, such as malabsorption/malnutrition and excessive alcohol consumption, were not evaluated in our study. Several studies have demonstrated iron deficiency, which is one of the causes of anemia in patients with chronic HCV infection [44,45]. Our multivariable regression analysis revealed that factors

such as sex, cirrhosis status, FIB-4 index, Hb level, and eGFR before treatment were related to the incidence of anemia due to HCV infection. Furthermore, compared to their male counterparts, women with HCV infection were 5.87 times more likely to develop anemia (p = 0.001). The prevalence of anemia was 2.21 times higher among patients with HCV infection who were diagnosed with cirrhosis (OR: 2.21; 97.5 CI: [1.98.5], p = 0.036). A multicenter study that enrolled 446 Japanese HCV genotype 2 patients (303 treatment-naïve and 143 treatment-experienced patients), including 190 (42.6%) patients aged $\geq$ 65 years and 90 (20.2%) patients with compensated cirrhosis, indicated that 10.5% of patients developed anemia with hemoglobin levels $<$ 10 g/dL; being $\geq$65 years old and ITPA CC genotype were associated with the development of anemia. Because of anemia, 13.2% of the patients in this study required a reduction in the dose of ribavirin (23.2% aged $\geq$ 65 and 5.9% age $<$ 65 years). Nevertheless, reducing the dose of ribavirin and the mean dose of ribavirin were not related to treatment failure, probably because almost all patients underwent 12 weeks of treatment [43,46].

Furthermore, for every one-point increase in the FIB-4 score before treatment with DAAs, the risk of anemia increases by 1.18 fold (OR: 1.18; 97.5% CI: [1.02, 1.4], p = 0.046). In contrast, each 1 mL/min/1.73m^2 increase in eGFR before treatment reduced the risk of anemia by 1% during the 12 months of treatment with DAAs (OR [97.5% CI]: 0.99 [0.99.1]). Similarly, every 1 g/L increase in Hb level at baseline reduced the risk of anemia by 3% (OR [97.5% CI]: 0.97 [0.95, 0.99]).

Our study included a specific set of outpatients and thus may not apply to inpatients who demonstrate different characteristics. Anemia is extremely common in HCV patients who are old and often present with multiple diseases. However, our study did not consider the possible factors contributing to anemia in HCV patients such as malnutrition, alcohol consumption, PWID, and duration of hospitalization. Polymorphisms located near the gene encoding the interferon-lambda beta subunit can identify patients with a high probability of achieving SVR [47]. However, this factor mainly predicts treatment efficacy in patients receiving ribavirin. Therefore, in our study, these polymorphisms were not considered, as patients receiving ribavirin were not recruited. Another limitation of our study is that patients were not stratified depending on their combined current treatment for diseases such as diabetes, dyslipidemia, and gout, which may impact the study results. However, in the evaluation, we individually compared biochemical tests, renal function, blood counts, viral load, and host genomics before and after 12 weeks of treatment with DAAs.

Conclusion

Our prospective study, which enrolled 280 HCV patients who achieved SVR12 after treatment with DAA therapy without ribavirin, found that DAAs improved liver function as indicated by the FIB-4 index, and AST, ALT, and BILT levels. Additionally, the fasting blood glucose level, HbA1C, and renal function of patients with HCV infection decreased significantly posttreatment. We observed that the prevalence of anemia increased from 20.48% before treatment to 36.23% after treatment (p = 0.004). Furthermore, multivariate analysis showed that the risk of anemia was related to sex, cirrhosis status, fibrosis-4 score, pretreatment eGFR, and pretreatment Hb levels. The results of our study can help clinicians guide the treatment and prognosis of this disease and improve the effectiveness and safety of therapies for chronic HCV infection.

Supporting information

S1 File. Data of the study.
(DOC)

S2 File.
(XLSX)

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References

1. European Association for the Study of the Liver. Electronic address eee, Clinical Practice Guidelines Panel C, representative EGB, Panel m. EASL recommendations on treatment of hepatitis C: Final update of the series(). J Hepatol. 2020; 73(5):1170–218.
2. Civeira MP, Prieto J. Early predictors of response to treatment in patients with chronic hepatitis C. J Hepatol. 1999; 31 Suppl 1:237–43. https://doi.org/10.1016/s0168-8278(99)80409-7 PMID: 10622595
3. Lee SS, Heathcote EJ, Reddy KR, Zeuzem S, Fried MW, Wright TL, et al. Prognostic factors and early predictability of sustained viral response with peginterferon alfa-2a (40KD). J Hepatol. 2002; 37(4):500–6. https://doi.org/10.1016/s0168-8278(02)00211-8 PMID: 12217604
4. Endo D, Satoh K, Shimada N, Hokari A, Aizawa Y. Impact of interferon-free antivirus therapy on lipid profiles in patients with chronic hepatitis C genotype 1b. World J Gastroenterol. 2017; 23(13):2355–64. https://doi.org/10.3748/wjg.v23.i13.2355 PMID: 28428715
5. Burstow NJ, Mohamed Z, Gomaa AI, Sonderup MW, Cook NA, Waked I, et al. Hepatitis C treatment: where are we now? Int J Gen Med. 2017; 10:39–52. https://doi.org/10.2147/IJGM.S127689 PMID: 28255252
6. Smith DB, Bukh J, Kuiken C, Muerhoff AS, Rice CM, Stapleton JT, et al. Expanded classification of hepatitis C virus into 7 genotypes and 67 subtypes: updated criteria and genotype assignment web resource. Hepatology. 2014; 59(1):318–27. https://doi.org/10.1002/hep.26744 PMID: 24115039

7. Borgia SM, Hedskog C, Parhy B, Hyland RH, Stamm LM, Brainard DM, et al. Identification of a Novel Hepatitis C Virus Genotype From Punjab, India: Expanding Classification of Hepatitis C Virus Into 8 Genotypes. J Infect Dis. 2018; 218(11):1722–9. https://doi.org/10.1093/infdis/jiy401 PMID: 29982508
8. Simmonds P, Bukh J, Combet C, Deleage G, Enomoto N, Feinstone S, et al. Consensus proposals for a unified system of nomenclature of hepatitis C virus genotypes. Hepatology. 2005; 42(4):962–73. https://doi.org/10.1002/hep.20819 PMID: 16149085
9. Pybus OG, Barnes E, Taggart R, Lemey P, Markov PV, Rasachak B, et al. Genetic history of hepatitis C virus in East Asia. J Virol. 2009; 83(2):1071–82. https://doi.org/10.1128/JVI.01501-08 PMID: 18971279
10. Adinolfi LE, Gambardella M, Andreana A, Tripodi MF, Utili R, Ruggiero G. Steatosis accelerates the progression of liver damage of chronic hepatitis C patients and correlates with specific HCV genotype and visceral obesity. Hepatology. 2001; 33(6):1358–64. https://doi.org/10.1053/jhep.2001.24432 PMID: 11391523
11. Vallet-Pichard A, Mallet V, Nalpas B, Verkarre V, Nalpas A, Dhalluin-Venier V, et al. FIB-4: an inexpensive and accurate marker of fibrosis in HCV infection. comparison with liver biopsy and fibrotest. Hepatology. 2007; 46(1):32–6. https://doi.org/10.1002/hep.21669 PMID: 17567829
12. d'Avigdor WMH, Budzinska MA, Lee M, Lam R, Kench J, Stapelberg M, et al. Virus Genotype-Dependent Transcriptional Alterations in Lipid Metabolism and Inflammation Pathways in the Hepatitis C Virus-infected Liver. Sci Rep. 2019; 9(1):10596. https://doi.org/10.1038/s41598-019-46664-0 PMID: 31332246
13. Gitto S, Cicero AFG, Loggi E, Giovannini M, Conti F, Grandini E, et al. Worsening of Serum Lipid Profile after Direct Acting Antiviral Treatment. Ann Hepatol. 2018; 17(1):64–75. https://doi.org/10.5604/01.3001.0010.7536 PMID: 29311405
14. Villani R, Di Cosimo F, Romano AD, Sangineto M, Serviddio G. Serum lipid profile in HCV patients treated with direct-acting antivirals: a systematic review and meta-analysis. Sci Rep. 2021; 11 (1):13944. https://doi.org/10.1038/s41598-021-93251-3 PMID: 34230541
15. Estefan S, Brandao-Melo CE, Dos Santos Silva CM, Gomes DCK, Cardoso P, Costa MHS. Metabolic Evaluation in Patients With Hepatitis C Treated With Direct Antiviral Agents. Front Med (Lausanne). 2021; 8:631600. https://doi.org/10.3389/fmed.2021.631600 PMID: 34136497
16. Drug Interactions. Lexicomp. Wolters Kluwer Health IDi. [Feb;2020];http://online.lexi.com 2021.
17. Kanwal F BB. "Does Treatment Alter the Natural History of Chronic HCV?". In Schiffman ML (ed.). Chronic Hepatitis C Virus Advances in Treatment, Promise for the Future.: Springer Verlag.; 2011.
18. Panel A-IHG. Hepatitis C Guidance 2018 Update: AASLD-IDSA Recommendations for Testing, Managing, and Treating Hepatitis C Virus Infection. Clin Infect Dis. 2018; 67(10):1477–92. https://doi.org/10.1093/cid/ciy585 PMID: 30215672
19. Panel AIHG. Hepatitis C guidance: AASLD-IDSA recommendations for testing, managing, and treating adults infected with hepatitis C virus. Hepatology. 2015; 62(3):932–54. https://doi.org/10.1002/hep.27950 PMID: 26111063
20. Ghany MG, Morgan TR, Panel A-IHCG. Hepatitis C Guidance 2019 Update: American Association for the Study of Liver Diseases-Infectious Diseases Society of America Recommendations for Testing, Managing, and Treating Hepatitis C Virus Infection. Hepatology. 2020; 71(2):686–721.
21. Wai CT, Greenson JK, Fontana RJ, Kalbfleisch JD, Marrero JA, Conjeevaram HS, et al. A simple noninvasive index can predict both significant fibrosis and cirrhosis in patients with chronic hepatitis C. Hepatology. 2003; 38(2):518–26. https://doi.org/10.1053/jhep.2003.50346 PMID: 12883497
22. Sterling RK, Lissen E, Clumeck N, Sola R, Correa MC, Montaner J, et al. Development of a simple noninvasive index to predict significant fibrosis in patients with HIV/HCV coinfection. Hepatology. 2006; 43 (6):1317–25. https://doi.org/10.1002/hep.21178 PMID: 16729309
23. Cockcroft DW, Gault MH. Prediction of creatinine clearance from serum creatinine. Nephron. 1976; 16 (1):31–41. https://doi.org/10.1159/000180580 PMID: 1244564
24. Nutritional anaemias. Report of a WHO scientific group. World Health Organ Tech Rep Ser. 1968; 405:5–37.
25. R: TR. A language and environment for statistical computing. R Foundation for Statistical Computing. 2005.
26. Backus LI, Belperio PS, Shahoumian TA, Loomis TP, Mole LA. Real-world effectiveness and predictors of sustained virological response with all-oral therapy in 21,242 hepatitis C genotype-1 patients. Antivir Ther. 2017; 22(6):481–93. https://doi.org/10.3851/IMP3117 PMID: 27934775
27. Dunford L, Carr MJ, Dean J, Waters A, Nguyen LT, Ta Thi TH, et al. Hepatitis C virus in Vietnam: high prevalence of infection in dialysis and multi-transfused patients involving diverse and novel virus variants. PLoS One. 2012; 7(8):e41266. https://doi.org/10.1371/journal.pone.0041266 PMID: 22916104

28. Abdel Alem S, Elsharkawy A, El Akel W, Abdelaziz AO, Salama RM, El-Sayed MH, et al. Liver stiffness measurements and FIB-4 are predictors of response to sofosbuvir-based treatment regimens in 7256 chronic HCV patients. Expert Rev Gastroenterol Hepatol. 2019; 13(10):1009–16. https://doi.org/10.1080/17474124.2019.1653183 PMID: 31418303

29. Bachofner JA, Valli PV, Kroger A, Bergamin I, Kunzler P, Baserga A, et al. Direct antiviral agent treatment of chronic hepatitis C results in rapid regression of transient elastography and fibrosis markers fibrosis-4 score and aspartate aminotransferase-platelet ratio index. Liver Int. 2017; 37(3):369–76. https://doi.org/10.1111/liv.13256 PMID: 27678216

30. Huynh T, Zhang J, Hu KQ. Hepatitis C Virus Clearance by Direct-acting Antiviral Results in Rapid Resolution of Hepatocytic Injury as Indicated by Both Alanine Aminotransferase and Aspartate Aminotransferase Normalization. J Clin Transl Hepatol. 2018; 6(3):258–63. https://doi.org/10.14218/JCTH.2018.00014 PMID: 30271737

31. Jang TY, Yeh ML, Huang CI, Lin ZY, Chen SC, Hsieh MH, et al. Association of hyperuricemia with disease severity in chronic hepatitis C patients. PLoS One. 2018; 13(11):e0207043. https://doi.org/10.1371/journal.pone.0207043 PMID: 30395654

32. Petta S, Macaluso FS, Camma C, Marco VD, Cabibi D, Craxi A. Hyperuricaemia: another metabolic feature affecting the severity of chronic hepatitis because of HCV infection. Liver Int. 2012; 32(9):1443–50. https://doi.org/10.1111/j.1478-3231.2012.02842.x PMID: 22764879

33. Carvalho JR, Velosa J, Serejo F. Lipids, glucose and iron metabolic alterations in chronic hepatitis C after viral eradication—comparison of the new direct-acting antiviral agents with the old regimens. Scand J Gastroenterol. 2018; 53(7):857–63. https://doi.org/10.1080/00365521.2018.1473486 PMID: 29779403

34. Hussein HA, Allam AS, Moaty ASA. Evaluation of Glycated Haemoglobin (HbA1c) Level in Type 2 Diabetic Chronic HCV Non-cirrhotic Treatment-Naive Egyptian Patients Eradicated with Sofosbuvir Plus Daclatasvir. Curr Diabetes Rev. 2020; 16(2):165–70.

35. Chiu SM, Tsai MC, Lin CY, Chen CH, Lu SN, Hung CH, et al. Serial changes of renal function after directly acting antivirals treatment for chronic hepatitis C: A 1-year follow-up study after treatment. PLoS One. 2020; 15(4):e0231102. https://doi.org/10.1371/journal.pone.0231102 PMID: 32287280

36. O'Donnell A, Pham N, Battisti L, Epstein R, Nunes D, Sawinski D, et al. Estimating the causal effect of treatment with direct-acting antivirals on kidney function among individuals with hepatitis C virus infection. PLoS One. 2022; 17(5):e0268478. https://doi.org/10.1371/journal.pone.0268478 PMID: 35560032

37. Huang CF, Tseng KC, Cheng PN, Hung CH, Lo CC, Peng CY, et al. Impact of Sofosbuvir-Based Direct-Acting Antivirals on Renal Function in Chronic Hepatitis C Patients With Impaired Renal Function: A Large Cohort Study From the Nationwide HCV Registry Program (TACR). Clin Gastroenterol Hepatol. 2022; 20(5):1151–62 e6. https://doi.org/10.1016/j.cgh.2021.07.037 PMID: 34333150

38. Villani R, Romano AD, Sangineto M, Serviddio G. Direct-acting antivirals improve kidney function in diabetic patients with HCV infection and chronic kidney disease. Intern Emerg Med. 2021; 16(5):1239–45. https://doi.org/10.1007/s11739-020-02628-1 PMID: 33471254

39. Nomura H, Tanimoto H, Kajiwara E, Shimono J, Maruyama T, Yamashita N, et al. Factors contributing to ribavirin-induced anemia. J Gastroenterol Hepatol. 2004; 19(11):1312–7. https://doi.org/10.1111/j.1440-1746.2004.03459.x PMID: 15482540

40. Takaki S, Tsubota A, Hosaka T, Akuta N, Someya T, Kobayashi M, et al. Factors contributing to ribavirin dose reduction due to anemia during interferon alfa2b and ribavirin combination therapy for chronic hepatitis C. J Gastroenterol. 2004; 39(7):668–73. https://doi.org/10.1007/s00535-003-1363-9 PMID: 15293138

41. Sulkowski MS, Poordad F, Manns MP, Bronowicki JP, Rajender Reddy K, Harrison SA, et al. Anemia during treatment with peginterferon Alfa-2b/ribavirin and boceprevir: Analysis from the serine protease inhibitor therapy 2 (SPRINT-2) trial. Hepatology. 2013; 57(3):974–84. https://doi.org/10.1002/hep.26096 PMID: 23081753

42. Molina-Cuadrado E, Mateo-Carrrasco H, Collado A, Casado Martin M. Anaemia predictors in patients with chronic hepatitis C treated with ribavirin and direct-acting antiviral agents. Eur J Hosp Pharm. 2018; 25(3):132–7. https://doi.org/10.1136/ejhpharm-2017-001277 PMID: 31157007

43. Poordad F, Hezode C, Trinh R, Kowdley KV, Zeuzem S, Agarwal K, et al. ABT-450/r-ombitasvir and dasabuvir with ribavirin for hepatitis C with cirrhosis. N Engl J Med. 2014; 370(21):1973–82. https://doi.org/10.1056/NEJMoa1402869 PMID: 24725237

44. Ioannou GN, Tung BY, Kowdley KV. Iron in hepatitis C: villain or innocent bystander? Semin Gastrointest Dis. 2002; 13(2):95–108. PMID: 12064865

45. Hayashi H, Takikawa T, Nishimura N, Yano M, Isomura T, Sakamoto N. Improvement of serum aminotransferase levels after phlebotomy in patients with chronic active hepatitis C and excess hepatic iron. Am J Gastroenterol. 1994; 89(7):986–8. PMID: 8017395

46. Ogawa E, Furusyo N, Nomura H, Takahashi K, Higashi N, Kawano A, et al. Effectiveness and safety of sofosbuvir plus ribavirin for HCV genotype 2 patients 65 and over with or without cirrhosis. Antiviral Res. 2016; 136:37–44. https://doi.org/10.1016/j.antiviral.2016.10.012 PMID: 27789224

47. European Association for the Study of the L. EASL Clinical Practice Guidelines: management of hepatitis C virus infection. J Hepatol. 2011; 55(2):245–64. https://doi.org/10.1016/j.jhep.2011.02.023 PMID: 21371579

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Developing a machine learning-based predictive model for levothyroxine dosage estimation in hypothyroid patients: a retrospective study

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Hypothyroidism, a common endocrine disorder, has a high incidence in women and increases with age. Levothyroxine (LT4) is the standard therapy; however, achieving clinical and biochemical euthyroidism is challenging. Therefore, developing an accurate model for predicting LT4 dosage is crucial. This retrospective study aimed to identify factors affecting the daily dose of LT4 and develop a model to estimate the dose of LT4 in hypothyroidism from a cohort of 1,864 patients through a comprehensive analysis of electronic medical records. Univariate analysis was conducted to explore the relationships between clinical and non-clinical variables, including weight, sex, age, body mass index, diastolic blood pressure, comorbidities, food effects, drug-drug interactions, liver function, serum albumin and TSH levels. Among the models tested, the Extra Trees Regressor (ETR) demonstrated the highest predictive accuracy, achieving an R^2 of 87.37% and the lowest mean absolute error of 9.4 mcg (95% CI: 7.7–11.2) in the test set. Other ensemble models, including Random Forest and Gradient Boosting, also showed strong performance (R^2 > 80%). Feature importance analysis highlighted BMI (0.516 $\pm$ 0.015) as the most influential predictor, followed by comorbidities (0.120 $\pm$ 0.010) and age (0.080 $\pm$ 0.005). The findings underscore the potential of machine learning in refining LT4 dose estimation by incorporating diverse clinical factors beyond traditional weight-based approaches. The model provides a solid foundation for personalized LT4 dosing, which can enhance treatment precision and reduce the risk of under- or over-medication. Further validation in external cohorts is essential to confirm its clinical applicability.

KEYWORDS

levothyroxine, hypothyroidism, model estimation, endocrine, retrospective study

1 Introduction

Hypothyroidism, a prevalent endocrine disorder, exhibits varying incidence and prevalence across different demographic groups (1). With a prevalence tenfold higher in women than in men, its occurrence escalates with advancing age. Hashimoto's thyroiditis is the leading cause of hypothyroidism in iodine-sufficient areas, affecting 20-30% of patients (2). It is part of a spectrum of autoimmune thyroid disorders with a complex pathogenesis involving genetic susceptibility and environmental factors (3). The disease is characterized by lymphocytic infiltration and follicular destruction, leading to thyroid atrophy and fibrosis (2, 3). Both cellular and humoral immunity play crucial roles, with defects in T regulatory cells and increased activation of follicular helper T cells contributing to disease initiation and perpetuation. Recent studies have identified multiple cytokine networks involving thyroid cells in proinflammatory effects and various T regulatory cell defects underlying the loss of self-tolerance (4). Environmental factors, including improved hygiene, increased dietary iodine intake, and certain medications, have been implicated in the recent increase in HT incidence (3). Diagnosis primarily relies on a combination of clinical and biochemical assessments due to the nonspecific nature of symptoms. Thyroid hormone replacement therapy has been used to treat hypothyroidism for over a century (5). Levothyroxine (LT4) the standard therapy for hypothyroid patients affecting approximately 5% of the global population, has significantly enhanced the quality of life for millions since its inception in 1949. Nonetheless, ensuring consistent biochemical and clinical euthyroidism in LT4-treated individuals remains a significant challenge (6). Given that LT4 is typically administered lifelong, changes in physiology necessitate adjustments in dosage to maintain euthyroidism (6). Moreover, dose modifications may be imperative for patients with concurrent medical conditions, those receiving specific medications, and elderly patients. Individuals undergoing weight fluctuations or hormonal changes may also necessitate dose adjustments, with pregnant women often requiring increased LT4 doses. Achieving the best treatment outcomes for hypothyroidism involves a collaborative effort between the patient and the physician. The physician's role entails evaluating the patient's condition through comprehensive clinical and laboratory assessments, and making necessary adjustments to LT4 therapy accordingly (6).

Drugs can change thyroid function in individuals without a thyroid illness, with effects ranging from aberrant thyroid biochemical parameters to overt thyroid malfunctions. The same medications may change the LT4 needs of patients currently being treated for hypothyroidism (7–9). These changes are exemplified by estrogen (10) and androgens (11), potentially causing increased and decreased LT4 requirements, respectively. Substances such as calcium and iron are prone to binding to LT4 in the gastrointestinal tract, potentially diminishing its absorption. Similarly, proton pump inhibitors may hinder absorption by elevating gastric pH (12). Methimazole, propylthiouracil, checkpoint inhibitors, alemtuzumab, interferon-α, amiodarone, sunitinib, and lithium are among the medications that could be included in this category due to their impact on thyroid hormone synthesis or release (13). Normalization of serum thyroid-stimulating hormone (TSH) levels before pregnancy is critical in patients with hypothyroidism (14). Early in the first trimester of pregnancy, women treated for hypothyroidism often require a 20%–30% increase in their LT4 dose. This increased demand is caused by mechanisms such as increased hepatic thyroxine-binding globulin (TBG) production and thyroid hormone metabolism by placental type 3 deiodinase (15, 16). Multiple studies have indicated a reduction in the required LT4 dose among elderly people (17–19). However, a recent study has proposed that this decline in LT4 requirement may be attributed to age-related changes in weight (20). Factors such as body weight, ideal body weight, and lean body mass all play a role in determining the necessary LT4 dosage, with higher levels of these factors correlating with increased dosage requirements (17, 21). However, if actual body weight is utilized to determine the dosage of LT4 needed by people with obesity, the dose may be overestimated instead of being more accurately predicted by optimum body weight (21). The use of LT4 for the treatment of thyroid disorders has been well established. However, recent studies have shown that this medication's dosage can significantly affect the liver (22–24). Appropriate LT4 dosage adjustment is crucial for preventing liver injury. In some cases, it may be necessary to base the dosage adjustment on the serum levels of glutamic oxaloacetic transaminase (GOT) and glutamic pyruvic transaminase (GPT). As noted by Silva et al. (25), individuals with elevated GPT levels may have a higher risk of abdominal circumference and total cholesterol.

The practice of initiating dosing based on weight is thought to be insufficient, as approximately 70% of patients often necessitate dosage adjustments during their initial postoperative follow-up (26). Additionally, administering an excessive LT4 dosage elevates the risk of accelerated bone loss, fractures, heat intolerance, diarrhea, and arrhythmias (27, 28). Conversely, underdosing of LT4 dosing leads to symptoms of hypothyroidism, such as fatigue and weight gain (29–31). Acknowledging these challenges, our study aims to systematically investigate the factors influencing LT4 dosage and develop a predictive model that incorporates the diverse determinants of dose variability. This model is intended to accurately estimate the appropriate levothyroxine dose, optimize therapeutic precision, and improve patient outcomes in the management of hypothyroidism.

2 Materials and methods

Our study, conducted in 2024, included data collected from the electronic medical records of outpatients at Hai Phong International Hospital between January 2022 and December 2023 who met the following criteria:

2.1 Participants

2.1.1 Selection criteria

- Patients diagnosed with hypothyroidism based on ICD-10 codes, including E02, E03, E89.0.
- Patients meeting diagnostic criteria for hypothyroidism, including overt hypothyroidism (elevated TSH levels with low free thyroxine levels) and subclinical hypothyroidism (elevated TSH levels with normal free thyroxine levels).
- Patients prescribed LT4 therapy at the study site.

D Patients with documented monthly follow-up visits at the study site for at least three consecutive months.

2.1.2 Exclusion criteria

- Use of LT4 outside the study site.
- Missing TSH test results.
- Incomplete medical records lacking clinical information.

Hypothyroidism is diagnosed based on elevated levels of TSH and reduced levels of free thyroxine (32). The normal reference range for free thyroxine levels is approximately 12 to 22 pmol/L. The normal reference range of serum TSH is within approximately 0.5–5.0 mU/L (17, 33).

2.1.3 Drug study

All patients were administered LT4 at 50 mcg or 100 mcg doses.

2.1.4 Data processing

During the study period, 3,794 medical records of patients diagnosed with hypothyroidism were reviewed and screened. The data extraction process involved accessing the hospital's electronic medical record (EMR) system, which stores comprehensive patient information. A systematic query was performed using predefined criteria to identify patients diagnosed with hypothyroidism and prescribed LT4 between January 2022 and December 2023. The query extracted relevant data fields, including demographic information (e.g., age, sex, weight), clinical details (e.g., symptoms, comorbid conditions), laboratory results (e.g., TSH levels, free T4 levels), and prescription records.

Data cleaning and verification were then conducted to ensure accuracy and completeness. Records were excluded if they indicated LT4 use outside the study site, if follow-up visits were inconsistent (less than three months), or if key information, such as TSH test results or clinical history, was missing. Specifically:

- 788 records were excluded for LT4 use outside the study site or insufficient follow-up.
- 328 records were excluded due to incomplete laboratory or clinical data.

This resulted in a final dataset of 2,678 medical records for analysis. Within this cohort, 69.6% (1,864 patients) achieved the hypothyroidism treatment goal after three months of follow-up, defined as symptom resolution and normalization of serum TSH levels within the reference range of 0.5–5.0 mU/L.

The extracted data was then anonymized to maintain patient confidentiality and imported into a secure database for further statistical analysis.

2.2 Statistical analysis

2.2.1 Analytical statistics

Quantitative variables, including age, weight, body mass index (BMI), systolic and diastolic blood pressure, TSH levels, and LT4 dose, were assessed for normality using the Shapiro-Wilk test. Variables following a normal distribution are presented as means ± standard deviations (SD), whereas non-normally distributed variables are reported as medians and interquartile ranges (IQR). Categorical variables, such as sex, comorbidities, food effects, and drug-drug interactions, are summarized using frequencies and percentages.

The relationships between LT4 dose and other quantitative variables were examined using Pearson correlation coefficients for normally distributed data and Spearman rank correlation for non-normally distributed variables.

2.2.2 Variable selection

Univariate analyses, including t-tests, analysis of variance (ANOVA), and chi-square tests, were conducted to identify variables significantly associated with LT4 dose. Stepwise regression (both forward and backward selection) was employed to refine the subset of predictors included in the LT4 dose prediction model, ensuring that only statistically significant and clinically relevant variables were retained.

2.2.3 Model development and optimization

The dataset was randomly divided into a derivation cohort (80%) and a validation cohort (20%) for developing the LT4 dose prediction model. Multiple machine learning algorithms were trained, including XGBoost, Random Forest, LightGBM, Ridge Regression, Lasso Regression, Support Vector Regression (SVR), Decision Tree Regressor (DTR), Gradient Boosting Regressor (GBR), Extra Trees Regressor (ETR), AdaBoost Regressor (ABR), K-Nearest Neighbors Regressor (KNR), Bagging Regressor (BR), Multi-Layer Perceptron Regressor (MLPR), and CatBoost.

Hyperparameter tuning was performed using grid search and cross-validation to optimize model performance. The final hyperparameters were selected based on the best combination of mean absolute error (MAE), mean squared error (MSE), root mean squared error (RMSE), and R^2 score.

The entire modeling process was implemented using Python (version 11.0), with key libraries including scikit-learn, XGBoost, LightGBM, CatBoost, pandas, numpy, matplotlib, and seaborn. Feature scaling and preprocessing were performed using StandardScaler from scikit-learn, while hyperparameter tuning was conducted using GridSearchCV and RandomizedSearchCV.

2.2.4 Model validation

The final LT4 dose prediction model was validated using 10-fold cross-validation, repeated three times to ensure generalizability and robustness. Validation was conducted in Python using the scikit-learn library, specifically the cross_val_score function. The model's predictive accuracy was assessed based on the average performance metrics across validation folds, including MAE, MSE, RMSE, and R^2 score.

The optimized model's performance before and after hyperparameter tuning was compared using a paired sample t-test to determine statistical significance.

The study flowchart is presented in Figure 1, and the raw data of the study is provided in Supplementary Data Sheet 1.

2.3 Ethical considerations

The Institutional Review Board (IRB) of Hai Phong International Hospital, Vietnam, approved and reviewed the study protocols (IRB. 23.118). The study was conducted in accordance with the Declaration of Helsinki and the International Conference on the Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use Good Clinical Practice guidelines.

3 Results

Of the 3,794 patients diagnosed with hypothyroidism and prescribed LT4, 2,678 met the inclusion criteria. Among the selected patients, 1,864 (approximately 69.6%) met the treatment goal and were included in the analysis and modeling of the LT4 dose calculation (Figure 1). The median weight of participants was 54.00 kg (IQR: 47.00–62.43), with a median age of 49.00 years (IQR: 39.00–58.00). The median height was 155.00 cm (IQR: 150.00–160.00), and the median BMI was 22.21 kg/m² (IQR: 19.16–26.59). Blood pressure measurements revealed a median systolic blood pressure (SBP) of 121.00 mmHg (IQR: 110.00–134.00) and a median diastolic blood pressure (DBP) of 72.00 mmHg (IQR: 64.00–80.00). The number of concomitant diseases had a median value of 3.00 (IQR: 2.00–4.00). For patients receiving LT4, the median daily dose was 62.50 mcg (IQR: 50.00–92.80) with individual prescriptions ranging from 25 to 175 mcg. 1,766 (94.74%) patients were prescribed LT4 after meals (Table 1).

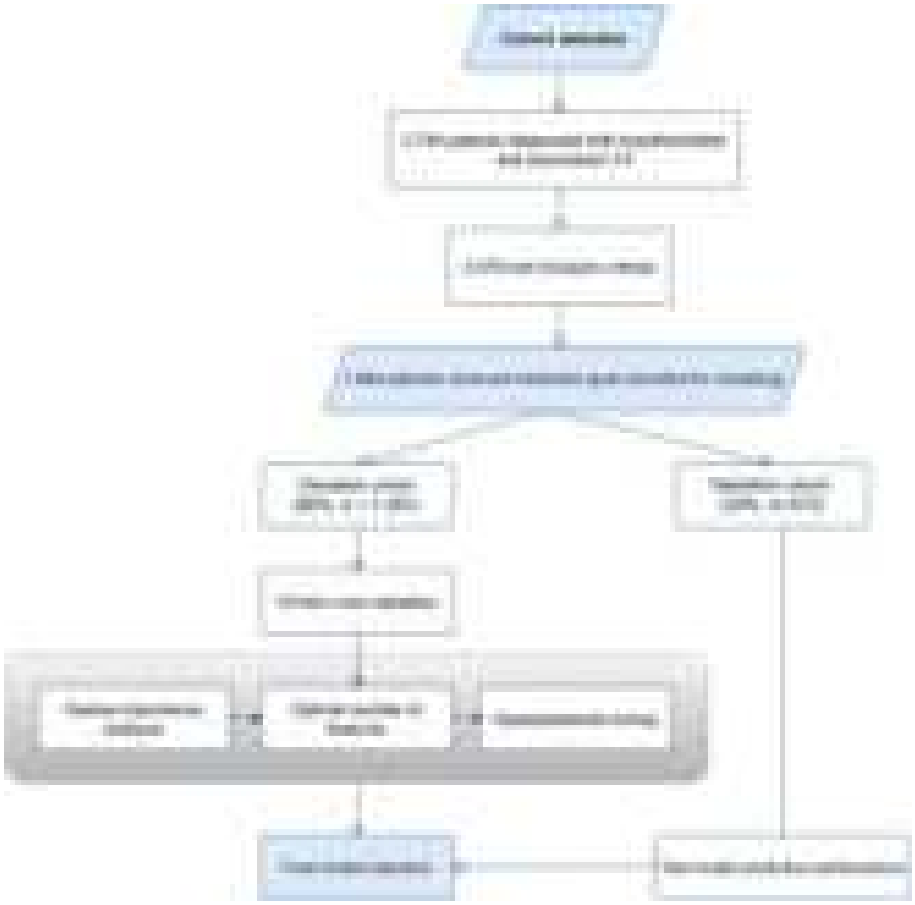

FIGURE 1
Study flowchart.

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TABLE 1 Patients' clinical characteristics (n = 1,864).

Variables	Value (Median (IQR)	Distribution in the dataset (N, %)	Min;Max
Weight (kg)	54.00 (47.00-62.43)		(31;89)
Sex (female)		1703 (91.36%)	
Age (years)	49.00 (39.00-58.00)		(6;86)
Children (6-12)	8.0 (7.0-9.0)	2 (0.11)	(6.0;10.0)
Adolescents (13-18)	17.0 (16.25-18.0)	10 (0.54)	(15.0;18.0)
Young adults (19-44)	35.0 (31.0-41.0)	722 (38.73)	(19.0;44.0)
Middle-aged adults (45-59)	52.0 (48.0-56.0)	723 (38.79)	(45.0;59.0)
Older adults (60-74)	65.0 (62.0-69.0)	381 (20.44)	(60.0;74.0)
Elderly (75-89)	84.0 (78.0-86.0)	26 (1.39)	(76.0;86.0)
Height (cm)	155.00 (150.00-160.00)		(129;185)
BMI	22.21 (19.16-26.59)		(13.24;41.24)
SBP (mmHg)	121.00 (110.00-134.00)		(82;206)
DBP (mmHg)	72.00 (64.00-80.00)		(33;130)
Number of concomitant diseases	3.00 (2.00-4.00)		(1;14)
LT4 dose regimen			
LT4 daily dose (mcg)	62.50 (50.00-92.80)		(25;175)
LT4 taking after meal		1,766 (94.74%)	
Complexity in drug use (ref: complexed)		1,423 (76.34%)	
Comorbidities			
Ulcerative colitis		23 (1.23%)	
Helicobacter pylori infection		82 (4.4%)	
Diabetes		423 (22.69%)	
Hypertension		720 (38.63%)	
Hypothyroidism cause			
Post-surgical hypothyroidism		1094 (58.69)	
Post-radioiodine therapy hypothyroidism		264 (14.16)	
Autoimmune hypothyroidism		150 (8.05)	
Drug-induced hypothyroidism		80 (4.29)	
Unknown/Other		276 (14.81)	
Pregnancy		94 (5.04%)	
Concomitant intake of medications			
Calcium supplement		189 (10.14%)	
Iron Preparations		64 (3.43%)	
Magnesium Salts		74 (3.97%)	
Multivitamins		251 (13.47%)	
PPI		134 (7.19%)	
Alendronate		31 (1.66%)	
Potassium chloride		59 (3.17%)	

(Continued)

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TABLE 1 Continued

Variables	Value (Median (IQR)	Distribution in the dataset (N, %)	Min;Max
Concomitant intake of medications			
Ciprofloxacin		4 (0.21%)	
Zinc		6 (0.32%)	
Clinical indices on prescription day			
AST, U/l	23.28 (18.02-30.05)		(10.01;157.13)
ALT, U/l	24.66 (21.22-31.05)		(7.45;306.07)
TSH mIU/l	2.52 (1.50-3.77)		(0.05;6.81)
Serum Albumin (mg/dl)	44.10 (33.23-54.13)		(20.01;64.96)

SBP, systolic blood pressure; DBP: diastolic blood pressure; ALT, alanine aminotransferase; AST, aspartate aminotransferase; BMI, body mass index; SD, standard deviation.

The distribution of LT4 dosage among study participants is visualized in Figure 2. The median LT4 dose was 62.5 mcg/day with an interquartile range (IQR) of 50.0 to 92.8 mcg/day. The most commonly prescribed dose was 50.0 mcg/day, accounting for 26.13% of participants. The histogram demonstrates a right-skewed distribution, with most participants receiving doses between 50 to 100 mcg/day. A smaller subset required higher doses (>100 mcg/day), suggesting individualized dosing based on patient-specific factors.

A subanalysis of 1,864 participants revealed that 12 (0.64%) were in the pediatric group (6-18 years) and 1,852 (99.36%) were in the adult group (>18 years). The pediatric group exhibited significantly lower BMI (17.67 vs. 22.26 kg/m^2, $p < 0.001$) and LT4 dose requirements (33.75 vs. 62.5 mcg/day, $p < 0.001$) compared to the adult group. Similarly, GOT (12.12 vs. 23.34 U/L, $p < 0.001$) and GPT (21.8 vs. 24.7 U/L, $p = 0.01$) levels were significantly lower in the pediatric group. No significant differences were observed in TSH (2.39 vs. 2.53 mIU/L, $p = 0.472$) or ALB levels (40.92 vs. 44.1 g/dL, $p = 0.362$) between the two groups (Table 2).

The linear regression analysis identified significant predictors of LT4 dosage (Table 3). Among demographic factors, BMI (4.657 ± 0.065, $P < 0.001$) and age (1.013 ± 0.041, $P < 0.001$) showed strong positive associations with LT4 dosage. Female sex (6.332 ± 2.308, $P = 0.006$) and pregnancy (18.570 ± 2.938, $P < 0.001$) were also significant contributors. Comorbidities such as ulcerative colitis (54.456 ± 5.749, $P < 0.001$), diabetes (21.702 ± 1.467, $P < 0.001$),

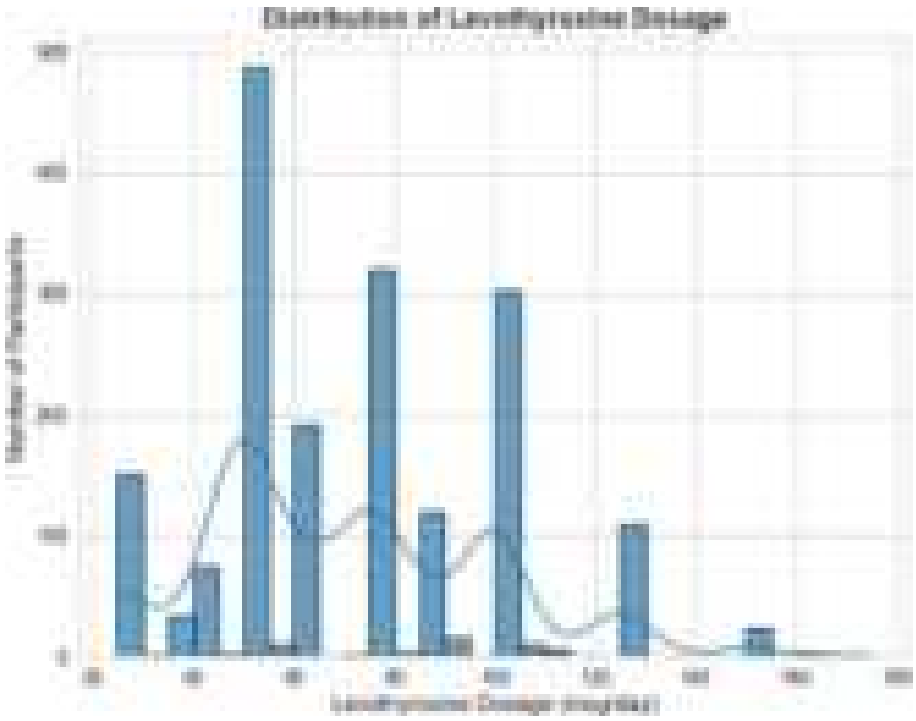

FIGURE 2
Distribution of Levothyroxine dosage among study participants.

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TABLE 2 Comparison of clinical and biochemical parameters between pediatric (6-18 years) and adults (>18 years).

Age Group	Pediatric (6-18)	Adults (>18)	p-value
n (%)	12 (0.64)	1852 (99.36)	
BMI (kg/m²) Median (IQR)	17.67 (15.38-18.47)	22.26 (19.2-26.65)	<0.001
LT4 Dose (mcg/day) Median (IQR)	33.75 (25.0-50.0)	62.5 (50.0-93.0)	<0.001
TSH (mIU/L) Median (IQR)	2.39 (1.68-3.14)	2.53 (1.5-3.78)	0.472
GOT (U/L) Median (IQR)	12.12 (11.7-15.55)	23.34 (18.14-30.11)	<0.001
GPT (U/L) Median (IQR)	21.8 (18.73-23.7)	24.7 (21.25-31.21)	0.01
ALB (g/dL) Median (IQR)	40.92 (29.48-50.21)	44.1 (33.36-54.15)	0.362

Helicobacter pylori infection (40.494 ± 3.026, P < 0.001), and hypertension (13.437 ± 1.298, P < 0.001) were strongly associated with increased LT4 requirements. Regarding hypothyroidism causes, post-surgical hypothyroidism (10.889 ± 1.295, P < 0.001) and post-radioiodine hypothyroidism (4.825 ± 1.860, P = 0.010) were associated with higher LT4 doses, whereas autoimmune (-14.430 ± 2.365, P < 0.001) and drug-induced hypothyroidism (-19.645 ± 3.173, P < 0.001) were linked to lower LT4 requirements. Concomitant medication use significantly influenced LT4 dosing. Proton pump inhibitors (PPIs) (37.162 ± 2.363, P < 0.001), potassium chloride (50.097 ± 3.525, P < 0.001), magnesium salts (43.834 ± 3.169, P < 0.001), iron preparations (43.983 ± 3.419, P < 0.001), calcium supplements (19.294 ± 2.105, P < 0.001), and multivitamins (18.996 ± 1.852, P < 0.001) were associated with significantly increased LT4 requirements. Laboratory findings also showed significant associations. Higher GOT (1.282 ± 0.037, P < 0.001) and GPT (0.701 ± 0.027, P < 0.001) levels were positively correlated with LT4 dosage, while TSH levels after treatment (-2.996 ± 0.406, P < 0.001) were inversely associated with LT4 dosage. Serum albumin was positively associated with LT4 dosage (0.329 ± 0.051, P < 0.001). Other predictors included the number of comorbidities (7.586 ± 0.239, P < 0.001), while taking LT4 before meals (-10.439 ± 2.901, P < 0.001) was associated with a lower LT4 dose requirement.

Table 4 compares the performance of various regression models based on MAE with 95% CI and R^2 values. The ETR achieved the lowest MAE (9.4 [11.2, 7.7]) in the test set and the highest R^2 (87.37%), making it the best-performing model. Other ensemble methods, including the RFR and GBR, also demonstrated strong predictive accuracy with MAE values around 9.6–9.9 and R^2 above 80%. Linear regression models (MLR, Ridge, Lasso, LSVR) had significantly higher MAE values (13.5–13.8) and lower R^2 compared to nonlinear models ($p < 0.001$ vs. ETR). Among nonlinear models, SVR, NuSVR, and MLPR showed moderate accuracy, while ABR had the highest test set error (12.5 [14.0, 10.9]) with an R^2 of 80.08%. Overall, tree-based ensemble methods outperformed linear and other nonlinear models, with ETR being the most accurate.

Figure 3 provides an in-depth analysis of model performance and feature importance in LT4 dose estimation. Figure 3a illustrates the relative importance of predictive features, with BMI (0.516 ± 0.015) emerging as the most influential factor, followed by comorbid diseases (0.120 ± 0.010) and age (0.080 ± 0.005). Other significant predictors include post-radioiodine therapy (0.051 ± 0.009), post-surgical hypothyroidism (0.047 ± 0.010), drug-induced hypothyroidism (0.047 ± 0.009), and the number of medications (0.046 ± 0.005), while sex (0.036 ± 0.005), baseline TSH (0.032 ± 0.002), and autoimmune hypothyroidism (0.025 ± 0.007) play a smaller role. Figure 3b presents the correlation matrix, highlighting BMI as the strongest predictor of LT4 dosage ($r = 0.86$, $p < 0.001$), with age ($r = 0.50$, $p < 0.001$) and comorbid diseases ($r = 0.59$, $p < 0.001$) also showing moderate correlations. Other variables, including post-radioiodine therapy ($r = 0.23$, $p < 0.001$) and post-surgical hypothyroidism ($r = 0.19$, $p < 0.001$), exhibit weaker associations, whereas sex ($r = 0.06$, $p = 0.04$) and baseline TSH ($r = 0.06$, $p = 0.02$) contribute minimally. Figure 3c displays the error distribution, showing a near-normal pattern with a mean prediction error of 0.58 (SD = 10.84) and an interquartile range from -7.2 to 8.9, suggesting that most predictions remain within an acceptable range despite occasional outliers. Figure 3d presents the actual vs. predicted LT4 dosage, demonstrating a strong alignment along the $y = x$ reference line ($R^2 = 0.85$), indicating high predictive accuracy. However, deviations are more pronounced at higher dosages, suggesting areas where model refinements could improve estimation reliability.

4 Discussion

This study provides valuable insights into the clinical and biochemical factors influencing LT4 dosage among patients with hypothyroidism. Among the 2,678 participants analyzed, 1,864 individuals (69.6%) achieved treatment goals, forming the basis for dose modeling. The findings underscore the significant variability in LT4 dose requirements, with a median dose of 62.5 mcg/day (IQR: 50.0–92.8 mcg/day) and doses ranging from 25 to 175 mcg/day. These findings align with previous reports that estimate median LT4 dose requirements at 1.3 μg/kg/day (IQR: 0.94,1.60), emphasizing the role of patient-specific metabolic and physiological factors in determining optimal LT4 replacement therapy (34). Our analysis highlights key predictors of LT4 dosage, which are consistent with findings from previous studies. BMI emerged as the strongest predictor, with a positive association (4.657 ± 0.065 mcg/kg/m², $p < 0.001$). The majority of patients were female (1,703; 91.36%). Research findings consistently indicate a higher prevalence of hypothyroidism in women compared to men. Reports suggest that hypothyroidism is approximately 4-6 times more prevalent in women than in men (35). However, the underlying reasons for this gender disparity remain incompletely understood. Some studies propose hormonal factors, such as estrogen, as potential contributors to the higher prevalence of

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TABLE 3 Linear regression coefficients for factors influencing LT4 dosage (mcg/day).

Category	Variable	Estimate	Standard Error (SD)	t-value	p-value
Demographics	Weight (kg)	1.976	0.039	51.113	< 0.001
	BMI (kg/m²)	4.657	0.065	72.166	< 0.001
	Age (years)	1.013	0.041	24.643	< 0.001
	Female sex	6.332	2.308	2.743	0.006
	Pregnancy	18.57	2.938	6.321	< 0.001
Comorbidities	Hypertension	13.437	1.298	10.355	< 0.001
	Diabetes	21.702	1.467	14.789	< 0.001
	Ulcerative colitis	54.456	5.749	9.473	< 0.001
	Helicobacter pylori infection	40.494	3.026	13.382	< 0.001
Hypothyroidism Cause	Post-surgical hypothyroidism	10.889	1.295	8.407	< 0.001
	Post-radioiodine hypothyroidism	4.825	1.86	2.594	0.01
	Autoimmune hypothyroidism	-14.43	2.365	-6.102	< 0.001
	Drug-induced hypothyroidism	-19.645	3.173	-6.191	< 0.001
Concomitant intake of medications	Proton pump inhibitors	37.162	2.363	15.724	< 0.001
	Potassium chloride	50.097	3.525	14.212	< 0.001
	Magnesium salts	43.834	3.169	13.833	< 0.001
	Iron preparations	43.983	3.419	12.863	< 0.001
	Calcium supplements	19.294	2.105	9.164	< 0.001
	Multivitamins	18.996	1.852	10.258	< 0.001
Laboratory findings	Serum albumin (mg/dL)	0.329	0.051	6.398	< 0.001
	GOT (U/L)	1.282	0.037	34.549	< 0.001
	GPT (U/L)	0.701	0.027	26.278	< 0.001
	TSH baseline (mIU/L)	0.251	0.1	2.521	0.012
	TSH after treatment (mIU/L)	-2.996	0.406	-7.388	< 0.001
Other factors	Number of comorbidities	7.586	0.239	31.698	< 0.001
	LT4 taken before meals	-10.439	2.901	-3.598	< 0.001

SBP, systolic blood pressure; DBP: diastolic blood pressure; ALT, alanine aminotransferase; AST, aspartate aminotransferase; BMI, body mass index; SD, standard deviation.

hypothyroidism in women, given their influence on thyroid function. Other research suggests lifestyle factors, including diet and physical activity, may also influence the gender difference (36). Notably, the prevalence of hypothyroidism varies across diverse populations and regions, emphasizing the need for further investigation to gain a comprehensive understanding of gender differences in hypothyroidism prevalence.

Our analysis highlights BMI as a key predictor of LT4 dosage, consistent with previous studies emphasizing its role in thyroid hormone replacement therapy. In our study, BMI demonstrated a strong positive association with LT4 dose (4.657 ± 0.065 mcg/kg/m², $p < 0.001$), reinforcing the metabolic demands of patients with higher body mass. This aligns with prior research indicating that weight-based dosing alone may be insufficient for achieving euthyroidism, particularly in overweight and underweight individuals (28, 37). Studies have shown that patients with higher BMI require higher absolute LT4 doses but lower doses relative to body weight, suggesting a complex interplay between body composition and thyroid hormone metabolism (38, 39). While BMI-based dosing algorithms have been developed and have improved euthyroidism rates at follow-up, recent studies advocate for more sophisticated dosing models incorporating multiple clinical parameters (40). Notably, some researchers argue that TSH, body weight, and BMI alone may be insufficient for precise LT4 titration, highlighting the need for individualized, multifactorial approaches to therapy optimization (28).

As per the investigation, the mean age of the patients was 48.42 ± 13.72, ranging from 6 to 86 years old. The prevalence of hypothyroidism varies across age groups. According to previous research, the highest prevalence of hypothyroidism is observed in older people (41). This study highlights significant differences in clinical and biochemical parameters between pediatric and adult

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TABLE 4 Comparison of regression models for predicting levothyroxine dosage: mean absolute error (MAE) and R^2 values.

Regression models	MAE (Training Set) [95% CI]	MAE (Test Set) [95% CI]	R^2 (Training Set)	R^2 (Test Set)	P values (vs. MLR)	P values (vs. ETR)
MLR	13.5 [13.6, 13.3]	13.6 [14.7, 12.5]	76.24	74.49	–	< 0.001; < 0.001
RidgeR	13.6 [13.7, 13.4]	13.7 [14.7, 12.6]	76.24	74.5	0.005; 0.695	< 0.001; < 0.001
LassoR	13.5 [13.7, 13.3]	13.6 [14.7, 12.5]	76.11	74.54	0.210; 1.000	< 0.001; < 0.001
LSVR	13.6 [14.1, 13.2]	13.8 [14.7, 12.8]	75.41	75.52	0.023; 0.576	< 0.001; < 0.001
ETR	5.4 [5.6, 5.3]	9.4 [11.2, 7.7]	100	87.37	< 0.001; < 0.001	–
KNR	2.4 [2.5, 2.2]	9.6 [11.6, 7.5]	84.48	78.34	< 0.001; < 0.001	0.743
BR	5.8 [6.0, 5.6]	9.6 [11.7, 7.5]	97.38	83.67	< 0.001; < 0.001	0.681
RFR	6.6 [6.8, 6.4]	9.6 [11.7, 7.7]	98.12	85.39	< 0.001; < 0.001	0.634
XGBR	8.4 [8.6, 8.1]	9.9 [11.2, 8.5]	99.54	84.92	< 0.001; < 0.001	0.234
GBR	7.9 [8.1, 7.8]	9.9 [11.4, 8.4]	89.14	83.55	< 0.001; < 0.001	0.251
DTR	7.3 [7.8, 6.7]	10.1 [12.1, 8.1]	100	71.85	< 0.001; < 0.001	0.142
SVR	7.8 [8.2, 7.3]	10.3 [12.0, 8.7]	43.57	45.68	< 0.001; < 0.001	0.034
NuSVR	8.1 [8.4, 7.9]	10.3 [12.0, 8.6]	43.57	45.68	< 0.001; < 0.001	0.038
MLPR	10.6 [10.9, 10.2]	11.0 [12.5, 9.5]	84.14	78.24	< 0.001; < 0.001	< 0.001
ABR	12.3 [12.4, 12.1]	12.5 [14.0, 10.9]	83.15	80.08	< 0.001; 0.002	< 0.001

MLR, Multiple Linear Regression; RidgeR, Ridge Regression; LassoR, Lasso Regression; LSVR, Linear Support Vector Regression; ETR, Extra Trees Regressor; KNR, K-Nearest Neighbors Regressor; BR, Bagging Regressor; RFR, Random Forest Regressor; XGBR, Extreme Gradient Boosting Regressor; GBR, Gradient Boosting Regressor; DTR, Decision Tree Regressor; SVR, Support Vector Regression; NuSVR, Nu-Support Vector Regression; MLPR, Multilayer Perceptron Regressor; ABR, Adaptive Boosting Regressor.

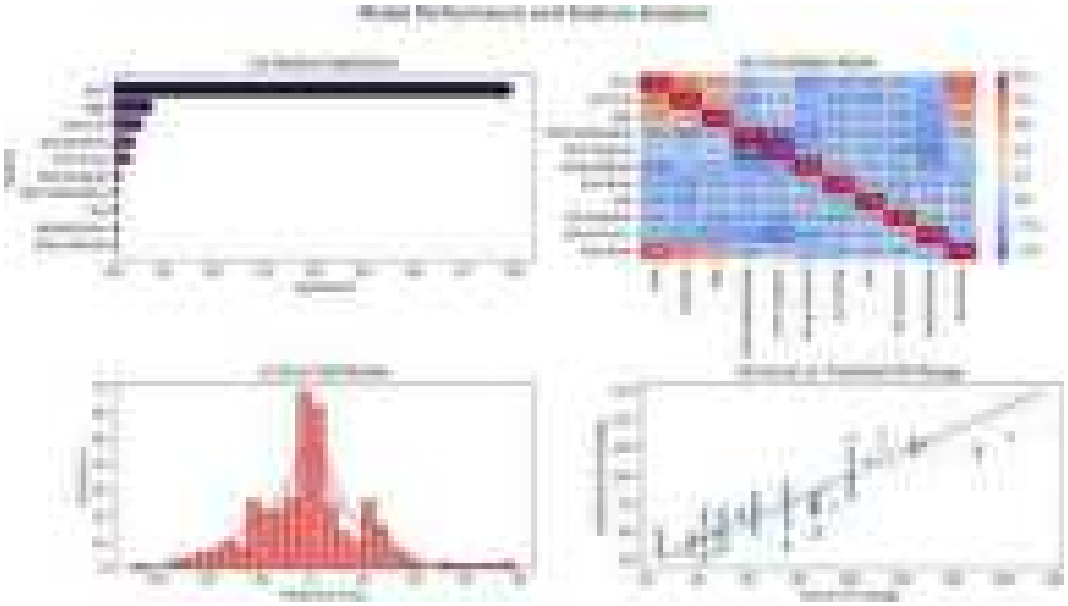

FIGURE 3
Model performance and feature importance. **(a)** Feature Importance; **(b)** Correlation Matrix; **(c)** Error Distribution; **(d)** Actual vs. Predicted LT4 Dosage. BMI, Body Mass Index; TSH, Thyroid-Stimulating Hormone; LT4, Levothyroxine; Autoimmune, Autoimmune Hypothyroidism; Conco.di, Concomitant Diseases (Comorbidities); Drug.induced, Drug-Induced Hypothyroidism; Num.drug, Total Number of Medications; Post-radioiodine, Post-Radioiodine Therapy; Post-surgical, Post-Surgical Hypothyroidism.

patients on LT4 therapy, consistent with findings in existing literature. Pediatric patients often require higher weight-based LT4 doses compared to adults (42), likely due to age-related variations in thyroid hormone metabolism and persistent hypothalamic-pituitary resistance in congenital cases. The lower BMI (17.67 vs. 22.26 kg/m^2, $p < 0.001$) and LT4 dose requirements (33.75 vs. 62.5 mcg/day, $p < 0.001$) observed in the pediatric group reflect differences in body composition and metabolic rates. Developmental variations in liver enzyme activity may explain the significantly lower GOT (12.12 vs. 23.34 U/L, $p < 0.001$) and GPT (21.8 vs. 24.7 U/L, $p = 0.01$) levels in pediatric patients, as children are known to metabolize LT4 differently, potentially leading to increased reactive metabolite formation (43). Despite these differences, comparable TSH levels (2.39 vs. 2.53 mIU/L, $p = 0.472$) across groups suggest effective dose titration strategies, aligning with the principle that age-specific reference intervals for thyroid function tests may be necessary (44). The small sample size in the pediatric group is a limitation of this study. Further research with larger cohorts is needed to validate these findings and refine LT4 dosing strategies, particularly for pediatric patients, to mitigate risks such as iatrogenic hyperthyroidism observed in initial dosing (45). Age-specific approaches remain critical to optimizing thyroid hormone replacement therapy and preventing overtreatment or undertreatment in diverse populations.

In our participants, we observed several notable comorbidities and conditions that warrant attention in the management of LT4 dose. Among patients with hypothyroidism, a substantial proportion (52.58%) underwent thyroidectomy, indicating a significant prevalence of surgical interventions in this population. A novel Poisson regression model incorporating seven variables predicted 60.9% of the doses ($p=0.031$) based on the data of 598 patients who attained euthyroidism after total or complete thyroidectomy for benign diseases (46). Furthermore, hypertension emerged as the most prevalent comorbidity among patients with hypothyroidism, affecting 38.63% of the individuals in our study cohort. Diabetes mellitus was also observed to be prevalent among hypothyroid patients, affecting 22.69% of the individuals. This finding underscores the bidirectional relationship between thyroid dysfunction and metabolic disorders and emphasizes the need for integrated management strategies to address both conditions simultaneously. Interestingly, adenocarcinoma of the thyroid gland was identified in 29.51% of patients with hypothyroidism, indicating a notable prevalence of thyroid malignancies within this population.

In addition to these common comorbidities, this study investigated the prevalence of gastrointestinal diseases in patients with hypothyroidism. Notably, a significant proportion of patients receiving LT4 (LT4) treatment present with concurrent conditions that can potentially impair intestinal absorption of the medication. Conditions such as gastroesophageal reflux disease (GERD), irritable bowel syndrome (IBS), food allergies, lactose intolerance, gastric bypass, Helicobacter pylori infection, gastroparesis, celiac disease, ulcerative colitis, Crohn's disease, and atrophic gastritis can all interfere with the absorption of LT4, thus affecting treatment efficacy and patient outcomes (47, 48). In our study, ulcerative colitis was identified in 1.23% of patients, while Helicobacter pylori infection was observed in 4.4%. Ulcerative colitis can significantly affect LT4 absorption, leading to an increased need for the medication in hypothyroid patients. Studies have shown that ulcerative colitis patients require approximately 26% higher LT4 doses compared to controls to achieve similar TSH levels (47). This malabsorption may persist even during clinical remission of UC. Various gastrointestinal disorders, including inflammatory bowel diseases, can impede LT4 absorption (7, 49). The development of new oral formulations, such as liquid LT4, may help overcome malabsorption issues in patients with gastrointestinal disorders (50). Patients requiring unusually high LT4 doses should be evaluated for potential malabsorption conditions (51). The LT4 absorption test can be useful in distinguishing between true malabsorption and pseudomalabsorption (52). Additionally, Ulcerative colitis may affect bile acid absorption, which could further impact medication absorption (53). Our study also included a subgroup analysis focused on pregnant women in the study cohort. Pregnancy was associated with markedly higher LT4 requirements (18.570 ± 2.938 mcg, $p < 0.001$), consistent with studies demonstrating that thyroid hormone demand increases significantly during gestation to maintain maternal and fetal euthyroidism (54, 55). This heightened demand is driven by increased thyroid-binding globulin levels, hCG stimulation of TSH receptors, and elevated peripheral thyroid hormone metabolism (56). Our findings align with previous reports indicating that 84–85% of hypothyroid women require LT4 dose increases during pregnancy, typically within the first 5–7 weeks of gestation (57). These results underscore the critical importance of early LT4 dose adjustments, particularly in the first trimester, to maintain optimal thyroid function. While trimester-specific TSH targets are widely used, clinical approaches to screening and dose adjustment vary across regions, particularly in Europe and Asia (58, 59).

In our study, we also assessed the effect of concurrent medications along with LT4. These included calcium supplements (10.14%), iron preparations (3.43%), magnesium salts (3.97%), multivitamins (13.47%), proton pump inhibitors (PPIs) (7.19%), alendronate (1.66%), potassium chloride (3.17%), ciprofloxacin (0.21%), and zinc supplements (0.32%). Notably, all these medications have been documented to potentially influence the pharmacokinetics or dosage requirements of LT4. Calcium supplements, for instance, may interfere with LT4 absorption when administered simultaneously, whereas iron preparations can bind to LT4 in the gastrointestinal tract, reducing its absorption (60). Similarly, magnesium salts and PPIs are associated with decreased LT4 absorption, potentially necessitating dosage adjustments. Multivitamins containing iron or calcium, such as alendronate, potassium chloride, and ciprofloxacin, may also affect LT4 absorption. Zinc supplementation may also interfere with LT4 absorption, albeit to a lesser extent (61). Our findings are consistent with the existing literature regarding the influence of these medications on the daily dosage requirements of LT4, except ciprofloxacin and zinc. However, ciprofloxacin and zinc did not appear to significantly affect the daily LT4 dosage requirements in our study. While these medications have been reported to interact with LT4 in some contexts, our findings suggest that their impact on LT4 dosage may be minimal or negligible within our study population (62, 63).

In our study, we found an influence of liver function (AST and ALT levels) and serum albumin levels on LT4 dosage. These parameters are of particular interest owing to their potential roles in thyroid hormone metabolism and distribution within the body. The liver plays a crucial role in the metabolism and clearance of thyroid hormones, including LT4. Impaired liver function can affect the synthesis of binding proteins such as TBG, which may in turn influence the distribution and availability of circulating thyroid hormones (64). Liver dysfunction can alter the metabolism of medications and potentially affect LT4 pharmacokinetics. Similarly, the serum albumin level is an important determinant of thyroid hormone transport and distribution. Albumin serves as the major carrier protein for thyroid hormones in the bloodstream, facilitating their transport to target tissues. Changes in albumin levels can affect the binding capacity of thyroid hormones and alter their distribution and availability for cellular uptake (65).

Our study confirms the effectiveness of machine learning models in predicting LT4 dosage with high accuracy, aligning with previous research. Among the tested models, ensemble methods such as Extra Trees Regressor (ETR) and Random Forest demonstrated superior performance, with ETR achieving the highest R^2 (0.87) and the lowest mean absolute error (MAE) in the test set. These findings are consistent with prior studies where XGBoost outperformed standard dosing guidelines by integrating a broader range of clinical variables beyond BMI and age (66). Additionally, our results highlight the significance of diverse predictors, including pregnancy, comorbidities, and concomitant medications, in determining LT4 requirements. This aligns with Singh et al., who employed multivariable linear regression for LT4 dose prediction, achieving early euthyroidism in 68% of participants (67, 68). Similar approaches were observed in the studies by Liu et al. and Zaborek et al., where machine learning models consistently outperformed conventional weight-based dosing methods. Notably, Zaborek et al. identified Poisson regression as the most accurate model among 13 machine learning algorithms (46). Collectively, these findings suggest that integrating machine learning into clinical practice can improve personalized LT4 dosing, enhancing treatment outcomes for hypothyroid patients.

The machine learning-based LT4 dosing model developed in this study offers a precise, data-driven approach to optimizing hypothyroidism treatment. By integrating key clinical variables—including BMI, age, sex, comorbidities, drug interactions, and biochemical markers—our model outperforms traditional weight-based dosing strategies, reducing variability and improving dose accuracy. Feature selection ensured clinical relevance, with ETR achieving the lowest MAE (9.4 [11.2, 7.7]) and highest R^2 (87.37%), demonstrating superior predictive performance. The low MAE highlights the model's precision in capturing individual LT4 requirements, reducing the need for trial-and-error adjustments and facilitating faster achievement of target TSH levels. This approach could streamline clinical workflows, minimize unnecessary follow-ups, and enhance treatment outcomes. The model's integration into clinical decision support systems or electronic health records could provide real-time, personalized dosing recommendations, improving efficiency in hypothyroidism management. Further validation in external cohorts and prospective trials is needed to confirm its real-world applicability.

One limitation of this study is its retrospective design, which relies on data collected from electronic medical records. Retrospective studies are prone to inherent biases and limitations, such as incomplete or missing data, variable data quality, and the inability to establish causality. Additionally, this study did not account for patient adherence to LT4 therapy, a critical factor influencing treatment efficacy. Non-adherence to LT4 is a well-recognized issue that can lead to fluctuations in thyroid hormone levels, suboptimal symptom control, and potential misinterpretation of dosage requirements. Variability in adherence may also contribute to differences in biochemical parameters observed between pediatric and adult patients. Future prospective studies incorporating objective measures of adherence, such as pharmacy refill data or serum LT4 monitoring, along with long-term treatment outcomes and quality-of-life assessments, are needed to refine LT4 dosing strategies and optimize management for individuals with hypothyroidism.

5 Conclusions

In conclusion, we comprehensively examined both clinical and non-clinical variables, uncovering significant relationships with numerous factors, such as weight, sex, age, BMI, diastolic blood pressure, comorbidities, food effect, drug-drug interactions, liver function, serum albumin, and TSH levels. Machine learning models were developed to predict LT4 dosage, with the Extra Trees Regressor demonstrating the best performance (MAE: 9.4 [11.2, 7.7], R^2: 87.37%), outperforming linear and other nonlinear models. BMI was the strongest predictor of LT4 dosage, followed by comorbid conditions and age. Additional significant factors included post-radioiodine therapy, post-surgical hypothyroidism, drug-induced hypothyroidism, and medication use. Correlation analysis confirmed BMI ($r = 0.86$, $p < 0.001$) as the primary determinant. Model residuals showed a near-normal distribution, and actual vs. predicted dosage plots demonstrated high predictive accuracy. These findings highlight the potential of machine learning in individualized LT4 dose optimization, improving precision in hypothyroidism management. Further validation is necessary for clinical application.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by Hai Phong International Hospital. The studies were conducted in accordance with the local legislation and institutional requirements. The human samples used in this study were acquired from a by- product of routine care or industry. Written informed consent for

participation was not required from the participants or the participants' legal guardians/next of kin in accordance with the national legislation and institutional requirements.

Author contributions

TN: Conceptualization, Data curation, Methodology, Writing – original draft, Writing – review & editing, Formal Analysis, Supervision, Validation, Visualization. DT: Conceptualization, Data curation, Methodology, Software, Writing – original draft, Writing – review & editing. NM: Conceptualization, Data curation, Methodology, Supervision, Writing – original draft, Writing – review & editing, Software. HD: Conceptualization, Data curation, Methodology, Writing – original draft, Writing – review & editing, Investigation. NK: Conceptualization, Data curation, Methodology, Software, Supervision, Writing – original draft, Writing – review & editing. PL: Conceptualization, Data curation, Investigation, Methodology, Writing – original draft, Writing – review & editing, Validation, Visualization. NP: Conceptualization, Data curation, Investigation, Methodology, Validation, Visualization, Writing – original draft, Writing – review & editing, Formal Analysis, Project administration, Supervision.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fendo.2025.1415206/full#supplementary-material

References

1. Sohn SY, Seo GH, Chung JH. Risk of all-cause mortality in levothyroxine-treated hypothyroid patients: A nationwide Korean cohort study. *Front Endocrinol.* (2021) 12. doi: 10.3389/fendo.2021.680647

2. Ragusa F, Fallahi P, Elia G, Gonnella D, Paparo SR, Giusti C, et al. Hashimotos' thyroiditis: Epidemiology, pathogenesis, clinic and therapy. *Best Pract Res Clin Endocrinol Metab.* (2019) 33:101367. doi: 10.1016/j.beem.2019.101367

3. Weetman PAP, Ajjan RA, Weetman AP. The pathogenesis of Hashimoto's thyroiditis: Further developments in our understanding. *Hormone Metab Res.* (2015) 47:702–10. doi: 10.1055/s-0035-1548832

4. Weetman AP. An update on the pathogenesis of Hashimoto's thyroiditis. *J Endocrinol Invest.* (2020) 44:883–90. doi: 10.1007/s40618-020-01477-1

5. Gottwald-Hostalek U, Razvi S. Getting the levothyroxine (LT4) dose right for adults with hypothyroidism: opportunities and challenges in the use of modern LT4 preparations. *Curr Med Res Opinion.* (2022) 38:1865–70. doi: 10.1080/03007995.2022.2071059

6. Duntas LH, Jonklaas J. Levothyroxine dose adjustment to optimise therapy throughout a patient's lifetime. *Adv Ther.* (2019) 36:30–46. doi: 10.1007/s12325-019-01078-2

7. Skelin M, Lucijanić T, Amidžić Klarić D, Rešić A, Bakula M, Liberati-Čizmek A-M, et al. Factors affecting gastrointestinal absorption of levothyroxine: A review. *Clin Ther.* (2017) 39:378–403. doi: 10.1016/j.clinthera.2017.01.005

8. Irving S A, Vadiveloo T, Leese GP. Drugs that interact with levothyroxine: an observational study from the Thyroid Epidemiology, Audit and Research Study (TEARS). *Clin Endocrinol.* (2015) 82:136–41. doi: 10.1111/cen.2014.82.issue-1

9. Burch HB. Drug effects on the thyroid. *N Engl J Med.* (2019) 381:749–61. doi: 10.1056/NEJMra1901214

10. Arafah BM. Decreased levothyroxine requirement in women with hypothyroidism during androgen therapy for breast cancer. *Ann Intern Med.* (1994) 121:247–51. doi: 10.7326/0003-4819-121-4-199408150-00002

11. Singh N, Singh PN, Hershman JM. Effect of calcium carbonate on the absorption of levothyroxine. *JAMA.* (2000) 283:2822–5. doi: 10.1001/jama.283.21.2822

12. Goodman A. Goodman and Gilman's the pharmacological basis of therapeutics. Cocaine, Amphetamine and Related Psychostimulants. (1990).

13. Cooper DS, Klibanski A, Ridgway EC. Dopaminergic modulation of tsh and its subunits: *in vivo* and *in vitro* studies. *Clin Endocrinol.* (1983) 18:265–75. doi: 10.1111/j.1365-2265.1983.tb03211.x

14. Okosieme OE, Khan I, Taylor PN. Preconception management of thyroid dysfunction. *Clin Endocrinol (Oxf).* (2018) 89:269–79. doi: 10.1111/cen.2018.89.issue-3

15. Alexander EK, Pearce EN, Brent GA, Brown RS, Chen H, Dosiou C, et al. 2017 Guidelines of the American thyroid association for the diagnosis and management of thyroid disease during pregnancy and the postpartum. *Thyroid.* (2017) 27:315–89. doi: 10.1089/thy.2016.0457

16. Lemieux P, Yamamoto JM, Nerenberg KA, Metcalfe A, Chin A, Khurana R, et al. Thyroid laboratory testing and management in women on thyroid replacement before pregnancy and associated pregnancy outcomes. *Thyroid.* (2021) 31:841–9. doi: 10.1089/thy.2020.0609

17. Jonklaas J, Bianco AC, Bauer AJ, Burman KD, Cappola AR, Celi FS, et al. Guidelines for the treatment of hypothyroidism: prepared by the american thyroid association task force on thyroid hormone replacement. *Thyroid.* (2014) 24:1670–751. doi: 10.1089/thy.2014.0028

18. Sawin CT, Herman T, Molitch ME, London MH, Kramer SM. Aging and the thyroid. Decreased requirement for thyroid hormone in older hypothyroid patients. *Am J Med.* (1983) 75:206–9. doi: 10.1016/0002-9343(83)91192-0

19. Del Duca SC, Santaguida MG, Brusca N, Gatto I, Cellini M, Gargano L, et al. Individually-tailored thyroxine requirement in the same patients before and after thyroidectomy: a longitudinal study. *Eur J Endocrinol*. (2015) 173:351–7. doi: 10.1530/EJE-15-0314

20. Younis IR, Ahmed MA, Burman KD, Soldin OP, Jonklaas J. Stable isotope pharmacokinetic studies provide insight into effects of age, sex, and weight on levothyroxine metabolism. *Thyroid*. (2018) 28:41–9. doi: 10.1089/thy.2017.0380

21. Devdhar M, Drooger R, Pehlivanova M, Singh G, Jonklaas J. Levothyroxine replacement doses are affected by gender and weight, but not age. *Thyroid*. (2011) 21:821–7. doi: 10.1089/thy.2011.0029

22. Wiersinga WM. T4+T3 combination therapy: an unsolved problem of increasing magnitude and complexity. *Endocrinol Metab (Seoul)*. (2021) 36:938–51. doi: 10.3803/EnM.2021.501

23. Wu B, Xie C. Liver injury induced by levothyroxine tablets in a patient with hypothyroidism. *Chin Med J (Engl)*. (2019) 132:2015–6. doi: 10.1097/CM9.0000000000000340

24. Kawakami T, Tanaka A, Negoro S, Morisawa Y, Mikami M, Hojo M, et al. Liver injury induced by levothyroxine in a patient with primary hypothyroidism. *Intern Med*. (2007) 46:1105–8. doi: 10.2169/internalmedicine.46.0086

25. Silva Nde O, Ronsoni MF, Colombo Bda S, Corrêa CG, Hatanaka SA, Canalli MH, et al. Clinical and laboratory characteristics of patients with thyroid diseases with and without alanine aminotransferase levels above the upper tertile - Cross-sectional analytical study. *Arch Endocrinol Metab*. (2016) 60:101–7. doi: 10.1590/2359-3997000000066

26. Fish LH, Schwartz HL, Cavanaugh J, Steffes MW, Bantle JP, Oppenheimer JH. Replacement dose, metabolism, and bioavailability of levothyroxine in the treatment of hypothyroidism. Role of triiodothyronine in pituitary feedback in humans. *N Engl J Med*. (1987) 316:764–70. doi: 10.1056/NEJM198703263161302

27. Olubowale O, Chadwick DR. Optimization of thyroxine replacement therapy after total or near-total thyroidectomy for benign thyroid disease. *Br J Surg*. (2006) 93:57–60. doi: 10.1002/bjs.5157

28. Ojomo KA, Schneider DF, Reiher AE, Lai N, Schaefer S, Chen H, et al. Using body mass index to predict optimal thyroid dosing after thyroidectomy. *J Am Coll Surg*. (2013) 216:454–60. doi: 10.1016/j.jamcollsurg.2012.12.002

29. Biondi B, Fazio S, Carella C, Amato G, Cittadini A, Lupoli G, et al. Cardiac effects of long term thyrotropin-suppressive therapy with levothyroxine. *J Clin Endocrinol Metab*. (1993) 77:334–8. doi: 10.1210/jcem.77.2.8345037

30. Sawin CT, Geller A, Wolf PA, Belanger AJ, Baker E, Bacharach P, et al. Low serum thyrotropin concentrations as a risk factor for atrial fibrillation in older persons. *N Engl J Med*. (1994) 331:1249–52. doi: 10.1056/NEJM199411103311901

31. Uzzan B, Campos J, Cucherat M, Nony P, Boissel JP, Perret GY. Effects on bone mass of long term treatment with thyroid hormones: a meta-analysis. *J Clin Endocrinol Metab*. (1996) 81:4278–89. doi: 10.1210/jcem.81.12.8954028

32. Baskin CHJ, Cobin RH, Duick DS, Gharib H, Guttler RB, Kaplan MM, et al. American Association of Clinical Endocrinologists medical guidelines for clinical practice for the evaluation and treatment of hyperthyroidism and hypothyroidism. *Endocr Pract* (2002) 6:457–69. doi: 10.4158/1934-2403-8.6.457

33. Baloch Z, Carayon P, Conte-Devolx B, Demers LM, Feldt-Rasmussen U, Henry JF, et al. Laboratory medicine practice guidelines. Laboratory support for the diagnosis and monitoring of thyroid disease. *Thyroid*. (2003) 13:3–126. doi: 10.1089/105072503321086962

34. Midgley JEM, Larisch R, Dietrich JW, Hoermann R. Variation in the biochemical response to l-thyroxine therapy and relationship with peripheral thyroid hormone conversion efficiency. *Endocr Connect*. (2015) 63:196–205. doi: 10.1530/EC-15-0056

35. Garmendia Madariaga A, Santos Palacios S, Guillén-Grima F, Galofré JC. The incidence and prevalence of thyroid dysfunction in Europe: A meta-analysis. *J Clin Endocrinol Metab*. (2014) 99:923–31. doi: 10.1210/jc.2013-2409

36. Gaitonde DY, Rowley KD, Sweeney LB. Hypothyroidism: an update. *South Afr Family Pract*. (2012) 54:384–90. doi: 10.1080/20786204.2012.10874256

37. Correia S, Almeida LS, Silva JD, Tavares P, Rocha G, Oliveira M. BMI helps to calculate the initial levothyroxine dose after total thyr oidectomy. *J Endocr Soc*. (2021) 5:A825–A. doi: 10.1210/jendso/bvab048.1681

38. Darquea A, Izquierdo R, Huang D, Greenfield M. ODP490 levothyroxine dosing based on BMI and different causes of hypot hyroidism. *J Endocr Soc*. (2022) 6:A770–A. doi: 10.1210/jendso/bvac150.1590

39. Ryu HJ, Choi MS, Park H, Kim TH, Chung JH, Park SY, et al. Adequate Dose of Levothyroxine for Thyroid-Stimulating Hormone Suppres sion after Total Thyroidectomy in Patients with Differentiated Thyroid Cancer. *Endocrinol Metab*. (2024) 39:615–21. doi: 10.3803/EnM.2023.1896

40. Elfenbein DM, Schaefer S, Shumway C, Chen H, Sippel RS, Schneider DF. Prospective Intervention of a Novel Levothyroxine Dosing Protocol Base d on Body Mass Index after Thyroidectomy. *J Am Coll Surge*. (2016) 222:83–8. doi: 10.1016/j.jamcollsurg.2015.10.005

41. Carlé A, Pedersen IB, Knudsen N, Perrild H, Ovesen L, Andersen S, et al. Hypothyroid symptoms fail to predict thyroid insufficiency in old people: A population-based case-control study. *Am J Med*. (2016) 129:1082–92. doi: 10.1016/j.amjmed.2016.06.013

42. Bagattini B, Cosmo CD, Montanelli L, Piaggi P, Ciampi M, Agretti P, et al. The different requirement of L-T4 therapy in congenital athyreosis com pared with adult-acquired hypothyroidism suggests a persisting thyroid hormone resistance at the hypothalamic-pituitary level. *Eur J Endocrinol*. (2014) 171:615–21. doi: 10.1530/EJE-14-0621

43. Alexander EK, Marqusee E, Lawrence J, Jarolim P, Fischer GA, Larsen PR. Timing and magnitude of increases in levothyroxine requirements during pregnancy in women with hypothyroidism. *N Engl J Med*. (2004) 351:241–9. doi: 10.1056/NEJMoa040079

44. Taylor P, Lansdown A, Witczak J, Ryan BFK, Rees A, Dayan C, et al. Age-related variation in thyroid function – a narrative review highlig hting important implications for research and clinical practice. *Thyroid Res*. (2023) 6:20. doi: 10.1186/s13044-023-00163-7

45. Craven M, Frank GR. Does initial dosing of levothyroxine in infants with congenital hypoth yroidism lead to frequent dose adjustments secondary to iatrogenic hyp erthyroidism on follow-up? *J Pediatr Endocrinol Metab*. (2018) 31:597–600. doi: 10.1515/jpem-2017-0513

46. Zaborek NA, Cheng A, Imbus JR, Long KL, Pitt SC, Sippel RS, et al. The optimal dosing scheme for levothyroxine after thyroidectomy: A comprehensive comparison and evaluation. *Surgery*. (2019) 165:92–8. doi: 10.1016/j.surg.2018.04.097

47. Virili C, Stramazzo I, Santaguida MG, Bruno G, Brusca N, Capriello S, et al. Ulcerative colitis as a novel cause of increased need for levothyroxine. *Front Endocrinol (Lausanne)*. (2019) 10:233. doi: 10.3389/fendo.2019.00233

48. Gonzales KM, Stan MN, Morris JC3rd, Bernet V, Castro MR. The levothyroxine absorption test: A four-year experience (2015-2018) at the mayo clinic. *Thyroid*. (2019) 29:1734–42. doi: 10.1089/thy.2019.0256

49. Ruchała MA, Szczepanek-Parulska E, Zybek A. The influence of lactose intolerance and other gastro-intestinal tract disorders on L-thyroxine absorption. *Endokrynol Pol*. (2012) 4:318–23.

50. Fallahi P, Ferrari SM, Elia G, Ragusa F, Paparo SR, Antonelli A. L-T4 therapy in enteric malabsorptive disorders. *Front Endocrinol (Lausanne)*. (2021) 12:626371. doi: 10.3389/fendo.2021.626371

51. Caron PJ, Grunenwald S, Persani L, Borson-Chazot F, Leroy R, Duntas L, et al. Factors influencing the levothyroxine dose in the hormone replacement therapy of primary hypothyroidism in adults. *Rev Endocr Metab Disord*. (2021) 23:463–83. doi: 10.1007/s11154-021-09691-9

52. Gonzales K, Stan MN, Bernet V, Castro M. OR19-3 utility of the levothyroxine absorption test: the mayo clinic experience. *J Endocr Soc*. (2019) 3. doi: 10.1210/js.2019-OR19-3

53. Fitzpatrick LR, Jenabzadeh P. IBD and bile acid absorption: focus on pre-clinical and clinical observations. *Front. Physiol*. (2020) 12. doi: 10.3389/fphys.2020.00564

54. Alemu A, Terefe B, Abebe M, Biadgo B. Thyroid hormone dysfunction during pregnancy: A review. *IJRM*. (2016) 14:677–86. doi: 10.29252/ijrm.14.11.677

55. Colicchia M, Campagnolo L, Baldini E, Ulisse S, Valensise H, Moretti C. Molecular basis of thyrotropin and thyroid hormone action during impla ntation and early development. *Hum Reprod Update*. (2014) 20:884–904. doi: 10.1093/humupd/dmu028

56. Parkes IL, Schenker JG, Shufaro Y. Thyroid disorders during pregnancy. *Gynecol Endocrinol*. (2012) 28:993–8. doi: 10.3109/09513590.2012.692001

57. Busnelli A, Vannucchi G, Paffoni A, Faulisi S, Fugazzola L, Fedele L, et al. Levothyroxine dose adjustment in hypothyroid women achieving pregnancy through IVF. *Eur J Endocrinol*. (2015) 173:417–24. doi: 10.1530/EJE-15-0151

58. Azizi F, Amouzegar A, Mehran L, Alamdari S, Subekti I, Vaidya B, et al. Screening and management of hypothyroidism in pregnancy: results of an Asian survey. *Endocr J*. (2014) 61:697–704. doi: 10.1507/endocrj.EJ14-0083

59. Vaidya B, Hubalewska-Dydejczyk A, Laurberg P, Negro R, Vermiglio F, Poppe K. Treatment and screening of hypothyroidism in pregnancy: results of a European survey. *Eur J Endocrinol*. (2012) 166:49–54. doi: 10.1530/EJE-11-0729

60. Guglielmi V, Bellia A, Bianchini E, Medea G, Cricelli I, Sbraccia P, et al. Drug interactions in users of tablet vs. oral liquid levothyroxine formulations: a real-world evidence study in primary care. *Endocrine*. (2018) 59:585–92. doi: 10.1007/s12020-017-1412-4

61. Benvenga S, Pantano R, Saraceno G, Lipari L, Alibrando A, Inferrera S, et al. A minimum of two years of undertreated primary hypothyroidism, as a result of drug-induced malabsorption of l-thyroxine, may have metabolic and cardiovascular consequences. *J Clin Transl Endocrinol*. (2019) 16:100189. doi: 10.1016/j.jcte.2019.100189

62. Goldberg AS, Tirona RG, Asher LJ, Kim RB, Van Uum SH. Ciprofloxacin and rifampin have opposite effects on levothyroxine absorption. *Thyroid*. (2013) 23:1374–8. doi: 10.1089/thy.2013.0014

63. Mahmoodianfard S, Vafa M, Golgiri F, Khoshniat M, Gohari M, Solati Z, et al. Effects of zinc and selenium supplementation on thyroid function in overweight and obese hypothyroid female patients: A randomized double-blind controlled trial. *J Am Coll Nutr*. (2015) 34:391–9. doi: 10.1080/07315724.2014.926161

64. Peeters RP, Visser TJ. Metabolism of thyroid hormone. In: Feingold KR, Anawalt B, Blackman MR, Boyce A, Chrousos G, Corpas E, et al, editors. *Endotext*. South Dartmouth (MA): MDText (2000).

65. Wiig H, Reed RK, Tenstad O. Interstitial fluid pressure, composition of interstitium, and interstitial exclusion of albumin in hypothyroid rats. *Am J Physiol Heart Circ Physiol.* (2000) 278:H1627–39. doi: 10.1152/ajpheart.2000.278.5.H1627

66. Zheng H, Lai V, Lu J, Hu D, Kang JK, Burman KD, et al. Efficacy of machine learning to identify clinical factors influencing levothyroxine dosage after total thyroidectomy. *Am J Surge.* (2023) 225:694–8. doi: 10.1016/j.amjsurg.2022.11.025

67. Singh R, Tandon A, Awasthi A. Development and prospective validation of the levothyroxine dose prediction model in primary hypothyroidism. *Hormone Metab Res.* (2021) 53:264–71. doi: 10.1055/a-1336-3502

68. Liu J-J, Wang Z-Y, Yue Y-F, Yin G-T, Tong L-N, Fu J, et al. A predictive model for L-T4 dose in postoperative DTC after RAI therap y and its clinical validation in two institutions. *Front Endocrinol.* (2024) 15. doi: 10.3389/fendo.2024.1425101

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RESEARCH ARTICLE

Fear and Impact of COVID-19 Among Post-Infected Adults: Types and Associations with Quality of Life and Post-Traumatic Stress Symptoms

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Abstract

Survivors of COVID-19 are susceptible to diminished health-related quality of life (HRQoL) and adverse psychological health, which may be exacerbated by their experiences of fear and the impact of the pandemic itself. This study aims to identify distinct fear and impact patterns related to the COVID-19 pandemic among survivors through latent profile analysis (LPA) and examine the associations of fear and impact patterns with post-traumatic stress symptoms (PTSS) and HRQoL. A total of 5,890 Vietnamese COVID-19 survivors completed the COVID-19 Impact Battery– Disability Scale (CIB-D), the Fear of COVID-19 Scale (FCoV-19 S), the Impact of Event Scale-Revised for PTSS, and the 36-Item Short Form Survey (SF-36) for HRQoL. Four distinct groups of fear and impact were identified: "Fearful and highly impacted" (26.8%), "moderately impacted yet not fearful" (22.9%), "less impacted and less fearful" (18.6%), and "mildly impacted and neutral" (31.7%). Survivors who were "less impacted and less fearful" exhibited significantly higher HRQoL scores (regression coefficient, B: 10.9; 95% confidence interval (CI): 10.0 – 11.7), both in terms of physical (B: 12.0; 95%CI: 11.1 – 12.9) and mental health (B: 19.4; 95%CI: 9.6 – 11.1), and lower PTSS levels (B: -24.5; 95%CI: -25.8 – -23.3) compared to those who were "highly impacted and fearful". It is imperative to acknowledge the intricate association between fear, impact, and mental health to comprehensively address the diverse needs of this distinct population post-COVID-19. These findings provide insights for designing interventions and support mechanisms for COVID-19 survivors.

Keywords COVID-19 survivors · Health-related quality of life · Fear · Post-traumatic stress symptoms · Latent profile analysis

Abbreviations

AIC	Akaike Information Criterion
BIC	Bayesian information criterion
BRS	Brief Resilience Scale
CIB-D	COVID-19 Impact Battery– Disability Scale
FCoV-19S	Fear of COVID-19 Scale
HRQoL	Health-related Quality of Life
IES-R	Impact of Event Scale-Revised
LCA	Latent class Analysis
LMR	Lo Mendell Rubin
LPA	Latent Profile Analysis
QoL	Quality of Life
QR	Quick Response
PTSD	Post-traumatic stress disorder
PTSS	Post-traumatic stress symptoms
SD	Standard deviation
SF-36	36-Item Short Form Survey

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1 Introduction

Since 2020, the COVID-19 pandemic has virtually spread to every country and region. While the pandemic's toll on public health and economies has been staggering, its collateral consequences have manifested in profound psychological and health challenges, especially for COVID-19 survivors (defined as those who received a confirmed positive SARS-CoV-2 test and had recovered from infection) [1–3]. Several studies have reported the health problems among COVID-19 survivors after their infection, including cognitive function decline, fatigue, insomnia, and serious mental health issues such as depressive and anxiety symptoms [4–8]. Among these problems, post-traumatic stress disorder (PTSD) is also frequently reported [5, 9, 10]. PTSD symptoms were observed among survivors of previous epidemics such as SARS and MERS up to six months after discharge from the hospital [11]. Recent studies also showed that PTSD prevailed among 6 to 18% of COVID-19 survivors up to 3 months after their recovery [12–15]. The long-term impact of COVID-19 is also expected to have a spillover effect on COVID-19 survivors' quality of life (QoL), influencing their future well-being and lifestyle [8, 16, 17]. Previous reports have indicated that post-COVID-19 patients' health-related quality of life (HRQoL) was impaired from two months to one year after recovery [18, 19]. Even though the prevalence of poor QoL or PTSD among COVID-19 survivors was profound, the mechanism and attributes through which COVID-19 pandemic may shape the mental health outcomes of COVID-19 survivors remains underexplored.

Fear and the negative impact of COVID-19 are considered among the most critical aspects of COVID-19 that impacting population psychological well-being during the pandemic [10, 20–22]. Recent research has delved into the multifaceted relationship between various types of fear and the impact of the COVID-19 pandemic on individuals' mental well-being. Fear and the negative impact of COVID-19 have been linked to worsened HRQoL in the general population [23–26], while fear of COVID-19 has also been identified as a risk factor for PTSD symptoms, hindering preventive health behaviors [27–30]. However, the literature on this subject has largely neglected the unique challenges faced by COVID-19 survivors themselves. COVID-19 survivors, due to their firsthand experience with the virus, face a more complex array of fears and impacts compared to the general population. The combination of physical illness, long-term health effects, and psychosocial stressors like stigmatization and isolation often places them at an increased risk for PTSS, diminished QoL, and other psychological distress [31–33]. Moreover, COVID-19 survivors may be disproportionately affected by prolonged symptoms, commonly known as "long COVID." According to studies, long COVID symptoms, including persistent fatigue, respiratory problems, and cognitive difficulties, are presented among approximately 10–30% of those who recover from the initial infection, further exacerbating psychological distress and lower QoL scores [34, 35]. For these individuals, the impact of COVID-19 extends beyond the acute phase of illness, translating into long-term physical and emotional burdens.

In addition to the physical and psychological impacts, COVID-19 survivors often contend with societal stigma. Stigmatization associated with COVID-19 infection has been reported globally, with survivors facing discrimination, social rejection, and blame for the spread of the virus. This stigmatization can lead to prolonged social isolation, further compounding feelings of fear and anxiety and contributing to an increased risk of PTSD, depression, and anxiety [36–39]. The psychological burden of COVID-19 survivors is therefore multifaceted, encompassing the direct impact of the disease, the long-term health consequences, and the social implications of being a COVID-19 survivor. Given this context, there might be an intricate interplay between different dimensions of fear and impact of COVID-19 which can negatively influence psychological well-being and overall QoL of COVID-19 survivors. Therefore, it is crucial to investigate the multifaceted types of experience in fear and impact of COVID-19, and its association with psychological outcomes specific to COVID-19 survivors. By identifying distinct patterns of fear and impact within this population, the findings may offer critical insights into the differential pathways through which COVID-19 could link to poorer psychological well-being and quality of life and inform post-pandemic healthcare strategies for COVID-19 survivors.

While the fear and impact constructs are distinct, it is plausible that they are interconnected within the context of the pandemic. For example, fear can amplify the impact on individuals' daily functioning, and conversely, the real-world impact of the pandemic can reinforce feelings of fear. Given the interrelationship between fear and impact of COVID-19, we hypothesize that these two constructs may jointly contribute to the psychological outcomes observed in COVID-19 survivors. Therefore, we propose to use latent class analysis (LCA) on both scales to measure various levels of COVID-19 fear and impact among COVID-19 survivors. The LCA is a statistical method for identifying unobserved subgroups within a population based on individual's responses to a set of categorical observed indicators [40], and we propose to use latent profile analysis (a variant of LCA using continuous indicators), which was used in previous studies to assess the multilayer and multidimensional characteristics of individual's health and social lives [41]. The LCA method does not assume that fear and

impact are identical; rather, it uncovers how these constructs co-occur and manifest in different subgroups within the population. This study aims to identify (a) distinct types of fear and impact of the COVID-19 pandemic experienced by COVID-19 survivors and (b) the association of types of COVID-19 fear and impact with their post-traumatic stress symptoms and health-related quality of life (HRQoL).

2 Research Methods

2.1 Study Design and Sample

We utilized data from a cross-sectional online survey conducted among COVID-19 survivors in Vietnam from December 2021 to October 2022. A convenience sample of 11,626 COVID-19 survivors aged 18 years or older was identified at 17 healthcare settings national-wide, including seven hospitals and one health center in the North, two health centers and one isolation facility in the Center, and five hospitals and one health center in the South (Further details in Supplement Table 1). The COVID-19 survivors were contacted by the research team to give consent to participate in the study concerning COVID-19's impact. Once verbal consent was obtained, participants received a survey web link via phone message or by scanning the quick response (QR) code. An additional online written consent form was collected before the survey commenced. Participants were encouraged to complete all the questionnaires, which took up to 20 min. The survey questionnaire was constructed and administered using Microsoft Forms. A total of 5,890 participants provided consent and completed the online survey, thereby being included in the final analysis.

2.2 Measurements and Assessments

We used the COVID-19 Impact Battery– Disability Scale (CIB-D) [42] and the Fear of COVID-19 Scale (FCoV-19 S) [43] to assess latent groups of COVID-19 impact and fear.

2.2.1 COVID-19 Impact

COVID-19 impact was measured by the COVID-19 Impact Battery– Disability Scale (CIB-D) [42]. The CIB-D scale comprises seven items adapted from the World Health Organization Disability Assessment 12-item scale (WHO-DAS 2.0) and was used to assess difficulties in daily life functioning due to the COVID–19 pandemic. Participants were prompted to rate difficulties that occurred "due to the COVID–19 outbreak" rather than those that arose "due to health conditions." Respondents scored 7 items (e.g., "How much have you been emotionally affected by the COVID-19 outbreak" or "How much difficulties have you found in taking care of household responsibilities") using a Likert scale ranging from "None" (scored as 0), "Mild -moderate" (scored as 1), and "Severe - extreme" (scored as 2). The items were specifically designed to evaluate the impact of COVID–19 on household activities, day-to-day work, community activities, emotional health, concentration, getting along with new people, and maintaining friendships. The overall score ranges from 0 to 21, with a higher score indicating a greater disability level due to the impact of COVID-19 (Cronbach's $\alpha = 0.92$).

2.2.2 COVID-19 Fear

COVID-19 fear was measured by the Fear of COVID-19 Scales (FCoV-19 S) [43]. The FCoV-19 S comprise seven items prompting participants to rate their perceptions and attitude towards COVID-19, and how the pandemic impacts them physically and mentally (e.g., "I am most afraid of COVID-19" or "I feel uncomfortable to think about COVID-19"). Each question requires a response on a 5-point Likert scale from 1 ("Strongly disagree") to 5 ("Strongly agree"). The sum of seven items ranges from 7 to 35, with a higher score indicating a greater fear and discomfort of COVID-19 (Cronbach's $\alpha = 0.85$). This scale has been used and validated in Vietnam [44–46].

2.2.3 Post-Traumatic Stress Symptoms

Post-traumatic stress symptoms (PTSS) were measured using the Impact of Event Scale-Revised (IES-R) [47]. The

Table 1 Model fit indices for latent groups

	2 Class	3 Class	4 Class	5 Class	6 Class
Log likelihood	-66269.8	-58654.7	-54886.0	-53703.2	-53502.6
AIC	132653.6	117481.4	110002.3	107694.6	106398.2
BIC	133034.4	118056.0	110770.7	108656.7	107356.2
Smallest class (%)	43.6%	27.5%	18.6%	8.4%	3.2%
Entropy	0.98	0.96	0.95	0.95	0.93
p(LMR)	0.13	0.19	0.20	0.36	0.40

Note AIC: Akaike Information criteria. BIC: Bayern information criteria. LMR: Lo-Mendell Rubin

IES-R consists of 22 items that measure how much psychological distress an individual would experience after exposure to a crisis (e.g. "Any reminder brought back feelings about it" or "I had trouble staying asleep). Items are rated on a 5-point scale ranging from "Not at all" (scored as 0); "A little bit" (scored as 1); "Moderately" (scored as 2); "Quite a bit" (scored as 3); and "Extremely" (scored as 4). We created the summed variable of PTSS which ranges from 0 to 88 (Cronbach's $\alpha = 0.83$), with a higher score indicating greater post-traumatic stress symptoms.

2.2.4 Health-Related Quality of Life

We employed the 36-item Short Form Survey (SF-36) developed by RAND Corporation (RAND-36) to assess health-related quality of life [48, 49], which has been validated in Vietnamese [50]. The RAND-36 comprises of 36 items grouped into eight dimensions (10 items of physical functioning, 2 items of social functioning, 4 items of role limitation in physical problems, 3 items in role limitations in emotional problems, 5 items of mental health, 4 items of vitality, 2 items of pain, 5 items of general health perception, and 1 item of health change). For each dimension, item scores were coded, summed, and transformed on to a scale from "Worst health" (scored as 0) to "Best health" (scored as 100) (Cronbach's $\alpha = 0.80$). From item score, two subcomponent scores were calculated: the Physical Component Summary (PCS) score (providing overall view score of physical health) and the Mental Component Summary (MCS) score (providing an overall view score pf mental health).

2.2.5 Covariates

We accounted for several covariates in our analysis. These include age, gender (1 = Male, 0 = Female), marital status (1 = Never married; 2 = Married; 3 = Widowed/divorced/separated); education level (1 = Illiterate/Elementary; 2 = Junior/ Senior high school; 3 = Vocational/Colleague; 4 = University or above); employment status (1 = Employed; 2 = Unemployed); self-reported income level (1 = low; 2 = middle; 3 = high); comorbidity/ any chronic conditions other than COVID-19 (0 = No; 1 = Yes). We also asked participants to report on their COVID-19 infection: number of times infected with SARS-CoV-2 (1 = Once; 2 = More than once); number of COVID-19 vaccine doses at time of infection (1 = None; 2 = one dose; 3 = more than one dose); COVID-19 severity level (1 = Mild symptoms; 2 = Moderate symptom; 3 = Severe to extremely severe); number of family members infected with SARS-CoV-2; and number of days of hospitalization for COVID-19 treatment. We also included the psychological resilience score of participants, measured by the Vietnamese version [51] of the Brief Resilience Scale (BRS) (final score ranging from 5 to 30, with higher scores indicating higher levels of resilience) [52].

2.3 Data Analysis

First, to derive the types of COVID-19 fear and impact, we fit multiple LPA models with a different number of classes, incorporating 7 items from CIB-D scale and 7 items from the FCoV-19 S scale. Second, we compare models based on the information criteria (Akaike Information Criterion–AIC and Bayesian information criterion– BIC), accuracy (Entropy), parsimony (Lo-Mendell Rubin test), and interpretability (Smallest class (%)) to determine the optimal model. The lower the value of the information criteria (AIC/BIC), the better the fit of the model to the data. A higher entropy indicates a more precise classification. The Lo Mendell Rubin (LMR) test checks whether the model with the k class fits the data better than the model with the k-1 class. Third, we assigned each respondent to a specific group based on the highest posterior probability. Last, we estimated multivariable regression models that examine the association between types of COVID-19 fear and impact and COVID-19 survivors' PTSS and HRQoL, controlled for all covariates. The descriptive and regression analysis were performed on Stata 15.0 (Stata Corp, College Station, TX, USA), and the LPA models were conducted on M*plus* 8.0 software.

3 Results

Descriptive statistics of the 5,890 COVID-19 survivors are presented in Supplement Table 2. The mean of PTSS score was 28.2 ± 18.8 (mean ± standard deviation). The mean of HRQoL was 64.1 ± 12.0, the average score in physical health subdomain score (63.3 ± 13.7) was higher than the average score in mental health subdomain (59.9 ± 10.3). The average COVID-19 impact score of the sample was 17.8 ± 5.3 and the average COVID-19 fear score was 20.4 ± 5.0). The median age of COVID-19 survivors was 31 years, 59% of them were females, 58% were married. 52% have a university or above level of education, about 80% were employed, and 82% reported a middle-income level. The mean resilience score was 18.0 ± 1.9. At the time of infection, 71% of COVID-19 survivors did not have any other chronic disease, 92% received more than one dose of a COVID-19 vaccine, and about 36% experienced moderate to extremely serious symptoms due to their infection. The median of days the participants were hospitalized due to COVID-19 infection was 6.0 days. About 3% of survivors were infected with SARS-CoV-2 more than once, and

Table 2 Distribution of health-related quality-of-life score, post-traumatic stress symptoms score, and covariates stratified by latent groups ($n = 5890$)

Factors	Group 1 Highly impacted and fearful ($n = 1576$, 26.8%)	Group 2 Moderately impacted yet least fearful ($n = 1351$, 22.9%)	Group 3 Less impacted and less fearful ($n = 1094$, 18.6%)	Group 4 Mildly impacted and neutral ($n = 1869$, 31.7%)	*p*-value
	N (%) or Mean ± SD				
Health related quality of life					
Overall score	59.5 ± 10.5	66.9 ± 11.4	72.5 ± 12.6	61.1 ± 9.9	< 0.001[a]
Physical summary score	57.8 ± 12.6	66.4 ± 13.1	72.3 ± 13.9	60.5 ± 11.6	< 0.001[a]
Mental summary score	56.1 ± 8.4	62.1 ± 9.9	68.0 ± 12.1	56.8 ± 7.4	< 0.001[a]
Post-traumatic stress symptoms score	37.5 ± 17.9	21.8 ± 16.5	11.9 ± 14.2	34.4 ± 15.2	< 0.001[a]
COVID-19 impact score	20.7 ± 4.0	18.3 ± 3.6	9.0 ± 2.4	20.0 ± 2.4	< 0.001[a]
COVID-19 fear score	25.9 ± 3.1	15.8 ± 3.4	17.3 ± 5.2	21.0 ± 0.7	< 0.001[a]
Age (Median, Interquartile range)	32.0 (24.0, 45.0)	29.0 (23.0, 39.0)	32.0 (23.0, 39.0)	31.0 (23.0, 40.0)	0.065[b]
Gender					0.473[c]
Male	526 (33.4)	627 (46.4)	496 (45.3)	798 (42.7)	
Female	1050 (66.6)	724 (53.6)	598 (54.7)	1071 (57.3)	
Marital status					< 0.001[c]
Never married	539 (34.2)	646 (47.8)	433 (39.6)	728 (39.0)	
Married	981 (62.2)	684 (50.6)	625 (57.1)	1112 (59.5)	
Widow/divorce/separate	56 (3.6)	21 (1.6)	36 (3.3)	29 (1.6)	
Education levels					0.068[c]
Illiterate/Elementary	44 (2.8)	24 (1.8)	13 (1.2)	80 (4.3)	
Junior/Senior high school	416 (26.4)	231 (17.1)	145 (13.3)	472 (25.3)	
Vocational/Colleague	496 (31.5)	243 (18.0)	231 (21.1)	461 (24.7)	
University or above	620 (39.3)	853 (63.1)	705 (64.4)	856 (45.8)	
Employment status					0.242[c]
Employed	1,285 (81.5)	1,131 (83.7)	921 (84.2)	1,599 (85.6)	
Unemployed	291 (18.5)	220 (16.3)	173 (15.8)	270 (14.4)	
Income level					0.035[c]
Low	268 (17.0)	161 (11.9)	99 (9.0)	239 (12.8)	
Middle	1233 (78.2)	1120 (82.9)	903 (82.5)	1566 (83.8)	
High	75 (4.8)	70 (5.2)	92 (8.4)	64 (3.4)	
Comorbidity (other than COVID-19)					0.442[c]
No	985 (62.5)	985 (72.9)	859 (78.5)	1348 (72.1)	
Yes	591 (37.5)	366 (27.1)	235 (21.5)	521 (27.9)	
Psychological resilience score	18.1 (1.7)	18.1 (2.1)	17.9 (2.4)	17.9 (1.3)	0.019[c]
Number of times infected by SARS-CoV-2					0.854[c]
Once	1548 (98.2)	1301 (96.3)	1070 (97.8)	1823 (97.5)	
More than once	28 (1.8)	50 (3.7)	24 (2.2)	46 (2.5)	
Number of COVID-19 vaccine doses at time of infection					0.078[c]
None	99 (6.3)	36 (2.7)	63 (5.8)	57 (3.0)	
One dose	103 (6.5)	38 (2.8)	47 (4.3)	56 (3.0)	
More than one	1374 (87.2)	1277 (94.5)	984 (89.9)	1756 (94.0)	
COVID-19 severity level					0.031[c]
Mild	883 (56.0)	924 (68.4)	816 (74.6)	1141 (61.0)	
Moderate	648 (41.1)	414 (30.6)	267 (24.4)	713 (38.1)	
Severe to extreme	45 (2.9)	13 (1.0)	11 (1.0)	15 (0.8)	
Number of family member infected with SARS-CoV-2 (Median, Interquartile range)	4.0 (1.0, 5.0)	3.0 (1.0, 4.0)	3.0 (1.0, 5.0)	3.0 (1.0, 6.0)	0.060[b]
Number of days of hospitalization for COVID-19 treatment (Median, Interquartile range)	6.0 (2.0, 10.0)	6.0 (1.0,11.0)	6.0 (1.0, 9.0)	6.0 (1.0, 8.0)	0.350[b]

Note. *p*-value was calculated by [a]ANOVA, [b]Mann-Whitney test, and [c]Chi-square test

COVID-19: Corona virus disease of 2019; SARS-CoV-2: Severe acute respiratory syndrome coronavirus 2

the median number of same-household-members who got infected with SARS-CoV-2 was 3.0 persons.

Table 1 reports the model fit indices of LPA models from two to six classes. Across all models, the entropy indices are all above 0.90 and the LMR test is insignificant. Although models with lower AIC and BIC values fit the data better, the six-class model has a negligible number in the smallest class (less than 5%), we thus exclude the six-class option [53–55]. The reduction in AIC and BIC levels off after the five-class model, however, the four-class model is more parsimonious and easier to interpret than the five-class model. Therefore, we chose the four-class model.

Figure 1 and Supplement Table 3 display the profile of the four-group model. The first group, comprising 27% of participants, represents survivors with the highest COVID-19 impact and COVID-19 fear scores and is labeled "Fearful and highly impacted". The second group represents COVID-19 survivors, constituting 23% of participants, were the second-most impacted by COVID-19, yet the least fearful of the pandemic in the sample size– thus termed as "moderately impacted yet not fearful" group. The third group, comprising 19% of participants, includes those who were the least impacted by COVID-19 and less fearful of the disease and/or the pandemic– labelled as "less impacted and less fearful". The fourth and largest group (31.7% of participants) represents COVID-19 survivors who were mildly impacted by COVID-19, and the second most fearful of COVID-19. We label this group as "mildly impacted and neutral".

Across domains of both scales, survivors in the first group "fearful and highly impacted" reported the highest percentage of severe to extremely severe difficulties across several aspects of life amidst the COVID-19 pandemic, about one-third of them had challenges participating in community activities and experienced emotional impacts by the pandemic. They also experienced a lot of nervousness and anxiety due to COVID-19, as 80% of participants in this group felt uncomfortable or afraid of losing their lives. Survivors in "moderately impacted yet not fearful" group showed a lower score in impact of COVID-19 scale than participants in the first group, however, they had the least fearful score across all domains. Notably, a high percentage of this group did not experience any negative physical challenges (such as nervousness, sleep disturbance) nor were afraid of losing their lives due to the pandemic. Survivors in the third group - "less impacted and less fearful" had the lowest impact score by COVID-19 among all groups and exhibited a lower level of fear. Despite accounting for the smallest proportion, more than 70% of participants in this group reported no difficulties in performing daily activities after recovering from their SARS-CoV-2 infection. More than 90% of survivors in the fourth group - "mildly impacted and neutral" - experienced mild to moderate levels of difficulties in certain activities due to COVID-19. About 90% of them also reported neutral feelings towards being fear of COVID-19, and they contributed the smallest proportion that being physically impacted while thinking about COVID-19.

Table 2 provides the distribution of HRQoL score, PTSS score, COVID-19 fear and impact score, and covariates stratified by latent groups. There is a significant distinction between survivors who were classified in the "highly impacted and fearful" group or "mildly impacted and neutral" group towards COVID-19 and survivors who were in the "less impacted and less fearful" group or "moderately impacted yet least fearful" group: while the former survivors reported a higher PTSS score and a lower HRQoL score (overall and in subdomains) compared to the latter. There are no statistical differences in the distribution of all covariates among the four groups, except for marital status, income level, psychological resilience score, COVID-19 severity level, and the number of family members infected with COVID-19. Notably, survivors who were in the "highly impacted and fearful" group have the highest percentage of low income, the highest proportion of chronic diseases, and the highest percentage of having severe to extremely severe COVID-19 symptoms. Participants in this group also had the highest proportion of being unvaccinated before their infection among other survivor groups. About 13% of survivors in the "mildly impacted and neutral" group reported in the low-income group, about 30% of them have chronic conditions, and they also had the lowest psychological resilience score, and the highest number of family members also infected with SARS-CoV-2.

Multinominal logistic regression in Table 3 indicates that gender, income level, education level, marital status, comorbidities other than COVID-19, and COVID-19 severity level were significantly associated with membership in the "highly impacted and fearful of COVID-19" group. Female participants with middle income level (compared to those with lower income level), comorbidities, less than one dose of COVID-19 vaccine at the time of infection, and suffered moderate, severe to extremely severe COVID-19 symptoms during infection were more likely to be a member in the first group "highly impacted and fearful of COVID-19". In addition, individuals with a high-income level or have ever been married were more likely to be a member in the third group "less impacted and less fearful" than being in the first group. On the other hand, those with a higher education level, middle income, had a higher psychological resilience score or a higher number of hospitalized days were more likely to be a member of the fourth group "mildly impacted and neutral" than in the first group.

Table 4 reports findings from multivariable linear regressions assessing the association between groups of

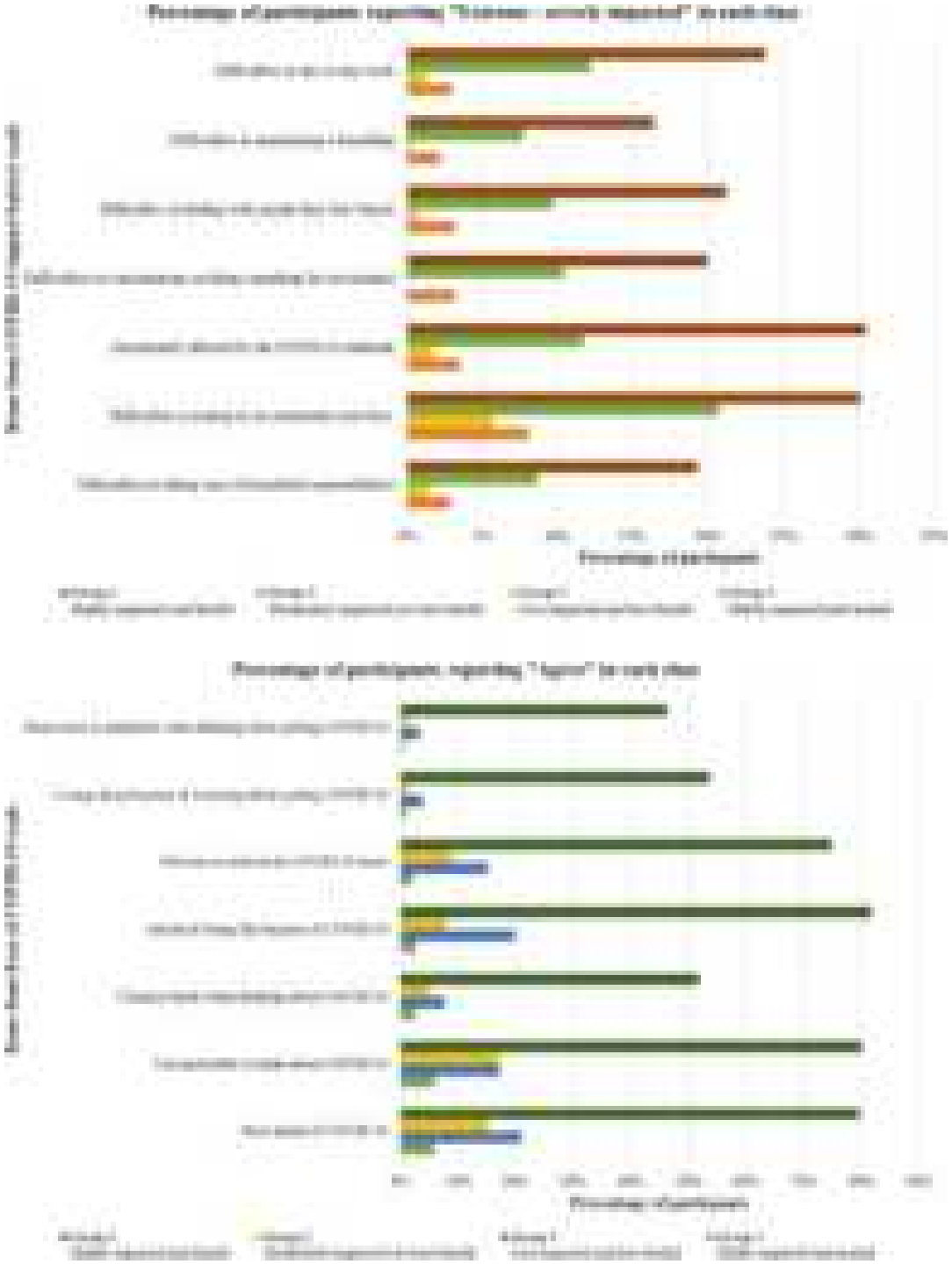

Fig. 1 Distribution of COVID-19 fear and impact among groups. Note. Figure only displays "Severe-extremely severe" or "Agree" categories percentage. More details can be found in Supplement Table 2

COVID-19 fear and impact with post-traumatic stress symptoms score (Model 1) and HRQoL score (overall and subdomains) (Model 2–4, respectively). All models are controlled for covariates. The regression analysis confirms the descriptive analysis, COVID-19 survivors in the "less impacted and less fearful" group had the lowest PTSS score and the highest HRQoL scores among all other subgroups, and survivors in the "highly impacted and fearful" group scored the reverse. Compared to survivors in the first group "highly impacted and fearful", survivors in the second group "moderately impacted yet least fearful" (regression coefficient B: 5.9; 95% confidence interval, 95%CI: 15.2 – 6.1 for overall

Table 3 Association between sociodemographic characteristics, COVID-19 infection and latent groups of fear and impact of COVID-19 based on multinomial logistic regression ($n = 5890$)

Factors	Group 2	Group 3	Group 4
	B (95% CI)		
Age	-0.001 (-0.01 – 0.01)	-0.004 (-0.01 – 0.004)	-0.003 (-0.01 – 0.002)
Gender			
Male	Ref.	Ref.	Ref.
Female	-0.4 (-0.6 – -0.3)***	-0.4 (-0.6 – -0.2)***	-0.3 (-0.5 – -0.2)***
Marital status			
Never married	Ref.	Ref.	Ref.
Married	-0.1 (-0.3 – 0.1)	0.3 (0.1 – 0.6)**	-0.04 (-0.2 – 0.1)
Widow/divorce/separate	-0.5 (-1.1 – 0.03)	0.7 (0.2 – 1.2)**	-0.5 (-1.0 – -0.02)*
Education levels			
Illiterate/Elementary	Ref.	Ref.	Ref.
Junior/ Senior high school	-0.1 (-0.7 – 0.4)	0.1 (-0.5 – 0.8)	-0.6 (-1.0 – -0.2)**
Vocational/Colleague	-0.4 (-0.9 – 0.1)	0.4 (-0.3 – 1.0)	-0.9 (-1.4 – -0.5)***
University or above	0.4 (-0.2 – 0.9)	1.2 (0.5 – 1.8)***	-0.6 (-1.1 – -0.2)**
Employment status			
Employed	Ref.	Ref.	Ref.
Unemployed	-0.2 (-0.4 – 0.04)	-0.01 (-0.2 – 0.2)	-0.2 (-0.4 – -0.02)*
Income level			
Low	Ref.	Ref.	Ref.
Middle	0.3 (0.1 – 0.5)**	0.5 (0.2 – 0.8)***	0.3 (0.1 – 0.5)**
High	0.1 (-0.3 – 0.5)	0.7 (0.3 – 1.1)***	-0.1 (-0.5 – 0.2)
Comorbidities (other than COVID-19)			
No	Ref.	Ref.	Ref.
Yes	-0.2 (-0.4 – -0.1)**	-0.5 (-0.7 – -0.3)***	-0.3 (-0.5 – -0.2)***
Psychological resilience score	0.001 (-0.04 – 0.04)	-0.03 (-0.1 – 0.01)	-0.04 (-0.1 – -0.01)*
Number of times infected by SARS-CoV-2			
Once	Ref.	Ref.	Ref.
More than once	0.8 (0.3 – 1.3)***	0.3 (-0.3 – 0.9)	0.3 (-0.1 – 0.8)
Number of COVID-19 vaccine doses at time of infection			
None	Ref.	Ref.	Ref.
One dose	-0.03 (-0.6 – 0.5)	-0.3 (-0.8 – 0.1)	-0.1 (-0.6 – 0.4)
More than one	0.8 (0.4 – 1.2)***	-0.02 (-0.4 – 0.3)	0.8 (0.4 – 1.1)***
COVID-19 severity level			
Mild	Ref.	Ref.	Ref.
Moderate	-0.3 (-0.5 – -0.1)***	-0.7 (-0.9 – -0.5)***	-0.1 (-0.2 – 0.1)
Severe to extreme	-0.9 (-1.6 – -0.3)**	-1.1 (-1.8 – -0.4)**	-1.1 (-1.7 – -0.5)***
Number of family member infected with SARS-CoV-2	-0.06 (-0.1 – -0.01)**	-0.01 (-0.05 – 0.03)	0.02 (-0.01 – 0.04)
Number of days of hospitalization for COVID-19 treatment	0.002 (-0.01 – 0.01)	0.01 (-0.003 – 0.02)	0.01 (0.003 – 0.02)*

Note. *p-value < 0.05, **p-value < 0.01, ***p-value < 0.001. Group 2, 3, and 4 were compared with Group 1– Highly impacted and fearful

B: unstandardized regression coefficient; CI: confidence interval; COVID-19: Corona virus disease of 2019; SARS-CoV-2: Severe acute respiratory syndrome coronavirus 2

score); the third group "mildly impacted and fearful" (B: 10.9; 95%CI: 10.0 – 11.7), and the fourth group "less impacted and less fearful" (B: 0.9; 95%CI: 0.2 – 1.6) had significantly higher scores of HRQoL, overall and across physical and mental health domains. Survivors in the second group (B: -15.8; 95%CI: -16.9 – -14.6), third group (B: -24.5; 95%CI: -25.8 – -23.3), and fourth group (B: -3.3, 95%CI: -4.3 – -2.2) had significantly lower PTSS score than those in the first group.

4 Discussion

To our knowledge, this is one of the few studies to explore the heterogeneity in fear and impact of COVID-19 among a large sample of COVID-19 survivors. We identified four distinct latent groups based on the fear and impact of COVID-19. Among these four, participants of three groups experienced similar impact of COVID-19 yet varied in the level of fear towards COVID-19, while participants of one

Table 4 Regression analysis of groups of COVID-19 fear and impact and health-related quality of life score and post-traumatic stress symptoms score ($n = 5890$)

Factors	Model 1: Post-traumatic stress symptoms	Health-related quality of life		
		Model 2: Overall	Model 3: Physical health	Model 4: Mental health
	B (95%CI)			
Group 1 Highly impacted and fearful	Ref.	Ref.	Ref.	Ref.
Group 2 Moderately impacted yet least fearful	-15.8 (-16.9– -14.6)***	5.9 (5.2–6.1)***	6.8 (5.9–7.7)***	4.9 (4.3–5.7)***
Group 3 Less impacted and less fearful	-24.5 (-25.8– -23.3)***	10.9 (10.0–11.7)***	12.0 (11.1–12.9)***	19.4 (9.6–11.1)***
Group 4 Mildly impacted and neutral	-3.3 (-4.3– -2.2)***	0.9 (0.2–1.6)*	1.9 (1.1–2.7)***	0.4 (-0.2–1.0)
Adjusted R-squared	31.0	27.4	27.5	24.7

Note. All covariates are controlled for but not shown for the parsimonious presentation. *p-value < 0.05, **p-value < 0.01, ***p-value < 0.001. B: unstandardized regression coefficient; CI: confidence interval

All models included four groups of COVID-19 fear and impact and all covariates as independent variables. Model 1 has post-traumatic stress symptom score as dependent variable. Model 2 has the overall score of health-related quality of life as dependent variable. Model 3 and 4 has health-related quality of life in physical health and social health domain as dependent variables, respectively

group experienced the least impact and the least fear. We also found that the magnitude of associations between each group and a range of psychological distress and quality of life measures differed significantly. Specifically, individuals in the "highly impacted and fearful" group had significantly lower HRQoL scores in both physical and mental health, along with higher PTSS scores. On the other hand, individuals of the "moderately impacted yet least fearful" group had relatively better HRQoL scores and a lower PTSS score than those in the "mildly impacted and neutral" group.

The four-group model we reported in this study differs slightly from those in previous studies identifying a three-group model of fear of COVID-19 in the general population [56–58]. This discrepancy can be attributed to variations in included indicators and scales in each model. However, current literature also found a similar distinction between high, moderate, and low levels of fear among participants during COVID-19 [56–58]. In our study, within 80% of COVID-19 survivors who were impacted by the COVID-19 pandemic at different intensities (in this study as group 1, 2, and 4), varying levels of fear towards the virus and the pandemic are evident. While a substantial proportion of survivors in the "highly impacted and fearful" group and "moderately impacted yet not fearful" group experienced mildly to moderately difficulties in performing activities due to COVID-19, around 70% of those in the "moderately impacted yet not fearful" group did not report any physical or mental challenges while being exposed to COVID-19-related information compared to only 2 to 10% of those in the "fearful and highly impacted" group reporting in the same categories. Whereas more than 90% of survivors in the "mildly impacted and neutral" group mostly reported a neutral view towards COVID-19. This finding emphasizes the nuanced relationship between fear and impact of COVID-19, indicating that they are not mutually exclusive.

The identification of distinct groups based on fear and impact scores sheds in our study light on the heterogeneous psychological responses to the pandemic, specifically among COVID-19 survivors. We found that Survivors in the "moderately impacted yet not fearful" reported a comparatively lower impact but the least fear, which aligns with studies suggesting that individuals with lower fear levels tend to exhibit better mental health outcomes even in the face of significant stressors. In contrast, survivors in the "less impacted and less fearful" group reported the lowest COVID-19 impact and fear scores, consistent with previous literature highlighting that individuals with minimal exposure to the virus and lower fear levels tend to experience fewer psychological sequelae [59]. Interestingly, the "Mildly impacted and neutral" survivors exhibited a paradoxical response, reporting moderate difficulties but neutrality in fear. This finding corresponds with research suggesting that moderate levels of fear can motivate individuals to adopt protective behaviors [60–62].

Our findings also show that female COVID-19 survivors were more likely to be fearful and impacted by COVID-19 than their male counterparts. This aligns with previous studies reporting on fear among the general population during COVID-19, as women exhibited a higher susceptibility to psychological distress [56, 57, 63]. In addition, being a female COVID-19 survivor had been considered as a predictor for prolonged COVID-19 symptoms and higher PTSD symptom severity [64, 65]. As the disproportionate burden of anxiety and other mental health problems

is evidently profound and skewed towards women during the pandemic, our findings further indicated that fear and impact of COVID-19 might be contributing more to this gendered burden. In addition, lower socio-economic status is also a risk factor of being highly impacted and fearful of COVID-19. This finding aligns with existing COVID-19 literature, where financial strains and fear of economic repercussions, which are often tied to job loss or financial instability due to the pandemic, are linked to increased fear and anxiety [65–68]. Furthermore, COVID-19 survivors with comorbidities and more severe COVID-19 symptoms were more likely to be in the "fearful and highly impacted" group. This highlights a "duo effect" of comorbidity, as individuals with comorbidity are not only at higher risk of acquiring COVID-19 infection but also for severe COVID-19 conditions. Previous studies have consistently shown that patients with more severe COVID-19 symptoms face a higher risk of enduring substantial neurological, psychiatric, and psychological morbidity from six months to one year after COVID-19 infection [69–73]. Chan et al. and Luna-Rodriguez et al. both found that psychological problems were more prominent among hospitalized COVID-19 patients [33, 74]. The connection between the severity of COVID-19 infection and psychological distress were explained that the patients were often kept in confinement without family interaction, they also got exposed frequently to negative news about COVID-19 or developed concern about themselves and family health [33, 74, 75]. Overall, our results carry important implications for healthcare services, emphasizing the need to consider the gender-specific and socio-economic factors when identifying and providing healthcare for COVID-19 survivors, who were more vulnerable to complications of the diseases itself.

Next, our study underscores the intricate association between types of fear and impact of COVID-19 with PTSD symptoms, and HRQoL among COVID-19 survivors. Notably, being a survivor in the "fearful and highly impacted" group was associated with significantly higher level of PTSS and lower scores of HRQoL, while being a survivor in the "less impacted and less fearful" group was associated with the reverse. This aligns with existing literature, which has consistently demonstrated that heightened fear of COVID-19 is associated with an increased risk of developing PTSD-like symptoms [76, 77]. These findings further resonate with previous research indicating that elevated fear and perception of threat during pandemics can contribute to long-lasting psychological distress as well as lower quality of life [3, 58, 67, 78–81].

Our study is not without limitations. Firstly, the cross-sectional design of our study does not permit the establishment of causal inference between predictors and outcomes. Therefore, caution consideration is needed when interpreting our results in the general population, as COVID-19 survivors had different pandemic challenges and experiences during infection or after recovery. Secondly, the self-reported online survey method is vulnerable to selection bias and recall bias, since we did not collect the data from participants at point of recovery from SARS-CoV-2 infection. Self-rating scales were used for all scales and measurements, which may influence the accuracy of the results and limit the generalizability of our findings. Thirdly, fear and impact of COVID-19 might not reflect in the total psychological impact and responses of COVID-19 survivors to the pandemic, which may lead to an underestimation of their mental well-being. Fourth, we acknowledged that there might be a multicollinear relationship between fear and impact of COVID-19. However, to mitigate potential confounding, we examined the correlation between all items within the fear and impact of COVID-19 scales during preliminary analyses and did not find a strong correlation between the two scales. We also adjusted for other variables that could confound the relationship between these constructs, such as sociodemographic factors and prior health conditions.

Our study carries several notable strengths. The application of latent profile analysis yielded four distinct groups that shed light on the multifaceted psychological responses within this growing cohort of COVID-19 recovered population. This approach also allows for a clearer understanding of how individuals with varying levels of fear and impact cope with the aftermath of COVID-19, thus reaffirming the potential association of the long-term impacts of COVID-19 on psychological health and QoL. Our findings provide a foundation for tailoring interventions and support for this population, recognizing the need for a holistic understanding of their experiences.

5 Conclusion

By identifying four distinct groups based on fear and impact of COVID-19 among COVID-19 survivors, our result provides insights into the heterogeneous psychological responses of survivors to the pandemic. The findings also underscore the significant association between types of impact and fear of COVID-19, on mental health and well-being. These findings are a foundation for tailoring the strategical interventions and support for COVID-19 survivors. Recognizing the complex interplay of fear, impact, and mental health helps addressing the holistic needs of COVID-19 survivors to navigate the recovery from infection.

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Author Contributions TXD, HLQ, TNAH, and TVD analyzed the data and drafted the manuscript. TXD, HLQ, TNAH, TTPN, LTHL, TTN, BND, KMP, VHV, LVP, LTHN, HCN, TVT, THN, ATN, HVN, PBN, HTTN, TTMP, TTL, CQT, KTN, HTV, TVD contributed to the conceptualization, investigation, methodology, validation, and revising of the manuscript. VHV, LVP, LTHN, HCN, TVT, THN, ATN, HVN, PBN, HTTN, TTL, CQT, KTN conducted data collection, ethics approval, data cleaning, and data curation. All authors approved the final version of the manuscript.

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Data Availability No datasets were generated or analysed during the current study.

Declarations

Ethics Approval and Consent to Participate The study protocol received approval from the Institutional Ethical Review Committee of Hanoi University of Public Health (No. 400/2021/YTCC-HD3 and 45/2022/YTCC-HD3). All participants gave consent online consent after receiving information about the study and before joining the survey.

Consent for Publication This study is approved by the respective ethics review board for publication. All authors approve this manuscript for submission and publication.

Competing Interests The authors declare no competing interests.

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References

1. Jones EAK, Mitra AK, Bhuiyan AR. Impact of COVID-19 on mental health in adolescents: a systematic review. Int J Environ Res Public Health. 2021;18(5). https://doi.org/10.3390/ijerph18052470.
2. Vindegaard N, Benros ME. COVID-19 pandemic and mental health consequences: systematic review of the current evidence. Brain Behav Immun. 2020;89:531–42. https://doi.org/10.1016/j.bbi.2020.05.048.
3. Xiong J, Lipsitz O, Nasri F, Lui LMW, Gill H, Phan L, Chen-Li D, Iacobucci M, Ho R, Majeed A, McIntyre RS. Impact of COVID-19 pandemic on mental health in the general population: a systematic review. J Affect Disord. 2020;277:55–64. https://doi.org/10.1016/j.jad.2020.08.001.
4. Ahmadi Hekmatikar AH, Ferreira Júnior JB, Shahrbanian S, Suzuki K. Functional and psychological changes after exercise training in post-COVID-19 patients discharged from the hospital: a PRISMA-compliant systematic review. Int J Environ Res Public Health. 2022;19(4). https://doi.org/10.3390/ijerph19042290.
5. Bourmistrova NW, Solomon T, Braude P, Strawbridge R, Carter B. Long-term effects of COVID-19 on mental health: a systematic review. J Affect Disord. 2022;299:118–25. https://doi.org/10.1016/j.jad.2021.11.031.
6. Crivelli L, Palmer K, Calandri I, Guekht A, Beghi E, Carroll W, Frontera J, García-Azorín D, Westenberg E, Winkler AS, Mangialasche F, Allegri RF, Kivipelto M. Changes in cognitive functioning after COVID-19: a systematic review and meta-analysis. Alzheimers Dement. 2022;18(5):1047–66. https://doi.org/10.1002/alz.12644.
7. Joli J, Buck P, Zipfel S, Stengel A. Post-COVID-19 fatigue: a systematic review. Front Psychiatry. 2022;13:947973. https://doi.org/10.3389/fpsyt.2022.947973.
8. Zheng X, Qian M, Ye X, Zhang M, Zhan C, Li H, Luo T. Implications for long COVID: a systematic review and meta-aggregation of experience of patients diagnosed with COVID-19. J Clin Nurs. 2022. https://doi.org/10.1111/jocn.16537.
9. Giannopoulou I, Galinaki S, Kollintza E, Adamaki M, Kympouropoulos S, Alevyzakis E, Tsamakis K, Tsangaris I, Spandidos DA, Siafakas N, Zoumpourlis V, Rizos E. COVID-19 and post-traumatic stress disorder: the perfect 'storm' for mental health (review). Exp Ther Med. 2021;22(4):1162. https://doi.org/10.3892/etm.2021.10596.
10. Chamaa F, Bahmad HF, Darwish B, Kobeissi JM, Hoballah M, Nassif SB, Ghandour Y, Saliba JP, Lawand N, Abou-Kheir W. PTSD in the COVID-19 era. Curr Neuropharmacol. 2021;19(12):2164–79. https://doi.org/10.2174/1570159x19666210113152954.
11. Ahmed H, Patel K, Greenwood DC, Halpin S, Lewthwaite P, Salawu A, Eyre L, Breen A, O'Connor R, Jones A, Sivan M. Long-term clinical outcomes in survivors of severe acute respiratory syndrome and Middle East respiratory syndrome coronavirus outbreaks after hospitalisation or ICU admission: a systematic review and meta-analysis. J Rehabil Med. 2020;52(5):jrm00063. https://doi.org/10.2340/16501977-2694.
12. Benedetti F, Palladini M, Paolini M, Melloni E, Vai B, De Lorenzo R, Furlan R, Rovere-Querini P, Falini A, Mazza MG. Brain correlates of depression, post-traumatic distress, and inflammatory biomarkers in COVID-19 survivors: a multimodal magnetic resonance imaging study. Brain Behav Immun Health. 2021;18:100387. https://doi.org/10.1016/j.bbih.2021.100387.
13. Tarsitani L, Vassalini P, Koukopoulos A, Borrazzo C, Alessi F, Di Nicolantonio C, Serra R, Alessandri F, Ceccarelli G, Mastroianni CM, d'Ettorre G. Post-traumatic stress disorder among COVID-19 survivors at 3-Month follow-up after hospital discharge. J Gen Intern Med. 2021;36(6):1702–7. https://doi.org/10.1007/s11606-021-06731-7.
14. Simani L, Ramezani M, Darazam IA, Sagharichi M, Aalipour MA, Ghorbani F, Pakdaman H. Prevalence and correlates of chronic fatigue syndrome and post-traumatic stress disorder after the outbreak of the COVID-19. J Neurovirol. 2021;27(1):154–9. https://doi.org/10.1007/s13365-021-00949-1.
15. Zeng N, Zhao YM, Yan W, Li C, Lu QD, Liu L, Ni SY, Mei H, Yuan K, Shi L, Li P, Fan TT, Yuan JL, Vitiello MV, Kosten T, Kondratiuk AL, Sun HQ, Tang XD, Liu MY, Lu L. A systematic review and meta-analysis of long term physical and mental sequelae of COVID-19 pandemic: call for research priority and

action. Mol Psychiatry. 2023;28(1):423–33. https://doi.org/10.1038/s41380-022-01614-7.
16. Silaghi-Dumitrescu R, Patrascu I, Lehene M, Bercea I. Comorbidities of COVID-19 patients. Medicina. 2023;59(8). https://doi.org/10.3390/medicina59081393.
17. Méndez R, Balanzá-Martínez V, Luperdi SC, Estrada I, Latorre A, González-Jiménez P, Feced L, Bouzas L, Yépez K, Ferrando A, Hervás D, Zaldívar E, Reyes S, Berk M, Menéndez R. Short-term neuropsychiatric outcomes and quality of life in COVID-19 survivors. J Intern Med. 2021;290(3):621–31. https://doi.org/10.1111/joim.13262.
18. Qorolli M, Beqaj S, Ibrahimi-Kaçuri D, Murtezani A, Krasniqi V, Mačak Hadžiomerović A. Functional status and quality of life in post-COVID-19 patients two to three weeks after hospitalization: a cross-sectional study. Health Sci Rep. 2023;6(8):e1510. https://doi.org/10.1002/hsr2.1510.
19. Hawlader MDH, Rashid MU, Khan MAS, Liza MM, Akter S, Hossain MA, Rahman T, Barsha SY, Shifat AA, Hossian M, Mishu TZ, Sagar SK, Manna RM, Ahmed N, Debu S, Chowdhury I, Sabed S, Ahmed M, Borsha SA, Dalal K. Quality of life of COVID-19 recovered patients: a 1-year follow-up study from Bangladesh. Infect Dis Poverty. 2023;12(1):79. https://doi.org/10.1186/s40249-023-01125-9.
20. Schmidt NB, Martin AD, Allan NP, Mathes BM, Saulnier KG, March DS. Actual versus perceived infection rates of COVID-19: impact on distress, behavior and disability. J Psychiatr Res. 2021;137:525–33. https://doi.org/10.1016/j.jpsychires.2021.03.061.
21. Mukhtar S. Psychological health during the coronavirus disease 2019 pandemic outbreak. Int J Soc Psychiatry. 2020;66(5):512–6. https://doi.org/10.1177/0020764020925835.
22. Dubey S, Biswas P, Ghosh R, Chatterjee S, Dubey MJ, Chatterjee S, Lahiri D, Lavie CJ. Psychosocial impact of COVID-19. Diabetes Metab Syndr. 2020;14(5):779–88. https://doi.org/10.1016/j.dsx.2020.05.035.
23. Naghizadeh S, Mirghafourvand M. Relationship of fear of COVID-19 and pregnancy-related quality of life during the COVID-19 pandemic. Arch Psychiatr Nurs. 2021;35(4):364–8. https://doi.org/10.1016/j.apnu.2021.05.006.
24. Demirbas N, Kutlu R. Effects of COVID-19 fear on society's quality of life. Int J Ment Health Addict. 2022;20(5):2813–22. https://doi.org/10.1007/s11469-021-00550-x.
25. Alyami M, de Albuquerque JV, Krägeloh CU, Alyami H, Henning MA. Effects of fear of COVID-19 on mental well-being and quality of life among Saudi adults: a path analysis. Saudi J Med Med Sci. 2021;9(1):24–30. https://doi.org/10.4103/sjmms.sjmms_630_20.
26. Kontodimopoulos N, Poulaki E, Fanourgiakis J, Talias MA. The association between fear of COVID-19 and health-related quality of life: a cross-sectional study in the Greek general population. J Pers Med. 2022;12(11):1891. https://doi.org/10.3390/jpm12111891.
27. Di Crosta A, Palumbo R, Marchetti D, Ceccato I, La Malva P, Maiella R, Cipi M, Roma P, Mammarella N, Verrocchio MC, Di Domenico A. Individual differences, economic stability, and fear of contagion as risk factors for PTSD symptoms in the COVID-19 emergency [Brief Research Report]. Fronti Psychol. 2020;11(567367). https://doi.org/10.3389/fpsyg.2020.567367. https://www.frontiersin.org/articles/.
28. Olapegba PO, Chovwen CO, Ayandele O, Ramos-Vera C. Fear of COVID-19 and preventive health behavior: mediating role of post-traumatic stress symptomology and psychological distress. Int J Ment Health Addict. 2022;20(5):2922–33. https://doi.org/10.1007/s11469-021-00557-4.
29. Kukreti S, Ahorsu DK, Strong C, Chen IH, Lin C-Y, Ko N-Y, Griffiths MD, Chen Y-P, Kuo Y-J, Pakpour AH. Post-traumatic stress disorder in Chinese teachers during COVID-19 pandemic: roles of fear of COVID-19, nomophobia, and psychological distress. Healthc (Basel). 2021;9(10):1288. https://doi.org/10.3390/healthcare9101288.
30. Velotti P, Civilla C, Rogier G, Beomonte Zobel S. A fear of COVID-19 and PTSD symptoms in pathological personality: the mediating effect of dissociation and emotion dysregulation. Front Psychiatry. 2021;12(590021). https://doi.org/10.3389/fpsyt.2021.590021.
31. Gunlu A, Koç H, Asici E, Oral T. Positivity and post-traumatic stress disorder (PTSD) in COVID-19 survivors: mediating role of rumination and fear of COVID-19. Psychiatr Danub. 2022;34(3):578–86. https://doi.org/10.24869/psyd.2022.578.
32. Dar SA, Dar MM, Sheikh S, Haq I, Azad A, Mushtaq M, Shah NN, Wani ZA. Psychiatric comorbidities among COVID-19 survivors in North India: a cross-sectional study. J Educ Health Promot. 2021;10:309. https://doi.org/10.4103/jehp.jehp_119_21.
33. Luna-Rodríguez GL, Peláez-Hernández V, Orea-Tejeda A, Ledesma-Ruíz CD, Casarín-López F, Rosas-Trujillo A, Domínguez-Trejo B, Tepepa-Flores LE. Prevalence of post-traumatic stress disorder, emotional impairments, and fear in COVID-19 surviving patients [Original Research]. Front Virtual Real. 2022;3:927058. https://doi.org/10.3389/frvir.2022.927058.
34. Yong SJ. Long COVID or post-COVID-19 syndrome: putative pathophysiology, risk factors, and treatments. Infect Dis. 2021;53(10):737–54. https://doi.org/10.1080/23744235.2021.1924397.
35. Michelen M, Manoharan L, Elkheir N, Cheng V, Dagens A, Hastie C, O'Hara M, Suett J, Dahmash D, Bugaeva P, Rigby I, Munblit D, Harriss E, Burls A, Foote C, Scott J, Carson G, Olliaro P, Sigfrid L, Stavropoulou C. Characterising long COVID: a living systematic review. BMJ Glob Health. 2021;6(9):e005427. https://doi.org/10.1136/bmjgh-2021-005427.
36. Ferreira JC, Moreira TCL, de Araújo AL, Imamura M, Damiano RF, Garcia ML, Sawamura MV, Pinna FR, Guedes BF, Gonçalves FAR, Mancini M, Burdmann EA, da Silva Filho DF, Polizel JL, Bento RF, Rocha V, Nitrini R, de Souza HP, Levin AS, Gouveia N. Clinical, sociodemographic and environmental factors impact post-COVID-19 syndrome. J Glob Health. 2022;12:05029. https://doi.org/10.7189/jogh.12.05029.
37. Silva Andrade B, Siqueira S, de Assis Soares WR, de Souza Rangel F, Santos NO, Dos Santos Freitas A, Ribeiro da Silveira P, Tiwari S, Alzahrani KJ, Góes-Neto A, Azevedo V, Ghosh P, Barh D. Long-COVID and post-COVID health complications: an up-to-date review on clinical conditions and their possible molecular mechanisms. Viruses. 2021;13(4). https://doi.org/10.3390/v13040700.
38. Soomägi A, Meister T, Vorobjov S, Suija K, Kalda R, Uusküla A. Fear of COVID-19 among patients with prior SARS-CoV-2 infection: a cross-sectional study in Estonian family practices. Eur J Gen Pract. 2023;29(2):2195163. https://doi.org/10.1080/13814788.2023.2195163.
39. Ding S, Dong L, Chen L, Gao F. Fear of progression in patients with mild or common type COVID-19. Int J Nurs Pract. 2022;28(5):e13085. https://doi.org/10.1111/ijn.13085.
40. Collins LM, Lanza ST. Latent class and latent transition analysis: with applications in the social, behavioral, and health sciences. Volume 718. Wiley; 2009.
41. Oberski D. (2016). Mixture models: Latent profile and latent class analysis. J. Robertson & M. Kaptein, editors, Modern Statistical Methods for HCI (pp. 275–287). Springer International Publishing. https://doi.org/10.1007/978-3-319-26633-6_12
42. Schmidt NB, Allan NP, Koscinski B, Mathes BM, Eackles K, Accorso C, Saulnier KG, Allan DM, Potter K, Garey L, Suhr J, Austin M, Zvolensky MJ. COVID-19 impact battery: development

and validation. J Psychopathol Behav Assess. 2022;44(2):326–43. https://doi.org/10.1007/s10862-021-09919-7.
43. Ahorsu DK, Lin CY, Imani V, Saffari M, Griffiths MD, Pakpour AH. The fear of COVID-19 scale: development and initial validation. Int J Ment Health Addict. 2022;20(3):1537–45. https://doi.org/10.1007/s11469-020-00270-8.
44. Luong TC, Pham TTM, Nguyen MH, Do AQ, Pham LV, Nguyen HC, Nguyen HC, Ha TH, Dao HK, Trinh MV, Do TV, Nguyen HQ, Nguyen TTP, Tran CQ, Tran KV, Duong TT, Pham HX, Do TT, Nguyen PB, Duong TV. Fear, anxiety and depression among pregnant women during COVID-19 pandemic: impacts of healthy eating behaviour and health literacy. Ann Med. 2021;53(1):2120–31. https://doi.org/10.1080/07853890.2021.2001044.
45. Nguyen HT, Do BN, Pham KM, Kim GB, Dam HTB, Nguyen TT, Nguyen TTP, Nguyen YH, Sørensen K, Pleasant A, Duong TV. Fear of COVID-19 scale—associations of its scores with health literacy and health-related behaviors among medical students. Int J Environ Res Public Health. 2020;17(11):4164. https://doi.org/10.3390/ijerph17114164.
46. Nguyen MH, Pham TTM, Nguyen KT, Nguyen YH, Tran TV, Do BN, Dao HK, Nguyen HC, Do NT, Ha TH, Phan DT, Pham KM, Pham LV, Nguyen PB, Nguyen HTT, Do TV, Ha DT, Nguyen HQ, Ngo HTM, Duong TV. Negative impact of fear of COVID-19 on health-related quality of life was modified by health literacy, eHealth literacy, and digital healthy diet literacy: a multi-hospital survey. Int J Environ Res Public Health. 2021;18(9):4929. https://doi.org/10.3390/ijerph18094929.
47. Horowitz M, Wilner N, Alvarez W. Impact of event scale: a measure of subjective stress. Psychosom Med. 1979;41(3):209–18. https://doi.org/10.1097/00006842-197905000-00004.
48. Hays RD, Morales LS. The RAND-36 measure of health-related quality of life. Ann Med. 2001;33(5):350–57. https://doi.org/10.3109/07853890109002089.
49. Ware JE, Sherbourne CD. The MOS 36-item short-form health survey (SF-36): conceptual framework and item selection. Med Care. 1992;30(6):473–83. http://www.jstor.org/stable/3765916.
50. Ngo-Metzger Q, Sorkin DH, Mangione CM, Gandek B, Hays RD. Evaluating the SF-36 Health Survey (Version 2) in older Vietnamese Americans. J Aging Health. 2008;20(4):420–36. https://doi.org/10.1177/0898264308315855.
51. Minh Nguyen T, Tran MAQ, Hoang Le GN. Psychometric validation of the brief resilience scale in the sample of Vietnamese university student. J Coll Stud Psychother. 2023;38(3):648–63. https://doi.org/10.1080/87568225.2023.2231348.
52. Smith BW, Dalen J, Wiggins K, Tooley E, Christopher P, Bernard J. The brief resilience scale: assessing the ability to bounce back. Int J Behav Med. 2008;15(3):194–200. https://doi.org/10.1080/10705500802222972.
53. Jung T, Wickrama KAS. An introduction to latent class growth analysis and growth mixture modeling. Soc Personal Psychol Compass. 2008;2(1):302–17. https://doi.org/10.1111/j.1751-9004.2007.00054.x.
54. Masyn KE. Latent class analysis and finite mixture modeling. The Oxford handbook of quantitative methods: statistical analysis. Volume 2. Oxford University Press; 2013. pp. 551–611.
55. Nylund-Gibson K, Garber AC, Carter DB, Chan M, Arch DAN, Simon O, Whaling K, Tartt E, Lawrie SI. Ten frequently asked questions about latent transition analysis. Psychol Methods. 2023;28(2):284–300. https://doi.org/10.1037/met0000486.
56. Yalçın İ, Can N, Mançe Çalışır Ö, Yalçın S, Çolak B. Latent profile analysis of COVID-19 fear, depression, anxiety, stress, mindfulness, and resilience. Curr Psychol. 2022;41(1):459–69. https://doi.org/10.1007/s12144-021-01667-x.
57. Liu Z, Liu R, Zhang Y, Zhang R, Liang L, Wang Y, Wei Y, Zhu R, Wang F. Latent class analysis of depression and anxiety among medical students during COVID-19 epidemic. BMC Psychiatry. 2021;21(1):498. https://doi.org/10.1186/s12888-021-03459-w.
58. Fernández RS, Crivelli L, Guimet NM, Allegri RF, Pedreira ME. Psychological distress associated with COVID-19 quarantine: latent profile analysis, outcome prediction and mediation analysis. J Affect Disord. 2020;277:75–84. https://doi.org/10.1016/j.jad.2020.07.133.
59. Pfefferbaum B, North CS. Mental health and the Covid-19 pandemic. N Engl J Med. 2020;383(6):510–2. https://doi.org/10.1056/NEJMp2008017.
60. Vann RJ, Tanner EC, Kizilova E. Perceived access, fear, and preventative behavior: key relationships for positive outcomes during the COVID-19 health crisis. J Consum Aff. 2022;56(1):141–57. https://doi.org/10.1111/joca.12439.
61. Harper CA, Satchell LP, Fido D, Latzman RD. Functional fear predicts public health compliance in the COVID-19 pandemic. Int J Ment Health Addict. 2021;19(5):1875–88. https://doi.org/10.1007/s11469-020-00281-5.
62. Kim J, Yang K, Min J, White B. Hope, fear, and consumer behavioral change amid COVID-19: application of protection motivation theory. Int J Consum Stud. 2022;46(2):558–74. https://doi.org/10.1111/ijcs.12700.
63. Mani A, Fereidooni R, Salehi-Marzijarani M, Ardekani A, Sasannia S, Habibi P, Zarei L, Heydari ST, Lankarani KB. The prevalence and risk factors of death anxiety and fear of COVID-19 in an Iranian community: a cross-sectional study. Health Sci Rep. 2022;5(4):e706. https://doi.org/10.1002/hsr2.706.
64. Metin A, Erbiçer ES, Şen S, Çetinkaya A, Gender. COVID-19 related fear and anxiety: a meta-analysis. J Affect Disord. 2022;310:384–95. https://doi.org/10.1016/j.jad.2022.05.036.
65. Alsharawy A, Spoon R, Smith A, Ball S. Gender differences in fear and risk perception during the COVID-19 pandemic. Front Psychol. 2021;12(689467). https://doi.org/10.3389/fpsyg.2021.689467.
66. Salameh P, Hajj A, Badro DA, Abou Selwan C, Aoun R, Sacre H. Mental health outcomes of the COVID-19 pandemic and a collapsing economy: perspectives from a developing country. Psychiatry Res. 2020;294:113520. https://doi.org/10.1016/j.psychres.2020.113520.
67. Meller FO, Schäfer AA, Quadra MR, Demenech LM, Paludo SS, da Silva PA, Neiva-Silva L, Dumith SC. Fear of Covid-19 and health-related outcomes: results from two Brazilian population-based studies. Psychiatry Res. 2022;313:114596. https://doi.org/10.1016/j.psychres.2022.114596.
68. Fitzpatrick KM, Harris C, Drawve G. Fear of COVID-19 and the mental health consequences in America. Psychol Trauma. 2020;12(S1). https://doi.org/10.1037/tra0000924. S17-S21.
69. Taquet M, Geddes JR, Husain M, Luciano S, Harrison PJ. 6-month neurological and psychiatric outcomes in 236 379 survivors of COVID-19: a retrospective cohort study using electronic health records. Lancet Psychiatry. 2021;8(5):416–27. https://doi.org/10.1016/s2215-0366(21)00084-5.
70. Taquet M, Luciano S, Geddes JR, Harrison PJ. Bidirectional associations between COVID-19 and psychiatric disorder: retrospective cohort studies of 62 354 COVID-19 cases in the USA. Lancet Psychiatry. 2021;8(2):130–40. https://doi.org/10.1016/s2215-0366(20)30462-4.
71. Roy D, Ghosh R, Dubey S, Dubey MJ, Benito-León J, Kanti Ray B. Neurological and neuropsychiatric impacts of COVID-19 pandemic. Can J Neurol Sci. 2021;48(1):9–24. https://doi.org/10.1017/cjn.2020.173.
72. Dorri M, Mozafari Bazargany MH, Khodaparast Z, Bahrami S, Seifi Alan M, Rahimi F, Kamipoor Z, Niksima MM, Dehghan H, Rastad H. Psychological problems and reduced health-related quality of life in the COVID-19 survivors. J Affect Disord Rep. 2021;6:100248. https://doi.org/10.1016/j.jadr.2021.100248.

73. Mazza MG, Palladini M, De Lorenzo R, Bravi B, Poletti S, Furlan R, Ciceri F, Vai B, Bollettini I, Melloni EMT, Mazza EB, Aggio V, Calesella F, Paolini M, Caselani E, Colombo F, D'orsi G, Di Pasquasio C, Fiore P, Benedetti F. One-year mental health outcomes in a cohort of COVID-19 survivors. J Psychiatr Res. 2022;145:118–24. https://doi.org/10.1016/j.jpsychires.2021.11.031.
74. Chen Y, Huang X, Zhang C, An Y, Liang Y, Yang Y, Liu Z. Prevalence and predictors of posttraumatic stress disorder, depression and anxiety among hospitalized patients with coronavirus disease 2019 in China. BMC Psychiatry. 2021;21(1):80. https://doi.org/10.1186/s12888-021-03076-7.
75. Lam MH, Wing YK, Yu MW, Leung CM, Ma RC, Kong AP, So WY, Fong SY, Lam SP. Mental morbidities and chronic fatigue in severe acute respiratory syndrome survivors: long-term follow-up. Arch Intern Med. 2009;169(22):2142–7. https://doi.org/10.1001/archinternmed.2009.384.
76. Asmundson GJG, Taylor S. How health anxiety influences responses to viral outbreaks like COVID-19: what all decision-makers, health authorities, and health care professionals need to know. J Anxiety Disord. 2020;71:102211. https://doi.org/10.1016/j.janxdis.2020.102211.
77. Salari N, Hosseinian-Far A, Jalali R, Vaisi-Raygani A, Rasoulpoor S, Mohammadi M, Rasoulpoor S, Khaledi-Paveh B. Prevalence of stress, anxiety, depression among the general population during the COVID-19 pandemic: a systematic review and meta-analysis. Glob Health. 2020;16(1):57. https://doi.org/10.1186/s12992-020-00589-w.
78. Samuel SR, Kuduruthullah S, Khair AMB, Al Shayeb M, Elkaseh A, Varma SR, Nadeem G, Elkhader IA, Ashekhi A. Impact of pain, psychological-distress, SARS-CoV-2 fear on adults' health-related quality-of-life during COVID-19 pandemic. Saudi J Biol Sci. 2021;28(1):492–4. https://doi.org/10.1016/j.sjbs.2020.10.033.
79. Alimoradi Z, Ohayon MM, Griffiths MD, Lin C-Y, Pakpour AH. Fear of COVID-19 and its association with mental health-related factors: systematic review and meta-analysis. BJPsych Open. 2022;8(2). https://doi.org/10.1192/bjo.2022.26. e73, Article e73.
80. Beisland EG, Gjeilo KH, Andersen JR, Bratås O, Bø B, Haraldstad K, Hjelmeland IHH, Iversen MM, Løyland B, Norekvål TM, Riiser K, Rohde G, Urstad KH, Utne I, Fløtlo TN, the Ln. Quality of life and fear of COVID-19 in 2600 baccalaureate nursing students at five universities: a cross-sectional study. Health Qual Life Outcomes. 2021;19(1):198. https://doi.org/10.1186/s12955-021-01837-2.
81. Aksoy A, Abiç A, Değirmenci F, Vefikuluçay Yılmaz D. The relationship between quality of life and fear of Turkish individuals during the COVID-19 pandemic: a cross-sectional study. Arch Psych Nurs. 2021;35(5):472–8. https://doi.org/10.1016/j.apnu.2021.06.003.

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Digital Healthy Diet Literacy and Fear of COVID-19 as Associated with Treatment Adherence and Its Subscales among Hemodialysis Patients: A Multi-Hospital Study

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Abstract: Treatment adherence (TA) is a critical issue and is under-investigated in hemodialysis patients. A multi-center study was conducted from July 2020 to March 2021 on 972 hemodialysis patients in eight hospitals in Vietnam to explore the factors associated with TA during the COVID-19 pandemic. Data were collected, including socio-demographics, an End-Stage Renal Disease Adherence Questionnaire (ESRD-AQ), 12-item short-form health literacy questionnaire (HLS-SF12), 4-item

digital healthy diet literacy scale (DDL), 10-item hemodialysis dietary knowledge scale (HDK), 7-item fear of COVID-19 scale (FCoV-19S), and suspected COVID-19 symptoms (S-COVID19-S). Bivariate and multivariate linear regression models were used to explore the associations. Higher DDL scores were associated with higher TA scores (regression coefficient, B, 1.35; 95% confidence interval, 95%CI, 0.59, 2.12; $p = 0.001$). Higher FCoV-19S scores were associated with lower TA scores (B, −1.78; 95%CI, −3.33, −0.24; $p = 0.023$). In addition, patients aged 60–85 (B, 24.85; 95%CI, 6.61, 43.11; $p = 0.008$) with "very or fairly easy" medication payment ability (B, 27.92; 95%CI, 5.89, 44.95; $p = 0.013$) had higher TA scores. Patients who underwent hemodialysis for ≥5 years had a lower TA score than those who received <5 years of hemodialysis (B, −52.87; 95%CI, −70.46, −35.28; $p < 0.001$). These findings suggested that DDL and FCoV-19S, among other factors, should be considered in future interventions to improve TA in hemodialysis patients.

Keywords: hemodialysis; fear; COVID-19; physical activity; digital healthy diet literacy; health literacy; treatment adherence; medication; fluid; diet

1. Introduction

Globally, approximately 3.8 million people with end-stage renal disease (ESRD) currently rely on renal replacement therapies [1]. Hemodialysis is the most common treatment option worldwide. Renal transplantation and peritoneal dialysis are also applied [2,3]. In Vietnam, there are around 30,000 ESRD patients who are receiving hemodialysis in 2020 [4].

According to World Health Organization, treatment adherence (TA) refers to how well an individual complies with their healthcare provider's recommendations, which may include taking prescribed medication, following a specific diet, or making lifestyle changes [5]. In hemodialysis patients, non-adherence links to increased morbidity, mortality, healthcare costs, and burden on the healthcare system [6–12]. Hemodialysis patients must maintain safe potassium and phosphate serum levels to avoid fatal arrhythmia and osteodystrophy [13]. To prevent edema and cardiovascular complications, they must limit fluid intake [14]. Therefore, patients and healthcare providers must strictly follow the treatment protocol/guideline.

The COVID-19 pandemic affects the adherence of ESRD patients to hemodialysis and medication regimens, resulting in a marked increase in the non-adherence rate from 11.7% to 19.5% [15]. A higher fear of COVID-19 score predicts a higher rate of non-adherence to treatment [15]. Increased levels of physical activity are correlated with health-related quality of life in hemodialysis patients (HRQOL) [16], and non-compliance to drug therapy may be associated with worse HRQOL [17]. Hemodialysis patients with sufficient health literacy (HL) had better fluid management and psychological health [18–21], following treatment recommendations [22]. HL is described as the patient's capacity to receive, process, communicate, and comprehend fundamental health information and services necessary for making informed health decisions [23,24]. Thus, when patients are fully informed and comprehend what is expected of them, they are better equipped to participate in health-related decisions and are more likely to adhere to regimens that they had a hand in selecting [25–27].

Amidst the pandemic, all hemodialysis centers applied strict measures to restrain the spread of COVID-19, such as using masks and restricting family members from visiting patients. The health-related information is provided on digital platforms that require people to access via the internet using digital devices. Thus, HL has become a crucial skill for people to access the application information to manage their health. Digital healthy diet literacy (DDL) has been promoted to encourage individuals to adopt healthier eating behavior, which can strengthen their immune systems. The DDL is an extended concept of HL, as it includes the ability to obtain, understand, assess, and apply digital information related to healthy diets. This ability can lead to better-eating behavior and health outcomes that are essential for containing the pandemic [19,28,29].

Previous studies have investigated TA among hemodialysis patients [10,22,30–35], and others focused on HL and fear of COVID-19 [22]. However, a lack of studies mentioned the role of DDL on TA [35]. Therefore, we conducted a multicenter study to investigate the associated factors of TA in hemodialysis patients, where the impacts of DDL and fear were emphasized. We hypothesized that Social -demographic, Fear of COVID-19, physical activity, HL, suspected COVID-19 symptoms (S-COVID19-S), and DDL were associated with TA in hemodialysis patients.

2. Materials and Methods

2.1. Study Design and Sample

We conducted a cross-sectional study between July 2020 to March 2021 at eight hospitals in Vietnam. Hemodialysis patients were recruited if they were able to read and respond to the survey, aged between 18 and 85 inclusively. Patients are excluded if they received hemodialysis treatment in less than 3 months. During the study period, there was no positive case of COVID-19 among the patients studied. In addition, patients needed to sign the informed consent before participating in the research. The study sample is presented in Figure 1.

Figure 1. The study sample.

2.2. Measurements

2.2.1. Treatment Adherence

Treatment adherence (TA) was assessed using the End-Stage Renal Disease Adherence Questionnaire (ESRD-AQ)—46 questions/items—four dimensions (hemodialysis attendance, medication use, fluid restrictions, and diet recommendations). The adherence behavior was calculated using questions numbers 14, 17, 18, 26, 31, and 46, which were further divided into three subscales: adherence to hemodialysis therapy (items 14, 17, and 18), medication (item 26), and fluid and dietary restrictions (items 31 and 46). The responses ranged from 0 to 200. The overall score ranges from 0 to 1200, with higher scores indicating better TA [15,36,37].

2.2.2. Socio-Demographics

Patient's socio-demographic data (age, gender, education, working status, married status, social status) and medication payment ability were collected. The social status was assessed using a self-reported question "If you self-assess your social status (related to

education, occupation, income), which level you are?". The response options were "low", middle", and "high".

2.2.3. Clinical Parameters

The clinical parameters were assessed, including comorbidity, suspected COVID-19 symptoms (S-COVID-19-S), body mass index (BMI, kg/m^2), hemodialysis vintage (year), and fear of COVID-19. HD vintage is the length of time on dialysis [38]. The participants were evaluated and classified as having S-COVID-19-S if they presented any of the following symptoms: fever, cough, fatigue, dyspnea, myalgia, sputum production/expectoration, sore throat, runny nose, confusion, headache, chest pain, rhinorrhea, diarrhea, and/or nausea/vomiting [39]. Comorbidities were evaluated using the Charlson comorbidity index (CCI) items [40].

The fear of COVID-19 was measured using the 7-item fear of COVID-19 scale (FCoV-19S) [41]. The responses ranged from 1 to 5 points, with 1 = "strongly disagree" 2 = "disagree", 3 = "neither agree nor disagree", 4 = "agree", and 5 = "strongly agree". The overall score ranges from 7 to 35, with higher scores indicating more fear.

2.2.4. Health Literacy, Digital Healthy Diet Literacy, and Hemodialysis Diet Knowledge

Participants' HL and DDL were evaluated using the 12-item short form of the health literacy questionnaire (HLS-SF12) [42] and the digital healthy diet literacy (DDL-4) [19], respectively. The responses range from 1 to 4, with 1 = "very difficult", 2 = "fairly difficult", 3 = "fairly easy", and 4 = "very easy". These scales have been validated and are commonly applied in Vietnam [21,43–45]. The higher index scores indicate better HL or DDL levels [19,46].

The hemodialysis dietary knowledge (HDK) scale was used to examine the participants' knowledge about the hemodialysis diet. This scale consists of 10 questions on water, potassium, phosphorus, sodium, and protein [47]. Each question consists of three options, including "correct", "incorrect", and "not sure". The correct answer was treated as "correct", and incorrect or "not sure" answers were treated as "incorrect". The responses range from 0 to 1, with 0 = "incorrect answer" and 1 = "correct answer". The HDK total score ranges from 0 to 10, with higher scores indicating greater knowledge. This questionnaire has been validated and utilized in prior research [21,45].

2.3. Data Collection Procedure

The procedure was mentioned in previous research [21,45]. Nephrologists, nurses, and students were trained in data collection. The COVID-19 controlling measures were implemented, including mask wearing, hand washing, and physical distancing. About 30 min were spent conducting the survey. The data were then coded, cleaned, and analyzed.

2.4. Data Analysis

First, the distributions of the studied variables were checked and presented with a number (N), percentage (%), mean, and standard deviation (SD) appropriately. Next, the *t*-test or one-way ANOVA test was used to explore group differences in treatment adherence scores. The assumption about the distribution of TA is presented in Supplementary Figure S1. Thirdly, we used bivariate linear regression analysis to identify the associated factor of TA. There are several factors that associate with TA. To minimize the residual effects of studied factors, we included those factors based on biological plausibility and prior literature [48,49] into the models. According to the simulation study of confounder-selection strategies, to eliminate the residual effects of studied factors, the factors associated with TA at p-value < 0.2 in the bivariate model were included in the multivariate model [50]. The independent variables' correlations were checked before running the multivariate linear regression to avoid multicollinearity. The Spearman correlation coefficients of independent variables that were less than 0.3 were accepted to be added to the multivariate model (Supplementary Tables S1–S5). All statistical analyses were performed using IBM

SPSS Version 26.0 (IBM Corp., Armonk, NY, USA). Statistical significance was established at $p < 0.05$.

3. Results

3.1. Participants' Socio-Demographics

The participants' characteristics are described in Table 1. Among 972 patients, 517 (53.46%) were male, and 450 (46.54%) were female. The number of patients aged 18 to 59 is 585 (60.19%). The treatment adherence was significantly different in some variables, such as education, social status, medication payment ability, suspected COVID-19 symptoms, and hemodialysis vintage ($p < 0.05$).

3.2. Associated Factors of Treatment Adherence

Table 2 shows the results of bivariate and multivariate linear regression models. In the bivariate model, patients had a higher TA score were those with higher education (B, 42.53; 95%CI, 18.87, 66.19; $p < 0.001$), middle and high social status (B, 36.11; 95%CI, 16.38, 55.84; $p < 0.001$), "very or fairly easy" medication payment ability (B, 55.21; 95%CI, 34.50, 75.92; $p < 0.001$), with suspected COVID-19 symptoms (B, 25.46; 95%CI, 0.22, 50.70; $p = 0.048$), with a higher HL score (B, 1.98; 95%CI, 1.03, 2.93; $p < 0.001$), and a higher DDL score (B, 1.58; 95%CI, 0.82, 2.53; $p < 0.001$). Inversely, patients had a lower TA score were those with a longer hemodialysis vintage (>5 years) (B, −59.07; 95%CI, −76.92, −41.23; $p < 0.001$), higher scores of fear of COVID-19 (B, −3.19; 95%CI, −4.68, −1.70; $p < 0.001$), and CCI (B, −6.05; 95%CI, −11.34, −0.75; $p = 0.025$), respectively.

To avoid multicollinearity, the correlations among the variables ($p < 0.20$) were examined (Supplementary Tables S1–S5). The variables selected in the multivariable linear regression models were age, working status, social status, medication payment ability, S-COVID-19-S, hemodialysis vintage, DDL index, fear of COVID-19, and CCI. The results of multivariate analysis show that patients who had a higher TA score were those with older age (from 60 to 85) (B, 24.85; 95%CI, 6.61, 43.11; $p = 0.008$), with "very or fairly easy" medication payment ability (B, 27.92; 95%CI, 5.89, 49.95; $p = 0.013$), a higher DDL score (B, 1.35; 95%CI, 0.59, 2.12; $p = 0.001$), respectively. Inversely, patients who had a lower TA score were those with a longer hemodialysis vintage (>5 years) (B, −52.87; 95%CI, −70.46, −35.28; $p < 0.001$), with more fear of COVID-19 (B, −1.78; 95%CI, −3.33, −0.24; $p = 0.023$), respectively.

In Table 3, patients with a longer hemodialysis vintage were less likely to adhere to hemodialysis therapy (B, −22.73; 95%CI, −33.46, −12.01; $p < 0.001$). Patients with older age (60 to 85) (B, 4.39; 95%CI, 0.63, 8.15; $p = 0.022$), a higher DDL (B, 0.17; 95%CI, 0.01, 0.33; $p = 0.036$) were more likely adhere to medication. Inversely, people with S-COVID-19 S (B, −11.06; 95% CI, 15.98, −6.13; $p = 0.001$) and a longer hemodialysis vintage (B, −9.40; 95%CI, −13.01, −5.79; $p = 0.001$) were less likely adhere to medication. In addition, patients who had a higher score of adherence to fluid and diet were those with older age (B, 17.02; 95%CI, 5.04, 29.01; $p = 0.005$), middle and high social status (B, 13.87; 95%CI, 0.25, 27.49; $p = 0.046$), "very and fairly easy" medication payment ability (B, 18.96; 95%CI, 4.12, 33.80; $p = 0.012$), and having suspected COVID-19 symptoms (B, 27.13; 95%CI, 10.78, 43.49; $p = 0.001$), a higher DDL score (B, 1.05, 95%CI, 0.53, 1.56; $p = 0.001$), respectively. Inversely, patients who had a lower score of adherence to fluid and diet were those with a longer hemodialysis vintage (B, −18.70; 95%CI, −30.53, −6.87; $p = 0.002$), fear of COVID-19 (B; −1.70; 95%CI, −2.71, −0.68; $p = 0.001$), and a higher HDK index (B, −4.92; 95%CI, −7.51, −2.34; $p = 0.001$), respectively.

Table 1. Patients' characteristics and treatment adherence (N = 972).

Variables	Total N (%)	Treatment Adherence (Mean ± SD)	*p*
Age			0.050 [a]
18–59	585 (60.19)	1040.50 ± 143.47	
60–85	387 (39.81)	1058.93 ± 142.92	
Gender			0.544 [a]
Male	517 (53.46)	1050.15 ± 143.51	
Female	450 (46.54)	1044.54 ± 143.63	
Education			<0.001 [b]
Illiterate or elementary	372 (42.32)	1047.86 ±137.61	
Junior high school	281 (31.97)	1018.54 ± 152.53	
Senior high school or above	226 (25.71)	1090.40 ± 139.12	
Working status			0.199 [a]
Not working	334 (34.97)	1039.38 ± 136.62	
Working	621 (65.03)	1051.84 ± 145.94	
Married status			0.639 [a]
Never married	86 (8.95)	1040.47 ± 145.99	
Ever married	875 (91.05)	1048.11 ± 143.55	
Social status			<0.001 [a]
Low	274 (28.81)	1022.39 ± 141.05	
Middle and high	677 (71.19)	1058.51 ± 140.14	
Medication payment ability			<0.001 [a]
Very or fairly difficult	726 (75.86)	1035.26 ± 143.07	
Very or fairly easy	231(24.14)	1090.47 ± 128.39	
S-COVID-19-S			0.048 [a]
Without S-COVID-19-S	146 (15.02)	1026.19 ± 142.31	
With S-COVID-19-S	826 (84.98)	1051.66 ± 143.41	
BMI, kg/m^2			0.468 [a]
BMI < 24	827 (90.19)	1045.82 ± 140.53	
BMI ≥ 24	90 (9.81)	1057.28 ± 156.74	
HD vintage, year			<0.001 [a]
<5	550 (56.58)	1073.48 ± 136.81	
≥5	422 (43.42)	1017.41 ± 145.19	
CCI (Mean ± SD)	1.74 ± 1.70		
HL index (Mean ± SD)	23.77 ± 9.44		
DDL index (Mean ± SD)	23.52 ± 11.68		
HDK (Mean ± SD)	4.29 ± 2.30		
FCoV-19S (Mean ± SD)	20.58 ± 6.0		
Treatment adherence (Mean ± SD)	1047.83 ± 143.46		
Hemodialysis treatment (Mean ± SD)	563.32 ± 77.05		
Medication (Mean ± SD)	184.19 ± 27.44		
Fluid and Diet (Mean ± SD)	301.08 ± 97.0		

Abbreviation: SD, standard deviation; S-COVID-19-S, suspected COVID-19 symptoms; BMI, body mass index; HD, hemodialysis; CCI, Charlson comorbidity index; HL, health Literacy; DDL, digital health diet literacy; HDK, hemodialysis dietary knowledge; FCoV-19S, fear of COVID-19 scale. [a] Results of the chi-square test; [b] Results of one-way ANOVA.

Table 2. Associated factors of treatment adherence via bivariate and multivariate linear regression analysis.

Variables	Treatment Adherence			
	Bivariate		Multivariate	
	B (95% CI)	*p*	B (95% CI)	*p*
Age 18–59 60–85	18.42 (0.01, 36.85)	0.05	24.85 (6.61, 43.11)	0.008 [a]
Gender Male Female	−5.61 (−23.78, 12.54)	0.544		
Education Illiterate or elementary Junior high school Senior high school or above	−29.32 (−51.48, −7.15) 42.53 (18.87, 66.19)	0.01 <0.001		
Working status Not working Working	12.45 (−6.55, 31.46)	0.199	−2.25 (−21.15, 16.65)	0.815 [a]
Married status Never married Ever married	7.63 (−24.25, 39.51)	0.639		
Social status Low Middle and high	36.11 (16.38, 55.84)	<0.001	19.22 (−1.23, 39.69)	0.066 [a]
Medication payment ability Very or fairly difficult Very or fairly easy	55.21 (34.50, 75.92)	<0.001	27.92 (5.89, 49.95)	0.013 [a]
S-COVID-19-S Without S-COVID-19-S With S-COVID-19-S	25.46 (0.22, 50.70)	0.048	15.58 (−9.41, 40.58)	0.221 [a]
BMI, kg/m^2 BMI < 24 BMI ≥ 24	11.46 (−19.50, 42.44)	0.468		
HD vintage, year <5 ≥5	−59.07 (−76.92, −41.23)	<0.001	−52.87 (−70.46, −35.28)	<0.001 [a]
CCI	−6.05 (−11.34, −0.75)	0.025	−3.70 (−9.11, 1.70)	0.179 [a]
HL index	1.98 (1.03, 2.93)	<0.001		
DDL index	1.58 (0.82, 2.53)	<0.001	1.35 (0.59, 2.12)	0.001 [a]
HDK index	0.04 (−3.89, 3.96)	0.985		
FCoV-19S	−3.19 (−4.68, −1.70)	<0.001	−1.78 (−3.33, −0.24)	0.023 [a]

Abbreviations: B, regression coefficient; CI, confidence interval; S-COVID-19-S, suspected COVID-19 symptoms; BMI, body mass index; HD, Hemodialysis; CCI, Charlson comorbidity index; HL, health literacy; DDL, digital health diet literacy; HDK, hemodialysis dietary knowledge; FCoV-19S, fear of COVID-19 scale. [a] Multilinear regression model consisting of age, working status, social status, medication payment ability, S-COVID-19-S, HD vintage, DDL index, Fear of COVID-19, and CCI.

Table 3. Associate factors of adherence to hemodialysis treatment, medication, fluid, and diet via multivariate linear regression analysis.

	Hemodialysis Treatment		Medication		Fluid and Diet	
	B (95% CI)	*p*	B (95% CI)	*p*	B (95% CI)	*p*
Age 19–59 60–85			4.39 (0.63, 8.15)	0.022 [b]	17.02 (5.04, 29.01)	0.005 [c]

Table 3. *Cont.*

	Hemodialysis Treatment		Medication		Fluid and Diet	
	B (95% CI)	***p***	**B (95% CI)**	***p***	**B (95% CI)**	***p***
Gender						
Male						
Female	−4.55 (−15.14, 6.03)	0.398 [a]				
Education						
Illiterate or elementary						
Junior high school						
Senior high school or above	−1.71 (−8.41, 5.01)	0.618 [a]	1.86 (−0.45, 0.18)	0.115 [b]		
Working status						
Not working						
Working					1.36 (−11.23, 13.96)	0.832 [c]
Married status						
Never married						
Ever married						
Social status						
Low						
Middle and high					13.87 (0.25, 27.49)	0.046 [c]
Medication payment ability						
Very or fairly difficult						
Very or fairly easy	5.86 (−6.64, 18.37)	0.357 [a]	2.78 (−1.55, 7.12)	0.208 [b]	18.96 (4.12, 33.80)	0.012 [c]
S-COVID-19-S						
Without S-COVID-19-S						
With S-COVID-19-S			−11.06 (−15.98, −6.13)	<0.001 [b]	27.13 (10.78, 43.49)	0.001 [c]
BMI, kg/m^2						
BMI < 24						
BMI ≥ 24						
HD vintage, year						
<5						
≥5	−22.73 (−33.46, −12.01)	<0.001 [a]	−9.40 (−13.01, −5.79)	<0.001 [b]	−18.70 (−30.53, −6.87)	0.002 [c]
CCI	−2.46 (−5.49, 0.56)	0.111 [a]	0.31 (−0.77, 1.38)	0.581 [b]		
HL index						
DDL index			0.17 (0.01, 0.33)	0.036 [b]	1.05 (0.53, 1.56)	0.001 [c]
HDK	1.9 (−0.3, 4.3)	0.092 [a]	0.57 (−0.20, 1.35)	0.148 [b]	−4.92 (−7.51, −2.34)	0.001 [c]
FCoV-19S			−0.18 (−0.49, 0.12)	0.238 [b]	−1.70 (−2.71, −0.68)	0.001 [c]

Abbreviations: B, regression coefficient; CI, confidence interval; S-COVID-19-S, suspected COVID-19 symptoms; BMI, body mass index; HD, hemodialysis; CCI, Charlson comorbidity index; HL, health literacy; DDL, digital health diet literacy; HDK, hemodialysis dietary knowledge; FCoV-19S, fear of COVID-19 scale. [a] Multiple linear regression model consisting of gender, education, medication payment ability, HD vintage, HDK, and CCI. [b] Multiple linear regression model consisting of age, education, medication payment ability, S-COVID-19-S, HD vintage, DDL index, HDK, Fear of COVID-19, and CCI. [c] Multiple linear regression model consisting of age, working status, social status, medication payment ability, S-COVID-19-S, HD vintage, DDL index, HDK index, and Fear of COVID-19.

4. Discussion

In this study, age, medication payment ability, and DDL were protective factors for treatment adherence in hemodialysis patients during the COVID-19 pandemic. At the same time, fear of COVID-19 and length of hemodialysis (for more than five years) were associated with lower scores of treatment adherence. Therefore, it is vital to design timely education programs for hemodialysis patients to improve health literacy and diet literacy and to allay the fears associated with COVID-19.

The most significant finding in this study is that DDL and HL were protective factors of treatment adherence, especially since this is the first study that shows the effectiveness of DDL in the treatment adherence of HD patients. Health literacy was also associated with better adherence to infection prevention and control during COVID-19 [51]. Addititionally, higher HL and DDL were also positively associated with a healthy diet, physical, and reduced risk of osteoporosis in hemodialysis patients [45,51]. Since DDL is highly correlated with HL, thus DDL as representative of HL was selected into the multivariate model to emphasize its impact. Therefore, the impact of HL cannot be ignored in improving treatment adherence.

We found the role of DDL on adherence to medication, fluid, and diet in particular. During the COVID-19 pandemic, patients relied more on online sources for information; their DDL became a critical factor. Beyond the pandemic, as long as healthy diet information is provided on the online platform, the DDL still keeps a substantial role in promoting healthy eating behavior and health.

In a previous study, HDK was found to have a good association with HL and DDL in terms of mitigating the detrimental effects of S-COVID-19-S on anxious and depressive symptoms in hemodialysis patients [21]. However, HDK has a negative impact on fluid and diet adherence. This could be explained by the fact that the HDK scale tends to represent for diet knowledge of patients [21]; this implies that patients require knowledge and decision-making skills. Therefore, we need to improve the ability of hemodialysis patients to get diet knowledge using digital devices.

Our study shows that fear of COVID-19 is associated with lower scores of treatment adherence. This finding is in line with a prior study, which found that insufficient knowledge and low perception scores, as well as a high fear of COVID-19, were the primary predictors of non-adherence [15]. Furthermore, the fear of COVID-19 also increased the chemotherapy postponement rate in cancer patients [52]. Hemodialysis patients are considered a vulnerable population as they are at an increased risk of COVID-19 infection and experiencing severe outcomes due to several factors such as age, comorbidities (especially diabetes and hypertension), and weakened immune systems due to their underlying health condition [53,54]. Despite orders to remain at home, hemodialysis patients have to leave their homes many times per week for hemodialysis treatment in the dialysis center [55,56]. Taken together, these factors aggravate the non-adherence to treatment in hemodialysis patients.

We analyzed subscales of treatment adherence and found that fear of COVID-19 was associated with adherence to fluids and diet. A previous study showed that hemodialysis patients perceived food and fruit restriction as a complex and challenging process requiring constant effort. The patient's perception of personal, societal, and systemic barriers made diet and fluid restriction compliance even more difficult. In addition, most patients needed to be adequately supported in managing diet and fluid restriction, and they had established their strategies [57]. Consequently, due to the fear of COVID-19, the non-adherence to the fluid and diet was highly reported.

In our study, S-COVID-19-S was associated with lower scores of medication adherence but associated with higher scores of fluid and diet adherence. When hemodialysis patients have symptoms such as COVID-19, they may need to use other drugs that they may confuse with current medications. Therefore, in practice, health providers should remind patients to pay more attention to regular ESRD-treated medications in addition to the limited-access drugs they obtain when they get symptoms such as worsen COVID-19. Meanwhile, fluid

and diet appear to be easier to obtain than medications. Therefore, the patients are likely to adhere to fluid and diet when they have suspected COVID-19 symptoms.

We found that patients with longer hemodialysis vintage had lower scores of treatment adherence. Several studies found that a longer hemodialysis vintage was associated with a lower chance of non-adherence to treatment as a result of individuals examining the impact of dialysis on their bodies and learning to cope with difficulties by engaging with other patients and healthcare providers [58,59]. However, patients with prolonged hemodialysis are prone to polypharmacy, a reflection of the high frequency of comorbidities and the numerous complications associated with dialysis treatment. In addition, previous research suggests that a high number of medications administered to hemodialysis patients is associated with a decline in their quality of life, lower treatment adherence, and an increased mortality risk [60,61]. Particular hemodialysis vintage also was a negative factor in all subscales of treatment adherence. Our study also found that patients with comorbid conditions had less treatment adherence. Together, these rationales could prove our results about the relationship between treatment adherence and hemodialysis duration.

Additionally, patients with better medication payment ability had higher treatment adherence, particularly with fluid and diet adherence. Hemodialysis patients in Vietnam need to co-pay with national health insurance due to the low reimbursement rate of only 25 USD for each session [4]. Moreover, patients frequently face decreased productivity due to the rigorous treatment schedule and their physical limitations. As a result, the worldwide employment rate and income have declined [62,63]. Financial difficulty affects their daily life and physical and mental health, demonstrating a link between financial hardship and overall symptom burden, including depression, fatigue, pain, and sexual dysfunction [64].

We found that older patients adhere to medication, fluid, and diet better than younger patients. This result is similar to previous results [65]. Patients have been living with ESRD for a longer time and have more experience in adhering to the hemodialysis diet and treatment. In addition, older individuals tend to consume low-sodium diets [66].

There are some limitations to consider. First, a cross-sectional study is not possible to establish a causal relationship between studied variables. However, the results of this study may still be useful in developing public health interventions to improve treatment adherence for individuals who are particularly fearful of COVID-19 during the pandemic. Secondly, our data were collected through the survey; thus, it is hard to avoid recall bias. However, our collectors were well-trained and used face-to-face interviews that can reduce recall bias. Thirdly, our study focuses on treatment adherence behaviors through six questions from the ESRD-AQ. Therefore, in the future, we intend to evaluate comprehensive treatment adherence in hemodialysis patients.

5. Conclusions

Digital health diet literacy (DDL) and fear of COVID-19 (FCoV-19S) are important factors in determining treatment adherence among hemodialysis patients. Therefore, it is recommended that future interventions to improve treatment adherence among hemodialysis patients should take into account these two factors, particularly during the current and future pandemics.

Supplementary Materials: The following supporting information can be downloaded at: https://www.mdpi.com/article/10.3390/nu15102292/s1, Figure S1: The assumption checked for linear regression models of treatment adherence; Table S1: The correlations between the independent variable (Treatment Adherence); Table S2: Associate factors of adherence to hemodialysis treatment, medication, fluid, and diet via bivariate linear regression analysis; Table S3: The correlations between the independent variable (Hemodialysis treatment); Table S4: The correlations between the independent variable (Medication treatment); Table S5: The correlations between the independent variable (Fluid and Diet).

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References

1. Liyanage, T.; Ninomiya, T.; Jha, V.; Neal, B.; Patrice, H.M.; Okpechi, I.; Zhao, M.H.; Lv, J.; Garg, A.X.; Knight, J.; et al. Worldwide access to treatment for end-stage kidney disease: A systematic review. *Lancet* **2015**, *385*, 1975–1982. [CrossRef] [PubMed]
2. Thurlow, J.S.; Joshi, M.; Yan, G.; Norris, K.C.; Agodoa, L.Y.; Yuan, C.M.; Nee, R. Global epidemiology of end-stage kidney disease and disparities in kidney replacement therapy. *Am. J. Nephrol.* **2021**, *52*, 98–107. [CrossRef] [PubMed]
3. Bhargava, V.; Jasuja, S.; Tang, S.C.W.; Bhalla, A.K.; Sagar, G.; Jha, V.; Ramachandran, R.; Sahay, M.; Alexander, S.; Vachharajani, T. Peritoneal dialysis: Status report in south and south east Asia. *Nephrology* **2021**, *26*, 898–906. [CrossRef] [PubMed]
4. Pham Van, B.; Vo Duc, C. Global Dialysis Perspective: Vietnam. *Kidney360* **2020**, *1*, 974–976. [CrossRef] [PubMed]
5. World Health Organization. Adherence to Long-Term Therapies: Evidence for Action. 2003. Available online: http://apps.who.int/iris/bitstream/handle/10665/42682/9241545992.pdf;jsessionid=69DD547138169C24724B8622BF4276BD?sequence=1. (accessed on 3 January 2023).
6. Kugler, C.; Maeding, I.; Russell, C.L. Non-adherence in patients on chronic hemodialysis: An international comparison study. *Survival* **2011**, *3*, 6. [CrossRef]
7. Walser, M. Is there a role for protein restriction in the treatment of chronic renal failure? *Blood Purif.* **2000**, *18*, 304–312. [CrossRef]
8. Unruh, M.L.; Evans, I.V.; Fink, N.E.; Powe, N.R.; Meyer, K.B. Skipped treatments, markers of nutritional nonadherence, and survival among incident hemodialysis patients. *Am. J. Kidney Dis.* **2005**, *46*, 1107–1116. [CrossRef]
9. Tentori, F.; Hunt, W.C.; Rohrscheib, M.; Zhu, M.; Stidley, C.A.; Servilla, K.; Miskulin, D.; Meyer, K.B.; Bedrick, E.J.; Johnson, H.K. Which targets in clinical practice guidelines are associated with improved survival in a large dialysis organization? *J. Am. Soc. Nephrol.* **2007**, *18*, 2377–2384. [CrossRef]

10. Bame, S.I.; Petersen, N.; Wray, N.P. Variation in hemodialysis patient compliance according to demographic characteristics. *Soc. Sci. Med.* **1993**, *37*, 1035–1043. [CrossRef]
11. Shirazian, S.; Crnosija, N.; Weinger, K.; Jacobson, A.M.; Park, J.; Tanenbaum, M.L.; Gonzalez, J.S.; Mattana, J.; Hammock, A.C. The self-management experience of patients with type 2 diabetes and chronic kidney disease: A qualitative study. *Chronic Illn.* **2016**, *12*, 18–28. [CrossRef]
12. Naderifar, M.; Tafreshi, M.Z.; Ilkhani, M.; Akbarizadeh, M.R.; Ghaljaei, F. Correlation between quality of life and adherence to treatment in hemodialysis patients. *J. Ren. Inj. Prev.* **2018**, *8*, 22–27. [CrossRef]
13. de Rooij, E.N.M.; Dekker, F.W.; Le Cessie, S.; Hoorn, E.J.; de Fijter, J.W.; Hoogeveen, E.K. Serum Potassium and Mortality Risk in Hemodialysis Patients: A Cohort Study. *Kidney Med.* **2022**, *4*, 100379. [CrossRef] [PubMed]
14. Canaud, B.; Chazot, C.; Koomans, J.; Collins, A. Fluid and hemodynamic management in hemodialysis patients: Challenges and opportunities. *J. Bras. Nefrol.* **2019**, *41*, 550–559. [CrossRef] [PubMed]
15. Sultan, B.O.; Fouad, A.M.; Zaki, H.M. Adherence to hemodialysis and medical regimens among patients with end-stage renal disease during COVID-19 pandemic: A cross-sectional study. *BMC Nephrol.* **2022**, *23*, 138. [CrossRef] [PubMed]
16. Wu, Y.H.; Hsu, Y.J.; Tzeng, W.C. Physical Activity and Health-Related Quality of Life of Patients on Hemodialysis with Comorbidities: A Cross-Sectional Study. *Int. J. Env. Res. Public Health* **2022**, *19*, 811. [CrossRef]
17. Alves, K.B.; Guilarducci, N.V.; Santos, T.d.R.; Baldoni, A.O.; Otoni, A.; Pinto, S.W.L.; Zanette, C.; Sanches, C. Is quality of life associated with compliance to pharmacoterapy in patients with chronic kidney disease undergoing maintenance hemodialysis? *Einstein* **2018**, *16*, eAO4036. [CrossRef]
18. Sørensen, K.; Van den Broucke, S.; Fullam, J.; Doyle, G.; Pelikan, J.; Slonska, Z.; Brand, H. Health literacy and public health: A systematic review and integration of definitions and models. *BMC Public Health* **2012**, *12*, 80. [CrossRef]
19. Duong, T.V.; Pham, K.M.; Do, B.N.; Kim, G.B.; Dam, H.T.; Le, V.-T.T.; Nguyen, T.T.; Nguyen, H.T.; Nguyen, T.T.; Le, T.T. Digital healthy diet literacy and self-perceived eating behavior change during COVID-19 pandemic among undergraduate nursing and medical students: A rapid online survey. *Int. J. Environ. Res. Public Health* **2020**, *17*, 7185. [CrossRef]
20. Chen, C.; Zheng, J.; Driessnack, M.; Liu, X.; Liu, J.; Liu, K.; Peng, J.; You, L. Health literacy as predictors of fluid management in people receiving hemodialysis in China: A structural equation modeling analysis. *Patient Educ. Couns.* **2021**, *104*, 1159–1167. [CrossRef]
21. Dang, L.T.; Luong, T.C.; Nguyen, D.H.; Hoang, T.A.; Nguyen, H.T.; Nguyen, H.C.; Duong, T.H.; Tran, T.T.; Pham, L.V.; Ngo, T.V. The Associations of Suspected COVID-19 Symptoms with Anxiety and Depression as Modified by Hemodialysis Dietary Knowledge: A Multi-Dialysis Center Study. *Nutrients* **2022**, *14*, 2364. [CrossRef]
22. Indino, K.; Sharp, R.; Esterman, A. The effect of health literacy on treatment adherence in maintenance haemodialysis patients: A cross-sectional study. *Ren. Soc. Australas. J.* **2019**, *15*, 11–18. [CrossRef]
23. Baker, D.W. The meaning and the measure of health literacy. *J. Gen. Intern. Med.* **2006**, *21*, 878–883. [CrossRef] [PubMed]
24. Wolf, M.S.; Davis, T.C.; Osborn, C.Y.; Skripkauskas, S.; Bennett, C.L.; Makoul, G. Literacy, self-efficacy, and HIV medication adherence. *Patient Educ. Couns.* **2007**, *65*, 253–260. [CrossRef] [PubMed]
25. DiMatteo, M.R.; Haskard-Zolnierek, K.B.; Martin, L.R. Improving patient adherence: A three-factor model to guide practice. *Health Psychol. Rev.* **2012**, *6*, 74–91. [CrossRef]
26. Makoul, G.; Clayman, M.L. An integrative model of shared decision making in medical encounters. *Patient Educ. Couns.* **2006**, *60*, 301–312. [CrossRef]
27. Miller, T.A. Health literacy and adherence to medical treatment in chronic and acute illness: A meta-analysis. *Patient Educ. Couns.* **2016**, *99*, 1079–1086. [CrossRef]
28. Iddir, M.; Brito, A.; Dingeo, G.; Fernandez Del Campo, S.S.; Samouda, H.; La Frano, M.R.; Bohn, T. Strengthening the immune system and reducing inflammation and oxidative stress through diet and nutrition: Considerations during the COVID-19 crisis. *Nutrients* **2020**, *12*, 1562. [CrossRef]
29. Calder, P.C.; Carr, A.C.; Gombart, A.F.; Eggersdorfer, M. Optimal nutritional status for a well-functioning immune system is an important factor to protect against viral infections. *Nutrients* **2020**, *12*, 1181. [CrossRef]
30. Leggat, J.; Orzol, S.M.; Hulbert-Shearon, T.E.; Golper, T.A.; Jones, C.A.; Held, P.J.; Port, F.K. Noncompliance in hemodialysis: Predictors and survival analysis. *Am. J. Kidney Dis.* **1998**, *32*, 139–145. [CrossRef]
31. De Brito Ashurst, I.; Dobbie, H. A randomized controlled trial of an educational intervention to improve phosphate levels in hemodialysis patients. *J. Ren. Nutr.* **2003**, *13*, 267–274. [CrossRef]
32. Sharp, J.; Wild, M.R.; Gumley, A.I.; Deighan, C.J. A cognitive behavioral group approach to enhance adherence to hemodialysis fluid restrictions: A randomized controlled trial. *Am. J. Kidney Dis.* **2005**, *45*, 1046–1057. [CrossRef] [PubMed]
33. Denhaerynck, K.; Manhaeve, D.; Dobbels, F.; Garzoni, D.; Nolte, C.; De Geest, S. Prevalence and consequences of nonadherence to hemodialysis regimens. *Am. J. Crit. Care* **2007**, *16*, 222–235. [CrossRef] [PubMed]
34. Naalweh, K.S.; Barakat, M.A.; Sweileh, M.W.; Al-Jabi, S.W.; Sweileh, W.M.; Zyoud, S.e.H. Treatment adherence and perception in patients on maintenance hemodialysis: A cross–Sectional study from Palestine. *BMC Nephrol.* **2017**, *18*, 178. [CrossRef] [PubMed]
35. Duong, C.M.; Olszyna, D.P.; Nguyen, P.D.; McLaws, M.-L. Challenges of hemodialysis in Vietnam: Experience from the first standardized district dialysis unit in Ho Chi Minh City. *BMC Nephrol.* **2015**, *16*, 122. [CrossRef]
36. Kim, Y.; Evangelista, L.S.; Phillips, L.R.; Pavlish, C.; Kopple, J.D. The End-Stage Renal Disease Adherence Questionnaire (ESRD-AQ): Testing the psychometric properties in patients receiving in-center hemodialysis. *Nephrol. Nurs. J.* **2010**, *37*, 377–393.

37. Poveda, V.; Amado, L.; Filgueiras, M.; Teixeira, L.; Miranda, V.; Santos-Silva, A.; Paúl, C.; Costa, E. End-stage renal disease adherence questionnaire: Translation and validation to the portuguese language. *Ren. Fail.* **2016**, *38*, 1633–1638. [CrossRef]
38. Chertow, G.M.; Johansen, K.L.; Lew, N.; Lazarus, J.M.; Lowrie, E.G. Vintage, nutritional status, and survival in hemodialysis patients. *Kidney Int.* **2000**, *57*, 1176–1181. [CrossRef]
39. BMJ Best Practice. Coronavirus Disease 2019 (COVID-19), History and Exam. 2020. Available online: https://bestpractice.bmj.com/topics/en-gb/3000201/history-exam (accessed on 29 December 2022).
40. Hemmelgarn, B.R.; Manns, B.J.; Quan, H.; Ghali, W.A. Adapting the Charlson Comorbidity Index for use in patients with ESRD. *Am. J. Kidney Dis.* **2003**, *42*, 125–132. [CrossRef]
41. Nguyen, H.T.; Do, B.N.; Pham, K.M.; Kim, G.B.; Dam, H.T.; Nguyen, T.T.; Nguyen, T.T.; Nguyen, Y.H.; Sørensen, K.; Pleasant, A. Fear of COVID-19 scale—Associations of its scores with health literacy and health-related behaviors among medical students. *Int. J. Environ. Res. Public Health* **2020**, *17*, 4164. [CrossRef]
42. Duong, T.V.; Aringazina, A.; Kayupova, G.; Nurjanah, f.; Pham, T.V.; Pham, K.M.; Truong, T.Q.; Nguyen, K.T.; Oo, W.M.; Su, T.T. Development and validation of a new short-form health literacy instrument (HLS-SF12) for the general public in six Asian countries. *HLRP Health Lit. Res. Pract.* **2019**, *3*, e91–e102. [CrossRef]
43. Duong, T.V.; Nguyen, T.T.; Pham, K.M.; Nguyen, K.T.; Giap, M.H.; Tran, T.D.; Nguyen, C.X.; Yang, S.-H.; Su, C.-T. Validation of the short-form health literacy questionnaire (HLS-SF12) and its determinants among people living in rural areas in Vietnam. *Int. J. Environ. Res. Public Health* **2019**, *16*, 3346. [CrossRef]
44. Van Hoa, H.; Giang, H.T.; Vu, P.T.; Van Tuyen, D.; Khue, P.M. Factors associated with health literacy among the elderly people in Vietnam. *BioMed Res. Int.* **2020**, *2020*, 3490635. [CrossRef] [PubMed]
45. Le, L.T.H.; Dang, L.T.; Wang, T.J.; Do, T.G.; Nguyen, D.H.; Hoang, T.A.; Pham, M.D.; Do, B.N.; Nguyen, H.C.; Tran, T.T.; et al. Osteoporosis Risk in Hemodialysis Patients: The Roles of Gender, Comorbidities, Biochemical Parameters, Health and Diet Literacy. *Nutrients* **2022**, *14*, 5122. [CrossRef]
46. Sørensen, K.; Pelikan, J.M.; Röthlin, F.; Ganahl, K.; Slonska, Z.; Doyle, G.; Fullam, J.; Kondilis, B.; Agrafiotis, D.; Uiters, E.; et al. Health literacy in Europe: Comparative results of the European health literacy survey (HLS-EU). *Eur. J. Public Health* **2015**, *25*, 1053–1058. [CrossRef] [PubMed]
47. Ryu, H.; Jeon, H.J.; Sun, H.-K.; Han, K.H.; Whang, C.G.; Han, S.Y. Repeated education improves diet compliance in maintenance Hemodialysis Patients. *Int. J. Urol. Nephrol* **2014**, *2*, 63–68.
48. Gast, A.; Mathes, T. Medication adherence influencing factors—An (updated) overview of systematic reviews. *Syst. Rev.* **2019**, *8*, 112. [CrossRef] [PubMed]
49. Jain, D.; Green, J.A. Health literacy in kidney disease: Review of the literature and implications for clinical practice. *World J. Nephrol.* **2016**, *5*, 147–151. [CrossRef]
50. Maldonado, G.; Greenland, S. Simulation study of confounder-selection strategies. *Am. J. Epidemiol.* **1993**, *138*, 923–936. [CrossRef]
51. Do, B.N.; Tran, T.V.; Phan, D.T.; Nguyen, H.C.; Nguyen, T.T.; Nguyen, H.C.; Ha, T.H.; Dao, H.K.; Trinh, M.V.; Do, T.V. Health literacy, ehealth literacy, adherence to infection prevention and control procedures, lifestyle changes, and suspected COVID-19 symptoms among health care workers during lockdown: Online survey. *J. Med. Internet Res.* **2020**, *22*, e22894. [CrossRef]
52. Karacin, C.; Bilgetekin, I.; B Basal, F.; Oksuzoglu, O.B. How does COVID-19 fear and anxiety affect chemotherapy adherence in patients with cancer. *Future Oncol.* **2020**, *16*, 2283–2293. [CrossRef]
53. Valeri, A.M.; Robbins-Juarez, S.Y.; Stevens, J.S.; Ahn, W.; Rao, M.K.; Radhakrishnan, J.; Gharavi, A.G.; Mohan, S.; Husain, S.A. Presentation and Outcomes of Patients with ESKD and COVID-19. *J. Am. Soc. Nephrol.* **2020**, *31*, 1409–1415. [CrossRef] [PubMed]
54. Fisher, M.; Yunes, M.; Mokrzycki, M.H.; Golestaneh, L.; Alahiri, E.; Coco, M. Chronic hemodialysis patients hospitalized with COVID-19: Short-term outcomes in the Bronx, New York. *Kidney360* **2020**, *1*, 755. [CrossRef] [PubMed]
55. Okoro, R.N. COVID-19 pandemic: The role of community pharmacists in chronic kidney disease management supportive care. *Res. Soc. Adm. Pharm.* **2021**, *17*, 1925–1928. [CrossRef] [PubMed]
56. Weiss, S.; Bhat, P.; Del Pilar Fernandez, M.; Bhat, J.G.; Coritsidis, G.N. COVID-19 Infection in ESKD: Findings from a Prospective Disease Surveillance Program at Dialysis Facilities in New York City and Long Island. *J. Am. Soc. Nephrol.* **2020**, *31*, 2517–2521. [CrossRef]
57. Özkan, İ.; Taylan, S. Diet and fluid restriction experiences of patients on hemodialysis: A meta-synthesis study. *Rev. Nefrol. Diálisis Transpl.* **2022**, *42*, 22–40.
58. Chan, Y.M.; Zalilah, M.S.; Hii, S.Z. Determinants of compliance behaviours among patients undergoing hemodialysis in Malaysia. *PLoS ONE* **2012**, *7*, e41362. [CrossRef]
59. Ozen, N.; Cinar, F.I.; Askin, D.; Mut, D.; Turker, T. Nonadherence in Hemodialysis Patients and Related Factors: A Multicenter Study. *J. Nurs. Res.* **2019**, *27*, e36. [CrossRef]
60. Tozawa, M.; Iseki, K.; Iseki, C.; Oshiro, S.; Higashiuesato, Y.; Yamazato, M.; Tomiyama, N.; Tana, T.; Takishita, S. Analysis of drug prescription in chronic haemodialysis patients. *Nephrol. Dial. Transplant.* **2002**, *17*, 1819–1824. [CrossRef]
61. Chiu, Y.-W.; Teitelbaum, I.; Misra, M.; De Leon, E.M.; Adzize, T.; Mehrotra, R. Pill burden, adherence, hyperphosphatemia, and quality of life in maintenance dialysis patients. *Clin. J. Am. Soc. Nephrol.* **2009**, *4*, 1089–1096. [CrossRef]
62. Walker, R.C.; Howard, K.; Tong, A.; Palmer, S.C.; Marshall, M.R.; Morton, R.L. The economic considerations of patients and caregivers in choice of dialysis modality. *Hemodial. Int.* **2016**, *20*, 634–642. [CrossRef]

63. Hallab, A.; Wish, J.B. Employment among patients on dialysis: An unfulfilled promise. *Clin. J. Am. Soc. Nephrol. CJASN* **2018**, *13*, 203. [CrossRef] [PubMed]
64. Ng, M.S.N.; Chan, D.N.S.; Cheng, Q.; Miaskowski, C.; So, W.K.W. Association between Financial Hardship and Symptom Burden in Patients Receiving Maintenance Dialysis: A Systematic Review. *Int. J. Env. Res. Public Health* **2021**, *18*, 9541. [CrossRef] [PubMed]
65. Clark-Cutaia, M.N.; Ren, D.; Hoffman, L.A.; Burke, L.E.; Sevick, M.A. Adherence to hemodialysis dietary sodium recommendations: Influence of patient characteristics, self-efficacy, and perceived barriers. *J. Ren. Nutr.* **2014**, *24*, 92–99. [CrossRef] [PubMed]
66. Foote, J.A.; Giuliano, A.R.; Harris, R.B. Older adults need guidance to meet nutritional recommendations. *J. Am. Coll. Nutr.* **2000**, *19*, 628–640. [CrossRef]

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Research Article

Determination of Risk Factors Associated with the Failure of 12 Weeks of Direct-Acting Antiviral Therapy in Patients with Hepatitis C: A Prospective Study

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Introduction. Direct-acting antivirals (DAAs) have significantly improved the efficacy and tolerability of the treatment of hepatitis C virus (HCV). However, studies conducted on actual patients with the aim of predicting the risk associated with treatment failure are lacking. *Methods*. Our study enrolled 334 new HCV patients and assessed the effectiveness of treatment and predicted the risk of failure to achieve sustained virological response (SVR) by developing a multiple logistic model. Our study compared the variables between the two groups, those who did (group 0, $n = 239$) and did not achieve SVR (group 1, $n = 95$). *Results*. The cure rate of HCV at 12th week in our study was 71.56%. We found that advanced cirrhosis, HCV genotype, HBV coinfection, rapid virological response (RVR), fibrosis index (FIB-4) score, serum levels of AST, ALP, hemoglobin, and viral load before treatment were prognostic factors associated with rate of failure to achieve SVR at week 12 of DAA therapy. In the multiple logistic model, eight significant predictors including advanced cirrhosis status, HCV genotype, RVR, AST/ALP levels, FIB-4 score, and viral load before treatment predicted the risk of failure with excellent model performance (area under the receiver operating characteristic curve (AUC_{ROC}) [95% CI] =0.986 (0.971-0.999)). RVR and advanced cirrhosis were the two strongest predictors with odd ratios (95% CI) =9.72 (2.8, 39.28) and 51.54 (6.39, 139.82), respectively. *Conclusion*. The multiple logistic regression model included significant factors to estimate the probability of failure to achieve SVR, which could improve HCV treatment strategy.

1. Introduction

Chronic hepatitis C virus (HCV) infection continues to be a serious global health problem, with 71 million people infected with HCV [1]. To date, HCV remains the leading cause of chronic liver disease and hepatocellular carcinoma (HCC) worldwide in both developed and developing countries [2]. In Vietnam, the HCV is estimated to affect approximately 1%-2% of the total population [3, 4]. It should be noted that the distribution of HCV genotypes and the clinical manifestations of HCV in Southeast Asian countries such as Vietnam are different from those in Europe and America [5]. The hepatitis C virus is transmitted through unsafe medical and non-medical injections, unscreened blood and blood products, and sharing of injection equipment, to name just a few routes. This is common in developing and low-middle income countries in Southeast Asia, which is likely responsible for the higher prevalence of HCV there [1]. To date, HCV has been classified into seven recognized genotypes including genotype 1, genotype 2, genotype 3, genotype 4, genotype 5, genotype 6, and mixed genotype [1, 6]. HCV genotype 6 accounts for only 2% of clinical manifestations in countries worldwide but is very common in Southeast Asian countries including Vietnam [5, 7].

The goal of HCV treatment is sustained virological response (SVR), defined as the absence of detectable viral RNA levels in the blood 24 weeks after completion of treatment. Besides the

goal of eradicating the virus, HCV treatment also needs to prevent the development of cirrhosis and its complications. Global efforts to improve the efficacy and tolerability of HCV treatment, including an understanding of the HCV genome, have paved the way for the development of many direct-acting antivirals (DAAs) [8]. Sofosbuvir and velpatasvir demonstrated clinical benefits in a small number of patients with HCV genotypes 1, 2, 3, 4, 5, and 6 in a phase II/III study. However, studies beyond clinical trials, involving patients in actual clinical settings, are needed to confirm their clinical efficacy [9, 10]. Although DAA has been discovered and used in the early years of the twenty-first century in other parts of the world, in Vietnam, the Ministry of Health has only recently (2019) implemented a new list of health insurance drugs, in which the approved DAA regimen includes the following: (1) sofosbuvir and ledipasvir (SOF/LDV), (2) sofosbuvir and velpatasvir (SOF/VEL), and (3) sofosbuvir and daclatasvir [11].

Predicting the success rate of achieving SVR at weeks 12 and 24 of DAA therapy can help guide treatment plans as well as HCV prognosis. Undetectable HCV RNA 4 weeks after the start of treatment was also considered a predictor, defined as rapid virological response (RVR) [12]. The strongest SVR predictors for HCV in general were genetic polymorphisms in IL28B, HCV genotype, fibrosis stage, and RVR [12]. Other predictors of response to HCV treatment include patient characteristics (e.g., age, BMI, insulin resistance, and sex), pretreatment HCV RNA levels, coinfections, dose regimen and duration of treatment, virological response during treatment, and adherence. A model to predict HCV treatment failure after initiating DAA therapy has been developed that includes variables for age, sex, body mass index (BMI), population ethnicity, insurance type, HCV genotype 1, HCV treatment history, fibrosis stage, Child-Turcotte classification in patients with cirrhosis, hepatitis B virus and/or HIV coinfection, history of solid organ transplantation, dialysis status, diabetes or comorbid mental illness, and the presence of drug-drug interactions (DDI) with the expected DAA regimen in 1,253 patients [13].

We performed a prospective study in treatment DAA-naïve patients with chronic hepatitis C to predict the risk of failure to achieve SVR at week 12 of DAA therapy by developing a multiple logistic model based on patient factors, preclinical characteristics before treatment, and genotype of HCV virus in Vietnamese HCV patients.

2. Materials and Methods

2.1. Study Design. The observational study was prospectively designed with a weekly follow-up after the initiation of DAA therapy for 12 weeks. The study was conducted at the Hai Phong International General Hospital from December 2019 to July 2021. Research data were collected from electronic medical records and medical examination processes of specialists. Patients were examined, checked for compliance with drug use, and underwent a blood test every four weeks. Treatment failure was determined by the absence of SVR at 12 weeks (SVR 12) after treatment completion.

2.2. Patients. Our study selected HCV patients from the Gastroenterology and Hepatobiliary Clinic of Hai Phong International General Hospital from January 2019 to July 2021 using the following inclusion criteria: age>18 years, DAA-naïve patients with HCV infection, and indicated for treatment with DAAs. Patients with current hepatocellular carcinoma or renal failure with an estimated glomerular filtration rate (eGFR) of <30 mL/min/1.73 m^2 were excluded from the study.

HCV infection was diagnosed using two methods [14]: an anti-HCV antibody test to screen for HCV infection and a subsequent confirmatory nucleic acid test for HCV ribonucleic acid (RNA).

2.3. Control Variables. Demographic and baseline characteristics of the study patients, including age, sex, weight, and height, were collected at the time of treatment initiation. The co-diseases were determined according to the International Classification of Disease (ICD) – 10 code.

The fibrosis index based on four factors (FIB-4) is calculated [15]:

$$\text{FIB} - 4 = \frac{(\text{age x AST})}{\text{Platelet count x } \sqrt{\text{ALT}}}. \quad (1)$$

The FIB-4 upper limit of normal (ULN) was 34 U/L for females and 36 U/L for males.

Estimated eGFR is estimated using the following formula [16]:

$$eGFR\,(mL/\text{min}) = [(140 - age) \times Wt/(0.814 \times S.Cr \text{ in } \mu mol/L)] \times (0.85 \text{ if } female)[eGFR \textit{ must be corrected for } surface\ area], \quad (2)$$

where Wt = weight and $S.Cr$ = serum creatinine.

The HCV viral load was measured using Roche COBAS AmpliPrep/COBAS TaqMan, Version 2 (Roche, Pleasanton, CA, USA) according to the manufacturer's instructions with a lower limit of quantification and detection of 15 IU/mL before the start (baseline viral load) and at 12th week of DAA therapy.

For HCV genotyping, viral RNA from HCV RNA-positive samples were reverse transcribed using the Superscript III RT and RNaseOUT kit (Invitrogen Life Technologies, Paisley, UK), as previously reported [17].

2.4. Statistical Analysis

2.4.1. Sample Size. Our sample size was calculated on the basis of the results reported by Nabulsi et al. [13], who reported a DAA treatment failure rate of 13.9% in patients with HCV. In total, our study required 13 patients to identify factors that affected treatment outcome on day 13 with an 80% power at a significance level of 5%.

2.4.2. Odds Ratios–Based Approach. The significance of odd ratio (OR) was examined based on z-test at the confidence interval (CI) of 95%, i.e., significance level (P) of 0.05 ($P \leq 0.05$), which measures if the OR is statistically significant. This is used in order to show whether or not a given factor or factors have caused the failure to achieve SVR at the 12th week of DAA treatment.

Table 1: Comparison of clinical characteristics between group 0 ($n = 239$) and group 1 ($n = 95$).

Characteristic	Group 0 ($n = 239$)	Group 1 ($n = 95$)	R^2	OR (95% CI)	P value
Age, years, mean ± SD	50.72 ± 12.68	51.23 ± 10.65	0.01		0.732
Sex (male), n (%)	157 (65.69)	68 (71.58)		1.32 (0.79, 2.24)	0.366
BMI, mean ± SD	0.19 ± 0.03	0.19 ± 0.03	0.01		0.686
Cirrhosis (Y/N), n (%)	21 (8.79)	53 (55.79)		12.91 (7.15, 24.09)	0.001
Comorbidity					
Diabetes, n (%)	24 (10.04)	7 (7.37)		0.73 (0.28, 1.68)	0.535
Hypertension, n (%)	14 (5.86)	8 (8.42)		1.49 (0.57, 3.64)	0.464
Ulcer, n (%)	22 (9.21)	16 (16.84)		2 (0.98, 4)	0.057
HBV-HCV coinfection, n (%)	5 (2.09)	55 (57.89)		61.49 (25.24, 187.94)	0.001
Malignancy (not including HCC)	8 (3.35)	3 (3.16)		0.98 (0.2, 3.53)	1
Drug regimen					
SOF/LDV, n (%)	155 (64.85)	66 (69.47)		1.24 (0.75, 2.08)	0.445
SOF/VEL, n (%)	83 (34.73)	30 (31.58)		0.87 (0.52, 1.44)	0.611
Reach RVR, n (%)	118 (49.37)	5 (5.26)		0.06 (0.02, 0.14)	0.001
FIB-4 score, mean ± SD	2.25 ± 1.36	7.39 ± 4.54	0.43		0.001
Baseline AST (U/L), mean ± SD	57.35 ± 34.07	246.88 ± 320.53	0.20		0.001
Baseline ALP (U/L), mean ± SD	63.6 ± 45.55	319.42 ± 403.26	0.22		0.001
Baseline total bilirubin (mg/dl), mean ± SD	14.43 ± 25.81	17.22 ± 24.67	0.01		0.368
Baseline serum creatinine, (μmol/L), mean ± SD	74.58 ± 23.82	82.68 ± 79.18	0.01		0.154
Baseline GFR (mL/min), mean ± SD	87.7 ± 33.57	88.24 ± 36.39	0.01		0.896
Baseline hemoglobin (g/L), mean ± SD	138.85 ± 19.65	123.63 ± 20.32	0.11		0.001
Baseline viral load $\log_{10}$ IU/ml, mean ± SD	4.14 ± 1.25	5.04 ± 1.37	0.10		0.001
Viral C genotype					
Genotype 1, n (%)	48 (20.08)	74 (77.89)		13.82 (7.86, 25.2)	0.001
Genotype 2, n (%)	25 (10.46)	9 (9.47)		0.91 (0.39, 1.97)	1
Genotype 3, n (%)	17 (7.11)	5 (5.26)		0.75 (0.24, 1.96)	0.632
Genotype 6, n (%)	149 (62.34)	7 (7.37)		0.05 (0.02, 0.11)	0.001

BMI, body mass index; HBV, hepatitis B virus; HCV, hepatitis C virus; RVR, rapid virological response; LDV/SOF, ledipasvir/sofosbuvir; VEL/SOF: sofosbuvir/velpatasvir; AST: aspartate aminotransferase; ALT: alanine transaminase; FIB-4: fibrosis index based on four factors; GFR: glomerular filtration rate.

2.4.3. Multiple Logistic Regression Model Development. ORs were used to compare the relative odds of the occurrence of the outcome of HCV treatment, given exposure to the variables. In addition to examining the ORs for each independent variable, we developed the logistic regression model to consider all independent variables concurrently for their correlation with the risk of treatment failure.

In our logistic regression model, the dependent variable was presented in binary form, and independent variables were presented in continuous or categorical form. The dependent variable Y has two possible values: $y = 1$ (person does not achieve SVR) and $y = 0$ (person achieves SVR). There were 17 independent variables ($xj, j = 1, \cdots 17$) (Table 1).

We applied a stepwise logistic regression: First, we considered all 17 independent variables, then developed a smaller model using stepwise regression (add and remove the variable at 0.1 level of significance), and finally examined the smaller model and rebuilt it to include only significant variables. The receiver operating characteristic (ROC) curve (AUC_{ROC}) was applied to compare the predictive performance across models using a validation set. Logistic regression was performed using R (version 11) [18].

2.5. Ethical Considerations. The study protocols were reviewed and approved by the Institutional Review Board (IRB) of Hai Phong International Hospital, Vietnam (IRB. 20.302). The study was conducted in accordance with the Declaration of Helsinki and the International Conference on the Harmonization of the Technical Requirements for the Registration of Pharmaceuticals for Human Use - Good Clinical Practice guidelines. Prior to data collection, ethical approval was obtained from the ethics subcommittees of Hai Phong International Hospital. All patients provided written informed consent prior to the commencement of the study.

3. Results

After 12 weeks of treatment with DAAs, 334 HCV patients were classified into two groups: those who achieved SVR (group 0, $n = 239$) and those who did not achieve SVR

(group 1, $n = 95$). Thus, the rate of reaching the treatment goal in our study group was 71.56%. The mean age of group 0 and group 1 was similar (50.72 ± 12.68 vs. 51.23 ± 10.66) with P value = 0.732. The proportion of men in groups 0 and 1was 65.69% and 71.58%, respectively ($P = 0.366$). Our study group also evaluated the comorbidities of 334 patients with HCV, including type 2 diabetes, hypertension, peptic ulcer, HBV coinfection, and cancer (excluding liver cancer). We found that the difference in the incidence of these diseases (except for the HBV comorbidity variable) did not differ significantly between groups ($P > 0.05$) (Table 1).

When comparing the clinical and subclinical characteristics between groups 0 and 1, we found many statistically significant differences (Table 1). The rate of cirrhosis in group 0 was 8.79%, while it was 55.79% in group 1 with ORs (95% CI) = 12.91 (7.15, 24.09) and $P < 0.001$. When looking at the SVR rate at week four of DAAs, we found that the SVR rate in group 0 was significantly higher than that in group 1 (49.37% vs. 5.26%) with ORs (95%CI) = 6.71 (3.82, 11.98) and $P < 0.001$. The FIB-4 index before treatment in group 1 was also higher than that of group 0 (mean + SD; 7.39 ± 4.54 vs. 2.25 ± 1.37, respectively, $P < 0.001$). Similarly, pretreatment blood AST (U/l) levels of the 95 patients in group 1 were significantly higher than that of the 239 patients in group 0 (246.88 ± 320.54 vs. 57.35 ± 34.08, sequentially, $P < 0.001$). Group 1 had a statistically significant higher serum ALP level (U/l) before treatment than group 0 (319.42 ± 403.27 vs. 63.6 ± 45.55, respectively, $P < 0.001$). Meanwhile, the mean total bilirubin levels of groups 0 and 1 were similar (14.43 ± 25.81 vs. 17.22 ± 24.68, respectively, $P = 0.368$). We found that $\log_{10}$ of hepatitis C viral load before treatment was higher in group 1 than in group 2 (5.04 ± 1.38 vs. 4.14 ± 1.25, $P < 0.001$).

When comparing renal function, we found that the serum creatinine concentration before treatment in both groups was similar (74.58 ± 23.83 vs. 82.68 ± 79.18%, $P = 0.154$). Similarly, the eGFR (mL/min) of HCV patients in group 0 did not differ from that in group 1 (88.24 ± 36.4 vs. 87.7 ± 33.58, $P = 0.896$). The hemoglobin concentration in group 0 was significantly higher than that of the patients in group 1 (138.85 ± 19.65 vs. 123.63 ± 20.33, respectively, $P < 0.001$).

We found that the genotype HCV-1 rate was higher in group 1 (77.89% vs. 20.08%) with ORs (95%CI) = 13.82 (7.86, 25.2) and $P < 0.001$. By contrast, the distribution of HCV-6 genotype was found to be lower in group 1 than in group 0 (7.37% vs. 62.34%, respectively) with ORs (95%CI) = 0.06 (0.02, 0.12) and $P < 0.001$. Meanwhile, the distribution of HCV-2 and HCV-3 genotypes did not differ significantly between the two groups ($P > 0.05$).

3.1. Logistic Regression and Interpretation. Firstly, we took into account all 17 independent variables in the full logistic regression model (Table 1). The models with coefficients, standard errors, P value, and OR (with 97.5% CI) are given in Table 2. It should be noted that positive coefficients (OR> 1) show that the variable positively relates to the probability of failure to achieve the SVR after 12 weeks of DAA treatment and negative coefficients (OR< 1) suggest a negative association with the probability of treatment failure. However, it is important to observe the significance of independent variables.

As per multiple logistic regression analysis, the independent variables (cirrhosis, HCV genotype, levels of AST, ALP, hemoglobin, fibrosis-4 score, and $\log_{10}$ of viral load before treatment) showed significant ORs (Table 1), while other variables (number of comorbidities, count of platelet numbers) did not exhibit significant ORs.

Secondly, we performed stepwise logistic regression to reduce the complete model by removing insignificant variables determined by the preceding stepwise regression. The comprehensive model (model 1) yielded a BIC of 114 with a pseudo R^2 of 0.89. The area under the ROC curve (95% CI) was 0.979 (0.961-0.997). From model 1, we excluded the pretreatment platelet count variable, because it had a P value of 0.225, to give model 2 (BIC of 110.6, pseudo $R^2 = 0.88$). We then removed the variable associated with HBV, because of the P value = 0.206, to give model 3 (BIC of 109.2). We further removed the pretreatment eGFR (mL/min) to obtain model 4 (BIC of 102.2). Due to the relationship between eGFR and blood creatinine concentration, we removed the variable creatinine concentration from model 4, to give model 5 (BIC of 101.1) with 12 variables. Model 6 was generated by the removal of the DAA therapy variable from model 5, which did not alter the BIC. A comparison of the statistical differences and fit of the models is presented in Table 3. Model 6 was chosen because of the fewest variables, highest ROC, and lowest BIC. It showed excellent diagnostic performance in predicting HCV treatment failure with a ROC curve (95% CI) = 0.986 (0.971-0.999) (Figure 1).

By running model 6 on the full dataset, we found that the most important predictor associated with failure to reach SVR was achieving RVR at the 4th week (ORs (95%CI) = 51.54 (6.39, 139.82) and p-value = 0.002) followed by the patient's cirrhosis status before treatment (OR, 97.5% =9.72 (2.85, 39.28), $P = 0.001$). Hepatitis C viral load before treatment also played an important role in predicting the risk of HCV treatment failure, ORs (97.5%) = 2.4 (1.52, 4.17), $P = 0.001$. With an increase of 1 in the FIB-4 score, the patient's risk of failure to achieve SVR at 12 weeks increased by 1.83 times (ORs (97.5%) = 1.83 (1.36, 2.67), $P = 0.001$). With 1 U/L higher AST and ALP concentrations than pre-HCV, the patient had a 1.03-and 1.02-fold increased risk of treatment failure, respectively. In contrast, a lower pretreatment hemoglobin level was a risk factor for HCV treatment failure at week 12 with ORs (97.5%) = 0.96 (0.93.0.99), $P = 0.003$. The genotype of the hepatitis C virus has a different influence on the risk of treatment failure. Compared with the HCV-1 genotype, patients with the HCV-6 genotype had a lower risk of failure to achieve SVR at 12 weeks (OR, 97.5%) = 0.32 (0.06.0.87), $P = 0.053$.

4. Discussion

Our study assessed the effectiveness of treatment and predicted the risk of failure to achieve SVR by developing a multivariable logistic model of 334 HCV patients. Cure rates of more than 90% have been documented in most phase III clinical trials using DAA therapy in chronic hepatitis C patients. Our study showed that the SVR measured 12 weeks after

Table 2: Multiple variable logistic regression models based on the test dataset.

Model	Independent variable	Slope	SE	*P*	OR (97.5%CI)
Model 1	Intercept	-55.38	33.69	0.101	0.01 (0.01, 0.01)
	Number of comorbidities	-2.06	1.56	0.186	0.13 (0.01, 1.5)
	Cirrhosis	10.59	4.75	0.026	39344.68 (37.88, 4887573)
	HBV coinfection	8.01	5.88	0.174	3004.94 (0.49, 1197994)
	Genotype 2	8.18	4.39	0.063	3564.85 (6.24, 4097476)
	Genotype 3	-2.99	2.41	0.214	0.06 (0.01, 3.83)
	Genotype 6	-2.17	1.88	0.249	0.12 (0.01, 3.52)
	Medication (SOF.VEL)	6.06	2.86	0.034	428.1 (5.32, 717602.2)
	Baseline AST	0.14	0.08	0.057	1.15 (1.05, 1.44)
	Baseline ALP	0.12	0.07	0.069	1.12 (1.03, 1.36)
	Baseline creatinine	0.19	0.1	0.056	1.2 (1.05, 1.59)
	Baseline GFR	0.1	0.06	0.09	1.1 (1.01, 1.29)
	Baseline hemoglobin	-0.35	0.18	0.053	0.71 (0.41, 0.9)
	Plt_pre	0.03	0.02	0.225	1.03 (1, 1.08)
	FIB_4	3.48	1.66	0.036	32.45 (3.27, 4953.69)
	Baseline viral load (log10 IU/ml)	3.03	1.58	0.056	20.52 (2.71, 3935)
	RVR	22.94	24.65	0.353	91353 (250.95, 1024875)
Model 2	Intercept	-44.75	18.76	0.017	0.01 (0.01, 0.01)
	Number of comorbidities	-2.22	1.4	0.111	0.11 (0.01, 1.05)
	Cirrhosis	10.43	4.11	0.012	33528.71 (52.01, 1364237)
	HBV coinfection	6.21	4.9	0.206	494.86 (0.21, 411352200)
	Genotype 2	7.17	3.72	0.054	1296.44 (4.39,84435790)
	Genotype 3	-3.06	2.14	0.153	0.05 (0.01, 2.44)
	Genotype 6	-2.71	1.79	0.129	0.07 (0.01, 1.67)
	Medication SOF.VEL	6.89	2.99	0.022	975.47 (9.17, 2460177)
	Baseline AST	0.13	0.06	0.033	1.14 (1.05, 1.33)
	Baseline ALP	0.1	0.05	0.047	1.1 (1.03, 1.24)
	Baseline creatinine	0.15	0.08	0.036	1.16 (1.05, 1.41)
	Baseline GFR	0.09	0.05	0.063	1.09 (1.01, 1.23)
	Baseline hemoglobin	-0.31	0.14	0.024	0.74 (0.51, 0.9)
	FIB_4	3.31	1.35	0.015	27.17 (3.64, 1049.77)
	Baseline viral load (log10 IU/ml)	2.69	1.26	0.033	14.64 (2.41, 517.5)
	RVR	21.39	9.28	0.022	1933120000 (4542.83, 7.439031E+21)
Model 3	Intercept	-30.52	11.36	0.008	0.01 (0.01, 0.01)
	Cirrhosis	7.23	2.82	0.011	1372.69 (16.17, 1459831)
	HBV coinfection	0.75	2.35	0.75	2.12 (0.03, 642.88)
	Genotype 2	5.8	2.64	0.028	328.87 (4.3, 236966)
	Genotype 3	-2.18	2.05	0.289	0.12 (0.01, 3.62)
	Genotype 6	-2.3	1.63	0.157	0.11 (0.01, 1.85)
	Medication SOF.VEL	4.31	2.02	0.033	73.79 (3.02, 17293.09)
	Baseline AST	0.08	0.03	0.012	1.08 (1.03, 1.17)
	Baseline ALP	0.04	0.03	0.052	1.05 (1.01, 1.1)
	Baseline creatinine	0.1	0.05	0.033	1.1 (1.03, 1.23)
	Baseline GFR	0.06	0.04	0.106	1.06 (1, 1.15)
	Baseline hemoglobin	-0.18	0.08	0.019	0.84 (0.68, 0.94)
	FIB_4	2.11	0.78	0.007	8.18 (2.46, 60.01)
	Baseline viral load (log10 IU/ml)	1.51	0.66	0.022	4.51 (1.7, 26.08)
	RVR	14.94	5.58	0.008	3058150 (791.41, 27932120000000)

Table 2: Continued.

Model	Independent variable	Slope	SE	*P*	OR (97.5%CI)
Model 4	Intercept	-20.77	7.95	0.009	0.01 (0.01, 0.01)
	Cirrhosis	4.9	1.87	0.009	134.18 (7.16, 16212.11)
	Genotype 2	3.43	1.93	0.076	30.85 (1.38, 5070.96)
	Genotype 3	-2.44	1.95	0.212	0.09 (0.01, 2.33)
	Genotype 6	-2.97	1.55	0.056	0.06 (0.01, 0.76)
	Medication SOF.VEL	4.03	2.17	0.063	55.74 (2.1, 14922.96)
	Baseline AST	0.06	0.03	0.012	1.07 (1.03, 1.13)
	Baseline ALP	0.03	0.02	0.067	1.03 (1.01, 1.08)
	Baseline creatinine	0.06	0.04	0.08	1.06 (1.01, 1.15)
	Baseline hemoglobin	-0.13	0.07	0.041	0.89 (0.76, 0.97)
	FIB_4	1.47	0.56	0.008	4.34 (1.87, 18.26)
	Baseline viral load (log10 IU/ml)	1.29	0.53	0.014	3.63 (1.56, 14.42)
	RVR	12.04	4.6	0.009	169281.6 (211.77, 35097410000)
Model 5	Intercept	-16.86	6.76	0.013	0.01 (0.01, 0.01)
	Cirrhosis	4.05	1.51	0.008	57.3 (4.77, 2162.94)
	Genotype 2	2.79	1.62	0.085	16.26 (1.01, 819.57)
	Genotype 3	-2.1	1.71	0.221	0.13 (0.01, 2.36)
	Genotype 6	-2.83	1.53	0.064	0.06 (0.01, 0.83)
	Medication SOF.VEL	3.13	1.68	0.062	22.73 (1.45, 1374.49)
	Baseline AST	0.06	0.02	0.009	1.06 (1.02, 1.11)
	Baseline ALP	0.03	0.02	0.054	1.03 (1.01, 1.08)
	Baseline hemoglobin	-0.1	0.05	0.04	0.92 (0.82, 0.98)
	FIB_4	1.28	0.47	0.006	3.58 (1.72, 11.6)
	Baseline viral load (log10 IU/ml)	1.34	0.49	0.006	3.81 (1.73, 13.37)
	RVR	9.26	3.37	0.007	10411.78 (60.84, 45946530)
Model 6	Intercept	-11.61	5.13	0.024	0.01 (0.01, 0.1)
	Cirrhosis	3.74	1.3	0.004	41.71 (4.65, 893.62)
	Genotype 2	2.53	1.44	0.08	12.44 (0.91, 293.43)
	Genotype 3	-1.43	1.32	0.279	0.25 (0.02, 2.85)
	Genotype 6	-2.94	1.48	0.048	0.06 (0.01, 0.7)
	Baseline AST	0.04	0.02	0.01	1.04 (1.02, 1.08)
	Baseline ALP	0.03	0.01	0.037	1.03 (1.01, 1.05)
	Baseline hemoglobin	-0.07	0.04	0.027	0.94 (0.87, 0.99)
	FIB_4	0.91	0.34	0.007	2.47 (1.4, 5.33)
	Baseline viral load (log10 IU/ml)	1.03	0.39	0.008	2.8 (1.46, 6.9)
	RVR	6.06	2.11	0.004	427.63 (15.54, 7179.67)

HBV, hepatitis B virus; HCV, hepatitis C virus; RVR, rapid virological response; LDV/SOF, ledipasvir/sofosbuvir; VEL/SOF: sofosbuvir/velpatasvir; AST: aspartate aminotransferase; ALT: alanine transaminase; FIB-4: fibrosis index based on four factors; GFR: glomerular filtration rate.

treatment was only 71.56%. SVR at 12 weeks was considered the primary outcome measure of HCV treatment efficacy by DAA therapy. The new DAA therapy is much more effective than the traditional treatment, which uses peg-IFN with or without protease inhibitor drugs [19]. However, this result is highly dependent on the HCV genotype and absence of cirrhosis [19]. Our study population consisted of 22.16% of patients with cirrhosis, which may have affected the percentage of SVR achievement. Furthermore, considering the success rate by genotype, patients with the HCV-6 genotype had a success rate of nearly 96%, while patients with the HCV-1 genotype had the lowest success rate (35%) (Table 1). Similar to our study, SVR rates of HCV genotype 6 with a combination of pegylated interferon and ribavirin is superior to genotype 1, and nearly comparable to genotype 3, with 60%-90% [20].

RVR is the most important predictor of SVR, as confirmed by logistic regression analysis [21]. In patients with RVR at week 4, SVR at week 24 was 81.6%, while in patients without RVR, the SVR rate was 52.1%, if the treatment duration was 24 weeks. Our study showed that in the group of patients achieving RVR, the SVR at week 12 was 49.37%, while in the group not achieving RVR, the SVR rate was very

Table 3: Comparison of clinical models based on six machine learning classifiers in predicting therapeutic failure among patients with HCV.

Model	No of variables	AUC_{ROC}	95% CI (Delong)	Pseudo R^2	BIC	P_value (>chi)
Model 1	17	0.979	0.961-0.997	0.89	114	
Model 2	16	0.982	0.965-0.998	0.88	110.6	0.18224
Model 3	15	0.982	0.965-0.997	0.86	109.2	0.05621
Model 4	13	0.98	0.962-0.996	0.84	102.2	0.19101
Model 5	12	0.984	0.968-0.998	0.82	101.1	0.04548
Model 6	11	0.986	0.971-0.999	0.8	101.1	0.02378

AUC_{ROC}: area under the receiver operating characteristic curve; BIC: Bayesian Information Criterion.

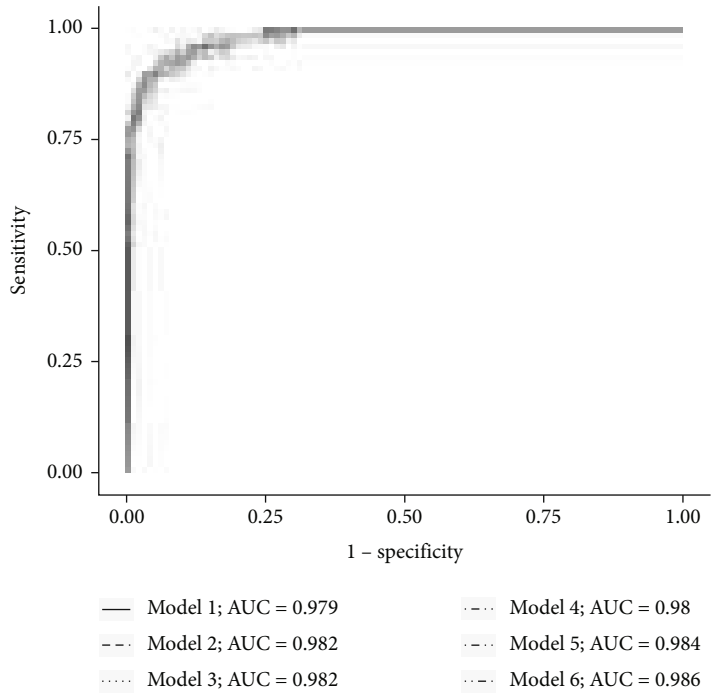

Figure 1: Receiver operating characteristic curves comparing the performance of six regression models using test datasets.

low at 5.26% (Table 1). An observational cohort of 21,142 HCV patients with genotype-1 initiating 8 or 12 weeks of DAA therapy also reported that detectable 4-week on-treatment HCV RNA ≥ 15 IU/ml reduced SVR odds ratios [22].

Hepatitis C patients with cirrhosis are considered difficult to treat and achieve lower SVR rates than those without cirrhosis. The efficacy of telaprevir or boceprevir in treatment-experienced patients with HCV genotype 1 and cirrhosis was studied in the CUPIC study [23]. A relatively high proportion of patients with HCV genotype 1 infection and cirrhosis respond to the combination of peginterferon and ribavirin plus telaprevir or boceprevir. However, side effects are frequent and often serious. Therefore, treatment with first-generation DAAs is not recommended for patients with advanced cirrhosis and severe portal hypertension. Our study demonstrated that cirrhosis was also a risk factor for treatment failure at week 12 of DAA therapy. About half (53/95) of the patients who did not achieve SVR12 had cirrhosis. One-way ANOVA showed that the risk of failure to achieve SVR12 was 12.91 times higher in the cirrhotic group than in the non-cirrhotic group with OR (95% CI) =12.91 (7.15-24.09), $P = 0.001$. Our study found no effect of renal function on the likelihood of achieving SVR at the 12th week of DAA treatment. In a review study evaluating the effectiveness and safety of DAA in the treatment of patients with chronic kidney disease, the authors concluded that the treatment of chronic hepatitis C in patients with chronic kidney disease was highly effective with SVR12 rates similar to those seen in patients without CKD and with acceptable adverse events [24]. Our study found that AST and ALP levels were associated with the risk of failure to achieve SVR at week 12 of DAA therapy (Tables 1 and 3). A prospective study based on demographic and clinical data was obtained from 834 patients with SVR after HCV treatment with PegIFN- or DAA-based regimens. Advanced liver disease and markers of hepatic steatosis were confirmed by the team to be independently associated with elevated aminotransferase levels after SVR [25].

FIB-4 is a simple, easy-to-calculate, and practical tool that includes patient age, ALT levels, AST levels, and platelet counts, developed and validated as a noninvasive marker for

Table 4: Regression coefficients and odds ratios (and 95% CIs) for risk factors associated with treatment failure after 12 weeks of DAA therapy in HCV patients ($n = 334$).

Independent variable	Slope	SE	P	OR (95% CI)
Intercept	-8.80	2.84	0.002	0.01 (0.01, 0.03)
Cirrhosis	2.28	0.67	0.001	9.72 (2.85, 39.28)
Genotype 2	0.96	0.85	0.262	2.6 (0.49, 14.29)
Genotype 3	-0.56	0.96	0.559	0.58 (0.09, 3.81)
Genotype 6	-1.17	0.82	0.053	0.32 (0.06, 0.87)
Baseline AST	0.03	0.01	0.003	1.03 (1.02, 1.05)
Baseline ALP	0.02	0.01	0.037	1.02 (1.01, 1.03)
Baseline hemoglobin	-0.05	0.02	0.003	0.96 (0.93, 0.99)
FIB-4	0.61	0.18	0.001	1.83 (1.36, 2.67)
Baseline viral load (log10 IU/ml)	0.88	0.26	0.001	2.4 (1.52, 4.17)
RVR	3.95	1.25	0.002	51.54 (6.39, 139.82)

RVR, rapid virological response; AST: aspartate aminotransferase; ALT: alanine transaminase; FIB-4: fibrosis index based on four factors.

liver fibrosis. The FIB-4 score has also been utilized by multiple studies to correlate hepatocellular carcinoma risk in DAA-treated non-cirrhotic HCV patients and in patients with chronic HBV, non-alcoholic fatty liver disease, or alcoholic cirrhosis [26, 27]. An increased FIB-4 score (≥3.25) has a high specificity (>96%) for advanced liver fibrosis, while a low FIB-4 score (≤1.45) is related to low fibrosis stages. Our study found that the FIB-4 score was closely related to the rate of treatment failure. A retrospective study of 363 chronic hepatitis C patients who completed a course of DAA at three hepatitis clinics in Spain concluded that advanced liver fibrosis and HIV coinfection were significantly associated with treatment failure [28]. Similarly, a retrospective cohort analysis of 784 people living with human immunodeficiency virus reported advanced liver fibrosis as a predictor of HCV viral failure with an OR of 2.29 [29].

In the multivariate logistic model with the entire dataset (Table 4), we included hemoglobin level as one of the predictors with OR (95% CI) = 0.96 (0.93, 0.99), *P value* = 0.003. In a retrospective study of 152 HCV patients receiving ribavirin +DAA, 15.1% experienced anemia. Baseline serum Hb and Hb% drop was a significant predictor of the risk of anemia [30]. The effect of anemia on the efficacy and safety of DAA therapies for patients with chronic kidney disease was evaluated in a single-center retrospective study. The author group indicated that Hb levels of <10.5 g/dL prior to DAA treatment did not affect the virological response in renal patients but were related to augmented serum creatinine [31].

Our study found hepatitis C virus genotype to be one of the predictors of treatment failure at week 12. Four genotypes were detected among 334 hepatitis C patients of our study including HCV-1, HCV-2, HCV-3, and HCV-6; multivariate logistic regression analysis showed that patients with HCV-6 had a lower risk of failure to achieve SVR12 when compared with those with genotype 1. Genotypes 1, 2, and 3 of the hepatitis C virus are widely distributed worldwide, making them the focus of *in vitro* studies and clinical trials [32]. In contrast, genotypes 4 and 5 were discovered mainly in African and Middle Eastern countries. Interestingly, genotype 6 of hepatitis C virus is found mainly in Southeast Asian countries, including Vietnam [7, 33]. A review aimed at summarizing data regarding HCV genotype 6 treatment found that genotype 6 HCV treatment outcomes with a combination of pegylated interferon and ribavirin were superior to that of genotype 1 [20]. This study also concluded that patients with RVR are suitable for a 24-week treatment with expected SVR rates of >80%. A study of available SVR12 data from 13951 patients at the Taiwan HCV Registry program showed that genotype-3 had adjusted OR (95% CI) = 5.78 (2.25-14), $P = 0.0003$, compared to genotype-1, while HCV genotype-2 had adjusted OR (95% CI) =1.55 (1.05-2.29), $P = 0.03$ [34]. In our study, multivariate analysis also showed that patients with genotype 2 had higher risk than those with genotype 1 with ORs (95% CI) =12.44 (0.91, 293.43) (Table 2). However, the P value was not statistically significant ($P = 0.08$).

A model developed from an observational retrospective cohort study after 12 weeks of DAA regimen determined the predictors of treatment failure including age, history of HCC, insurance type, HIV coinfection, current use of opioid substitution therapy, HCV treatment history, history of solid organ transplantation, current cirrhosis, and history of alcohol use [13]. Our model included specific laboratory data that can directly evaluate the liver and renal functions, which can reduce the errors due to the subjective assessment of physicians. We also included the relationship between anemia through serum hemoglobin level and HCV treatment failure in a multiple regression model.

Our modelling did not handle continuous input variables by dividing the subjects into categories. Keeping the quantitative data constant made it easy for us to integrate the model into electronic medical records to help doctors predict after having input data entered by nurses or laboratories. Additionally, our model, derived from a specific set of outpatients, may not apply to inpatients with different characteristics. Polymorphisms located near the gene encoding the interferon-lambda beta subunit (IL28B) can identify patients with a high probability of achieving SVR [12]. In our study, the polymorphism of IL28B was not considered, as this factor mainly predicts efficacy in patients receiving ribavirin therapy. A monotone likelihood limitation existed

in our clinical data, in which the odds ratio of genotype 1 (Table 1), RVR (Table 2), and cirrhosis (Table 4) inflated due to the small number of samples with substantial censoring of survival time and several highly predictive covariates [35]. Nevertheless, our logistic regression model demonstrated the role of predictors in estimating the risk of treatment failure in patients with HCV.

5. Conclusions

Our study followed up 334 patients divided into two groups according to their achievement of SVR. Univariate analysis showed that SVR failure rate was influenced by cirrhosis status, HBV comorbidity, RVR achievement at week 4, genotype, FIB-4 score, AST level, ALT level, serum hemoglobin levels, and hepatitis C viral load before treatment. An excellent predictive performance of the multiple logistic regression model was built with AUC_{ROC} (95% CI) =0.986 (0.971-0.999) that can help clinicians select optimal treatment strategies and issue the most accurate disease prognosis for patients with chronic hepatitis C.

Data Availability

Data is available on request from the authors.

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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References

[1] World Health Organization, "Global Hepatitis Report 2017," http://apps.who.int/iris/bitstream/handle/10665/255016/9789241565455-eng.pdf;jsessionid=A1E5CF10018D99C7C1291A9BCA6F05A9?sequence=1.

[2] D. Lavanchy, "The global burden of hepatitis C," *Liver International*, vol. 29, Suppl 1, pp. 74–81, 2009.

[3] R. G. Gish, T. D. Bui, C. T. Nguyen et al., "Liver disease in Viet Nam: screening, surveillance, management and education: a 5-year plan and call to action," *Journal of Gastroenterology and Hepatology*, vol. 27, no. 2, pp. 238–247, 2012.

[4] V. T. Nguyen, M. L. McLaws, and G. J. Dore, "Prevalence and risk factors for hepatitis C infection in rural North Vietnam," *Hepatology International*, vol. 1, no. 3, pp. 387–393, 2007.

[5] E. Gower, C. Estes, S. Blach, K. Razavi-Shearer, and H. Razavi, "Global epidemiology and genotype distribution of the hepatitis C virus infection," *Journal of Hepatology*, vol. 61, no. 1, pp. S45–S57, 2014.

[6] G. S. Cooke, M. Lemoine, M. Thursz et al., "Viral hepatitis and the global burden of disease: a need to regroup," *Journal of Viral Hepatitis*, vol. 20, no. 9, pp. 600-601, 2013.

[7] V. H. Pham, H. D. Nguyen, P. T. Ho et al., "Very high prevalence of hepatitis C virus genotype 6 variants in southern Vietnam: large-scale survey based on sequence determination," *Japanese Journal of Infectious Diseases*, vol. 64, no. 6, pp. 537–539, 2011.

[8] F. Poordad and D. Dieterich, "Treating hepatitis C: current standard of care and emerging direct-acting antiviral agents," *Journal of Viral Hepatitis*, vol. 19, no. 7, pp. 449–464, 2012.

[9] J. J. Feld, I. M. Jacobson, C. Hezode et al., "Sofosbuvir and Velpatasvir for HCV genotype 1, 2, 4, 5, and 6 infection," *The New England Journal of Medicine*, vol. 373, no. 27, pp. 2599–2607, 2015.

[10] K. V. Kowdley, E. Lawitz, I. Crespo et al., "Sofosbuvir with pegylated interferon alfa-2a and ribavirin for treatment-naive patients with hepatitis C genotype-1 infection (ATOMIC): an open-label, randomised, multicentre phase 2 trial," *Lancet*, vol. 381, no. 9883, pp. 2100–2107, 2013.

[11] O. T. Due, A. Thakkinstian, M. Thavorncharoensap et al., "Cost-utility analysis of direct-acting antivirals for treatment of chronic hepatitis C genotype 1 and 6 in Vietnam," *Value in Health*, vol. 23, no. 9, pp. 1180–1190, 2020.

[12] "EASL clinical practice guidelines: management of hepatitis C virus infection," *Journal of Hepatology*, vol. 55, no. 2, pp. 245–264, 2011.

[13] N. A. Nabulsi, M. T. Martin, L. K. Sharp et al., "Predicting treatment failure for initiators of hepatitis C virus treatment in the era of direct-acting antiviral therapy," *Frontiers in Pharmacology*, vol. 11, article 551500, 2020.

[14] AASLD/IDSA HCV Guidance Panel, R. T. Chung, G. L. Davis et al., "Hepatitis C guidance: AASLD-IDSA recommendations for testing, managing, and treating adults infected with hepatitis C virus," *Hepatology*, vol. 62, no. 3, pp. 932–954, 2015.

[15] R. K. Sterling, E. Lissen, N. Clumeck et al., "Development of a simple noninvasive index to predict significant fibrosis in patients with HIV/HCV coinfection," *Hepatology*, vol. 43, no. 6, pp. 1317–1325, 2006.

[16] D. W. Cockcroft and M. H. Gault, "Prediction of creatinine clearance from serum creatinine," *Nephron*, vol. 16, no. 1, pp. 31–41, 1976.

[17] O. G. Pybus, E. Barnes, R. Taggart et al., "Genetic history of hepatitis C virus in East Asia," *Journal of Virology*, vol. 83, no. 2, pp. 1071–1082, 2009.

[18] Team RDC, *R. A Language and Environment for Statistical Computing*, R Foundation for Statistical Computing, Vienna, Austria, 2009.

[19] M. P. Manns and T. von Hahn, "Novel therapies for hepatitis C – one pill fits all?," *Nature Reviews. Drug Discovery*, vol. 12, no. 8, pp. 595–610, 2013.

[20] C. Bunchorntavakul, D. Chavalitdhamrong, and T. Tanwandee, "Hepatitis C genotype 6: a concise review and response-guided therapy proposal," *World Journal of Hepatology*, vol. 5, no. 9, pp. 496–504, 2013.

[21] M. W. Fried, S. J. Hadziyannis, M. L. Shiffman, D. Messinger, and S. Zeuzem, "Rapid virological response is the most important predictor of sustained virological response across genotypes in patients with chronic hepatitis C virus infection," *Journal of Hepatology*, vol. 55, no. 1, pp. 69–75, 2011.

[22] L. I. Backus, P. S. Belperio, T. A. Shahoumian, T. P. Loomis, and L. A. Mole, "Real-world effectiveness and predictors of sustained virological response with all-oral therapy in 21, 242

hepatitis C genotype-1 patients," *Antiviral Therapy*, vol. 22, no. 6, pp. 481–493, 2017.

[23] C. Hezode, H. Fontaine, C. Dorival et al., "Effectiveness of telaprevir or boceprevir in treatment-experienced patients with HCV genotype 1 infection and cirrhosis," *Gastroenterology*, vol. 147, no. 1, pp. 132–142.e4, 2014.

[24] A. Kohli, A. Alshati, F. Georgie, R. Manch, and R. G. Gish, "Direct-acting antivirals for the treatment of chronic hepatitis C in patients with chronic kidney disease," *Therapeutic Advances in Gastroenterology*, vol. 9, no. 6, pp. 887–897, 2016.

[25] C. Welsch, M. Efinger, M. von Wagner et al., "Ongoing liver inflammation in patients with chronic hepatitis C and sustained virological response," *PLoS One*, vol. 12, no. 2, article e0171755, 2017.

[26] B. Suh, S. Park, D. W. Shin et al., "High liver fibrosis index FIB-4 is highly predictive of hepatocellular carcinoma in chronic hepatitis B carriers," *Hepatology*, vol. 61, no. 4, pp. 1261–1268, 2015.

[27] M. Tobari, E. Hashimoto, M. Taniai et al., "The characteristics and risk factors of hepatocellular carcinoma in nonalcoholic fatty liver disease without cirrhosis," *Journal of Gastroenterology and Hepatology*, vol. 35, no. 5, pp. 862–869, 2020.

[28] A. Arias, A. Aguilera, V. Soriano et al., "Rate and predictors of treatment failure to all-oral HCV regimens outside clinical trials," *Antiviral Therapy*, vol. 22, no. 4, pp. 307–312, 2017.

[29] E. R. Cachay, A. Mena, L. Morano et al., "Predictors of hepatitis C treatment failure after using direct-acting antivirals in people living with human immunodeficiency Virus," *Infectious Diseases*, vol. 6, no. 3, p. ofz 070, 2019.

[30] E. Molina-Cuadrado, H. Mateo-Carrrasco, A. Collado, and M. Casado Martín, "Anaemia predictors in patients with chronic hepatitis C treated with ribavirin and direct-acting antiviral agents," *European Journal of Hospital Pharmacy*, vol. 25, no. 3, pp. 132–137, 2018.

[31] A. Y. Elmowafy, M. H. Abbas, A. A. Denewar et al., "The effect of anemia on the efficacy and safety of treating chronic hepatitis C infection with direct-acting antivirals in patients with chronic kidney disease," *International Urology and Nephrology*, vol. 53, no. 4, pp. 749–761, 2021.

[32] M. H. Nguyen and E. B. Keeffe, "Prevalence and treatment of hepatitis C virus genotypes 4, 5, and 6," *Clinical Gastroenterology and Hepatology*, vol. 3, 10 Suppl 2, pp. S97–S101, 2005.

[33] W. Sievert, I. Altraif, H. A. Razavi et al., "A systematic review of hepatitis C virus epidemiology in Asia, Australia and Egypt," *Liver International*, vol. 31, Suppl 2, pp. 61–80, 2011.

[34] C. Y. Chen, C. F. Huang, P. N. Cheng et al., "Factors associated with treatment failure of direct-acting antivirals for chronic hepatitis C: a real-world nationwide hepatitis C virus registry programme in Taiwan," *Liver International*, vol. 41, no. 6, pp. 1265–1277, 2021.

[35] I. S. Tzeng, "To handle the inflation of odds ratios in a retrospective study with a profile penalized log-likelihood approach," *Journal of Clinical Laboratory Analysis*, vol. 35, no. 7, article e23849, 2021.

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The Associations of Suspected COVID-19 Symptoms with Anxiety and Depression as Modified by Hemodialysis Dietary Knowledge: A Multi-Dialysis Center Study

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Abstract: During the COVID-19 pandemic, it is essential to evaluate hemodialysis patients' dietary knowledge, especially among those with COVID-19 related symptoms, in order to identify appropriate strategies in managing their mental health. The study's purposes were to test the psychometric properties of the hemodialysis dietary knowledge (HDK) scale, and to investigate the modifying impact of HDK on the associations of suspected COVID-19 symptoms (S-COVID-19-S) with anxiety and depression among hemodialysis patients. A cross-sectional study was conducted from July 2020

to March 2021 at eight hospitals across Vietnam. Data of 875 hemodialysis patients were analyzed, including socio-demographic, anxiety (the generalized anxiety disorder scale, GAD-7), depression (the patient health questionnaire, PHQ-9), S-COVID-19-S, HDK, health literacy, and digital healthy diet literacy. Confirmatory factor analysis (CFA) and logistic regression models were used to analyze the data. The HDK scale demonstrates the satisfactory construct validity with good model fit (Goodness of Fit Index, GFI = 0.96; Adjusted Goodness of Fit Index, AGFI = 0.90; Standardized Root Mean Square Residual, SRMR = 0.05; Root Mean Square Error of Approximation, RMSEA = 0.09; Normed Fit Index, NFI = 0.96; Comparative Fit Index, CFI = 0.96, and Parsimony goodness of Fit Index, PGFI = 0.43), criterion validity (as correlated with HL (r = 0.22, $p < 0.01$) and DDL (r = 0.19, $p < 0.01$), and reliability (Cronbach alpha = 0.70)). In the multivariate analysis, S-COVID-19-S was associated with a higher likelihood of anxiety (odds ratio, OR, 20.76; 95% confidence interval, 95%CI, 8.85, 48.70; $p < 0.001$) and depression (OR, 12.95; 95%CI, 6.67, 25.14, $p < 0.001$). A higher HDK score was associated with a lower likelihood of anxiety (OR, 0.70; 95%CI, 0.64, 0.77; $p < 0.001$) and depression (OR, 0.72; 95%CI, 0.66, 0.79; $p < 0.001$). In the interaction analysis, the negative impacts of S-COVID-19-S on anxiety and depression were mitigated by higher HDK scores ($p < 0.001$). In conclusion, HDK is a valid and reliable tool to measure dietary knowledge in hemodialysis patients. Higher HDK scores potentially protect patients with S-COVID-19-S from anxiety and depression during the pandemic.

Keywords: hemodialysis; psychometric properties; anxiety; depression; suspected COVID-19 symptoms; health literacy; digital healthy diet literacy; hemodialysis dietary knowledge; Vietnam

1. Introduction

Anxiety and depression are highly prevalent in patients with end-stage renal disease (ESRD) undergoing hemodialysis [1]. The prevalence varies (from 22.5% to nearly 85% for depression; from 32.3% to 44.7% for anxiety) by populations and measurement tools [2–6]. In hemodialysis patients, anxiety and depression have been linked to adverse outcomes such as lower quality of life, poorer clinical parameters (e.g., loss of vascular access, poorer nutritional status) [3,4], reduced treatment adherence [7], increased risk for death or hospitalization [8–10], and more common suicidal ideation [11,12]. However, anxiety and depression remain under-recognized and neglected in ESRD patients [13,14].

Amidst the COVID-19 pandemic, hemodialysis patients are highly vulnerable to COVID-19 infection [14]. Prevalence of COVID-19 infection in hemodialysis patients ranged from a lower rate, such as 5.3% in Qatar [15], to higher rates, such as 19% in Paris [16] and 36.2% in the United Kingdom [17]. The incidence of COVID-19 and mortality rate in these patients was 7.7% and 22.4%, respectively [18]. Multiple studies have examined the factors associated with depression and anxiety among hemodialysis patients prior to the COVID-19 pandemic [19–22] and during such context [23,24]. However, there has been a lack of studies investigating the association between COVID-19 related symptoms and mental health in hemodialysis patients. Meanwhile, previous studies found that having S-COVID-19-S was associated with higher odds of anxiety and depression in another population [25,26].

Insufficient dietary or nutritional knowledge was found in patients receiving hemodialysis [27]. In addition, people tended to change their eating habits and dietary intake during the COVID-19 pandemic [28,29]. Having adequate hemodialysis dietary knowledge (HDK) may help ESRD patients in selecting healthy foods and maintaining a healthy dietary intake, which was found to modify the negative effect of COVID-19 lockdown on depression in outpatients [30].

It is important to have a valid and reliable tool to assess dietary knowledge in hemodialysis patients, and explore its role in mental health, especially in those with suspected COVID-19 symptoms (S-COVID-19-S). Therefore, we aimed to test the psychometric properties of the hemodialysis dietary knowledge (HDK) scale, and to investigate the modifying impact of HDK on the associations of S-COVID-19-S with anxiety and depression among hemodialysis patients. We hypothesized that hemodialysis patients with S-COVID-19-S

have a higher likelihood of anxiety and depression than those without symptoms, whereas patients with a higher HDK score have a lower likelihood of anxiety and depression, especially in those with S-COVID-19-S.

2. Materials and Methods

2.1. Study Design and Sample

A cross-sectional study was conducted from July 2020 to March 2021. Participants were recruited from dialysis centers in eight hospitals in Vietnam. The study was reviewed and approved by the Institutional Ethical Review Committee of Hanoi University of Public Health, Vietnam (IRB No. 225/2020/YTCC-HD3).

A total sample of 1048 participants was invited to participate in the study, including from Bach Mai Hospital (n = 251), Military Hospital 103 (n = 147), General Hospital of Agriculture (n = 171), Thai Nguyen National Hospital (n = 170), Hai Phong University of Medicine and Pharmacy Hospital (n = 82), Hai Phong International Hospital (n = 43), Quang Ninh General Hospital (n = 103), and Bai Chay Hospital (n = 81). Patients recruited were those aged 18–85 years, receiving hemodialysis treatment for at least three months, and able to read and speak Vietnamese. Patients excluded from final analysis were those with hemodialysis vintage less than 3 months (n = 56), age <18 years or >85 years (n = 20), pregnant (n = 1), amputation (n = 1), tube feeding (n = 1), having a scheduled surgery (n = 2), and having arteriovenous fistula (AVF) dysfunction (n = 92). The final sample of 875 patients was analyzed. This sample was large enough for the analysis in our study as it is larger than the required sample of 261, calculated using G*Power software Version 3.1.9.7 (Heinrich-Heine-Universität, Düsseldorf, Germany) [31] with an effect size of 0.05, type I error of 0.05, and power of 0.95, and the proportion of patients with S-COVID-19-S with depression was 0.643 [26].

2.2. Measurements

2.2.1. Suspected COVID-19 Symptoms

The face-to-face interviews were conducted on patients in the hemodialysis departments. At the time of data collection, participants were screened for S-COVID-19-S and classified as having S-COVID-19-S if they had any of the following symptoms: fever, cough, dyspnea, myalgia, fatigue, sputum production/expectoration, confusion, headache, sore throat, running nose, chest pain, rhinorrhea, diarrhea, or nausea/vomiting [32].

2.2.2. Anxiety

We used the Generalized Anxiety Disorder Scale (GAD-7) to measure anxiety [33]. Participants were asked about and rated how often they have been bothered by each of the seven symptoms during the last two weeks on a 4-point scale (0 = not at all; 1 = several days; 2 = more than half of the days; and 3 = nearly every day). The reliability and validity of this scale have been tested [33,34]. The tool was also validated and used in Vietnam [35,36]. A score of 8 or higher was defined as anxiety [37].

2.2.3. Depression

The Patient Health Questionnaire (PHQ-9) was used to measure depression severity [38]. The tool was validated and used in Vietnam [35,39]. It is a valid and reliable tool [40] used in the hemodialysis population [34,41]. Patients were asked to self-report each depressive symptom they had experienced over the last two weeks on a 4-point Likert scale from 0 (not at all) to 3 (nearly every day). The PHQ-9 score ranged from 0 to 27. A score of 10 or higher was classified as depression [38].

2.2.4. Hemodialysis Dietary Knowledge

Hemodialysis dietary knowledge (HDK) was used for assessment. The tool was developed and used in a previous study [42]. The HDK scale consists of ten questions related to knowledge of protein, potassium, phosphorus, sodium, and water, each containing

two sub-questions [42]. There are three response options, including "correct", "incorrect", and "not sure". The correct answer was treated as "correct", and incorrect or "not sure" answers were treated as "incorrect". The possible total score ranges from 0 to 10; a higher score presents better knowledge. The continuous scale was used in a previous study [42] and in this one.

2.2.5. Covariates

In this study, socio-demographics, comorbidity, physical activity, health literacy, and digital health literacy were also included and treated as covariates, which showed associations with mental health in previous studies [26,43].

Information related to participants was collected, including age, gender, marital status, education, occupation, social status, ability to pay for medication, body height (cm), weight after dialysis (kg), body mass index (BMI, kg/m^2), and hemodialysis vintage (years). The Charlson Comorbidity Index (CCI) was used to assess comorbidities [44].

We used the International Physical Activity Questionnaire short version (IPAQ-SF) to assess physical activity (PA) level [45]. Patients were asked to provide information about their time spent in sitting, walking, moderate and vigorous physical activities during the last seven days. The IPAQ was used in the Vietnamese population [46,47]. The overall PA score was calculated by multiplying minutes spent on activities at different levels including sitting, walking, moderate and vigorous activity, by 1.0, 3.3, 4.0, and 8.0, respectively [45,47]. The metabolic equivalent task scored in minutes per week (MET-min/wk) was used as the measuring unit of PA [48].

We evaluated participants' ability in accessing, understanding, appraising, and applying health-related information and digital healthy-diet-related information using the valid and reliable 12-item short form health literacy questionnaire (HLS-SF12) [49] and digital healthy diet literacy (DDL) [50], respectively. Patients were requested to rate their perceived difficulty of each item using 4-point Likert scales ranging from very difficult (equal to 1) to very easy (equal to 4). The HL and DDL index were standardized to unified metrics from 0 to 50 using the formula mentioned in previous studies [26,50]. Higher HL or DDL index scores indicate a better HL or DDL level [50,51].

2.3. Data Collection Procedure

Data collection was conducted by research assistants (doctors, nurses, and medical students). All data collectors were trained in data collection over 4 h by two senior researchers at each hospital. Safety guidance for prevention and control of COVID-19 was also provided during the training, including wearing masks, washing hands, and maintaining physical distance [52].

Qualified patients were invited to participate in the survey. Research assistants contacted and asked for voluntary participation. Consent form was achieved before the survey. The face-to-face interviews were conducted at the hemodialysis departments. Adequate time was given to patients. It took about 20–30 min to complete the questionnaire. After the interview, research assistants reviewed the medical records for clinical and biochemical parameters. Finally, all the data were coded, cleaned, and analyzed confidentially by the researchers.

2.4. Data Analysis

2.4.1. Psychometric Properties of the HDK

Confirmatory factor analysis (CFA) of the HDK was assessed using Linear Structure Relations (LISREL) Software, version 8.8 (Scientific Software International, Inc., Charlottesville, VA, USA) [53]. Model fit indices were reported, including Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Standardized Root Mean Square Residual (SRMR), Root Mean Square Error of Approximation (RMSEA), Normed Fit Index (NFI), Comparative Fit Index (CFI), and Parsimony Goodness of Fit Index (PGFI). The index values for adequate model fit were RMSEA < 0.08, GFI > 0.95, AGFI > 0.90, SRMR < 0.05,

NFI > 0.90, CFI ≥ 0.95, and PGFI ≤ 0.50 [54,55]. In addition, the correlations among HDK, HL, and DDL were estimated using Pearson correlations to provide evidence of criterion validity [56]. Correlations between the HDK scale and its ten items were estimated using Spearman's correlation test, which confirmed item-scale convergent validity. The floor and ceiling effects were checked by calculating the percentages of the potential lowest and highest HDK scores. Minimal percentages (<15%) were recommended to eliminate floor and ceiling effects [57]. Internal consistency reliability was assessed using Cronbach's alpha statistic, with acceptable values of alpha above 0.70 [58].

2.4.2. Associated Factors for Anxiety, Depression and Effect Modification of HDK

Descriptive analysis was used to explore the distribution of studied variables. The independent samples *t*-test, Mann-Whitney test, and chi-square test were used appropriately. Next, the associated factors of anxiety and depression were investigated by using bivariate and multivariate logistic regression models. Age, gender, and factors associated with anxiety and depression at $p < 0.20$ in the bivariate model were selected in the multivariate model [59]. The correlations among the independent variables were also checked by Spearman correlation to avoid multi-collinearity (Table S1).

We used PROCESS 3.5 in SPSS to investigate the modified effect of HDK on the relationship between S-COVID-19-S and anxiety/depression. In order to better understand the simple slope analysis, the figure was used to illustrate the results. The figures were drawn by calculating the expected probability of outcomes (anxiety and depression) at three values of HDK (one standard deviation above the mean, +1 SD, the mean, and one standard deviation below the mean, −1 SD) (Tables S3 and S5). The conditional effects were also used to calculate the odds ratios for the impacts of S-COVID-19-S on anxiety or depression at three values of HDK (Tables S2 and S4). IBM SPSS Version 26.0 (IBM Corp, Armonk, NY, USA) was used to analyze the data. Statistical significance was established at $p < 0.05$.

3. Results

3.1. Participants' Socio-Demographics

As shown in Table 1, 54.3% were male, aged 18 to 59 years (61.0%). Overall, the prevalence of anxiety and depression were 34.1% and 41.8%, respectively. The prevalence of anxiety and depression were significantly higher in patients with S-COVID-19-S and varied by different groups regarding social status, medication payment ability, edema, physical activity, comorbidity ($p < 0.05$, Table 1). Additionally, compared to patients who have no anxiety and no depression, the mean scores of HL, DDL, HDK of those with anxiety or depression were significantly lower ($p < 0.05$, Table 1).

Table 1. Patients' characteristics, anxiety and depression (n = 875).

Variables	Total *n* (%)	GAD < 8 (*n* = 577)	GAD ≥ 8 (*n* = 298)	*p*	PHQ < 10 (*n* = 509)	PHQ ≥ 10 (*n* = 366)	*p*
Age				0.315 [a]			0.082 [a]
18–59	534 (61.0)	359 (62.2)	175 (58.7)		323 (63.5)	211 (57.7)	
60–85	345 (39.0)	218 (37.8)	123 (41.3)		186 (36.5)	155 (42.3)	
Gender				0.128 [a]			0.079 [a]
Male	475 (54.3)	324 (56.4)	151 (51.0)		289 (57.1)	186 (51.1)	
Female	395 (45.1)	250 (43.6)	145 (49.0)		217 (42.9)	178 (48.9)	
Education				0.840 [a]			0.905 [a]
Illiterate or elementary	353 (43.6)	237 (44.1)	116 (42.5)		207 (44.0)	146 (42.9)	
Junior high school	256 (31.6)	170 (31.7)	86 (31.5)		149 (31.7)	107 (31.5)	
Senior high school or above	201 (24.8)	130 (24.2)	71 (26.0)		114 (24.3)	87 (25.6)	
Working status				0.365 [a]			0.118 [a]
Not working	311 (35.5)	199 (34.5)	112 (37.6)		170 (33.4)	141 (38.5)	
Working	564 (64.5)	378 (65.5)	186 (62.4)		339 (66.6)	225 (61.5)	
Married status				0.026 [a]			0.098 [a]
Never married	76 (8.7)	59 (10.2)	17 (5.7)		51 (10.0)	25 (6.8)	
Ever married	799 (91.3)	518 (89.8)	281 (94.3)		458 (90.0)	341 (93.2)	

Table 1. *Cont.*

Variables	Total *n* (%)	GAD < 8 (*n* = 577)	GAD ≥ 8 (*n* = 298)	*p*	PHQ < 10 (*n* = 509)	PHQ ≥ 10 (*n* = 366)	*p*
Social status				<0.001 [a]			<0.001 [a]
Low	233 (26.6)	120 (20.8)	113 (37.9)		99 (19.4)	134 (36.6)	
Middle & high	642 (73.4)	457 (79.2)	185 (62.1)		410 (80.6)	232 (63.4)	
Medication payment ability				<0.001 [a]			<0.001 [a]
Very or fairly difficult	660 (76.7)	388 (68.4)	272 (92.5)		328 (65.5)	332 (92.2)	
Very or fairly easy	201 (23.3)	179 (31.6)	22 (7.5)		173 (34.5)	28 (7.8)	
S-COVID-19-S				<0.001 [a]			<0.001 [a]
Without S-COVID-19-S	286 (32.7)	248 (43.0)	38 (12.8)		233 (45.8)	53 (14.5)	
With S-COVID-19-S	589 (67.3)	329 (57.0)	260 (87.2)		276 (54.2)	313 (85.5)	
BMI, kg/m^2				0.478 [a]			0.049 [a]
BMI < 24	790 (90.3)	518 (89.8)	272 (91.3)		451 (88.6)	339 (92.6)	
BMI ≥ 24	85 (9.7)	59 (10.2)	26 (8.7)		58 (11.4)	27 (7.4)	
Edema				<0.001 [a]			<0.001 [a]
No	467 (53.4)	331 (57.4)	136 (45.6)		305 (59.9)	162 (44.3)	
Yes	408 (46.6)	246 (42.6)	162 (54.4)		204 (40.1)	204 (55.7)	
Hyperthyroidism				0.981 [a]			0.414 [a]
No	839 (96.0)	553 (96.0)	286 (96.0)		490 (96.5)	349 (95.4)	
Yes	35 (4.0)	23 (4.0)	12 (4.0)		18 (3.5)	17 (4.6)	
Hospitalization within one month				0.679 [a]			0.106 [a]
No	817 (93.5)	537 (93.2)	280 (94.0)		469 (92.3)	348 (95.1)	
Yes	57 (6.5)	39 (6.8)	18 (6.0)		39 (7.7)	18 (4.9)	
Physical activity, MET-min/wk				<0.001 [a]			<0.001 [a]
Tertile 1 (MET ≤ 178)	204 (31.6)	105 (23.0)	99 (52.4)		72 (17.6)	132 (55.7)	
Tertile 2 (178 < MET ≤ 960)	224 (34.7)	185 (40.5)	39 (20.6)		175 (42.8)	49 (20.7)	
Tertile 3 (MET > 960)	218 (33.7)	167 (36.5)	51 (27.0)		162 (39.6)	56 (23.6)	
HD vintage, years (Median, IQR)	4.2 (2.1, 7.2)	4.2 (2.0, 7.2)	4.1 (2.6, 7.4)	0.540 [b]	4.5 (1.9, 7.2)	4.1 (2.6, 7.2)	0.517 [b]
CCI (Median, IQR)	1.0 (0.0, 2.0)	1.0 (0.0, 2.0)	1.0 (1.0, 4.0)	<0.001 [b]	1.0 (0.0, 2.0)	1.0 (1.0, 3.0)	<0.001 [b]
HL index (Mean ± SD)	25.2 ± 9.2	26.8 ± 9.3	22.1 ± 7.9	<0.001 [c]	26.8 ± 8.9	22.9 ± 9.1	<0.001 [c]
DDL index (Mean ± SD)	24.1 ± 11.4	25.4 ± 11.7	21.5 ± 10.4	<0.001 [c]	25.4 ± 11.4	22.3 ± 11.2	<0.001 [c]
HDK (Mean ± SD)	5.4 ± 2.5	5.9 ± 2.3	4.4 ± 2.67	<0.001 [c]	5.9 ± 2.3	4.6 ± 2.7	<0.001 [c]

Abbreviation: S-COVID-19-S, suspected COVID 19 symptoms; BMI, body mass index; MET-min/wk, metabolic equivalent task scored in minutes per week; HD, hemodialysis; CCI, Charlson Comorbidity index; DDL, digital healthy diet literacy; HDK, hemodialysis dietary knowledge. [a] Result of chi-square test. [b] Result of the Man-Whitney test. [c] Result of independent *t* test.

3.2. Psychometric Properties of Hemodialysis Dietary Knowledge

Figure 1 presents the model with standardized estimates. The CFA model resulted in a good fit (except for RMSEA), where GFI = 0.96, AGFI = 0.90, RMSEA = 0.09, SRMR = 0.05, NFI = 0.96, CFI = 0.96, and PGFI = 0.43 (Table 2). The correlations between the HDK scale and its 10 items ranged from 0.37–0.59. In addition, significant positive correlations between HDK and HL, and DDL scores were obtained (r = 0.19 to 0.22, $p < 0.01$). The Cronbach's alpha value of the HDK for the overall scale was acceptable ($\alpha = 0.70$). There were no significant floor and ceiling effects (6.17% and 5.26%) (Table 2).

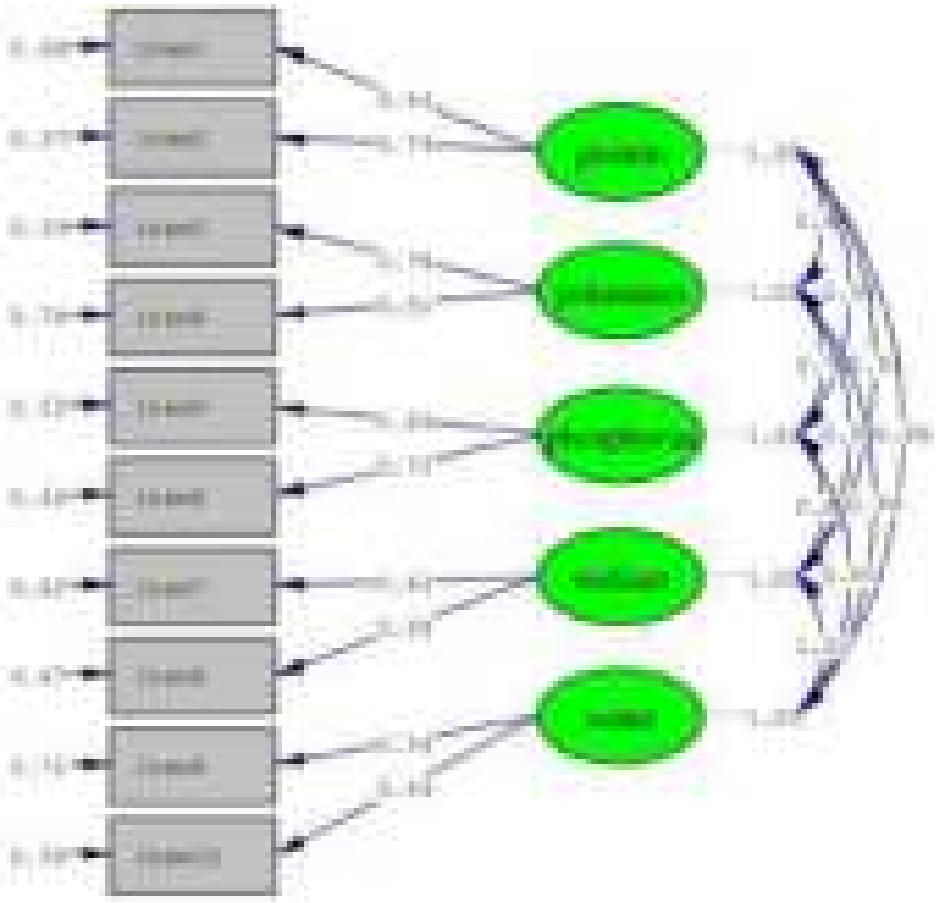

Figure 1. The structure of the hemodialysis dietary knowledge. Parameter estimates are standardized. Model fit indices: GFI = 0.96, AGFI = 0.90, RMSEA = 0.09, SRMR = 0.05, NFI = 0.96, CFI = 0.96, and PGFI = 0.43.

Table 2. Psychometric properties of the hemodialysis dietary knowledge Scale (n = 875).

HDK Scale	Values
Absolute fit indices	
RMSEA	0.09
GFI	0.96
AGFI	0.90
SRMR	0.05
Incremental fit indices	
NFI	0.96
CFI	0.96
Parsimony fit indices	
PGFI	0.43
Item-scale convergent validity, mean of *rho* [a] (range)	0.51 (0.37–0.59)
Criterion validity	
Correlation with HL, *rho* [b]	0.22 **
Correlation with DDL, *rho* [b]	0.19 **
Internal consistency, Cronbach's alpha	0.70
Floor effect, %	6.17
Ceiling effect, %	5.26

Abbreviation: HDK, hemodialysis dietary knowledge; RMSEA, root mean square error of approximation; GFI, goodness of fit index; AGFI, adjusted goodness of fit index; SRMR, standardized root mean square residual; NFI, normed fit index; CFI, comparative fit index; PGFI, parsimony goodness of fit index; HL, health literacy; DDL, digital healthy diet literacy. [a] Spearman correlation coefficient. [b] Pearson correlation coefficient. **: $p < 0.01$.

3.3. Associated Factors of Anxiety and Depression

In the bivariate analysis, the odds for anxiety and depression were significantly higher in patients with S-COVID-19-S, who were very or fairly difficult to pay for medication, with edema, and with comorbid diseases ($p < 0.05$). By contrast, the odds for anxiety and depression were significantly lower in patients who had more physical activity, with higher HL, DDL, HDK, and with middle or high social status ($p < 0.05$).

The multivariate analysis illustrated that patients with S-COVID-19-S were more likely to have anxiety (odds ratio, OR, 20.76; 95% confidence interval, 95%CI, 8.85, 48.70, $p < 0.001$), and depression (OR, 12.95, 95%CI, 6.67, 25.14, $p < 0.001$). In comparison with patients in tertile 1 of physical activity, those in tertile 2 (OR, 0.31; 95%CI, 0.18, 0.52, $p < 0.001$), or tertile 3 (OR, 0.50; 95%CI, 0.29, 0.87, $p = 0.014$) had a lower score for anxiety. Similarly, patients in tertile 2 of physical activity (OR, 0.21; 95%CI, 0.12, 0.35, $p < 0.001$), or tertile 3 (OR, 0.26; 95%CI, 0.15, 0.45, $p < 0.001$) had lower odds for anxiety compared with those in tertile 1. The odds for anxiety decreased by 0.4% and 30% for one score increment of HL (OR, 0.96; 95%CI, 0.93, 0.98, $p = 0.001$), and HDK (OR, 0.70; 95%CI, 0.64, 0.77, $p < 0.001$), respectively. The odds of depression decreased by 0.3% and 28% for one score increment of HL (OR, 0.97, 95%CI, 0.95, 0.99, $p = 0.024$) and HDK (OR, 0.72; 95%CI, 0.66, 0.79, $p < 0.001$; Table 3), respectively.

Table 3. Associated factors of anxiety and depression via bivariate and multivariate logistic regression analysis.

Variables	Anxiety (GAD ≥ 8)				Depression (PHQ ≥ 10)			
	Bivariate		Multivariate		Bivariate		Multivariate	
	OR (95%CI)	*p*	OR (95%CI)	*p*	OR (95%CI)	*p*	OR (95%CI)	*p*
Age								
23–59	1.00		1.00		1.00		1.00	
60–85	1.16 (0.87, 1.54)	0.315	0.85 (0.54, 1.34)	0.484	1.28 (0.97, 1.68)	0.082	1.06 (0.68, 1.65)	0.804
Gender								
Male	1.00		1.00		1.00		1.00	
Female	1.25 (0.94, 1.65)	0.128	0.92 (0.59, 1.44)	0.710	1.28 (0.97, 1.67)	0.079	0.92 (0.60, 1.43)	0.723
Education								
Illiterate or elementary	1.00				1.00			
Junior high school	1.03 (0.74, 1.45)	0.850			1.02 (0.74, 1.41)	0.914		
Senior high school or above	1.12 (0.78, 1.61)	0.556			1.08 (0.76, 1.54)	0.659		
Working status								
Not working	1.00				1.00		1.00	
Working	0.87 (0.65, 1.17)	0.365			0.80 (0.61, 1.06)	0.118	1.32 (0.80, 2.19)	0.275
Married status								
Never	1.00		1.00		1.00		1.00	
Ever	1.88 (1.08, 3.29)	0.026	1.67 (0.65, 4.29)	0.284	1.52 (0.92, 2.50)	0.100	0.99 (0.41, 2.37)	0.980
Social status								
Low	1.00		1.00		1.00		1.00	
Middle or high	0.43 (0.32, 0.59)	<0.001	0.54 (0.33, 0.88)	0.014	0.42 (0.31, 0.57)	<0.001	0.45 (0.27, 0.74)	0.002
Medication payment ability								
Very or fairly easy	1.00				1.00			
Very or fairly difficulty	5.70 (3.57, 9.12)	<0.001			6.25 (4.08, 9.59)	<0.001		
S-COVID-19-S								
Without S-COVID-19-S	1.00		1.00		1.00		1.00	
With S-COVID-19-S	5.16 (3.53, 7.53)	<0.001	20.76 (8.85, 48.70)	<0.001	4.99 (3.56, 7.00)	<0.001	12.95 (6.67, 25.14)	<0.001
BMI, kg/m^2								
BMI < 24	1.00				1.00		1.00	
BMI ≥ 24	0.84 (0.52, 1.36)	0.478			0.62 (0.38, 0.99)	0.049	0.50 (0.25, 1.00)	0.050
Edema								
No	1.00				1.00			
Yes	1.60 (1.21, 2.12)	<0.001			1.88 (1.43, 2.47)	<0.001		
Hyperthyroidism								
No	1.00				1.00			
Yes	1.01 (0.49, 2.06)	0.981			1.33 (0.67, 2.61)	0.414		
Hospitalization within one month								
No	1.00				1.00		1.00	
Yes	0.89 (0.50, 1.58)	0.679			0.62 (0.35, 1.11)	0.106	0.38 (0.11, 1.36)	0.137

Table 3. *Cont.*

Variables	Anxiety (GAD ≥ 8)				Depression (PHQ ≥ 10)			
	Bivariate		Multivariate		Bivariate		Multivariate	
	OR (95%CI)	*p*	OR (95%CI)	*p*	OR (95%CI)	*p*	OR (95%CI)	*p*
Physical activity, MET-min/wk.								
Tertile 1 (MET ≤ 178)	1.00		1.00		1.00		1.00	
Tertile 2 (178 < MET ≤ 960)	0.22 (0.14, 0.35)	<0.001	0.31 (0.18; 0.52)	<0.001	0.15 (0.10, 0.23)	<0.001	0.21 (0.12; 0.35)	<0.001
Tertile 3 (MET > 960)	0.32 (0.21, 0.49)	<0.001	0.50 (0.29; 0.87)	0.014	0.19 (0.12, 0.29)	<0.001	0.26 (0.15; 0.45)	<0.001
HD vintage	1.01 (0.98, 1.04)	0.670			1.01 (0.97, 1.04)	0.743		
CCI	1.12 (1.07, 1.17)	<0.001			1.10 (1.05, 1.15)	<0.001		
HL index	0.94 (0.93, 0.96)	<0.001	0.96 (0.93, 0.98)	0.001	0.95 (0.94, 0.97)	<0.001	0.97 (0.95, 0.99)	0.024
DDL index	0.97 (0.96, 0.99)	<0.001			0.98 (0.97, 0.99)	<0.001		
HDK	0.79 (0.74, 0.84)	<0.001	0.70 (0.64, 0.77)	<0.001	0.80 (0.76, 0.85)	<0.001	0.72 (0.66, 0.79)	<0.001

Abbreviation: OR, odds ratio; CI, confidence interval; S-COVID-19-S, suspected COVID-19 symptoms; BMI, body mass index; MET-min/wk, metabolic equivalent task scored in minutes per week; HD, hemodialysis; CCI, Charlson Comorbidity index; HL, health literacy; DDL, digital healthy diet literacy; HDK, hemodialysis dietary knowledge.

3.4. Modification Impacts of Hemodialysis Dietary Knowledge

Figure 2 illustrates the change in the expected probability of having anxiety and depression with S-COVID-19-S at three levels of HDK (the mean, −1 SD, and +1 SD from the mean). The negative impact of S-COVID-19-S on anxiety was mitigated by higher HDK values from 1 SD below the mean (OR = $e^{4.4074}$ = 82.06; 95%CI, 2.95, 5.87; $p < 0.001$), the mean (OR = $e^{2.7755}$ =16.05; 95%CI, 1.90, 3.65; $p < 0.001$), and 1 SD above the mean (OR = $e^{1.1436}$ = 3.14; 95%CI, 0.06, 2.23; $p = 0.038$). The negative impact of S-COVID-19-S on depression was also mitigated by higher HDK values from 1 SD below the mean (OR = $e^{3.8368}$ = 46.37; 95%CI, 2.83, 4.85; $p < 0.001$), the mean (OR = $e^{2.4547}$ = 11.64; 95%CI, 1.18, 3.10; $p < 0.001$), and 1 SD above the mean (OR = $e^{1.0726}$ = 2.92; 95%CI, 0.19, 1.95; $p = 0.017$).

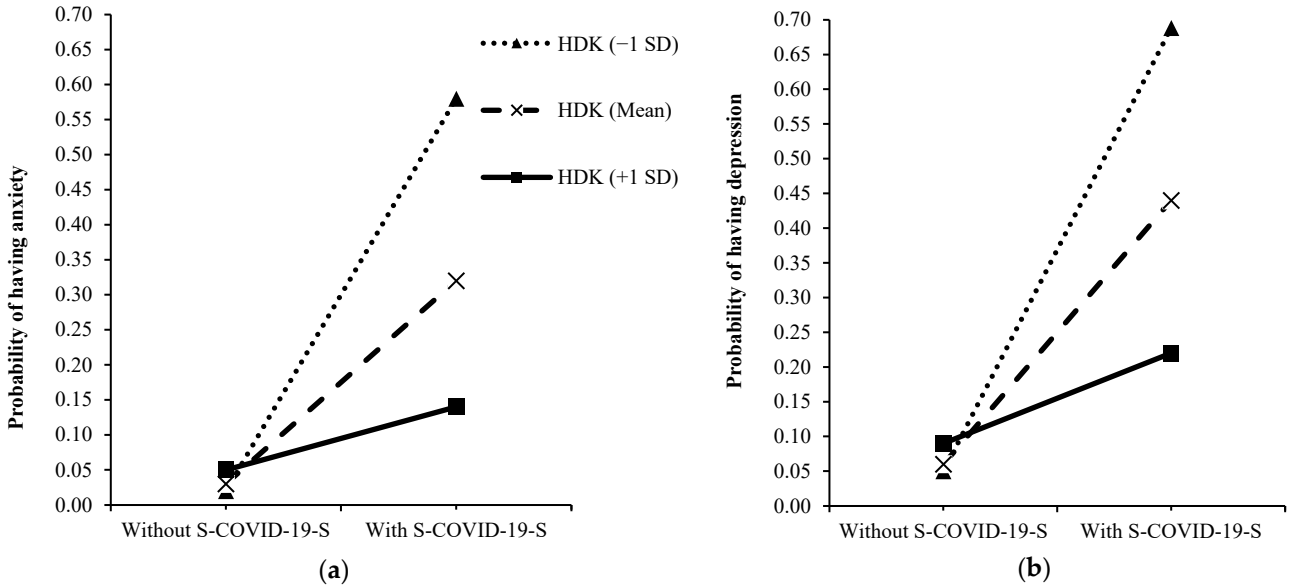

Figure 2. Simple slopes for the interactions between S-COVID-19-S with hemodialysis diet knowledge on anxiety (**a**) and depression (**b**) (n = 875). Note: HDK, hemodialysis dietary knowledge; S-COVID-19-S, suspected COVID 19 symptoms; +1 SD, one standard deviation above the mean; −1 SD, one standard deviation below the mean.

4. Discussion

The simple structure and acceptable psychometric properties of the hemodialysis dietary knowledge (HDK) were established in this study. The construct, criterion validity and reliability of this instrument were acceptable. No floor or ceiling effect of the HDK

were confirmed. Through the CFA, goodness-of-fit indices used in this study met the recommended criteria [54]. The CFA supported the model of an original HDK version which consisted of 10 items divided into five components, including protein, potassium, phosphorus, sodium, and water. The overall scale was used in this and a previous study [42]. This study provides the evidence of HDK psychometric properties in Vietnamese context. Further studies are needed to test the validity and reliability of the HDK in different languages and contexts.

In our study, the important predictor of anxiety and depression was S-COVID-19-S. Similarly, previous studies have found that people with S-COVID-19-S had a higher depression likelihood [26,30,60]. In addition, hemodialysis patients who have a family member with suspected or confirmed COVID-19 were more likely to experience anxiety [23]. Hemodialysis patients were more vulnerable to COVID-19 complications because they had been suffering from pre-existing comorbid conditions, which were significantly correlated with mortality [14,61]. Therefore, medical staff should pay more attention to early detection of psychological problems and provide appropriate support to hemodialysis patients, especially to those who have symptoms of COVID-19.

The HDK was found as a protective factor for anxiety and depression. Importantly, our findings also highlighted that HDK alleviated the adverse impact of S-COVID-19-S on hemodialysis patients' anxiety and depression. This could be explained that having good knowledge about diet may help the hemodialysis patients choose healthy foods, adhering to fluid or dialysis diet prescriptions that may balance the biochemical parameters (e.g., calcium, albumin), and further protect patients' psychological status [19]. A low nutritional knowledge level in hemodialysis patients has been reported in previous studies [62,63]. In addition, hemodialysis patients who had a higher dietary phosphorus or potassium intake were more likely to increase mortality [64,65], and this was also positively associated with depressed symptoms [66]. Therefore, it is important to have a dietary education program for the improvement of hemodialysis patients' knowledge and their quality of life [42,67]. Amidst the COVID-19 pandemic, alternative interventions are highly suggested, e.g., dietary mobile applications for hemodialysis patients, and a quick diet and nutrition guide for chronic kidney disease patients [68]. Therefore, we recommended that Vietnamese health care providers, namely dietitians, nephrologists, and nurses, should be aware of providing the necessary knowledge related to healthy diet and nutrition to hemodialysis patients through different methods amidst the pandemic. Further rigorous studies are necessary to examine the effects of enhanced dietary knowledge programs on reducing anxious and depressive symptoms in maintenance hemodialysis patients.

Besides, our finding also demonstrated that hemodialysis patients with S-COVID-19-S and higher HL scores were less likely to be anxious and depressed compared to those people with lower HL scores. This is in line with the findings of previous studies [30,69–71]. Increasing HL in patients receiving hemodialysis may improve their quality of life [72], and lower anxiety and depression [73]. However, the literature has documented that hemodialysis patients have limited HL levels [74,75]. Therefore, appropriate strategies should be developed to improve HL in hemodialysis patients.

In the current study, anxiety and depression were found to be protected by increasing physical activity in hemodialysis patients. This finding is congruent with other studies [30,76]. During the COVID19 pandemic, people tended to have less exercise due to restrictions on outdoor activities, which may further associate with anxiety and depression [77]. Physical activity exerts antidepressant effects through multiple biological and psychosocial pathways [78]. Therefore, regular exercise is highly recommended for hemodialysis patients to prevent psychological consequences during the COVID-19 pandemic. Patients are encouraged to exercise at home or take part in physical activities in the dialysis facilities during hemodialysis sessions. The effects of intradialytic exercise on improving depression and other health outcomes such as quality of life and dialysis adequacy were illustrated in previous studies [79,80]. Lastly, social status was found to be one of the protective factors of anxiety and depression in the present study. Patients with

high social status tend to have higher education, higher income, and employment, which were significantly associated with lower levels of depression and anxiety [81].

The present study has some limitations. First, this study was a cross-sectional study that could not determine a direct cause-and-effect association. Future longitudinal or experimental studies are needed to examine the effectiveness of health literacy interventions or diet knowledge education on improving mental health matters in hemodialysis patients. Second, an imbalance probability of S-COVID-19-S resulted in the width of the confidence interval of this variable in relation to anxiety and depression. Third, we only assess knowledge of diet, which may differ from practice. Thus, other tools to measure patients' eating behaviors are recommended for use in further studies. Finally, some variables such as smoking and drinking that may influence our outcomes have not been studied here.

5. Conclusions

The HDK scale was found to be a valid and reliable survey tool for hemodialysis patients in Vietnam. Patients with suspected COVID-19 symptoms had a higher likelihood of having anxiety and depression. Patients with higher HDK scores had a lower likelihood of having anxiety and depression. Importantly, hemodialysis dietary knowledge was found to mitigate the negative impact of S-COVID-19-S on anxious and depressive symptoms. The findings can serve as evidence for developing educational intervention programs, in order to improve patients' dietary knowledge and health literacy in contributing to the reduction of anxiety and depression.

Supplementary Materials: The following supporting information can be downloaded at: https://www.mdpi.com/article/10.3390/nu14122364/s1, Table S1: The correlations between independent variables; Table S2: Conditional effect of S-COVID-19-S on anxiety at values of HDK; Table S3: Data for visualizing the conditional effect of S-COVID-19-S on anxiety; Table S4: Conditional effects of S-COVID-19-S on depression at values of HDK; Table S5: Data for visualizing the conditional effect of S-COVID-19-S on depression.

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References

1. Goh, Z.S.; Griva, K. Anxiety and depression in patients with end-stage renal disease: Impact and management challenges—A narrative review. *Int. J. Nephrol. Renov. Dis.* **2018**, *11*, 93–102. [CrossRef] [PubMed]
2. Ng, H.J.; Tan, W.J.; Mooppil, N.; Newman, S.; Griva, K. Prevalence and patterns of depression and anxiety in hemodialysis patients: A 12-month prospective study on incident and prevalent populations. *Br. J. Health Psychol.* **2015**, *20*, 374–395. [CrossRef]
3. Alencar, S.B.V.; de Lima, F.M.; Dias, L.D.A.; Dias, V.D.A.; Lessa, A.C.; Bezerra, J.M.; Apolinário, J.F.; de Petribu, K.C. Depression and quality of life in older adults on hemodialysis. *Rev. Bras. De Psiquiatr.* **2020**, *42*, 195–200. [CrossRef]
4. Brito, D.C.S.; Machado, E.L. Depression and anxiety among patients undergoing dialysis and kidney transplantation: A cross-sectional study. *Sao Paulo Med. J.* **2019**, *137*, 137–147. [CrossRef] [PubMed]
5. Marthoenis, M.; Syukri, M.; Abdullah, A.; Tandi, T.M.R.; Putra, N.; Laura, H.; Setiawan, A.; Sofyan, H.; Schouler-Ocak, M. Quality of life, depression, and anxiety of patients undergoing hemodialysis: Significant role of acceptance of the illness. *Int. J Psychiatry Med.* **2021**, *56*, 40–50. [CrossRef]
6. Khan, A.; Khan, A.H.; Adnan, A.S.; Sulaiman, S.A.S.; Mushtaq, S. Prevalence and predictors of depression among hemodialysis patients: A prospective follow-up study. *BMC Public Health* **2019**, *19*, 531. [CrossRef] [PubMed]
7. Kauric-Klein, Z. Depression and Medication Adherence in Patients on Hemodialysis. *Curr. Hypertens. Rev.* **2017**, *13*, 138–143. [CrossRef]
8. Schouten, R.W.; Haverkamp, G.L.; Loosman, W.L.; Chandie Shaw, P.K.; van Ittersum, F.J.; Smets, Y.F.C.; Vleming, L.J.; Dekker, F.W.; Honig, A.; Siegert, C.E.H. Anxiety Symptoms, Mortality, and Hospitalization in Patients Receiving Maintenance Dialysis: A Cohort Study. *Am. J. Kidney Dis.* **2019**, *74*, 158–166. [CrossRef] [PubMed]
9. Wu, P.H.; Lin, M.Y.; Huang, T.H.; Lin, Y.T.; Hung, C.C.; Yeh, Y.C.; Kuo, H.T.; Chiu, Y.W.; Hwang, S.J.; Tsai, J.C.; et al. Depression amongst patients commencing maintenance dialysis is associated with increased risk of death and severe infections: A nationwide cohort study. *PLoS ONE* **2019**, *14*, e0218335. [CrossRef] [PubMed]
10. Farrokhi, F.; Abedi, N.; Beyene, J.; Kurdyak, P.; Jassal, S.V. Association between depression and mortality in patients receiving long-term dialysis: A systematic review and meta-analysis. *Am. J. Kidney Dis.* **2014**, *63*, 623–635. [CrossRef]
11. Keskin, G.; Engin, E. The evaluation of depression, suicidal ideation and coping strategies in haemodialysis patients with renal failure. *J. Clin. Nurs.* **2011**, *20*, 2721–2732. [CrossRef] [PubMed]
12. Chen, C.K.; Tsai, Y.C.; Hsu, H.J.; Wu, I.W.; Sun, C.Y.; Chou, C.C.; Lee, C.C.; Tsai, C.R.; Wu, M.S.; Wang, L.J. Depression and suicide risk in hemodialysis patients with chronic renal failure. *Psychosomatics* **2010**, *51*, 528–528.e6. [CrossRef]
13. Hedayati, S.S.; Yalamanchili, V.; Finkelstein, F.O. A practical approach to the treatment of depression in patients with chronic kidney disease and end-stage renal disease. *Kidney Int.* **2012**, *81*, 247–255. [CrossRef] [PubMed]
14. Patel, M.P.; Kute, V.B.; Prasad, N.; Agarwal, S.K.; COVID-19 Working Group of Indian Society of Nephrology. COVID 19 and Hemodialysis Anxiety. *Indian J. Nephrol.* **2020**, *30*, 174–175. [CrossRef] [PubMed]
15. Ghonimi, T.A.L.; Alkad, M.M. Mortality and associated risk factors of COVID-19 infection in dialysis patients in Qatar: A nationwide cohort study. *PLoS ONE* **2021**, *16*, e0254246. [CrossRef]
16. Creput, C.; Fumeron, C.; Toledano, D.; Diaconita, M.; Izzedine, H. COVID-19 in Patients Undergoing Hemodialysis: Prevalence and Asymptomatic Screening During a Period of High Community Prevalence in a Large Paris Center. *Kidney Med.* **2020**, *2*, 716–723.e1. [CrossRef]
17. Rodríguez-Espinosa, D.; Broseta, J.J. Prevalence of COVID-19 Infection in Hemodialysis Patients Detected Using Serologic Screening. *J. Am. Soc. Nephrol.* **2020**, *31*, 2966–2967. [CrossRef]
18. Chen, C.Y.; Shao, S.C.; Chen, Y.T.; Hsu, C.K.; Hsu, H.J.; Lee, C.C.; Sun, C.Y.; Chen, Y.C.; Hung, M.J.; Wu, I.W. Incidence and Clinical Impacts of COVID-19 Infection in Patients with Hemodialysis: Systematic Review and Meta-Analysis of 396,062 Hemodialysis Patients. *Healthcare* **2021**, *9*, 47. [CrossRef]
19. Delgado-Domínguez, C.J.; Sanz-Gómez, S. Influence of Depression and Anxiety on Hemodialysis Patients: The Value of Multidisciplinary Care. *Int. J. Environ. Res. Public Health* **2021**, *18*, 3544. [CrossRef]
20. Hou, Y.; Li, X.; Yang, L.; Liu, C.; Wu, H.; Xu, Y.; Yang, F.; Du, Y. Factors associated with depression and anxiety in patients with end-stage renal disease receiving maintenance hemodialysis. *Int. Urol. Nephrol.* **2014**, *46*, 1645–1649. [CrossRef]
21. Theofilou, P. Depression and anxiety in patients with chronic renal failure: The effect of sociodemographic characteristics. *Int. J. Nephrol.* **2011**, *2011*, 514070. [CrossRef]
22. Mosleh, H.; Alenezi, M.; Al Johani, S.; Alsani, A.; Fairaq, G.; Bedaiwi, R. Prevalence and Factors of Anxiety and Depression in Chronic Kidney Disease Patients Undergoing Hemodialysis: A Cross-sectional Single-Center Study in Saudi Arabia. *Cureus* **2020**, *12*, e6668. [CrossRef]
23. Al Naamani, Z.; Gormley, K.; Noble, H.; Santin, O.; Al Maqbali, M. Fatigue, anxiety, depression and sleep quality in patients undergoing haemodialysis. *BMC Nephrol.* **2021**, *22*, 157. [CrossRef]

24. Hao, W.; Tang, Q.; Huang, X.; Ao, L.; Wang, J.; Xie, D. Analysis of the prevalence and influencing factors of depression and anxiety among maintenance dialysis patients during the COVID-19 pandemic. *Int. Urol. Nephrol.* **2021**, *53*, 1453–1461. [CrossRef]
25. Nguyen, M.H.; Pham, T.T.M.; Pham, L.V.; Phan, D.T.; Tran, T.V.; Nguyen, H.C.; Nguyen, H.C.; Ha, T.H.; Dao, H.K.; Nguyen, P.B.; et al. Associations of Underlying Health Conditions with Anxiety and Depression Among Outpatients: Modification Effects of Suspected COVID-19 Symptoms, Health-Related and Preventive Behaviors. *Int. J. Public Health* **2021**, *66*, 634904. [CrossRef]
26. Nguyen, H.C.; Nguyen, M.H.; Do, B.N. People with Suspected COVID-19 Symptoms Were More Likely Depressed and Had Lower Health-Related Quality of Life: The Potential Benefit of Health Literacy. *J. Clin. Med.* **2020**, *9*, 965. [CrossRef]
27. Kauric-Klein, Z. Sodium Knowledge, Beliefs, and Behaviors in Patients on Chronic Hemodialysis. *Blood Purif.* **2020**, *49*, 25–32. [CrossRef]
28. Zhang, X.; Chen, B.; Jia, P.; Han, J. Locked on salt? Excessive consumption of high-sodium foods during COVID-19 presents an underappreciated public health risk: A review. *Environ. Chem. Lett.* **2021**, *19*, 3583–3595. [CrossRef]
29. Cheikh Ismail, L.; Osaili, T.M.; Mohamad, M.N.; Al Marzouqi, A.; Jarrar, A.H.; Zampelas, A.; Habib-Mourad, C.; Omar Abu Jamous, D.; Ali, H.I.; Al Sabbah, H.; et al. Assessment of eating habits and lifestyle during the coronavirus 2019 pandemic in the Middle East and North Africa region: A cross-sectional study. *Br. J. Nutr.* **2020**, *126*, 757–766. [CrossRef]
30. Pham, K.M.; Pham, L.V.; Phan, D.T.; Tran, T.V.; Nguyen, H.C.; Nguyen, M.H.; Nguyen, H.C.; Ha, T.H.; Dao, H.K.; Nguyen, P.B.; et al. Healthy Dietary Intake Behavior Potentially Modifies the Negative Effect of COVID-19 Lockdown on Depression: A Hospital and Health Center Survey. *Front. Nutr.* **2020**, *7*, 581043. [CrossRef]
31. Faul, F.; Erdfelder, E.; Lang, A.G.; Buchner, A. G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behav. Res. Methods* **2007**, *39*, 175–191. [CrossRef]
32. Editorial Team. *Overview of Novel Coronavirus*. BMJ Best Practice: 2020. Available online: https://bestpractice.bmj.com/topics/en-gb/3000165 (accessed on 10 February 2020).
33. Spitzer, R.L.; Kroenke, K.; Williams, J.B.; Löwe, B. A brief measure for assessing generalized anxiety disorder: The GAD-7. *Arch. Intern. Med.* **2006**, *166*, 1092–1097. [CrossRef]
34. Alshraifeen, A.; Alnuaimi, K.; Al-Rawashdeh, S.; Ashour, A.; Al-Ghabeesh, S.; Al-Smadi, A. Spirituality, Anxiety and Depression Among People Receiving Hemodialysis Treatment in Jordan: A Cross-Sectional Study. *J. Relig. Health* **2020**, *59*, 2414–2429. [CrossRef] [PubMed]
35. Luong, T.C.; Pham, T.T.M.; Nguyen, M.H.; Do, A.Q.; Pham, L.V.; Nguyen, H.C.; Nguyen, H.C.; Ha, T.H.; Dao, H.K.; Trinh, M.V.; et al. Fear, anxiety and depression among pregnant women during COVID-19 pandemic: Impacts of healthy eating behaviour and health literacy. *Ann. Med.* **2021**, *53*, 2120–2131. [CrossRef]
36. Mughal, A.Y.; Stockton, M.A.; Bui, Q.; Go, V.; Ha, T.V.; Pence, B.W.; Gaynes, B.N. Validation of screening tools for common mental health disorders in the methadone maintenance population in Hanoi, Vietnam. *BMC Psychiatry* **2021**, *21*, 488. [CrossRef]
37. Plummer, F.; Manea, L.; Trepel, D.; McMillan, D. Screening for anxiety disorders with the GAD-7 and GAD-2: A systematic review and diagnostic metaanalysis. *Gen. Hosp. Psychiatry* **2016**, *39*, 24–31. [CrossRef] [PubMed]
38. Kroenke, K.; Spitzer, R.L.; Williams, J.B. The PHQ-9: Validity of a brief depression severity measure. *J. Gen. Intern. Med.* **2001**, *16*, 606–613. [CrossRef]
39. Nguyen, N.; An, P.; Tien, N. Reliability and Validity of Vietnamese Version of Patient Health Questionnaire 9 Items (PHQ-9) Among UMP Medical Freshmen. In *International Conference on the Development of Biomedical Engineering in Vietnam*; Springer: Berlin/Heidelberg, Germany, 2022; pp. 901–923. [CrossRef]
40. Trotter, T.L.; Denny, D.L.; Evanson, T.A. Reliability and Validity of the Patient Health Questionnaire-9 as a Screening Tool for Poststroke Depression. *J. Neurosci. Nurs.* **2019**, *51*, 147–152. [CrossRef] [PubMed]
41. Thomas, Z.; Novak, M.; Platas, S.G.T.; Gautier, M.; Holgin, A.P.; Fox, R.; Segal, M.; Looper, K.J.; Lipman, M.; Selchen, S.; et al. Brief Mindfulness Meditation for Depression and Anxiety Symptoms in Patients Undergoing Hemodialysis: A Pilot Feasibility Study. *Clin. J. Am. Soc. Nephrol.* **2017**, *12*, 2008–2015. [CrossRef]
42. Ryu, H.; Jeon, H.J.; Sun, H.-K.; Han, K.H.; Whang, C.G.; Han, S.Y. Repeated education improves diet compliance in maintenance Hemodialysis Patients. *Int. Urol. Nephrol.* **2014**, *2*, 63–68.
43. Nguyen, T.T.; Nguyen, M.H.; Pham, T.T.M.; Le, V.T.; Nguyen, T.T.; Luong, T.C.; Do, B.N.; Dao, H.K.; Nguyen, H.C.; Ha, T.H.; et al. Negative Impacts of COVID-19 Induced Lockdown on Changes in Eating Behavior, Physical Activity, and Mental Health as Modified by Digital Healthy Diet Literacy and eHealth Literacy. *Front. Nutr.* **2021**, *8*, 774328. [CrossRef] [PubMed]
44. Hemmelgarn, B.R.; Manns, B.J.; Quan, H.; Ghali, W.A. Adapting the Charlson Comorbidity Index for use in patients with ESRD. *Am. J. Kidney Dis.* **2003**, *42*, 125–132. [CrossRef]
45. Craig, C.L.; Marshall, A.L.; Sjöström, M.; Bauman, A.E.; Booth, M.L.; Ainsworth, B.E.; Pratt, M.; Ekelund, U.; Yngve, A.; Sallis, J.F.; et al. International physical activity questionnaire: 12-country reliability and validity. *Med. Sci. Sports Exerc.* **2003**, *35*, 1381–1395. [CrossRef]
46. Pham, T.; Bui, L.; Nguyen, A.; Nguyen, B.; Tran, P. The prevalence of depression and associated risk factors among medical students: An untold story in Vietnam. *PLoS ONE* **2019**, *14*, e0221432. [CrossRef]
47. Nguyen, L.T.K.; Do, B.N. Physical Activity and Diet Quality Modify the Association between Comorbidity and Disability among Stroke Patients. *Nutrients* **2021**, *13*, 1641. [CrossRef]
48. Lee, P.H.; Macfarlane, D.J.; Lam, T.H.; Stewart, S.M. Validity of the International Physical Activity Questionnaire Short Form (IPAQ-SF): A systematic review. *Int. J. Behav. Nutr. Phys. Act.* **2011**, *8*, 115. [CrossRef] [PubMed]

49. Duong, T.V.; Aringazina, A.; Kayupova, G.; Nurjanah; Pham, T.V.; Pham, K.M.; Truong, T.Q.; Nguyen, K.T.; Oo, W.M.; Su, T.T.; et al. Development and Validation of a New Short-Form Health Literacy Instrument (HLS-SF12) for the General Public in Six Asian Countries. *Health Lit. Res. Pract.* **2019**, *3*, e91–e102. [CrossRef] [PubMed]
50. Duong, T.V.; Pham, K.M. Digital Healthy Diet Literacy and Self-Perceived Eating Behavior Change during COVID-19 Pandemic among Undergraduate Nursing and Medical Students: A Rapid Online Survey. *Int. J. Environ. Res. Public Health* **2020**, *17*, 7185. [CrossRef]
51. HLS-EU Consortium. Comparative Report of Health Literacy in Eight EU Member States. The European Health Literacy Project 2009–2012. Available online: https://www.healthliteracyeurope.net/hls-eu (accessed on 22 October 2012).
52. WHO. Coronavirus Disease (COVID-19) Technical Guidance: Infection Prevention and Control/Wash. Available online: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/infection-prevention-and-control (accessed on 20 May 2020).
53. Jöreskog, K.G.; Sörbom, D. *LISREL 8.80 for Windows [Computer Software]*; Scientific Software International, Inc.: Lincolnwood, IL, USA, 2006.
54. Hooper, D.; Coughlan, J.; Mullen, M.R. Structural Equation Modelling: Guidelines for Determining Model Fit. *Electron. J. Bus. Res. Methods* **2008**, *6*, 53–60.
55. Joreskog, K.G.; Sorbom, D. *LISREL 7: User's Reference Guide*; Scientific Software: Chicago, IL, USA, 1989.
56. Kimberlin, C.L.; Winterstein, A.G. Validity and reliability of measurement instruments used in research. *Am. J. Health Syst. Pharm.* **2008**, *65*, 2276–2284. [CrossRef]
57. Terwee, C.B.; Bot, S.D.; de Boer, M.R.; van der Windt, D.A.; Knol, D.L.; Dekker, J.; Bouter, L.M.; de Vet, H.C. Quality criteria were proposed for measurement properties of health status questionnaires. *J. Clin. Epidemiol.* **2007**, *60*, 34–42. [CrossRef] [PubMed]
58. George, D.; Mallery, P. *SPSS for Windows Step by Step: A Simple Guide and Reference*, 4th ed.; Allyn & Bacon: Boston, MA, USA, 2003.
59. Maldonado, G.; Greenland, S. Simulation study of confounder-selection strategies. *Am. J. Epidemiol.* **1993**, *138*, 923–936. [CrossRef]
60. Oginni, O.A.; Oloniniyi, I.O.; Ibigbami, O.; Ugo, V.; Amiola, A.; Ogunbajo, A. Depressive and anxiety symptoms and COVID-19-related factors among men and women in Nigeria. *PLoS ONE* **2021**, *16*, e0256690. [CrossRef]
61. Ejaz, H.; Alsrhani, A.; Zafar, A.; Javed, H.; Junaid, K.; Abdalla, A.E.; Abosalif, K.O.A.; Ahmed, Z.; Younas, S. COVID-19 and comorbidities: Deleterious impact on infected patients. *J. Infect. Public Health* **2020**, *13*, 1833–1839. [CrossRef] [PubMed]
62. Pafili, Z.; Maridaki, M.; Giannaki, C.D.; Karatzaferi, C.; Liakopoulos, V.; Eleftheriadis, T.; Stefanidis, I.; Sakkas, G.K. Phosphorus nutritional knowledge among dialysis health care providers and patients: A multicenter observational study. *Clin. Nutr. ESPEN* **2019**, *31*, 33–37. [CrossRef] [PubMed]
63. Montazeri, R.; Sharifi, N. Evaluation of Nutritional Knowledge in Terms of Dietary Sources of Protein, Phosphorous, Potassium and Fluids Restriction in Hemodialysis Patients. Available online: https://brieflands.com/articles/jjcmb-21832.html (accessed on 19 May 2022).
64. Noori, N.; Kalantar-Zadeh, K.; Kovesdy, C.P.; Murali, S.B.; Bross, R.; Nissenson, A.R.; Kopple, J.D. Dietary potassium intake and mortality in long-term hemodialysis patients. *Am. J. Kidney Dis.* **2010**, *56*, 338–347. [CrossRef]
65. Noori, N.; Kalantar-Zadeh, K.; Kovesdy, C.P.; Bross, R.; Benner, D.; Kopple, J.D. Association of dietary phosphorus intake and phosphorus to protein ratio with mortality in hemodialysis patients. *Clin. J. Am. Soc. Nephrol.* **2010**, *5*, 683–692. [CrossRef] [PubMed]
66. Gebrie, M.H.; Ford, J. Depressive symptoms and dietary non-adherence among end stage renal disease patients undergoing hemodialysis therapy: Systematic review. *BMC Nephrol.* **2019**, *20*, 429. [CrossRef] [PubMed]
67. Ebrahimi, H.; Sadeghi, M.; Amanpour, F.; Dadgari, A. Influence of nutritional education on hemodialysis patients' knowledge and quality of life. *Saudi. J. Kidney Dis. Transplant.* **2016**, *27*, 250–255. [CrossRef]
68. Mafra, D.; Cardozo, L.F.M.F.; Moraes, C.; Moreira, L.S.G.; Teixeira, K.T.R.; Reis, D.C.M.V.; Fanton, S.; Salarolli, R.; Kalantar-Zadeh, K.; Burrowe, J.D. Coronavirus Disease 2019: Quick Diet and Nutrition Guide for Patients with Chronic Kidney Disease. *J. Ren. Nutr.* **2021**, *31*, 39–42. [CrossRef]
69. Dodson, S.; Osicka, T.; Huang, L.; McMahon, L.P.; Roberts, M.A. Multifaceted Assessment of Health Literacy in People Receiving Dialysis: Associations with Psychological Stress and Quality of Life. *J. Health Commun.* **2016**, *21*, 91–98. [CrossRef]
70. Skoumalova, I.; Geckova, A.M. Does Depression and Anxiety Mediate the Relation between Limited Health Literacy and Diet Non-Adherence? *Int. J. Environ. Res. Public Health* **2020**, *17*, 7913. [CrossRef]
71. Tran, T.V.; Nguyen, H.C.; Pham, L.V.; Nguyen, M.H.; Nguyen, H.C.; Ha, T.H.; Phan, D.T.; Dao, H.K.; Nguyen, P.B.; Trinh, M.V.; et al. Impacts and interactions of COVID-19 response involvement, health-related behaviours, health literacy on anxiety, depression and health-related quality of life among healthcare workers: A cross-sectional study. *BMJ Open* **2020**, *10*, e041394. [CrossRef] [PubMed]
72. Alemayehu, Y.H.; Seylania, K.; Bahramnezhad, F. The relationship between health literacy and quality of life among hemodialysis patients: An integrative review. *Hum. Antib.* **2020**, *28*, 75–81. [CrossRef]
73. Li, Y.N.; Shapiro, B.; Kim, J.C.; Zhang, M.; Porszasz, J.; Bross, R.; Feroze, U.; Upreti, R.; Martin, D.; Kalantar-Zadeh, K.; et al. Association between quality of life and anxiety, depression, physical activity and physical performance in maintenance hemodialysis patients. *Chronic Dis. Transl. Med.* **2016**, *2*, 110–119. [CrossRef] [PubMed]
74. Cavanaugh, K.L.; Wingard, R.L.; Hakim, R.M.; Eden, S.; Shintani, A.; Wallston, K.A.; Huizinga, M.M.; Elasy, T.A.; Rothman, R.L.; Ikizler, T.A. Low health literacy associates with increased mortality in ESRD. *J. Am. Soc. Nephrol.* **2010**, *21*, 1979–1985. [CrossRef]

75. Khamis, S.; Emara, M.; Elnashar, M.; Khalil, M.; Kasemy, Z. Development of Health Literacy for Regular Hemodialysis Patients in Menoufia Governorate: A Cross-Sectional Study. *Open J. Nephrol.* **2021**, *11*, 199–216. [CrossRef]
76. Dziubek, W.; Kowalska, J.; Kusztal, M.; Rogowski, Ł.; Gołębiowski, T.; Nikifur, M.; Szczepańska-Gieracha, J.; Zembroń-Łacny, A.; Klinger, M.; Woźniewski, M. The Level of Anxiety and Depression in Dialysis Patients Undertaking Regular Physical Exercise Training–a Preliminary Study. *Kidney Blood Press. Res.* **2016**, *41*, 86–98. [CrossRef]
77. Puccinelli, P.J.; da Costa, T.S.; Seffrin, A.; de Lira, C.A.B.; Vancini, R.L.; Nikolaidis, P.T.; Knechtle, B.; Rosemann, T.; Hill, L.; Andrade, M.S. Reduced level of physical activity during COVID-19 pandemic is associated with depression and anxiety levels: An internet-based survey. *BMC Public Health* **2021**, *21*, 425. [CrossRef]
78. Kandola, A.; Ashdown-Franks, G.; Hendrikse, J.; Sabiston, C.M.; Stubbs, B. Physical activity and depression: Towards understanding the antidepressant mechanisms of physical activity. *Neurosci. Biobehav. Rev.* **2019**, *107*, 525–539. [CrossRef]
79. Chung, Y.C.; Yeh, M.L.; Liu, Y.M. Effects of intradialytic exercise on the physical function, depression and quality of life for haemodialysis patients: A systematic review and meta-analysis of randomised controlled trials. *J. Clin. Nurs.* **2017**, *26*, 1801–1813. [CrossRef]
80. Pu, J.; Jiang, Z.; Wu, W.; Li, L.; Zhang, L.; Li, Y.; Liu, Q.; Ou, S. Efficacy and safety of intradialytic exercise in haemodialysis patients: A systematic review and meta-analysis. *BMJ Open* **2019**, *9*, e020633. [CrossRef] [PubMed]
81. Gerogianni, G.; Lianos, E.; Kouzoupis, A.; Polikandrioti, M.; Grapsa, E. The role of socio-demographic factors in depression and anxiety of patients on hemodialysis: An observational cross-sectional study. *Int. Urol. Nephrol.* **2018**, *50*, 143–154. [CrossRef]

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Single and Combinative Impacts of Healthy Eating Behavior and Physical Activity on COVID-19-like Symptoms among Outpatients: A Multi-Hospital and Health Center Survey

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Abstract: Background: Healthy eating and physical activity are effective non-pharmacological approaches to boost immune function and contain the pandemic. We aimed to explore the associations and interactions between physical activity and healthy eating behavior with COVID-19-like Symptoms (Slike-CV19S). Methods: A cross-sectional study was conducted on 3947 outpatients, from 14 February to 2 March 2020, at nine health facilities in Vietnam. Data collection included sociodemographic characteristics, healthy eating behavior (using the healthy eating score (HES) questionnaire), physical activity (using the short form international physical activity questionnaire), and Slike-CV19S. The associations and interactions were tested using logistic regression models. Results: Frequent intake of fruits (OR = 0.84; $p = 0.016$), vegetables (OR = 0.72; $p = 0.036$), and fish (OR = 0.43; $p < 0.001$) were associated with a lower Slike-CV19S likelihood, as compared with infrequent intake. Patients with higher HES levels (OR = 0.84; $p = 0.033$ for medium HES; OR = 0.77; $p = 0.006$ for high HES)

or being physically active (OR = 0.69; $p < 0.001$) had a lower Slike-CV19S likelihood, as compared to those with low HES or physical inactivity, respectively. Patients with medium HES who were physically active (OR = 0.69; $p = 0.005$), or with high HES and physically active (OR = 0.58; $p < 0.001$), had a lower Slike-CV19S likelihood, as compared to those with low HES and physical inactivity. Conclusions: Healthy eating behavior and physical activity showed single and combinative impacts on protecting people from Slike-CV19S. Strategic approaches are encouraged to improve healthy behaviors, which may further contribute to containing the pandemic.

Keywords: COVID-19-like Symptoms; healthy eating score; fruits; vegetables; fish; physical activity; non-pharmacological; interaction; immune function; Vietnam

1. Introduction

Deaths due to COVID-19 have exceeded 3 million globally, as reported in June 2021 [1]. Although COVID-19 vaccination rollouts have been implemented worldwide at different rates [2,3], the emergence of new variants and waning immunity after vaccination or infection over time have prevented the community from achieving herd immunity [4,5]. Consequently, new waves of the COVID-19 disease have re-emerged [6,7], which have negatively impacted healthcare systems and socio-economies in many countries [8–10].

COVID-19 is a contagious respiratory illness with symptoms similar to other respiratory infections (e.g., influenza) [11]. Suspected COVID-19 symptoms (Slike-CV19S) adversely affect people's physical health and increase fear and nervousness, even if people are not confirmed with COVID-19 infection. In addition, Slike-CV19S have been linked to an elevated risk of mental illnesses and poorer quality of life [12,13]. Moreover, individuals with any suspected symptom were advised to stay at home, self-isolate, or keep a safe distance from others [14]. This leads to feelings of loneliness and isolation, which may exacerbate people's psychological ill-health. Moreover, people with Slike-CV19S have to go to medical facilities for COVID-19 testing, thereby causing financial burden and pressure on the health system [15,16].

During the pandemic, the general public seeking medical care were at a higher risk of infection [17]. They have encountered many stressors, including limited access to healthcare services, delayed treatments, fear of contracting COVID-19, and health concerns [17–19]. In particular, previous research showed that patients with underlying diseases and Slike-CV19S had a higher likelihood of experiencing mental health problems [20]. Therefore, investigating protective factors is highly recommended to protect patients from Slike-CV19S.

A diverse and healthy diet could help to mitigate the risk of chronic diseases [21,22] and improve health outcomes [23]. Frequent consumption of healthy foods (e.g., vegetables, fruits, fish) helps to provide the body with a sufficient intake of essential nutrients and antioxidants [24,25], which could reduce inflammation and oxidative stress, enhancing immunity [26,27]. In addition, physical activity could help to lower the respiratory infection likelihood, as reported in previous studies [28,29]. Physical exercise can help to strengthen immune function [30,31]. Therefore, healthy eating and staying physically active could mitigate the susceptibility to pathogens that helps to decrease the chance of infectious respiratory diseases, including COVID-19.

In a similar situation to other countries, Vietnam has been facing significant challenges in containing the coronavirus infection and managing its consequences. Several preventive measures have been implemented, such as social distancing, quarantine, and lockdown, which may negatively affect lifestyles (e.g., increase in sedentary behavior, unhealthy eating) [32,33]. Thus, it is essential to provide timely evidence about the beneficial roles of physical activity and healthy diets in health, encouraging patients to engage in these behaviors to stay healthy during the crisis.

Therefore, the aims of this study were to explore the single and combinative impacts of healthy eating behavior and physical activity on the likelihood of Slike-CV19S among outpatients.

2. Materials and Methods

2.1. Study Design

An observational cross-sectional study was conducted on outpatients from 14 February to 2 March 2020. Patients were recruited during their visit to the outpatient departments (OPDs) of nine health centers and hospitals in Vietnam.

This study was reviewed and approved by all selected health facilities and the ethical committee of Hanoi University of Public Health (IRB number: 029/2020/YTCC-HD3).

2.2. Study Population and Data Collection Procedure

The study participants were recruited using the consecutive convenience sampling technique. Inclusion criteria were people aged 18–85, voluntarily participating in the survey, and without Vietnamese language barriers. Patients experiencing any medical emergencies were excluded (e.g., positive with COVID-19, heart attack, severe injuries, appendicitis, severe bleeding, etc.). Patients unable to communicate normally (e.g., blindness or deafness) were also excluded.

The process of collecting data was described in a previous publication [12]. In brief, after receiving training in data collection, investigators (physicians, nurses, medical students) contacted and invited outpatients to participate in the survey voluntarily. Patients signed informed consent forms prior to completing this survey. Investigators and participants were required to adhere to precaution measures (e.g., handwashing, mask-wearing, physical distancing) to prevent virus infection during data collection. Each interview took about 20 min. Participant information was obtained and kept confidential and for scientific purposes only.

A total of 4029 individuals agreed to participate and complete the survey [12]. Out of the sample, 82 respondents were excluded (aged <18 or >85, or missing data). Finally, we analyzed the data of 3947 outpatients.

2.3. Measurements

2.3.1. COVID-19-like Symptoms

At the time of the survey, patients were screened for suspected COVID-19 symptoms (Slike-CV19S), including those related to the bronchial system (cough, dyspnea, sputum production, sore throat, rhinorrhea), gastrointestinal system (diarrhea and vomiting), and others (fever, myalgia, fatigue, confusion, headache, chest pain, hemoptysis) [34]. Patients who had any of these symptoms were classified as having Slike-CV19S but did not test positive for COVID-19.

2.3.2. Healthy Eating Behaviors

We used a Healthy Eating Score questionnaire with five items (HES-5) to assess the participant's healthy eating behavior. The HES-5 was validated and used in the Vietnamese context, with satisfactory validity [35]. The questionnaire investigated patients regarding the frequency of consumption of five healthy foods over the previous 30 days, including vegetables, fruits, dairy products, whole grains, and fish. The frequency of intake of each food was recorded with six possible responses from 0 = "Rarely or never" to 5 = "3 or more times per day". According to the American Heart Association's healthy dietary guidelines [36], we categorized the frequency of each healthy food into two groups (frequent vs. infrequent) as follows: "<3 times/day" vs. "≥3 times/day" for vegetables, dairy products, and whole grains; "<2 times/day" vs. "≥2 times/day" for fruits. It is also recommended that adults should consume 1–3 servings of fish per week depending on the type of fish [37]. Thus, for ease of analysis, fish consumption was later categorized into two groups: <1 time/week vs. ≥1 time/week.

Next, the Healthy Eating Score (HES) was calculated by summing up participants' responses to five items. The total score ranges from 0 to 25, in which patients with a greater score had a better healthy eating behavior. Then, we categorized healthy eating scores into tertiles, a method used previously [38], and defined the first tertile (HES < 10), the second tertile (10 $\leq$ HES < 15), and the third tertile (HES $\geq$ 15) as low, medium, and high HES, respectively.

2.3.3. Physical Activity

Physical activity (PA) was evaluated using the short form of the International Physical Activity Questionnaire (IPAQ-SF), which has been utilized for surveys in different countries [39–41]. The IPAQ-SF was also validated and used for study in Vietnam [12,42], with acceptable reliability and validity [43,44]. The IPAQ-SF comprises seven items asking participants about the amount of time spent on a variety of PA intensities, from sitting to vigorous activities, during the previous seven days. The PA intensity was expressed as the Metabolic Equivalent Task in minutes/week scores (MET-min/week). The total MET-min/week was the sum of minutes spent on walking, moderate, and vigorous activities multiplied by 3.3, 4.0, and 8.0, respectively. Following IPAQ guidelines [45], MET-min/week was classified into three levels (low, moderate, and high). We then categorized PA into two groups: inactive (low) vs. active (moderate/high) [46].

2.3.4. Covariates

Data on participants' sociodemographic characteristics were obtained, including age, gender, marital status (single vs. married vs. separated/divorced/widowed), education degree (junior high school and below vs. senior high school vs. college/university/postgraduate degree), occupational status (no job vs. having a job), the ability to pay for healthcare (difficult vs. easy), social status (low vs. middle or high). The information regarding participants' lifestyle behaviors was collected: smoking (no vs. yes) and alcohol consumption (no vs. yes). Body Mass Index (BMI, kg/m^2) was calculated and classified into three groups (underweight (BMI < 18.5), normal weight (18.5 $\leq$ BMI < 25.0), and overweight/obese (BMI $\geq$ 25.0)). Underlying diseases were assessed using items of the Charlson Comorbidity Index [47] and divided into two groups (no vs. yes).

Health literacy was evaluated using the short version of the Health Literacy Questionnaire (HLS-SF12), which was validated and used in Vietnam [12,48–50] and Asian countries [51,52]. The HLS-SF12 comprises twelve items evaluating the perception of difficulty when participants conduct each item, with a 4-level response from "very difficult" (1) to "very easy" (4). The scoring formula is described in previous studies [53]. The total score ranges from 0 to 50, in which patients with greater scores had higher health literacy levels.

2.4. Statistical Analysis

Studied variables were expressed as mean, standard deviation, frequency, and percentage. The proportion of Slike-CV19S in different groups of studied variables was tested using a chi-square test or one-way ANOVA test, appropriately. Then, the associations of food intake frequency, healthy eating score, and physical activity with Slike-CV19S were examined using simple and multiple logistic regression analyses. Age, gender, and factors associated with Slike-CV19S at p-value < 0.2 in simple logistic regression models (Table S1 in Supplementary File) were adjusted in multiple logistic regression models. For the multicollinearity check, Spearman's correlation was conducted to check correlations of adjusting factors (Table S2 in Supplementary File). If a moderate correlation (rho $\geq$ 0.3) was found between two variables, we chose a representative variable to adjust in the multiple logistic regression models. Finally, multiplicative interaction models were used to explore the combinative impact of PA and healthy eating scores on suspected COVID-19 symptoms. We ran the interaction model with three terms (X1, X2, X1 * X2) and potential confounders, where X1 is physical activity (treated as the binary variable: inactive vs. active), X2 is the healthy eating score (treated as the ordinal variable: low, medium, high), X1 * X2 is the

interaction terms (including physical activity * medium HES or physical activity * high HES). Odds ratio (OR) with a 95% confidence interval (95% CI) and *p*-value were presented. The *p*-value < 0.05 was defined as a significant level. Data were analyzed using STATA for Windows, version 15.1 (StataCorp LLC, College Station, TX, USA).

3. Results

3.1. Participant Characteristics Stratified by Suspected COVID-19 Symptoms

A total of 3947 outpatients were analyzed. According to the Vietnam Ministry of Health report, there was no COVID-19 infection at the studied locations during the survey period [54]. Therefore, no outpatients with Slike-CV19S were COVID-19 positive. The mean age of patients was 44.4 years. Of all outpatients, 35.1% (1387/3947) had suspected COVID-19 symptoms, 28.1% were physically inactive, and 72.6% had medium or high HES. Furthermore, 55.7% were women, 23.5% were aged 60–85 years, 41.6% had a college or university degree or higher, 54.9% had a job, and 15.6% had one or more pre-existing diseases. Regarding food intake frequency, fish (85.3%) was most frequently consumed, followed by fruits (55.4%), whole grains (15.4%), dairy products (7.2%), and vegetables (6.3%) (Table 1).

Table 1. Characteristics of participants (*N* = 3947).

Variables	Total (*n* = 3947)	Without Slike-CV19S (*n* = 2560)	With Slike-CV19S (*n* = 1387)	
	n (%)	*n* (%)	*n* (%)	*p* *
Age (years), mean ± SD	44.4 ± 17.0			
Age groups				<0.001
18–59	3019 (76.5)	2080 (68.9)	939 (31.1)	
60–85	928 (23.5)	480 (51.7)	448 (48.3)	
Gender				0.762
Female	2197 (55.7)	1430 (65.1)	767 (34.9)	
Male	1747 (44.3)	1129 (64.6)	618 (35.4)	
Marital status				<0.001
Single	865 (22.0)	653 (75.5)	212 (24.5)	
Married	2850 (72.4)	1795 (63.0)	1055 (37.0)	
Separated/Divorced/Widowed	220 (5.6)	105 (47.7)	115 (52.3)	
Education attainment				<0.001
Junior high school and below	1216 (30.9)	717 (59.0)	499 (41.0)	
Senior high school	1083 (27.5)	754 (69.7)	328 (30.3)	
College/university/postgraduate degree	1639 (41.6)	1081 (66.0)	558 (34.0)	
Occupational status				0.010
No job	1770 (45.1)	1185 (66.9)	585 (33.1)	
Having a job	2155 (54.9)	1358 (63.0)	797 (37.0)	
Ability to pay for healthcare				<0.001
Very or fairly difficult	1764 (44.7)	964 (54.6)	800 (45.4)	
Very or fairly easy	2182 (55.3)	1595 (73.1)	587 (26.9)	
Social status				<0.001
Low	482 (12.2)	265 (55.0)	217 (45.0)	
Middle/High	3464 (87.8)	2294 (66.2)	1170 (33.8)	
BMI				<0.001
Underweight	386 (9.8)	225 (58.3)	161 (41.7)	
Normal weight	3128 (79.4)	2012 (64.3)	1116 (35.7)	
Overweight or obese	428 (10.9)	320 (74.8)	108 (25.2)	
Underlying diseases				0.936
No	3309(84.4)	2139 (64.6)	1170 (35.4)	
Yes	611 (15.6)	396 (64.8)	215 (35.2)	
Smoking				0.580
No	3465 (88.0)	2252 (65.0)	1213 (35.0)	
Yes	471 (12.0)	300 (63.7)	171 (36.3)	

Table 1. *Cont.*

Variables	Total (n = 3947)	Without Slike-CV19S (n = 2560)	With Slike-CV19S (n = 1387)	
	n (%)	n (%)	n (%)	p *
Drinking alcohol				0.140
No	2653 (67.8)	1702 (64.2)	951 (35.8)	
Yes	1262 (32.2)	840 (66.6)	422 (33.4)	
Physical activity				<0.001
Inactive	1111 (28.1)	628 (56.5)	483 (43.5)	
Active	2836 (71.9)	1932 (68.1)	904 (31.9)	
Food intake frequency				
Vegetables				<0.001
<3 times/day	3697 (93.7)	2372 (64.2)	1325 (35.8)	
≥3 times/day	249 (6.3)	188 (75.5)	61 (24.5)	
Fruits				<0.001
<2 times/day	1761 (44.6)	1111 (63.1)	650 (36.9)	
≥2 times/day	2185 (55.4)	1449 (66.3)	736 (33.7)	
Whole grains				0.098
<3 times/day	3338 (84.6)	2184 (65.4)	1154 (34.6)	
≥3 times/day	607 (15.4)	376 (61.9)	231 (38.1)	
Dairy				0.906
<3 times/day	3659 (92.8)	2375 (64.9)	1284 (35.1)	
≥3 times/day	285 (7.2)	184 (64.6)	101 (35.4)	
Fish				<0.001
<1 time/week	581 (14.7)	259 (44.6)	322 (55.4)	
≥1 time/week	3363 (85.3)	2301 (68.4)	1062 (31.6)	
Healthy Eating Score (HES), mean ± SD	12.0 ± 4.2			<0.001
Low (HES < 10)	1082 (27.4)	649 (60.0)	433 (40.0)	
Medium (10 ≤ HES < 15)	1806 (45.8)	1201 (66.5)	605 (33.5)	
High (HES ≥ 15)	1054 (26.7)	709 (67.3)	345 (32.7)	
Health literacy (HL), mean ± SD	29.9 ± 7.7	30.9 ± 7.7	28.0 ± 7.4	<0.001

Abbreviations: Slike-CV19S, COVID-19-like Symptoms. * The p-value of the chi-square or one-way ANOVA test appropriately.

3.2. Associations of Food Frequency, Healthy Eating Score, and Physical Activity with COVID-19-like Symptoms

After adjusting for potential confounders, Table 2 shows that frequent vegetable consumption (≥3 times/day) (odds ratio, OR, 0.72; 95% confidence interval, 95% CI, 0.52, 0.98; p = 0.036), frequent fruit consumption (≥2 times/day) (OR, 0.84; 95% CI, 0.73, 0.97); p = 0.016), and frequent fish consumption (≥1 time/week) (OR, 0.43; 95% CI, 0.36, 0.52); p < 0.001) were associated with lower odds of experiencing suspected COVID-19 symptoms. As compared to people with low healthy eating scores (HES), those with medium HES (OR, 0.84; 95% CI, 0.71, 0.98; p = 0.033) or high HES (OR, 0.77; 95% CI, 0.64, 0.93; p = 0.006) had lower odds of having Slike-CV19S. In comparison to physically inactive people, those with a high level of physical activity had a lower likelihood of having Slike-CV19S (OR, 0.69; 95% CI, 0.59, 0.80); p < 0.001).

3.3. Interactions between Physical Activity and Healthy Eating Behavior

Table 3 shows the combinative impacts of HES and PA on COVID-19-like Symptoms. After adjusting for confounders, there are negative multiplicative interactions between high HES and PA (OR, 0.58; 95% CI, 0.39, 0.86; p = 0.008). In other words, in people with high HES, physical activity reduces the likelihood of having Slike-CV19S more than in people with low HES. Regarding the combined effect, Table 3 shows that as compared to people with low HES and physical inactivity, those with medium HES and a high level of physical activity had a 31% lower likelihood of having Slike-CV19S (OR, 0.69; 95% CI, 0.54, 0.89; p = 0.005); those with high HES and a high level of physical activity had a 42% lower likelihood of having Slike-CV19S (OR, 0.58; 95% CI, 0.44, 0.77; p < 0.001) (Table 3).

Table 2. Associations of food frequency, healthy eating score and physical activity with COVID-19-like Symptoms (n = 3947).

Variables *	COVID-19-like Symptoms			
	Unadjusted Model		Adjusted Model **	
	OR (95% CI)	*p*	OR (95% CI)	*p*
Food intake frequency				
Vegetables				
<3 times/day	1.00		1.00	
≥3 times/day	0.58 (0.43, 0.78)	<0.001	0.72 (0.52, 0.98)	0.036
Fruits				
<2 times/day	1.00		1.00	
≥2 times/day	0.87 (0.76, 0.99)	0.035	0.84 (0.73, 0.97)	0.016
Whole grains				
<3 times/day	1.00		1.00	
≥3 times/day	1.16 (0.97, 1.39)	0.098	0.97 (0.81, 1.18)	0.793
Dairy				
<3 times/day	1.00		1.00	
≥3 times/day	1.01 (0.79, 1.30)	0.906	1.03 (0.79, 1.34)	0.819
Fish				
<1 time/week	1.00		1.00	
≥1 time/week	0.37 (0.31, 0.44)	<0.001	0.43 (0.36, 0.52)	<0.001
Healthy Eating Score (HES)				
Low (HES < 10)	1.00		1.00	
Medium (10 ≤ HES < 15)	0.75 (0.64, 0.88)	<0.001	0.84 (0.71, 0.98)	0.033
High (HES ≥ 15)	0.73 (0.61, 0.87)	<0.001	0.77 (0.64, 0.93)	0.006
Physical activity				
Inactive	1.00		1.00	
Active	0.61 (0.52, 0.70)	<0.001	0.69 (0.59, 0.80)	<0.001

* All variables were tested separately in different models. ** Adjusted for age, gender, occupational status, education attainment, medication payment ability, social status, BMI.

Table 3. Interaction between physical activity and healthy eating score on COVID-19-like Symptoms (n = 3947).

Healthy Eating Score (HES)	Physical Activity				Multiplicative Interaction	
	Inactive		Active			
	OR (95% CI)	*p*	OR (95% CI)	*p*	OR (95% CI)	*p*
Low (HES < 10)	1.00 *		0.88 (0.67, 1.16)	0.380		
Medium (10 ≤ HES < 15)	0.99 (0.74, 1.33)	0.979	0.69 (0.54, 0.89)	0.005	0.79 (0.55, 1.12)	0.182 **
High (HES ≥ 15)	1.13 (0.81, 1.58)	0.458	0.58 (0.44, 0.77)	<0.001	0.58 (0.39, 0.86)	0.008 ***

Abbreviations: HES, healthy eating score. ORs are adjusted for age, gender, occupational status, education attainment, medication payment ability, social status, BMI. * The single reference group is "physical inactivity and low HES". ** The *p*-value of the interaction term: medium HES * physical activity. *** The *p*-value of the interaction term: high HES * physical activity.

4. Discussion

In this study, no participants with Slike-CV19S were COVID-19 positive, as no new COVID-19 case was reported at the studied sites during the survey period [54]. However, finding factors associated with the likelihood of COVID-19-like Symptoms may provide timely evidence for effective interventions that help to raise people's awareness and promote health throughout the pandemic.

Our findings show that people who frequently consumed vegetables or fruits were less likely to have COVID-19-like Symptoms than those who did not. Like other respiratory infections (e.g., influenza), the symptoms of COVID-19 are manifestations of airway and systemic inflammation [55]. Vegetables and fruits contain a wide range of essential vitamins, antioxidants (e.g., vitamin A, C, E), and bioactive substances (e.g., flavonoids) [56], which can mitigate inflammation, thereby supporting the immune system to fight against viral and bacterial infections, including COVID-19 [27,57–60]. In addition, adequate vegetable and

fruit intake was associated with a lower likelihood of wheezing and chronic inflammatory illnesses (e.g., asthma) [25]. Previous studies indicated that regularly consuming fruits and vegetables could help to lower the likelihood of non-communicable diseases (e.g., COPD, diabetes, cardiovascular diseases) [24,61,62], which may in turn decrease susceptibility to opportunistic infections [63]. We also found that people who regularly ate fish were less like to have suspected symptoms of COVID-19. Fish intake provides the body with omega 3, vitamin D, and selenium [57]. These nutrients have anti-inflammatory effects that may help to mitigate the risk of non-communicable diseases and combat infections [27,64,65]. Particularly, omega-3 fatty acids were found to be linked to better lung function [66], and reduced likelihoods of chronic cough and wheeze [67,68] in previous studies. Therefore, the frequent consumption of fruits, vegetables, and fish has potential health benefits in improving immune responses, which in turn decrease the development of respiratory infection symptoms, including COVID-19.

In the current study, patients with a medium or high healthy eating score (HES) had lower odds of having Slike-CV19S than those with a low HES. The consumption of healthy and diverse foods helps the body achieve optimal nutrient intake, enhancing the immune response that prevents it from becoming infected with pathogens such as influenza or coronavirus [27,57]. Other healthy diets (e.g., Mediterranean or Dietary Approach to Stop Hypertension diets) were identified by the high intake of vegetables, fruits, whole grains, and fish, which are anti-inflammatory foods [69,70]. In addition, healthy diets were linked to a decreased risk of respiratory illnesses (e.g., COPD, asthma, wheezing symptoms) [71–75]. Adherence to a well-balanced diet was also found to be linked to a decreased likelihood of obesity [76] and chronic health conditions [77,78], which helps decrease the vulnerability to viral infections. Therefore, healthy eating habits have potential health-promoting impacts that help to reduce inflammation, and improve the immune function to protect the body against respiratory infection symptoms.

Our results indicate that active PA was associated with lower odds of having Slike-CV19S. Prior studies showed that medium and high PA levels were negatively correlated to the likelihood of contracting upper respiratory tract infections [28,29,79,80]. Physical activity has been shown to have anti-inflammatory effects and to lower inflammation, thereby enhancing immune function, which could protect the body against pathogens and reduce the symptoms of respiratory infections [30,31,81–83]. In addition, staying physically active was found to be associated with the reduced likelihood of obesity and chronic diseases in previous studies [77,84,85]. These illnesses have been linked to a constant status of low-grade inflammation and immunological dysfunction, which provide greater susceptibility to infectious diseases, including COVID-19 [30]. Therefore, regular engagement in physical activity has potential preventive impacts on the likelihood and symptoms of respiratory infections, and should be encouraged in the time of the pandemic.

Importantly, we found that the combinative impact of PA and a healthy diet was better at reducing the likelihood of suspected symptoms of COVID-19. Our findings suggested that patients with active PA and a more healthy diet could reduce the odds of COVID-19-like Symptoms by up to 42% compared to those with inactive PA and low healthy eating. People have faced significant changes in their lives throughout the pandemic, including fear, sleep disorders, and lifestyle changes (e.g., unhealthy eating and inactive PA) [32]. These factors may adversely affect physical and mental health, leading to the functional impairment of immunity [86,87], increasing sensitivity to opportunistic infections, including COVID-19. Therefore, among COVID-19 prevention strategies, the combination of healthy eating and PA should be promoted to reinforce immunological health, reducing the likelihood of suspected symptoms of COVID-19.

The study has the limitations of a cross-sectional design and reporting bias. Healthy eating was assessed using the HES-5 questionnaire, which includes only five food items and does not query portion sizes. This questionnaire is not suitable for assessing overall dietary intake and may lead to subjective dietary assessments. However, the HES-5 is brief, simple, and well correlated with the 2015 Healthy Eating Index [88]. Therefore, it is a useful

tool for quickly assessing diet quality during the sensitive time of the pandemic. This study did not investigate the consumption of unhealthy foods and culture-related aspects, which may potentially affect our findings. In addition, we have not investigated whether patients received nutritional guidance, which may potentially influence patients' behaviors and affect the analysis. Future research should take these considerations into account in assessments. Moreover, we investigated specific symptoms instead of diseases that caused those symptoms. However, COVID-19-like Symptoms (in populations who were negative for COVID-19) play important roles in reflecting immune response. The roles of nutrition and physical activity can be potentially assessed. Furthermore, patients with underlying illnesses may change their diet and exercise regimen according to the suggestions of healthcare professionals. This may also potentially confound the associations. However, we have checked the associations of underlying diseases with healthy eating behavior and PA and found no significant association in this study. The findings are presented in Table S3 in the Supplementary File. Finally, The IPAQ-SF is prone to overestimating PA levels compared to other objective measures (e.g., accelerometer), but it is a valid and commonly used tool to assess PA [40]. However, the strength of the study is its relatively large sample size. Thus, our findings could provide timely and valuable evidence for public health interventions to lower the likelihood of suspected symptoms of COVID-19.

5. Conclusions

The single and combinative impacts of physical activity and healthy eating behavior were found to protect patients from having suspected COVID-19 symptoms. Therefore, these healthy behaviors should be promoted to improve patients' health and well-being. This further contributes to control of the pandemic.

Supplementary Materials: The following are available online at https://www.mdpi.com/article/10.3390/nu13093258/s1; Table S1: Confounders associated with suspected COVID-19 symptoms among outpatients (n = 3947), Table S2: Spearman's correlation (rho) among potential confounders (n = 3947), Table S3: Associations of underlying diseases with healthy eating behavior and physical activity among outpatients (n = 3947).

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References

1. World Health Organisation. WHO Coronavirus Disease (COVID-19) Dashboard. Available online: https://covid19.who.int/ (accessed on 7 June 2021).
2. Mathieu, E.; Ritchie, H.; Ortiz-Ospina, E.; Roser, M.; Hasell, J.; Appel, C.; Giattino, C.; Rodes-Guirao, L. A global database of COVID-19 vaccinations. *Nat. Hum. Behav.* **2021**, *5*, 947–953. [CrossRef]
3. World Health Organisation. Coronavirus Disease (COVID-19): Vaccines. Available online: https://www.who.int/news-room/q-a-detail/coronavirus-disease-(covid-19)-vaccines? (accessed on 15 March 2021).
4. Anderson, R.M.; Vegvari, C.; Truscott, J.; Collyer, B.S. Challenges in creating herd immunity to SARS-CoV-2 infection by mass vaccination. *Lancet* **2020**, *396*, 1614–1616. [CrossRef]
5. McKie, R. Would Herd Immunity Stop the Spread of Coronavirus? Available online: https://www.theguardian.com/world/2020/oct/11/would-herd-immunity-stop-the-spread-of-coronavirus (accessed on 15 May 2021).
6. Mahase, E. COVID-19: What new variants are emerging and how are they being investigated? *BMJ* **2021**, *372*, n158. [CrossRef] [PubMed]
7. Dyer, O. COVID-19: Variants are spreading in countries with low vaccination rates. *BMJ* **2021**, *373*, n1359. [CrossRef] [PubMed]
8. Nicola, M.; Alsafi, Z.; Sohrabi, C.; Kerwan, A.; Al-Jabir, A.; Iosifidis, C.; Agha, M.; Agha, R. The socio-economic implications of the coronavirus pandemic (COVID-19): A review. *Int. J. Surg.* **2020**, *78*, 185–193. [CrossRef]
9. Phelan, A.L.; Katz, R.; Gostin, L.O. The Novel Coronavirus Originating in Wuhan, China: Challenges for Global Health Governance. *JAMA* **2020**, *323*, 709–710. [CrossRef]
10. Miller, I.F.; Becker, A.D.; Grenfell, B.T.; Metcalf, C.J.E. Disease and healthcare burden of COVID-19 in the United States. *Nat. Med.* **2020**, *26*, 1212–1217. [CrossRef]
11. World Health Organisation. Coronavirus Disease (COVID-19): Similarities and Differences with Influenza. Available online: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/question-and-answers-hub/q-a-detail/coronavirus-disease-covid-19-similarities-and-differences-with-influenza (accessed on 15 May 2020).
12. Nguyen, H.C.; Nguyen, M.H.; Do, B.N.; Tran, C.Q.; Nguyen, T.T.P.; Pham, K.M.; Pham, L.V.; Tran, K.V.; Duong, T.T.; Tran, T.V.; et al. People with Suspected COVID-19 Symptoms Were More Likely Depressed and Had Lower Health-Related Quality of Life: The Potential Benefit of Health Literacy. *J. Clin. Med.* **2020**, *9*, 965. [CrossRef]
13. Chew, N.W.; Lee, G.K.; Tan, B.Y.; Jing, M.; Goh, Y.; Ngiam, N.J.; Yeo, L.L.; Ahmad, A.; Khan, F.A.; Shanmugam, G.N. A multinational, multicentre study on the psychological outcomes and associated physical symptoms amongst healthcare workers during COVID-19 outbreak. *Brain Behav. Immun.* **2020**, *88*, 559–565. [CrossRef]
14. World Health Organisation. Coronavirus Disease (COVID-19): Advice for the Public. Available online: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public (accessed on 15 December 2020).
15. Jin, H.; Wang, H.; Li, X.; Zheng, W.; Ye, S.; Zhang, S.; Zhou, J.; Pennington, M. Economic burden of COVID-19, China, January–March, 2020: A cost-of-illness study. *Bull. World Health Organ.* **2021**, *99*, 112–124. [CrossRef]
16. Bartsch, S.M.; Ferguson, M.C.; McKinnell, J.A.; O'Shea, K.J.; Wedlock, P.T.; Siegmund, S.S.; Lee, B.Y. The Potential Health Care Costs and Resource Use Associated with COVID-19 in the United States. *Health Aff.* **2020**, *39*, 927–935. [CrossRef]
17. World Health Organisation. COVID-19: Vulnerable and High Risk Groups. Available online: https://www.who.int/westernpacific/emergencies/covid-19/information/high-risk-groups (accessed on 8 May 2020).
18. Riera, R.; Bagattini, Â.M.; Pacheco, R.L.; Pachito, D.V.; Roitberg, F.; Ilbawi, A. Delays and Disruptions in Cancer Health Care Due to COVID-19 Pandemic: Systematic Review. *JCO Glob. Oncol.* **2021**, *7*, 311–323. [CrossRef]
19. Barach, P.; Fisher, S.D.; Adams, M.J.; Burstein, G.R.; Brophy, P.D.; Kuo, D.Z.; Lipshultz, S.E. Disruption of healthcare: Will the COVID pandemic worsen non-COVID outcomes and disease outbreaks? *Prog. Pediatr. Cardiol.* **2020**, *59*, 101254. [CrossRef] [PubMed]
20. Nguyen, M.H.; Pham, T.T.M.; Pham, L.V.; Phan, D.T.; Tran, T.V.; Nguyen, H.C.; Nguyen, H.C.; Ha, T.H.; Dao, H.K.; Nguyen, P.B.; et al. Associations of Underlying Health Conditions with Anxiety and Depression Among Outpatients: Modification Effects of Suspected COVID-19 Symptoms, Health-Related and Preventive Behaviors. *Int. J. Public Health* **2021**, *66*, 634904. [CrossRef] [PubMed]
21. McCullough, M.L.; Feskanich, D.; Stampfer, M.J.; Giovannucci, E.L.; Rimm, E.B.; Hu, F.B.; Spiegelman, D.; Hunter, D.J.; Colditz, G.A.; Willett, W.C. Diet quality and major chronic disease risk in men and women: Moving toward improved dietary guidance. *Am. J. Clin. Nutr.* **2002**, *76*, 1261–1271. [CrossRef] [PubMed]
22. *Diet, Nutrition and the Prevention of Chronic Diseases*; World Health Organization Technical Report Series; World Health Organization: Geneva, Switzerland, 2003; Volume 916, pp. i–viii, 1–149.
23. Schwingshackl, L.; Bogensberger, B.; Hoffmann, G. Diet Quality as Assessed by the Healthy Eating Index, Alternate Healthy Eating Index, Dietary Approaches to Stop Hypertension Score, and Health Outcomes: An Updated Systematic Review and Meta-Analysis of Cohort Studies. *J. Acad. Nutr. Diet.* **2018**, *118*, 74–100.e111. [CrossRef] [PubMed]
24. Wallace, T.C.; Bailey, R.L.; Blumberg, J.B.; Burton-Freeman, B.; Chen, C.O.; Crowe-White, K.M.; Drewnowski, A.; Hooshmand, S.; Johnson, E.; Lewis, R.; et al. Fruits, vegetables, and health: A comprehensive narrative, umbrella review of the science and recommendations for enhanced public policy to improve intake. *Crit. Rev. Food Sci. Nutr.* **2020**, *60*, 2174–2211. [CrossRef]
25. Hosseini, B.; Berthon, B.S.; Wark, P.; Wood, L.G. Effects of Fruit and Vegetable Consumption on Risk of Asthma, Wheezing and Immune Responses: A Systematic Review and Meta-Analysis. *Nutrients* **2017**, *9*, 341. [CrossRef]

26. Iddir, M.; Brito, A.; Dingeo, G.; Fernandez Del Campo, S.S.; Samouda, H.; La Frano, M.R.; Bohn, T. Strengthening the Immune System and Reducing Inflammation and Oxidative Stress through Diet and Nutrition: Considerations during the COVID-19 Crisis. *Nutrients* **2020**, *12*, 1562. [CrossRef]
27. Calder, P.C.; Carr, A.C.; Gombart, A.F.; Eggersdorfer, M. Optimal Nutritional Status for a Well-Functioning Immune System Is an Important Factor to Protect against Viral Infections. *Nutrients* **2020**, *12*, 1181. [CrossRef]
28. Matthews, C.E.; Ockene, I.S.; Freedson, P.S.; Rosal, M.C.; Merriam, P.A.; Hebert, J.R. Moderate to vigorous physical activity and risk of upper-respiratory tract infection. *Med. Sci. Sports Exerc.* **2002**, *34*, 1242–1248. [CrossRef] [PubMed]
29. Fondell, E.; Lagerros, Y.T.; Sundberg, C.J.; Lekander, M.; Bälter, O.; Rothman, K.J.; Bälter, K. Physical activity, stress, and self-reported upper respiratory tract infection. *Med. Sci. Sports Exerc.* **2011**, *43*, 272–279. [CrossRef] [PubMed]
30. Laddu, D.R.; Lavie, C.J.; Phillips, S.A.; Arena, R. Physical activity for immunity protection: Inoculating populations with healthy living medicine in preparation for the next pandemic. *Prog. Cardiovasc. Dis.* **2021**, *64*, 102–104. [CrossRef]
31. Davison, G.; Kehaya, C.; Wyn Jones, A. Nutritional and Physical Activity Interventions to Improve Immunity. *Am. J. Lifestyle Med.* **2016**, *10*, 152–169. [CrossRef]
32. Ammar, A.; Brach, M.; Trabelsi, K.; Chtourou, H.; Boukhris, O.; Masmoudi, L.; Bouaziz, B.; Bentlage, E.; How, D.; Ahmed, M.; et al. Effects of COVID-19 Home Confinement on Eating Behaviour and Physical Activity: Results of the ECLB-COVID19 International Online Survey. *Nutrients* **2020**, *12*, 1583. [CrossRef]
33. Górnicka, M.; Drywień, M.E.; Zielinska, M.A.; Hamułka, J. Dietary and lifestyle changes during COVID-19 and the subsequent lockdowns among Polish adults: A Cross-sectional online survey PLifeCOVID-19 study. *Nutrients* **2020**, *12*, 2324. [CrossRef] [PubMed]
34. BMJ Editorial Team. Overview of Novel Coronavirus (2019-nCoV). Available online: https://bestpractice.bmj.com/topics/en-gb/3000165 (accessed on 10 March 2020).
35. Pham, K.M.; Pham, L.V.; Phan, D.T.; Tran, T.V.; Nguyen, H.C.; Nguyen, M.H.; Nguyen, H.C.; Ha, T.H.; Dao, H.K.; Nguyen, P.B.; et al. Healthy Dietary Intake Behavior Potentially Modifies the Negative Effect of COVID-19 Lockdown on Depression: A Hospital and Health Center Survey. *Front. Nutr.* **2020**, *7*, 581043. [CrossRef]
36. American Heart Association Editorial Team. Suggested Servings from Each Food Group. Available online: https://www.heart.org/en/healthy-living/healthy-eating/eat-smart/nutrition-basics/suggested-servings-from-each-food-group (accessed on 19 February 2020).
37. The Food and Drug Administration (FDA). Advice about Eating Fish. Available online: https://www.fda.gov/food/consumers/advice-about-eating-fish (accessed on 15 June 2021).
38. DeCoster, J.; Gallucci, M.; Iselin, A.-M.R. Best practices for using median splits, artificial categorization, and their continuous alternatives. *J. Exp. Psychopathol.* **2011**, *2*, 197–209. [CrossRef]
39. Ekelund, U.; Sepp, H.; Brage, S.; Becker, W.; Jakes, R.; Hennings, M.; Wareham, N.J. Criterion-related validity of the last 7-day, short form of the International Physical Activity Questionnaire in Swedish adults. *Public Health Nutr.* **2006**, *9*, 258–265. [CrossRef] [PubMed]
40. Lee, P.H.; Macfarlane, D.J.; Lam, T.H.; Stewart, S.M. Validity of the International Physical Activity Questionnaire Short Form (IPAQ-SF): A systematic review. *Int. J. Behav. Nutr. Phys. Act.* **2011**, *8*, 115. [CrossRef]
41. Craig, C.L.; Marshall, A.L.; Sjöström, M.; Bauman, A.E.; Booth, M.L.; Ainsworth, B.E.; Pratt, M.; Ekelund, U.; Yngve, A.; Sallis, J.F.; et al. International physical activity questionnaire: 12-country reliability and validity. *Med. Sci. Sports Exerc.* **2003**, *35*, 1381–1395. [CrossRef]
42. Pham, T.; Bui, L.; Nguyen, A.; Nguyen, B.; Tran, P.; Vu, P.; Dang, L. The prevalence of depression and associated risk factors among medical students: An untold story in Vietnam. *PLoS ONE* **2019**, *14*, e0221432. [CrossRef]
43. Tran, D.V.; Lee, A.H.; Au, T.B.; Nguyen, C.T.; Hoang, D.V. Reliability and validity of the International Physical Activity Questionnaire-Short Form for older adults in Vietnam. *Health Promot. J. Aust.* **2013**, *24*, 126–131. [CrossRef]
44. Tran, V.D.; Do, V.V.; Pham, N.M.; Nguyen, C.T.; Xuong, N.T.; Jancey, J.; Lee, A.H. Validity of the International Physical Activity Questionnaire-Short Form for Application in Asian Countries: A Study in Vietnam. *Eval. Health Prof.* **2020**, *43*, 105–109. [CrossRef] [PubMed]
45. IPAQ Group. Guidelines for Data Processing and Analysis of the International Physical Activity Questionnaire (IPAQ)-Short and Long Forms. Available online: www.ipaq.ki.se (accessed on 15 May 2021).
46. Rahman, M.E.; Islam, M.S.; Bishwas, M.S.; Moonajilin, M.S.; Gozal, D. Physical inactivity and sedentary behaviors in the Bangladeshi population during the COVID-19 pandemic: An online cross-sectional survey. *Heliyon* **2020**, *6*, e05392. [CrossRef] [PubMed]
47. Charlson, M.E.; Pompei, P.; Ales, K.L.; MacKenzie, C.R. A new method of classifying prognostic comorbidity in longitudinal studies: Development and validation. *J. Chronic Dis.* **1987**, *40*, 373–383. [CrossRef]
48. Duong, T.V.; Nguyen, T.T.P.; Pham, K.M.; Nguyen, K.T.; Giap, M.H.; Tran, T.D.X.; Nguyen, C.X.; Yang, S.H.; Su, C.T. Validation of the Short-Form Health Literacy Questionnaire (HLS-SF12) and Its Determinants among People Living in Rural Areas in Vietnam. *Int. J. Environ. Res. Public Health* **2019**, *16*, 3346. [CrossRef] [PubMed]
49. Nguyen, H.T.; Do, B.N.; Pham, K.M.; Kim, G.B.; Dam, H.T.B.; Nguyen, T.T.; Nguyen, T.T.P.; Nguyen, Y.H.; Sorensen, K.; Pleasant, A.; et al. Fear of COVID-19 Scale-Associations of Its Scores with Health Literacy and Health-Related Behaviors among Medical Students. *Int. J. Environ. Res. Public Health* **2020**, *17*, 4164. [CrossRef] [PubMed]

50. Van Hoa, H.; Giang, H.T.; Vu, P.T.; Van Tuyen, D.; Khue, P.M. Factors Associated with Health Literacy among the Elderly People in Vietnam. *BioMed Res. Int.* **2020**, *2020*, 3490635. [CrossRef] [PubMed]
51. Duong, T.V.; Aringazina, A.; Kayupova, G.; Nurjanah; Pham, T.V.; Pham, K.M.; Truong, T.Q.; Nguyen, K.T.; Oo, W.M.; Su, T.T.; et al. Development and Validation of a New Short-Form Health Literacy Instrument (HLS-SF12) for the General Public in Six Asian Countries. *Health Lit. Res. Pract.* **2019**, *3*, e91–e102. [CrossRef]
52. Van Duong, T.; Chiu, C.H.; Lin, C.Y.; Chen, Y.C.; Wong, T.C.; Chang, P.W.S.; Yang, S.H. E-healthy diet literacy scale and its relationship with behaviors and health outcomes in Taiwan. *Health Promot. Int.* **2021**, *36*, 20–33. [CrossRef] [PubMed]
53. Nguyen, T.T.; Le, N.T.; Nguyen, M.H.; Pham, L.V.; Do, B.N.; Nguyen, H.C.; Nguyen, H.C.; Ha, T.H.; Dao, H.K.; Nguyen, P.B.; et al. Health Literacy and Preventive Behaviors Modify the Association between Pre-Existing Health Conditions and Suspected COVID-19 Symptoms: A Multi-Institutional Survey. *Int. J. Environ. Res. Public Health* **2020**, *17*, 8598. [CrossRef]
54. Vietnam Ministry of Health. Coronavirus Disease (COVID-19) Outbreak in Vietnam. Available online: https://ncov.moh.gov.vn/ (accessed on 7 June 2020).
55. Harrison, A.G.; Lin, T.; Wang, P. Mechanisms of SARS-CoV-2 Transmission and Pathogenesis. *Trends Immunol.* **2020**, *41*, 1100–1115. [CrossRef]
56. Slavin, J.L.; Lloyd, B. Health benefits of fruits and vegetables. *Adv. Nutr.* **2012**, *3*, 506–516. [CrossRef]
57. Morais, A.H.A.; Aquino, J.S.; da Silva-Maia, J.K.; Vale, S.H.L.; Maciel, B.L.L.; Passos, T.S. Nutritional status, diet and viral respiratory infections: Perspectives for severe acute respiratory syndrome coronavirus 2. *Br. J. Nutr.* **2021**, *125*, 851–862. [CrossRef] [PubMed]
58. Huang, J.; Weinstein, S.J.; Yu, K.; Männistö, S.; Albanes, D. Relationship Between Serum Alpha-Tocopherol and Overall and Cause-Specific Mortality. *Circ. Res.* **2019**, *125*, 29–40. [CrossRef] [PubMed]
59. Messina, G.; Polito, R.; Monda, V.; Cipolloni, L.; Di Nunno, N.; Di Mizio, G.; Murabito, P.; Carotenuto, M.; Messina, A.; Pisanelli, D.; et al. Functional Role of Dietary Intervention to Improve the Outcome of COVID-19: A Hypothesis of Work. *Int. J. Mol. Sci.* **2020**, *21*, 3104. [CrossRef]
60. Zhu, F.; Du, B.; Xu, B. Anti-inflammatory effects of phytochemicals from fruits, vegetables, and food legumes: A review. *Crit. Rev. Food Sci. Nutr.* **2018**, *58*, 1260–1270. [CrossRef] [PubMed]
61. Kaluza, J.; Harris, H.R.; Linden, A.; Wolk, A. Long-term consumption of fruits and vegetables and risk of chronic obstructive pulmonary disease: A prospective cohort study of women. *Int. J. Epidemiol.* **2018**, *47*, 1897–1909. [CrossRef]
62. Kaluza, J.; Larsson, S.C.; Orsini, N.; Linden, A.; Wolk, A. Fruit and vegetable consumption and risk of COPD: A prospective cohort study of men. *Thorax* **2017**, *72*, 500–509. [CrossRef]
63. Butler, M.J.; Barrientos, R.M. The impact of nutrition on COVID-19 susceptibility and long-term consequences. *Brain Behav. Immun.* **2020**, *87*, 53–54. [CrossRef]
64. Torpy, J.M.; Lynm, C.; Glass, R.M. JAMA patient page. Eating fish: Health benefits and risks. *JAMA* **2006**, *296*, 1926. [CrossRef] [PubMed]
65. Sidhu, K.S. Health benefits and potential risks related to consumption of fish or fish oil. *Regul. Toxicol. Pharmacol.* **2003**, *38*, 336–344. [CrossRef]
66. De Luis, D.A.; Armentia, A.; Aller, R.; Asensio, A.; Sedano, E.; Izaola, O.; Cuellar, L. Dietary intake in patients with asthma: A case control study. *Nutrition* **2005**, *21*, 320–324. [CrossRef] [PubMed]
67. Tabak, C.; Wijga, A.H.; de Meer, G.; Janssen, N.A.; Brunekreef, B.; Smit, H.A. Diet and asthma in Dutch school children (ISAAC-2). *Thorax* **2006**, *61*, 1048–1053. [CrossRef] [PubMed]
68. Lemoine, S.C.; Brigham, E.P.; Woo, H.; Hanson, C.K.; McCormack, M.C.; Koch, A.; Putcha, N.; Hansel, N.N. Omega-3 fatty acid intake and prevalent respiratory symptoms among U.S. adults with COPD. *BMC Pulm. Med.* **2019**, *19*, 97. [CrossRef]
69. Schwingshackl, L.; Hoffmann, G. Mediterranean dietary pattern, inflammation and endothelial function: A systematic review and meta-analysis of intervention trials. *Nutr. Metab. Cardiovasc. Dis.* **2014**, *24*, 929–939. [CrossRef]
70. Steck, S.; Shivappa, N.; Tabung, F.; Harmon, B.; Wirth, M.; Hurley, T.; Hebert, J. The dietary inflammatory index: A new tool for assessing diet quality based on inflammatory potential. *Digest* **2014**, *49*, 1–10.
71. Arvaniti, F.; Priftis, K.N.; Papadimitriou, A.; Papadopoulos, M.; Roma, E.; Kapsokefalou, M.; Anthracopoulos, M.B.; Panagiotakos, D.B. Adherence to the Mediterranean type of diet is associated with lower prevalence of asthma symptoms, among 10–12 years old children: The PANACEA study. *Pediatr. Allergy Immunol.* **2011**, *22*, 283–289. [CrossRef]
72. Ardestani, M.E.; Onvani, S.; Esmailzadeh, A.; Feizi, A.; Azadbakht, L. Adherence to Dietary Approaches to Stop Hypertension (DASH) Dietary Pattern in Relation to Chronic Obstructive Pulmonary Disease (COPD): A Case-Control Study. *J. Am. Coll. Nutr.* **2017**, *36*, 549–555. [CrossRef]
73. Scoditti, E.; Massaro, M.; Garbarino, S.; Toraldo, D.M. Role of Diet in Chronic Obstructive Pulmonary Disease Prevention and Treatment. *Nutrients* **2019**, *11*, 1357. [CrossRef]
74. Tabak, C.; Feskens, E.J.; Heederik, D.; Kromhout, D.; Menotti, A.; Blackburn, H.W. Fruit and fish consumption: A possible explanation for population differences in COPD mortality (The Seven Countries Study). *Eur. J. Clin. Nutr.* **1998**, *52*, 819–825. [CrossRef]
75. Walda, I.C.; Tabak, C.; Smit, H.A.; Räsänen, L.; Fidanza, F.; Menotti, A.; Nissinen, A.; Feskens, E.J.; Kromhout, D. Diet and 20-year chronic obstructive pulmonary disease mortality in middle-aged men from three European countries. *Eur. J. Clin. Nutr.* **2002**, *56*, 638–643. [CrossRef]

76. Schröder, H.; Marrugat, J.; Vila, J.; Covas, M.I.; Elosua, R. Adherence to the traditional mediterranean diet is inversely associated with body mass index and obesity in a spanish population. *J. Nutr.* **2004**, *134*, 3355–3361. [CrossRef] [PubMed]
77. Caprara, G. Mediterranean-Type Dietary Pattern and Physical Activity: The Winning Combination to Counteract the Rising Burden of Non-Communicable Diseases (NCDs). *Nutrients* **2021**, *13*, 429. [CrossRef]
78. Rosato, V.; Temple, N.J.; La Vecchia, C.; Castellan, G.; Tavani, A.; Guercio, V. Mediterranean diet and cardiovascular disease: A systematic review and meta-analysis of observational studies. *Eur. J. Nutr.* **2019**, *58*, 173–191. [CrossRef] [PubMed]
79. Zhou, G.; Liu, H.; He, M.; Yue, M.; Gong, P.; Wu, F.; Li, X.; Pang, Y.; Yang, X.; Ma, J.; et al. Smoking, leisure-time exercise and frequency of self-reported common cold among the general population in northeastern China: A cross-sectional study. *BMC Public Health* **2018**, *18*, 294. [CrossRef]
80. Kostka, T.; Berthouze, S.E.; Lacour, J.; Bonnefoy, M. The symptomatology of upper respiratory tract infections and exercise in elderly people. *Med. Sci. Sports Exerc.* **2000**, *32*, 46–51. [CrossRef] [PubMed]
81. Nieman, D.C.; Wentz, L.M. The compelling link between physical activity and the body's defense system. *J. Sport Health Sci.* **2019**, *8*, 201–217. [CrossRef] [PubMed]
82. Fletcher, G.F.; Landolfo, C.; Niebauer, J.; Ozemek, C.; Arena, R.; Lavie, C.J. Promoting Physical Activity and Exercise: JACC Health Promotion Series. *J. Am. Coll. Cardiol.* **2018**, *72*, 1622–1639. [CrossRef]
83. Pape, K.; Ryttergaard, L.; Rotevatn, T.A.; Nielsen, B.J.; Torp-Pedersen, C.; Overgaard, C.; Bøggild, H. Leisure-Time Physical Activity and the Risk of Suspected Bacterial Infections. *Med. Sci. Sports Exerc.* **2016**, *48*, 1737–1744. [CrossRef]
84. Nasi, M.; Patrizi, G.; Pizzi, C.; Landolfo, M.; Boriani, G.; Dei Cas, A.; Cicero, A.F.G.; Fogacci, F.; Rapezzi, C.; Sisca, G.; et al. The role of physical activity in individuals with cardiovascular risk factors: An opinion paper from Italian Society of Cardiology-Emilia Romagna-Marche and SIC-Sport. *J. Cardiovasc. Med. (Hagerstown)* **2019**, *20*, 631–639. [CrossRef] [PubMed]
85. Mattioli, A.V.; Sciomer, S.; Moscucci, F.; Maiello, M.; Cugusi, L.; Gallina, S.; Dei Cas, A.; Lombardi, C.; Pengo, M.; Parati, G.; et al. Cardiovascular prevention in women: A narrative review from the Italian Society of Cardiology working groups on 'Cardiovascular Prevention, Hypertension and peripheral circulation' and on 'Women Disease'. *J. Cardiovasc. Med. (Hagerstown)* **2019**, *20*, 575–583. [CrossRef] [PubMed]
86. Vieira, S.M.; Pagovich, O.E.; Kriegel, M.A. Diet, microbiota and autoimmune diseases. *Lupus* **2014**, *23*, 518–526. [CrossRef]
87. Haspel, J.A.; Anafi, R.; Brown, M.K.; Cermakian, N.; Depner, C.; Desplats, P.; Gelman, A.E.; Haack, M.; Jelic, S.; Kim, B.S.; et al. Perfect timing: Circadian rhythms, sleep, and immunity—An NIH workshop summary. *JCI Insight* **2020**, *5*. [CrossRef]
88. Shams-White, M.M.; Chui, K.; Deuster, P.A.; McKeown, N.M.; Must, A. Investigating Items to Improve the Validity of the Five-Item Healthy Eating Score Compared with the 2015 Healthy Eating Index in a Military Population. *Nutrients* **2019**, *11*, 251. [CrossRef] [PubMed]

Original Paper

Sex Differences in Clustering Unhealthy Lifestyles Among Survivors of COVID-19: Latent Class Analysis

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Abstract

Background: The COVID-19 pandemic has underscored the significance of adopting healthy lifestyles to mitigate the risk of severe outcomes and long-term consequences.

Objective: This study focuses on assessing the prevalence and clustering of 5 unhealthy lifestyle behaviors among Vietnamese adults after recovering from COVID-19, with a specific emphasis on sex differences.

Methods: The cross-sectional data of 5890 survivors of COVID-19 in Vietnam were analyzed from December 2021 to October 2022. To examine the sex differences in 5 unhealthy lifestyle behaviors (smoking, drinking, unhealthy diet, physical inactivity, and sedentary behavior), the percentages were plotted along with their corresponding 95% CI for each behavior. Latent class analysis was used to identify 2 distinct classes of individuals based on the clustering of these behaviors: the "less unhealthy" group and the "more unhealthy" group. We examined the sociodemographic characteristics associated with each identified class and used logistic regression to investigate the factors related to the "more unhealthy" group.

Results: The majority of individuals (male participants: 2432/2447, 99.4% and female participants: 3411/3443, 99.1%) exhibited at least 1 unhealthy behavior, with male participants being more susceptible to multiple unhealthy behaviors. The male-to-female ratio for having a single behavior was 1.003, but it escalated to 25 for individuals displaying all 5 behaviors. Male participants demonstrated a higher prevalence of combining alcohol intake with sedentary behavior (949/2447, 38.8%) or an unhealthy diet (861/2447, 35.2%), whereas female participants tended to exhibit physical inactivity combined with sedentary behavior (1305/3443, 37.9%) or an unhealthy diet (1260/3443, 36.6%). Married male participants had increased odds of falling into the "more unhealthy" group compared to their single counterparts (odds ratio [OR] 1.45, 95% CI 1.14-1.85), while female participants exhibited lower odds (OR 0.65, 95% CI 0.51-0.83). Female participants who are underweight showed a higher likelihood of belonging to the "more unhealthy" group (OR 1.11, 95% CI 0.89-1.39), but this was not observed among male participants (OR 0.6, 95% CI 0.41-0.89). In both sexes, older age, dependent employment, high education, and obesity were associated with higher odds of being in the "more unhealthy" group.

Conclusions: The study identified notable sex differences in unhealthy lifestyle behaviors among survivors of COVID-19. Male survivors are more likely to engage in unhealthy behaviors compared to female survivors. These findings emphasize the importance of tailored public health interventions targeting sex-specific unhealthy behaviors. Specifically, addressing unhealthy habits is crucial for promoting post–COVID-19 health and well-being.

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KEYWORDS

sex difference; cluster; lifestyle behavior; COVID-19 recovery; latent class analysis; sex; unhealthy; lifestyle; adult; long COVID-19; infected; survivor; public health; intervention; promote; well-being; COVID-19; adults; mobile phone

Introduction

The COVID-19 pandemic has a significant impact on population health and causes widespread disruption globally [1]. Beyond the public health crisis, it has triggered substantial alternations in people's lifestyles, including poorer nutrition intake, sedentary lifestyle due to prolonged lockdown, sleep disturbance, and mental health problems [2-4]. These unhealthy habits are associated with a higher risk of noncommunicable diseases (NCDs) [5-7] and greater vulnerability to SARS-CoV-2 infection, resulting in more severe COVID-19 outcomes [8-10].

In Vietnam, the COVID-19 control policies have exerted a considerable impact on people's lifestyles [11]. The stringent isolation measures have resulted in significant changes in daily routines. For example, symptomatic patients underwent isolation for a minimum of 14 days in designated facilities such as medical camps or field hospitals, where living conditions were limited. This was followed by an additional 14 days of quarantine at home after recovery [12]. These changes are particularly noticeable in alterations to diet and physical activities [13]. Even asymptomatic individuals with COVID-19 (those testing positive for SARS-CoV-2 without symptoms) quarantined for at least 14 days at home are susceptible to a sedentary lifestyle, primarily due to the limited physical activity options and dependence on provided foods [14].

Indeed, several publications have indicated that survivors of COVID-19 experience a wide range of health problems after recovery [15], and these problems are often linked to an individual's lifestyle and health behaviors [16,17]. Additionally, studies have shown that unhealthy lifestyle behaviors tend to cluster, with individuals who engage in 1 unhealthy behavior being more likely to engage in others [18,19]. For example, the co-occurrence of a sedentary lifestyle with excessive substance use, alcohol consumption, and smoking can lead to worse health conditions [18-20], especially for survivors of COVID-19 who are already vulnerable. While several publications have examined the long-term mental and physical health of COVID-19 infection [21,22], there is limited evidence on the unhealthy lifestyles among survivors of COVID-19, that is, who are more likely to engage in these lifestyles. It would be of interest for policy makers to provide timely and targeted health promotion interventions to survivors of COVID-19 to avoid further complications of long-term COVID-19 health problems.

Several studies have found significant differences in the clustering of unhealthy lifestyle behaviors between sex [18,19,23-25]. For instance, one study in the United States

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investigated the sex differences in lifestyle behaviors among adults with diabetes between 1999 and 2018. The findings revealed that both male participants and female participants with diabetes displayed unhealthy lifestyle behaviors, but the specific behaviors differed by sex. Male patients with diabetes were more likely to smoke and engage in excessive drinking, whereas their counterparts were more likely to be physically inactive and have poor dietary habits [25]. In another study focusing on Indian adults, researchers explored that the prevalence of multiple unhealthy lifestyle behaviors is significant, with a higher tendency for male adults to exhibit the clustering of multiple factors compared to female ones [26].

In Vietnam, sex differences in lifestyle behaviors arise from societal expectations. Male participants often exhibit a higher tendency to participate in risky behavior influenced by socialization, whereas female participants benefit from their cautiousness and adherence to healthy behaviors and health education [27-29]. For instance, within Vietnamese tradition, smoking and drinking might be perceived as integral to the male gender role, serving to demonstrate masculinity and foster social connections [30]. In contrast, societal expectations generally discourage women from engaging in these behaviors, aligning with gender role norms.

Although previous research has extensively investigated various patterns of lifestyle behaviors, little is known about whether these patterns differ among adult survivors of COVID-19. Additionally, previous studies have examined the impact of sociodemographic characteristics such as race, ethnicity, culture, age, socioeconomic status, employment, and education on unhealthy behaviors [31-33]. However, a sex-specific analysis to understanding and measuring these behaviors is still lacking, except in studies conducted on adolescents [23,34]. Therefore, this study aims to use latent class analysis (LCA) to identify distinct patterns of unhealthy lifestyle behaviors, including cigarette smoking, alcohol consumption, unhealthy diet, physical inactivity, and sedentary behaviors, among survivors of COVID-19 after their recovery, focusing on sex differences. Furthermore, this study seeks to identify the factors associated with “more unhealthy” behaviors in this population.

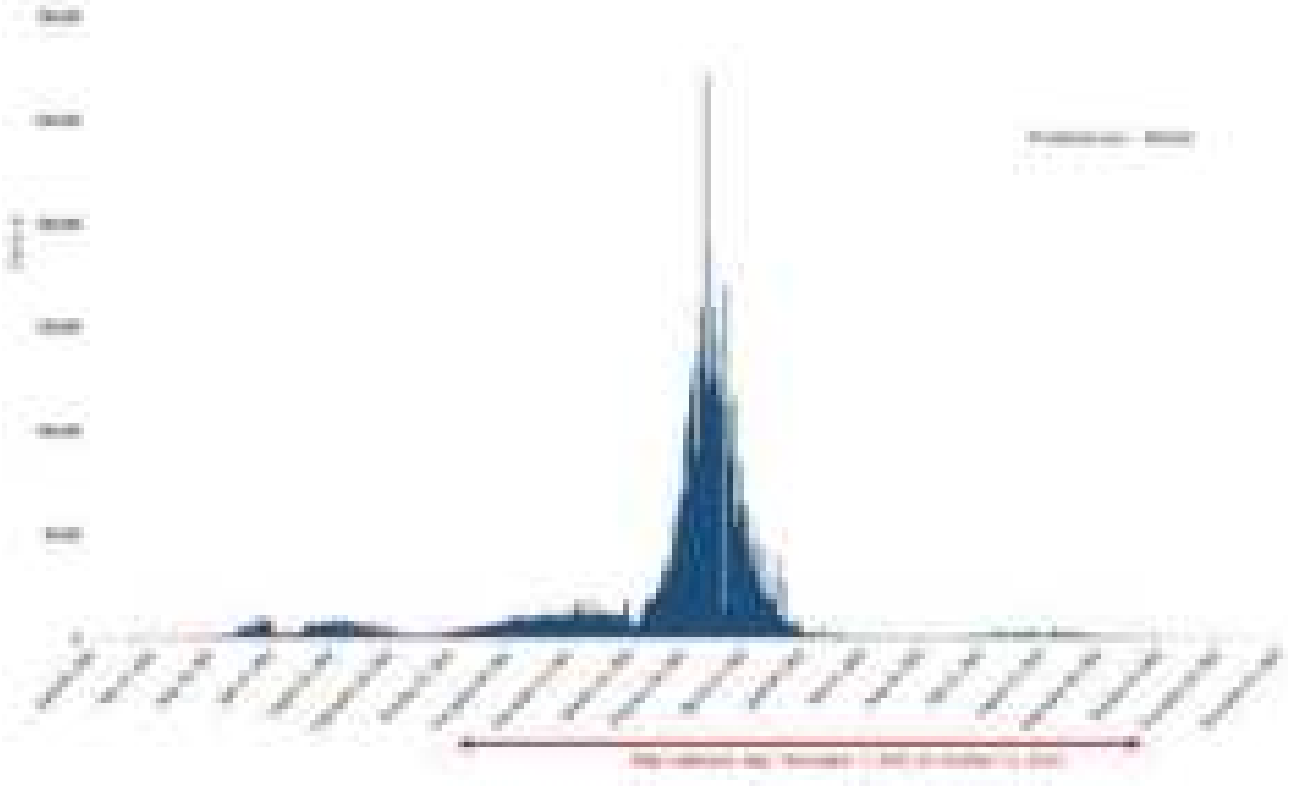
Methods

Study Settings

Vietnam first confirmed the presence of the SARS-CoV-2 virus in January 2020, with initial cases being mostly from other countries. However, local transmission began to develop in February and March 2020. To curb the spread, the Vietnamese government implemented a zero–COVID-19 strategy throughout 2020, which involved contact tracing, mass testing, quarantining, and lockdowns. This approach was largely successful, but since April 2021, the country has been facing its largest outbreak yet. As a result, lockdowns have been implemented in one-third of provinces and cities, affecting roughly one-third of the population. The emergence of the Omicron variant in the first quarter of 2022 led to a sharp increase in infections, although Vietnam’s high vaccination rates resulted in fewer fatalities [35] (Figure 1).

Our study collection period spanned from December 1, 2021, to October 31, 2022. The research was carried out across 17 hospitals and health centers located in 9 provinces across the country. We included 5 provinces with 8 hospitals in the Northern region, 3 provinces with 3 health centers in the Central region, and 2 provinces with 6 hospitals and health centers in the Southern region (Multimedia Appendix 1).

Figure 1. COVID-19 situation in Vietnam from April 2021 to December 2022.



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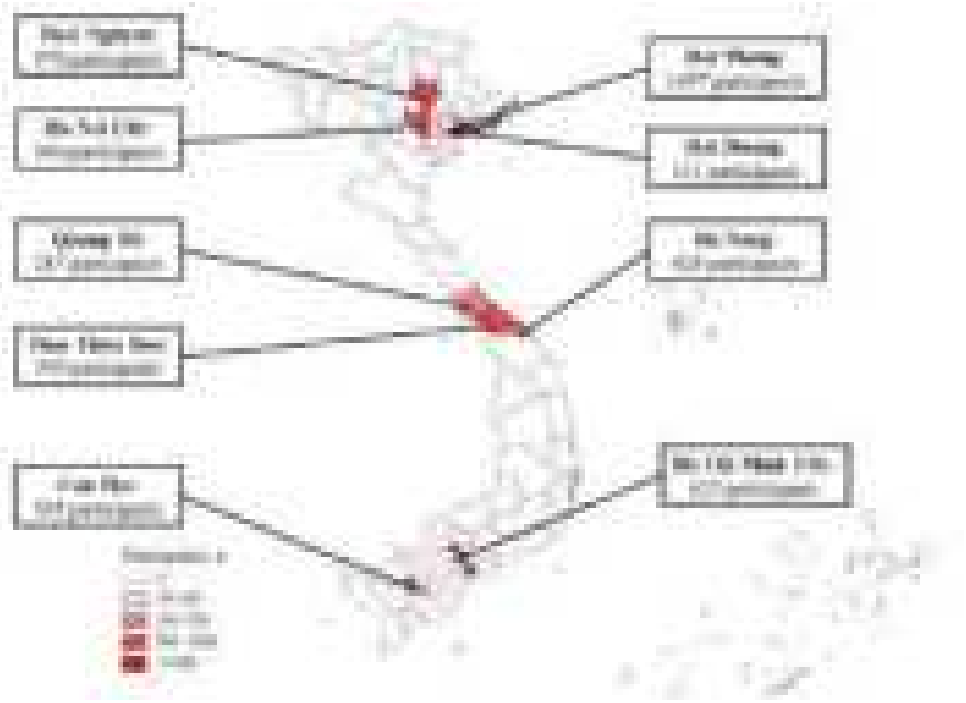
Study Design and Participants

This is a nationwide cross-sectional, web-based survey conducted from 2021 to 2022 in Vietnam. We enrolled Vietnamese adults (aged 18 years or older) who had been infected with SARS-CoV-2, which is confirmed by available positive test results for SARS-CoV-2 (either real-time polymerase chain reaction or rapid antigen test), and afterward recovered from the infection, which is confirmed by available negative test results for SARS-CoV-2 (either real-time polymerase chain reaction or rapid antigen test). Participants who did not consent, were nonpermanent residents of Vietnam, were unable to understand the survey questions, or had cognitive or mental health issues that may have affected their responses to the survey were excluded from the study (n=87).

Participants from 17 hospitals and COVID-19 health centers across 9 provinces representative of 3 geographical regions of Vietnam were purposively selected. We recruited 3450 participants in 4 Northern region provinces and cities, 1130 participants in 3 Central region provinces, and 1310 participants in 2 Southern region cities. In total, we collected data from 5890 participants. Details of the number of participants recruited per site of the 3 geographical regions can be found in Figure 2 and Multimedia Appendix 1.

Figure 2. Distribution of participants in the study.



Sample Size

A sample of 5890 participants provided sufficient data for inclusion in the analysis, representing 50.1% of the total 11,761 survivors of COVID-19 from 17 study sites and 0.05% of the total 10,607,166 survivors of COVID-19 in Vietnam until the end of data collection on October 31, 2022 [35].

Data Collection Procedures

The data were collected from December 1, 2021, to October 31, 2022. The survey form was prepared on Microsoft Forms (Microsoft Corp). Initially, we secured agreements to collaborate with 17 target sites for the research. Before data collection, senior researchers provided the enumerators, who were health care workers at each site, with an introduction to the data collection procedures. The enumerators reached out to survivors of COVID-19 through various contact channels (phone, smartphone app, and email) and distributed the survey link. The reminders were sent out to achieve the response rate. Data were collected, extracted, and coded for analysis anonymously.

Assessments and Measurements

LCA Indicators: Unhealthy Lifestyle Behaviors

Based on previous literature, we assessed 5 most common unhealthy lifestyle behaviors including the following binary indicators:

- Cigarette smoking: Participants were asked about their tobacco use status and were given 3 options: “currently smoking,” “used to smoke and stopped,” and “never smoke.” We coded the variable “cigarette smoking” as “nonsmokers” if participants answered “never smoke” or “used to smoke and stopped.” Participants who answered “currently smoking” were categorized as “smokers.”
- Alcohol consumption: We asked participants whether they had consumed at least 1 standard drink of alcoholic beverage in the past 30 days. The variable was binary coded as “yes” or “no.”
- Unhealthy diet: We used the 5-item healthy eating score to assess the healthy diet. The 5-item healthy eating score is comparable with the 2015 health eating index in assessing the overall diet quality [36] and has been validated and used in Vietnam [37]. Participants were asked to respond to 5

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questions about their consumption frequency of fruits, vegetables, whole grains, dairy, and fish over the past 30 days using a 6-point scale ranging from 0=rarely or never to 5=3 or more times per day. The total score can range from 0 to 25, with a higher score indicating a healthier diet. We used a cut-off point as the median of 15 (IQR 13-17) to create a binary variable, with a score of less than 15 indicating the "unhealthy diet."

- Physical inactivity: Physical activity is defined as any bodily movement that requires the contraction of skeletal muscles and increases energy expenditure above the resting metabolic rate [38]. In this study, we used the short version of the International Physical Activity Questionnaire to assess participants' physical activity levels [39]. Participants who reported engaging in vigorous-intensity activity on 3 or more days per week, or moderate-intensity activity or walking for at least 30 minutes per day on 5 or more days, were considered to have met the criteria for being "physically active," and the opposite was labeled "physically inactive."
- Sedentary behaviors: Sedentary behaviors are defined as any activities that involve sitting or reclining and consume an energy expenditure equal to or below 1.5 metabolic equivalents. Sitting time is usually the main indicator used to quantify the time devoted to sedentary behaviors [40]. To assess sedentary behavior, we asked survivors of COVID-19 about the average number of hours they spent sitting for nonwork purposes (eg, watching television, playing computer games, using social media, or engaging in other sitting activities) on a typical day in the past 7 days. Participants who reported spending more than 2 hours per day on these activities were classified as having sedentary behavior [34].

Clinical Parameters

Participants were asked to report their height in meters and weight in kilograms. The self-reported weight is concordant with image-captured weight in web-based research [41]. The BMI was calculated by dividing their weight by the square of their height in meters. Participants were then classified as underweight (BMI<18.5 kg/m^2), normal weight (18.5 $kg/m^2 \leq BMI < 23\ kg/m^2$), overweight ($23\ kg/m^2 \leq BMI < 25\ kg/m^2$), or obese ($BMI \geq 25\ kg/m^2$) [42]. In addition, comorbid conditions other than COVID-19 were also assessed.

Sociodemographic Characteristics

Sociodemographic characteristics were also measured, including age (years), sex (male or female), marital status (single; married; or widow, divorced, or separated), education levels (illiterate or elementary, secondary or high school, vocational or college, or university or higher), employment status (dependent, independent, or unemployed), whether the participant was a health care worker (yes or no), and self-reported social status (low, middle, or high).

Data Analysis

Data were analyzed on Stata (version 17.0; StataCorp). First, we tabulated sociodemographic characteristics and nutritional status for the overall sample separately by sex and differentiated by Wilcoxon rank-sum tests, Pearson chi-square tests, and Fisher exact tests. Second, the prevalence and 95% CIs of 5 unhealthy lifestyle behaviors were calculated for male and female participants. The 95% CIs were calculated using the formula CI=proportion mean 1.96×SE of proportion mean [43]. We then used the UpSet diagrams to describe the combinations of these behaviors [44]. The UpSet diagrams can help display complex intersections of a lifestyle behaviors matrix, where the rows represent different sets of combinations and the columns represent the number of male and female participants who had these combinations.

LCA is a statistical method used to identify subgroups of individuals based on observed variables [45]. Previous studies have used LCA to identify subgroups with distinct patterns of lifestyle behaviors and explore the factors associated with these patterns [31,34]. We used the expectation-maximization algorithm of LCA with 30 iterations—a general optimization technique for deriving maximum likelihood estimates in the presence of latent variables from 5 indicators [46]. This algorithm alternated between the expectation step—imputing latent variables based on current parameter estimates, and the maximization step—updating parameters to maximize the likelihood of the observed data from these 5 indicators [46,47]. Our approach involved systematically testing a series of models with an increasing number of latent classes to pinpoint the most fitting model. We considered Akaike information criterion (AIC) and Bayesian information criterion (BIC) to choose the optimal number of classes. The class with the smallest AIC and BIC was considered a good fit [33].

We defined 2 distinct classes, namely, the "less unhealthy" group and the "more unhealthy" group. Within each latent group, we assessed the predicted probabilities for categorical indicators and assigned each participant to the group with the highest probability. The distribution of indicators and covariates was compared among each group membership, and logistic regression analysis was performed to estimate the association between covariates and being in the "more unhealthy" group, stratified by sex. The selection of covariates for this model was informed by our hypothesis of correlation, guided by the findings in the literature [4,16,18,19,23,25,29]. Odds ratio (OR) and 95% CIs were reported. Likelihood ratio tests were used to determine the effect of each variable in the models.

Ethical Considerations

This study was reviewed and approved by the institutional ethical review committee of Hanoi University of Public Health, Vietnam (IRB 400/2021/YTCC-HD3 and 45/2022/YTCC-HD3). Participants have consented their participation. Data were confidentially collected and analyzed. No compensation was provided for participation.

Results

Participants' Characteristics

Table 1 provides a summary of participants' characteristics, stratified by sex. Among 5890 survivors of COVID-19, the median age was 31 (IQR 23-40) years. More than half of them were female (n=3443, 58.5%), married (n=3402, 57.8%), and

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had attained a university education or higher (n=3034, 51.5%). In total, 3475 (59%) participants were dependent workers, and 1928 (32.7%) were health care workers. Most participants belonged to the middle social status category (n=4822, 81.9%) and had no comorbidities other than COVID-19 (n=4177, 70.9%).

Table 1. Distribution of sociodemographic characteristics among 5890 survivors of COVID-19, stratified by sex.

Characteristics	All participants (N=5890)	Male participants (n=2447, 41.5%)	Female participants (n=3443, 58.5%)	*P* value[a]
Age (years), median (IQR)	31 (23-40)	30 (23-40)	32 (24-41)	<.001
Sex, n (%)				
Male	2447 (41.5)	N/A[b]	N/A	N/A
Female	3443 (58.5)	N/A	N/A	N/A
Marital status, n (%)				<.001
Single	2346 (39.8)	1156 (47.2)	1190 (34.6)	
Married	3402 (57.8)	1259 (51.5)	2143 (62.2)	
Widow or divorce or separate	142 (2.4)	32 (1.3)	110 (3.2)	
Education levels, n (%)				<.001
Illiterate or elementary	161 (2.7)	62 (2.5)	99 (2.9)	
Secondary or high school	1264 (21.5)	569 (23.3)	695 (20.2)	
Vocational or college	1431 (24.3)	425 (17.4)	1006 (29.2)	
University or higher	3034 (51.5)	1391 (56.8)	1643 (47.7)	
Employment status, n (%)				.003
Dependent worker	3475 (59)	1382 (56.5)	2093 (60.8)	
Independent worker	1461 (24.8)	656 (26.8)	805 (23.4)	
Unemployed	954 (16.2)	409 (16.7)	545 (15.8)	
Health care workers, n (%)				<.001
No	3962 (67.3)	1790 (73.2)	2172 (63.1)	
Yes	1928 (32.7)	657 (26.8)	1271 (36.9)	
Social status, n (%)				<.001
Low	767 (13)	302 (12.3)	465 (13.5)	
Middle	4822 (81.9)	1974 (80.7)	2848 (82.7)	
High	301 (5.1)	171 (7)	130 (3.8)	
Comorbidity, n (%)				.09
No	4177 (70.9)	1764 (72.1)	2413 (70.1)	
Yes	1713 (29.1)	683 (27.9)	1030 (29.9)	
BMI (kg/m^2), n (%)				<.001
Underweight	709 (12)	133 (5.4)	576 (16.7)	
Normal	3573 (60.7)	1261 (51.5)	2312 (67.2)	
Overweight	1043 (17.7)	671 (27.4)	372 (10.8)	
Obese	565 (9.6)	382 (15.6)	183 (5.3)	

[a]*P* value from Wilcoxon rank-sum, Pearson chi-square, and Fisher exact test compared the distribution of covariates between male and female participants.
[b]N/A: not applicable.

There were significant differences in the distribution of all covariates between male and female participants except for comorbidities. A higher percentage of female participants were underweight (female: 576/3443, 16.7% vs male: 133/2447, 5.4%). In contrast, male participants had higher rates of overweight (male: 671/2447, 27.4% vs female: 372/3443, 10.8%) and obesity (male: 382/2447, 15.6% vs female: 183/3443, 5.3%) than female participants.

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Distribution of Unhealthy Lifestyle Behaviors

Table 2 displays the proportion of unhealthy lifestyle behaviors in survivors of COVID-19, stratified by sex. Among both sexes, sedentary behaviors were the most prevalent behavior (male: 1871/2447, 76.5% and female: 2629/3443, 76.4%), followed by unhealthy diet (male: 1508/2447, 61.6% and female: 2109/3443, 61.3%). The prevalence of smoking and drinking was significantly higher among male participants compared to their female counterparts (307/2447, 12.5% vs 12/3443, 0.3%; *P*<.001 and 1217/2447, 49.7% vs 816/3443, 23.7%; *P*<.001, respectively). Conversely, the proportion of physical inactivity among female participants was higher than among male participants (female: 1928/3443, 56% vs male: 988/2447, 40.4%; *P*<.001).

Table 2. Distribution of 5 unhealthy lifestyle behaviors, stratified by sex (N=5890).

Unhealthy lifestyle behaviors	All participants (N=5890), n (%)	Male participants (n=2447, 41.5%), n (%)	Female participants (n=3443, 58.5%), n (%)	*P* value[a]
Cigarette smoking				<.001
Nonsmokers	5571 (94.6)	2140 (87.5)	3431 (99.7)	
Smokers	319 (5.4)	307 (12.5)	12 (0.3)	
Alcohol consumption				<.001
No	3857 (65.5)	1230 (50.3)	2627 (76.3)	
Yes	2033 (34.5)	1217 (49.7)	816 (23.7)	
Unhealthy diet				.77
No	2273 (38.6)	939 (38.4)	1334 (38.7)	
Yes	3617 (61.4)	1508 (61.6)	2109 (61.3)	
Physical inactivity				<.001
No	2974 (50.5)	1459 (59.6)	1515 (44)	
Yes	2916 (49.5)	988 (40.4)	1928 (56)	
Sedentary behavior				.93
No	1390 (23.6)	576 (23.5)	814 (23.6)	
Yes	4500 (76.4)	1871 (76.5)	2629 (76.4)	

[a]*P* value from Pearson chi-square and Fisher exact test compared the distribution of covariates between male and female participants.

Table 3 illustrates the distribution of co-occurring unhealthy lifestyle behaviors among male and female participants. Almost all survivors of COVID-19 had participated in 1 behavior (male: 2432/2447, 99.4% and female: 3411/3443, 99.1%). In all categories, there was a higher prevalence of male participants than female participants who had 2 (male: 1918/2447, 78.4% vs female: 2551/3443, 74.1%), 3 (male: 1091/2447, 44.6% vs female: 1243/3443, 36.1%), 4 (male: 331/2447, 13.5% vs female: 282/3443, 8.2%), and all 5 (male 61/2447, 2.5% vs female: 3/3443, 0.1%) behaviors. The absolute and relative differences between the prevalence of male and female participants also increased as the number of behaviors increased. The ratio of male to female participants participating in 1 behavior was 1.003. This ratio increased gradually with a higher number of behaviors and surged to 25 at 5 unhealthy behaviors.

Figure 3 illustrates different combinations of unhealthy behaviors, stratified by sex. The most frequent combination observed in 1123 (45.9%) of 2447 male participants and 1584 (46%) of 3443 female participants was sedentary behavior and unhealthy diet. Male participants showed a high prevalence of combining alcohol consumption with sedentary behaviors (949/2447, 38.8%) and an unhealthy diet (861/2447, 35.2%), followed by the combination of all 3 abovementioned behaviors (663/2447, 27.1%). On the other hand, female participants tended to combine physical inactivity with sedentary behavior (1305/3443, 37.9%) or an unhealthy diet (1260/3443, 36.6%), as well as all 3 behaviors (885/3443, 25.7%).

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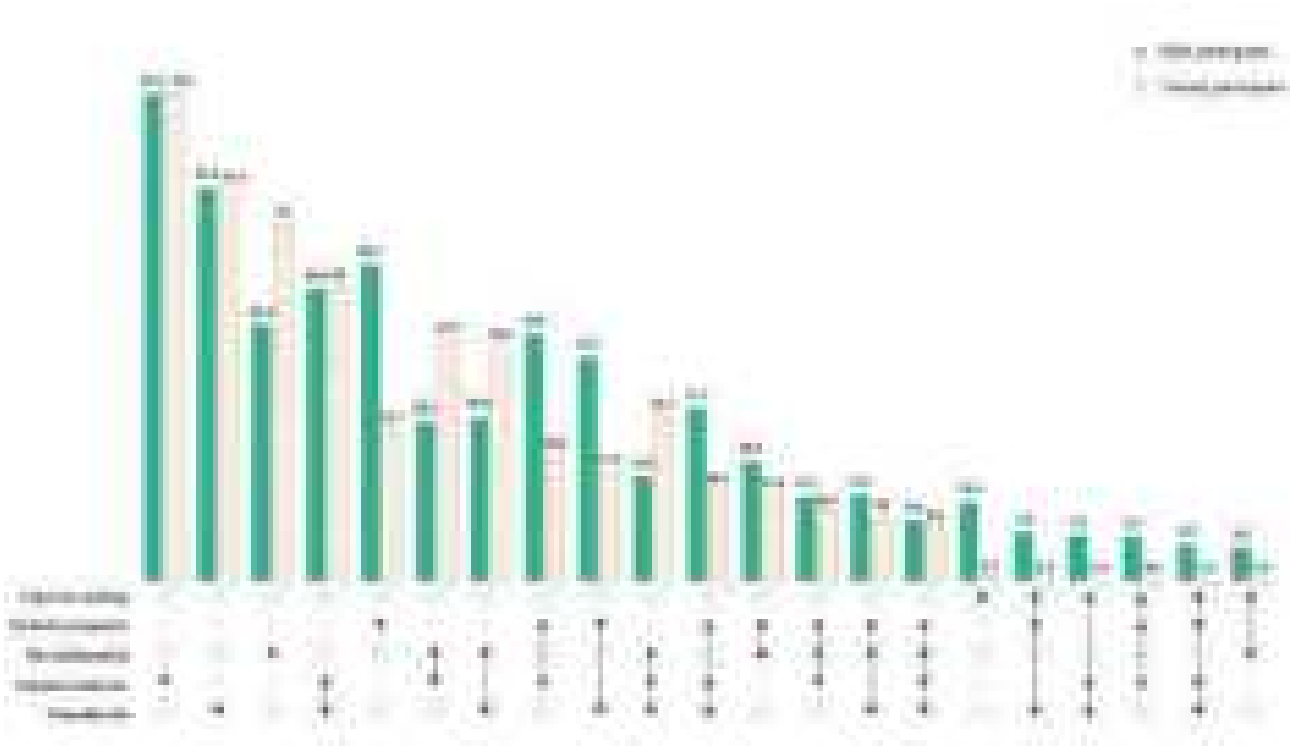
Table 3. Distribution of unhealthy lifestyle behavior co-occurrence, stratified by sex (N=5890).

Unhealthy lifestyle behavior co-occurrence	All participants (N=5890), n (%)	Male participants (n=2447, 41.5%), n (%)	Female participants (n=3443, 58.5%), n (%)	% Difference (absolute; relative)	*P* value[a]
One risk				0.3 (1.003)	.18
No	47 (0.8)	15 (0.6)	32 (0.9)		
Yes	5843 (99.2)	2432 (99.4)	3411 (99.1)		
Two risks				4.3 (1.06)	<.001
No	1421 (24.1)	529 (21.6)	892 (25.9)		
Yes	4469 (75.9)	1918 (78.4)	2551 (74.1)		
Three risks				8.5 (1.24)	<.001
No	3556 (60.4)	1356 (55.4)	2200 (63.9)		
Yes	2334 (39.6)	1091 (44.6)	1243 (36.1)		
Four risks				5.3 (1.65)	<.001
No	5277 (89.6)	2116 (86.5)	3161 (91.8)		
Yes	613 (10.4)	331 (13.5)	282 (8.2)		
Five risks				2.4 (25.0)	<.001
No	5826 (98.9)	2386 (97.5)	3440 (99.9)		
Yes	64 (1.1)	61 (2.5)	3 (0.1)		

[a]*P* value from Pearson chi-square and Fisher exact test compared the distribution of covariates between male and female participants.

Figure 3. UpSet diagrams for different combinations of unhealthy lifestyle behaviors of participants, stratified by sex. This figure does not illustrate the combination with a prevalence of less than 5% in both sexes. The table underneath depicts the co-occurrence of unhealthy lifestyle behavior combination, where the rows represent different sets of combinations and the columns represent the number of male and female participants who had these combinations.



The Cluster of Unhealthy Lifestyle Behaviors

Table 4 reports the model fit indices of LCA models from 2 to 6 classes fitting to 5 behavior indicators. The 2-class model has the lowest AIC and BIC. In addition, the 2-class model is easier to interpret than the other models. Therefore, we proceed with the 2-class model.

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Table 4. The model fit indices of latent class analysis models.

Variable	Two-class model	Three-class model	Four-class model	Five-class model	Six-class model
Log likelihood	–16,050.62	–15,787.33	–15,769.49	–15,768.81	Not convergent
AIC[a]	31,584.99	31,608.67	32,123.24	31,595.62	Not convergent
BIC[b]	31,722.26	32,196.75	31,738.67	31,789.39	Not convergent

[a]AIC: Akaike information criterion.

[b]BIC: Bayesian information criterion.

Table 5 presents the 2-class membership, distributed among the prevalence of 5 unhealthy lifestyle behaviors and stratified by sex. The 2 classes were labeled based on the distribution of each behavior in each class. The "less unhealthy" group included 64.7% (3810/5890) of total participants, and among them, there were 48.4% (1184/2447) of male participants and 76.3% (2626/3443) of female participants. Sedentary behavior was the most common behavior exhibited in both male and female participants in this group (887/1184, 74.9% and 1954/2626, 74.4%, respectively), followed by an unhealthy diet and physical inactivity. None of the participants in this membership had participated in 4 or 5 behaviors, and none of them reported any alcohol consumption. More than 43% of both male (521/1184, 43.8%) and female (1143/2626, 43.5%) "less unhealthy" participants engaged in 2 behaviors.

Table 5. Distribution of unhealthy lifestyle behaviors among survivors of COVID-19 by 2-class memberships.

Unhealthy lifestyle behaviors	All participants (N=5890)		Male participants (n=2447)		Female participants (n=3443)	
	Less unhealthy (n=3810, 64.7%), n (%)	More unhealthy (n=2080, 35.3%), n (%)	Less unhealthy (n=1184, 48.4%), n (%)	More unhealthy (n=1263, 51.6%), n (%)	Less unhealthy (n=2626, 76.3%), n (%)	More unhealthy (n=819, 23.8%), n (%)
Unhealthy lifestyle behaviors						
Cigarette smoking	22 (0.6)	297 (14.3)	19 (1.6)	288 (22.8)	3 (0.1)	9 (1.1)
Alcohol consumption	0 (0)	2036 (97.7)	0 (0)	1217 (96.4)	0 (0)	816 (99.9)
Unhealthy diet	2119 (55.6)	1498 (72)	602 (50.7)	908 (71.9)	1519 (57.8)	590 (72.2)
Physical inactivity	1977 (51.9)	939 (45.1)	509 (43)	497 (37.9)	1468 (55.9)	460 (56.3)
Sedentary behaviors	2841 (74.6)	1659 (79.8)	887 (74.9)	984 (77.9)	1954 (74.4)	675 (82.6)
Number of unhealthy lifestyle behaviors						
0	47 (1.2)	0 (0)	15 (1.3)	0 (0)	32 (1.2)	0 (0)
1	1338 (35.1)	36 (1.7)	489 (41.3)	25 (2)	849 (32.3)	11 (1.3)
2	1662 (43.6)	473 (22.7)	521 (43.8)	308 (24.4)	1143 (43.5)	165 (20.2)
3	763 (20)	958 (46.1)	161 (13.6)	599 (47.4)	602 (22.9)	359 (43.9)
4	0 (0)	549 (26.4)	0 (0)	270 (21.4)	0 (0)	279 (34.1)
5	0 (0)	64 (3.1)	0 (0)	61 (4.8)	0 (0)	3 (0.4)

The "more unhealthy" group included 35.3% (2080/5890) of total participants, and among them, there were 51.6% (1263/2447) of male participants and 23.8% (819/3443) of female participants. The most prevalent behavior practiced in both male and female participants was alcohol consumption (1217/1263, 96.4% and 816/819, 99.9%, respectively), followed by sedentary behaviors (984/1263, 77.9% and 675/819, 82.6%, respectively). Male participants in the "more unhealthy" group exhibited a significantly higher prevalence of cigarette smoking compared to their female counterparts (288/1263, 22.8% vs 9/819, 1.1%, respectively). There were 599 (47.4%) of 1263 male participants and 359 (43.9%) of 819 female participants in this group who participated in 3 unhealthy behaviors. Approximately 5% (61/1263) of male participants engaged in all 5 behaviors, while this proportion was 0.4% (3/819) among female participants in the same class.

Table 6 displays the distribution of covariates by class membership. There were significant differences in the distribution of all covariates between "less unhealthy" and "more unhealthy" groups. Nearly half (1010/2080, 48.6%) of the participants in the "more unhealthy" group were single, 60.7% (1263/2080) of them were male, 67.3% (1400/2080) of them had at least a university education, and 71.9% (1495/2080) of "more unhealthy" participants were dependent workers. Regarding "less unhealthy" group, nearly 69% (2626/3810) of the participants were female, and 62.4% (2377/3810) were married. More than half (1980/3810, 52%) of "less unhealthy" participants were dependent workers, and 42.9% (1634/3810) of them had at least a university education. The prevalence of obesity was almost 3 times higher in the "more unhealthy" group compared to the "less unhealthy" group (314/2080, 15.1% vs 251/3810, 6.6%, respectively).

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Table 6. Distribution of covariates by class membership (N=5890).

Covariates	Less unhealthy group (n=3810, 64.7%)	More unhealthy group (n=2080, 35.3%)	*P* value[a]
Age (years), median (IQR)	32.0 (23.0-44.0)	29.0 (23.0-37.0)	<.001
Sex, n (%)			<.001
Male	1184 (31.1)	1263 (60.7)	
Female	2626 (68.9)	817 (39.3)	
Marital status, n (%)			<.001
Single	1336 (35.1)	1010 (48.6)	
Married	2377 (62.4)	1025 (49.3)	
Widow or divorce or separate	97 (2.5)	45 (2.2)	
Education levels, n (%)			<.001
Illiterate or elementary	140 (3.7)	21 (1)	
Secondary or high school	1025 (26.9)	239 (11.5)	
Vocational or college	1011 (26.5)	420 (20.2)	
University or above	1634 (42.9)	1400 (67.3)	
Employment status, n (%)			<.001
Dependent worker	1980 (52)	1495 (71.9)	
Independent worker	1139 (29.9)	322 (15.5)	
Unemployed	691 (18.1)	263 (12.6)	
Health care workers, n (%)			<.001
No	2699 (70.8)	1263 (60.7)	
Yes	1111 (29.2)	817 (39.3)	
Social status, n (%)			<.001
Low	529 (13.9)	238 (11.4)	
Middle	3115 (81.8)	1707 (82.1)	
High	166 (4.4)	135 (6.5)	
Comorbidity, n (%)			.004
No	2654 (69.7)	1523 (73.2)	
Yes	1156 (30.3)	557 (26.8)	
Nutritional status, n (%)			<.001
Underweight	495 (13)	214 (10.3)	
Normal	2453 (64.4)	1120 (53.8)	
Overweight	611 (16)	432 (20.8)	
Obese	251 (6.6)	314 (15.1)	

[a]*P* value from Pearson chi-square and Fisher exact test.

Factors Related to the More Unhealthy Group

Table 7 presents multivariable logistics regression to examine the association between covariates and being in the "more unhealthy" group among male and female participants. In both sexes, younger individuals had lower odds of being in the "more unhealthy" group (male: *P*=.001; OR 0.99, 95% CI 0.98-0.99 and female: *P*<.001; OR 0.98, 95% CI 0.97-0.99). Marital status showed a significant association with the "more unhealthy" group in both models. Married male participants had higher odds of being in the "more unhealthy" group compared to single ones (OR 1.45, 95% CI 1.14-1.85), while female participants exhibited lower odds (OR 0.65, 95% CI 0.51-0.83). Independent workers and unemployed participants had lower odds of being in the "more unhealthy" group compared to dependent workers of both sexes. In both models, higher educational levels were found to be associated with increased odds of belonging to the "more unhealthy" group.

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Table 7. Multivariable models of factors related to more unhealthy group among survivors of COVID-19.

Factors	Male participants		Female participants	
	OR[a] (95% CI)	*P* value[a]	OR (95% CI)	*P* value[b]
Age (years)	0.99 (0.98-0.99)	.001	0.98 (0.97-0.99)	<.001
Marital status (reference: single)		.006		<.001
Married	1.45 (1.14-1.85)		0.65 (0.51-0.83)	
Widow or divorce or separate	2.11 (0.94-4.75)		1.16 (0.68-1.98)	
Education levels (reference: illiterate or elementary)		<.001		<.001
Secondary or high school	1.05 (0.59-1.88)		3.06 (0.72-12.9)	
Vocational or college	1.92 (1.06-3.47)		4.64 (1.11-19.39)	
University or above	2.4 (1.34-4.31)		8.23 (1.97-34.38)	
Current employment status (reference: dependent workers)		<.001		<.001
Independent workers	0.65 (0.51-0.82)		0.37 (0.27-0.51)	
Unemployment	0.55 (0.42-0.72)		0.44 (0.32-0.59)	
Being health care workers (reference: no)		.52		.36
Yes	1.08 (0.86-1.36)		0.91 (0.74-1.12)	
Social status (reference: low)		.96		.66
Middle	1.03 (0.80-1.33)		1.13 (0.87-1.47)	
High	1.06 (0.71-1.58)		1.09 (0.68-1.76)	
Comorbidity (reference: no)		.06		.98
Yes	1.21 (0.99-1.47)		1.00 (0.83-1.22)	
Nutritional status (reference: normal)		<.001		.005
Underweight	0.6 (0.41-0.89)		1.11 (0.89-1.39)	
Overweight	1.04 (0.85-1.26)		1.42 (1.07-1.87)	
Obese	2.03 (1.58-2.62)		1.73 (1.21-2.47)	

[a]OR: odds ratio.

[b]*P* value from likelihood ratio test.

Furthermore, individuals who are overweight or obese were more likely to fall into the “more unhealthy” category when compared to participants with a normal weight. Among male participants, the odds of being in the “more unhealthy” group slightly increased for overweight individuals who are overweight (OR 1.04, 95% CI 0.85-1.26), while significantly higher odds were found for individuals who are obese (OR 2.03, 95% CI 1.58-2.62). For female participants, both individuals who are overweight (OR 1.42, 95% CI 1.07-1.87) and obese (OR 1.73, 95% CI 1.21-2.47) had an increased likelihood of being in the “more unhealthy” group. Female participants who are underweight showed a higher likelihood of falling into the “more unhealthy” group (OR 1.11, 95% CI 0.89-1.39), but this was not the case for male participants (OR 0.6, 95% CI 0.41-0.89). Being a health care worker, level of social status, and having comorbidities did not show a statistically significant association with higher odds of being in the “more unhealthy” group.

Discussion

Principal Findings

This national study examines the prevalence and clustering patterns of 5 unhealthy lifestyle behaviors among survivors of COVID-19 in Vietnam. This study provides a distinct pattern of unhealthy behaviors exhibited by male and female individuals after their COVID-19 recovery. We found that sedentary behaviors and unhealthy diets are common unhealthy behaviors in both sexes. While physical inactivity was more commonly practiced among female participants, male participants tended to engage in smoking and alcohol consumption. Nearly all participants had engaged in at least 1 unhealthy behavior, and male participants had a higher likelihood of engaging in multiple behaviors than female participants. Male participants also tended to practice alcohol intake with others such as sedentary behaviors and unhealthy diet, whereas female participants engaged in physical inactivity with sedentary behaviors and unhealthy diet.

Two unhealthy behavior classes were identified using LCA, with the “more unhealthy” group featured by a greater

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proportion of male participants. Certain common factors associated with this group were observed in both male and female participants, including older age, dependent employment, high educational levels, and obesity. However, sex-specific differences were found. For male participants, being married was an additional factor linked to a higher likelihood of being in the "more unhealthy" group. On the other hand, for female participants, being single and underweight were additional factors associated with this group.

Prevalence of Unhealthy Lifestyle Behaviors by Sex

The most prevalent unhealthy behaviors among survivors of COVID-19 were sedentary behaviors and unhealthy diets, which is consistent with findings from other studies among students and younger adults [23,34,48]. While there were significant differences between the percentage of male and female participants engaged in almost all behaviors, there were no significant differences between the prevalence of unhealthy diet and sedentary behavior in male and female participants in our sample. Our findings are in line with those from a study conducted among 1058 first-year students in Greece in 2016, which also found no significant differences in the prevalence of sedentary behavior (defined by screen time of more than 2 hours) and fruit and vegetable intake between male and female participants [23]. Since the study collected data when several provinces and cities were under lockdown across Vietnam, one explanation for the absence of these significant sex differences in terms of sedentary behavior and an unhealthy diet could be that both sexes were impacted similarly in this period. The lockdown might have caused significant changes in daily routines and lifestyles for the whole population, such as reduced physical activity, increased sedentary behavior, and changes in dietary patterns. Similar changes were observed in previous studies that took place during the cordon sanitaire period globally [49-51]. These changes can then exacerbate the prevalence of both sexes engaging in unhealthy behaviors. Indeed, there was a considerable increase in snacking and meal numbers or in unfavorable food choices and dietary habits during the COVID-19 lockdown reported in 2020, and there were no significant differences in sex participation rate as well [52].

Our evidence highlights the significant sex disparities in cigarette smoking and alcohol consumption among survivors of COVID-19, skewing higher in male participants. This observation aligns with prior research, where male participants tend to engage in more hazardous behaviors than female participants [53-56]. Male participants were also more likely to combine alcohol consumption with other factors such as sedentary lifestyles and unhealthy diets. With nearly 30% (683/2447) of male participants in our sample with chronic conditions, the high prevalence of co-occurring unhealthy behaviors coupled with the possible long-term effect of COVID-19 infection might increase the risk of NCDs in this population [57]. The observed sex differences in cigarette smoking and alcohol consumption in this study might be explained by a range of social, cultural, and economic factors. Vietnamese tradition perceived smoking and drinking as a part of the male gender role, used to display masculinity and establish social connections [30], while women are generally not encouraged to engage in these behaviors due to gender role expectations. Following such a drastic health event such as a cancer diagnosis or in our case—COVID-19 infection, lifestyle behaviors might also differ between sexes [58]. While women are more likely to adhere to health education and healthy behaviors after diagnosis, men are less likely to change their behaviors [28]. In addition, possible stress and anxiety induced by both the infection and the pandemic might cause men to smoke or drink more as a coping mechanism [59]. To address this gap, targeted interventions for male survivors of COVID-19 are recommended. These interventions may include a health education program for health problems following COVID-19 infection focused on the consequences associated with smoking and alcohol intake or a health promotion campaign highlighting the double-burden aspects of long COVID-19 symptoms and unhealthy behaviors.

Clustering of Multiple Unhealthy Lifestyle Behaviors by Sex

We highlighted significant differences in the number and combination of lifestyle-compromising behaviors between male and female participants. Surprisingly, the prevalence of male participants engaging in 4 or 5 unhealthy lifestyle behaviors simultaneously was nearly twice and 25 times higher compared to female participants. These findings are consistent with evidence from the adult population in India, which suggests that more adult male participants tend to exhibit the clustering of multiple NCD risk factors than female participants [26]. However, these findings contradict previous research indicating that female participants tend to engage in multiple unhealthy behaviors more frequently than male participants [23,34]. For example, in a study involving 3495 adolescents in Vietnam, it was found that the prevalence of practicing 2 unhealthy behaviors was similar between male and female participants. However, there was a sex discrepancy in the co-occurrence of 3 factors (male: 27.3% and female: 31.5%) and 4 factors (male: 13.7% and female: 15.1%) [34]. Similarly, a study conducted with 1058 first-year students in Greece found that the co-occurrence of 4 unhealthy factors was twice as high in female participants compared to male participants (male: 2.9% and female: 5.2%) [23]. It is important to note that the percentages of co-occurring behaviors may vary across studies due to differences in the number and types of behaviors measured as well as the specific cut-off points used. This is particularly relevant in cases where clear guidelines are lacking [32,60].

Among survivors of COVID-19 in Vietnam, we identified 2 distinct behavior patterns: "less unhealthy" and "more unhealthy" groups. These groups differed significantly in various factors. In the "less unhealthy" group, which represented around 65% (3810/5890) of the sample, a sedentary lifestyle was most prevalent, and there were a higher proportion of female participants. Conversely, the "more unhealthy" group, constituting over one-third of the population, was predominantly male and exhibited higher rates of alcohol intake and sedentary behavior. Additionally, the 2 groups differed in the number of concurrent unhealthy lifestyle behaviors. None of the "less unhealthy" participants reported engaging in more than 3 unhealthy behaviors simultaneously, while over 70% (male: 930/1263, 73.6% and female: 642/819, 78.4%) of the "more unhealthy" ones reported 3 or more behaviors. These distinctions

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were also reflected in the sex distribution. This finding is in line with a previous study documenting the clustering of health-related behaviors among Indian adults and US young adults [26], in which the authors also found a higher percentage of men grouped in the higher-risk cluster. Overall, the findings reaffirm that (1) there were distinct patterns of unhealthy lifestyle behaviors practiced by survivors of COVID-19, and (2) these patterns differ significantly by sex.

Our findings also indicate that several factors were associated with the "more unhealthy" pattern with sex-specific differences. In this study, male participants who were married displayed a higher likelihood of engaging in unhealthy behaviors compared to those who were single. This contradicts previous research conducted on healthy behaviors among young Korean adults [61] and survivors of cancer [62], which found that unmarried men or men without a partner were more likely to practice unhealthy behaviors compared to their married counterparts. Our evidence suggests that dependent workers, especially male participants, were more likely to engage in unhealthy behaviors. This aligns with previous research indicating that men in dependent jobs, particularly in Asian contexts, tend to participate in social gatherings at work that often involve smoking and drinking [63]. The drinking culture after work is a common practice in many Asian countries, including Vietnam [64], South Korea [65,66], and Japan [67]. On the other hand, self-employment was positively associated with healthier behaviors. This can be attributed to the flexibility self-employed individuals have in managing their work schedule, allowing them to allocate time for health promotion activities [68,69].

Additionally, we found that obesity was significantly associated with the "more unhealthy" group. This highlights the need to address the growing public health challenge of a higher prevalence of obese individuals, which has been exacerbated by the COVID-19 pandemic [70-73]. Given that our adults recovering from COVID-19 are already at risk of postrecovery complications, the engagement in unhealthy behaviors due to obesity conditions further places them in a vulnerable position. We strongly recommend targeted public health interventions and services for this population, focusing on promoting an active lifestyle and a balanced diet and discouraging unhealthy behaviors to regain and maintain their pre-COVID-19 infection health status.

Limitations and Strengths

This study has several limitations that should be acknowledged. First, the reliance on self-reported data for assessing lifestyle behaviors introduces the possibility of information bias. Participants may have underreported or overreported their engagement in certain behaviors. Second, the cross-sectional design of this study restricts our ability to establish causal relationships between lifestyle behaviors and different demographic factors. Third, the use of web-based surveys may have introduced selection bias, as only individuals who were contactable by phone were included in the sample, and the overall response rate was 50.1% (5890/11,761). It is important to consider the generalizability of our findings, as they may not apply to other vulnerable populations experiencing different chronic health impacts, given the variations in definitions, methodologies, and targeted populations in measuring lifestyle behaviors [32,60]. Fourth, the changes in lifestyle behaviors before and amid the pandemic were not investigated in this study. Fifth, we were unable to access data on Vietnamese societal and cultural dynamics to provide implications for the observed sex differences in lifestyle behaviors. Future research should address these limitations by using other empirical measures of unhealthy lifestyle behaviors and using longitudinal study designs to provide more robust evidence.

Despite certain limitations, this study possesses notable strengths. First, the data were derived from a large population-based cohort, enhancing the representativeness of our findings. Additionally, we used validated questionnaires to assess unhealthy lifestyle behaviors and associated factors, bolstering the generalizability of our study and facilitating comparisons with prior research. Moreover, this study contributes to the existing body of knowledge by shedding light on the distinct patterns of lifestyle behaviors observed among adults recovering from COVID-19, including sex differences, through the advanced application of LCA [55]. As survivors of COVID-19 constitute a growing population facing various health challenges, this study provides valuable insights into their sex-specific engagement in unhealthy behaviors. This, in turn, highlights the importance for public health agencies and policy makers to recognize the inadvertent detrimental impact of the COVID-19 pandemic, as well as the infection itself, on individuals' lifestyle behaviors and overall health outcomes.

Conclusions

The study revealed distinct patterns of unhealthy lifestyle behaviors among survivors of COVID-19 in Vietnam, with sedentary lifestyles and unhealthy diets being the most prevalent. Notably, these patterns differed significantly between sexes, with male participants exhibiting higher unhealthy behaviors and engaging in a greater number of unhealthy behaviors compared to female counterparts. These findings have important implications for public health initiatives, highlighting the need for tailored educational interventions that address sex-specific lifestyle behaviors. Specifically, efforts should be made to reduce unhealthy tendencies, particularly among married male adults recovering from COVID-19 who are obese, to promote a healthy and active life after COVID-19.

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Authors' Contributions

LTHL, TNAH, and TVD analyzed the data and drafted the paper. LTHL, TNAH, TTN, TDD, BND, KMP, VHV, LVP, LTHN, HCN, TVT, THN, ATN, HVN, PBN, HTTN, TTMP, TTL, TTPN, CQT, HLQ, KTN, and TVD contributed to conceptualization, investigation, methodology, validation, and revising the paper. LTHL, TTN, TDD, BND, KMP, VHV, LVP, LTHN, TVT, THN, HVN, PBN, HTTN, TTMP, TTL, TTPN, and CQT conducted data curation. All authors approved the final version of the paper.

Conflicts of Interest

None declared.

Multimedia Appendix 1

Participant distribution across study sites.
[DOCX File , 28 KB-Multimedia Appendix 1]

References

1. Haileamlak A. The impact of COVID-19 on health and health systems. Ethiop J Health Sci. 2021;31(6):1073-1074. [FREE Full text] [doi: 10.4314/ejhs.v31i6.1] [Medline: 35392335]
2. Hoang NA, Van Hoang N, Quach HL, Nguyen KC, Duong LH, Pham TQ, et al. Assessing the mental effects of COVID-19-related work on depression among community health workers in Vietnam. Hum Resour Health. 2022;20(1):64. [FREE Full text] [doi: 10.1186/s12960-022-00760-x] [Medline: 35986294]
3. Caroppo E, Mazza M, Sannella A, Marano G, Avallone C, Claro AE, et al. Will nothing be the same again?: changes in lifestyle during COVID-19 pandemic and consequences on mental health. Int J Environ Res Public Health. 2021;18(16):8433. [FREE Full text] [doi: 10.3390/ijerph18168433] [Medline: 34444180]
4. Hammouri H, Almomani F, Muhsen RA, Abughazzi A, Daghmash R, Abudayah A, et al. Lifestyle variations during and after the COVID-19 pandemic: a cross-sectional study of diet, physical activities, and weight gain among the Jordanian adult population. Int J Environ Res Public Health. 2022;19(3):1346. [FREE Full text] [doi: 10.3390/ijerph19031346] [Medline: 35162368]
5. Lifestyle risk factors. Centers for Disease Control and Prevention. 2020. URL: https://www.cdc.gov/nceh/tracking/topics/LifestyleRiskFactors.htm#:~:text=Four personal behaviors that can,use%2C and excessive alcohol use [accessed 2024-03-05]
6. Steyn K, Damasceno A. Chapter 18 Lifestyle and related risk factors for chronic diseases. In: Jamison DT, Feachem RG, Makgoba MW, editors. Disease and Mortality in Sub-Saharan Africa. 2nd Edition. Washington, DC. The World Bank; 2006.
7. Al-Maskari F. LIFESTYLE DISEASES: an economic burden on the health services. United Nations Office on Drugs and Crime (UNODC) Web site. URL: https://www.un.org/en/chronicle/article/lifestyle-diseases-economic-burden-health-services [accessed 2024-03-05]
8. Li B, Yang J, Zhao F, Zhi L, Wang X, Liu L, et al. Prevalence and impact of cardiovascular metabolic diseases on COVID-19 in China. Clin Res Cardiol. 2020;109(5):531-538. [FREE Full text] [doi: 10.1007/s00392-020-01626-9] [Medline: 32161990]
9. Sanyaolu A, Okorie C, Marinkovic A, Patidar R, Younis K, Desai P, et al. Comorbidity and its impact on patients with COVID-19. SN Compr Clin Med. 2020;2(8):1069-1076. [FREE Full text] [doi: 10.1007/s42399-020-00363-4] [Medline: 32838147]
10. Apicella M, Campopiano MC, Mantuano M, Mazoni L, Coppelli A, del Prato S. COVID-19 in people with diabetes: understanding the reasons for worse outcomes. Lancet Diabetes Endocrinol. 2020;8(9):782-792. [FREE Full text] [doi: 10.1016/S2213-8587(20)30238-2] [Medline: 32687793]
11. Tran BX, Nguyen HT, Le HT, Latkin CA, Pham HQ, Vu LG, et al. Impact of COVID-19 on economic well-being and quality of life of the Vietnamese during the national social distancing. Front Psychol. 2020;11:565153. [FREE Full text] [doi: 10.3389/fpsyg.2020.565153] [Medline: 33041928]
12. Vu M. Vietnam lengthens quarantine period to over 14 days. Hanoi News. 2021. URL: https://hanoitimes.vn/vietnam-lengthens-quarantine-period-to-over-14-days-317209.html [accessed 2024-03-05]
13. Vu MQ, Tran TTP, Hoang TA, Khuong LQ, Hoang MV. Health-related quality of life of the Vietnamese during the COVID-19 pandemic. PLoS One. 2020;15(12):e0244170. [FREE Full text] [doi: 10.1371/journal.pone.0244170] [Medline: 33338067]
14. UN analysis on social impacts of COVID-19 and strategic policy recommendations for Viet Nam. United Nations. URL: https://www.unicef.org/vietnam/media/5996/file/UN analysis on social impacts of COVID-19 and strategic policy recommendations for Viet Nam.pdf [accessed 2024-03-05]
15. Khodeir MM, Shabana HA, Rasheed Z, Alkhamiss AS, Khodeir M, Alkhowailed MS, et al. COVID-19: post-recovery long-term symptoms among patients in Saudi Arabia. PLoS One. 2021;16(12):e0260259. [FREE Full text] [doi: 10.1371/journal.pone.0260259] [Medline: 34879074]

XSL•FO
RenderX

16. Wang S, Li Y, Yue Y, Yuan C, Kang JH, Chavarro JE, et al. Adherence to healthy lifestyle prior to infection and risk of post-COVID-19 condition. JAMA Intern Med. 2023;183(3):232-241. [FREE Full text] [doi: 10.1001/jamainternmed.2022.6555] [Medline: 36745445]
17. Smirmaul BPC, Chamon RF, de Moraes FM, Rozin G, Moreira ASB, de Almeida R, et al. Lifestyle medicine during (and after) the COVID-19 pandemic. Am J Lifestyle Med. 2021;15(1):60-67. [FREE Full text] [doi: 10.1177/1559827620950276] [Medline: 33456421]
18. French S, Rosenberg M, Knuiman M. The clustering of health risk behaviours in a Western Australian adult population. Health Promot J Austr. 2008;19(3):203-209. [doi: 10.1071/he08203] [Medline: 19053937]
19. Atorkey P, Owiredua C. Clustering of multiple health risk behaviours and association with socio-demographic characteristics and psychological distress among adolescents in Ghana: a latent class analysis. SSM Popul Health. 2021;13:100707. [FREE Full text] [doi: 10.1016/j.ssmph.2020.100707] [Medline: 33365380]
20. Mukamal KJ. The effects of smoking and drinking on cardiovascular disease and risk factors. Alcohol Res Health. 2006;29(3):199-202. [FREE Full text] [Medline: 17373409]
21. Badinlou F, Lundgren T, Jansson-Fröjmark M. Mental health outcomes following COVID-19 infection: impacts of post-COVID impairments and fatigue on depression, anxiety, and insomnia—a web survey in Sweden. BMC Psychiatry. 2022;22(1):743. [FREE Full text] [doi: 10.1186/s12888-022-04405-0] [Medline: 36447183]
22. Bourmistrova NW, Solomon T, Braude P, Strawbridge R, Carter B. Long-term effects of COVID-19 on mental health: a systematic review. J Affect Disord. 2022;299:118-125. [FREE Full text] [doi: 10.1016/j.jad.2021.11.031] [Medline: 34798148]
23. Kritsotakis G, Psarrou M, Vassilaki M, Androulaki Z, Philalithis AE. Gender differences in the prevalence and clustering of multiple health risk behaviours in young adults. J Adv Nurs. 2016;72(9):2098-2113. [doi: 10.1111/jan.12981] [Medline: 27102085]
24. Mollborn S, Lawrence EM, Hummer RA. A gender framework for understanding health lifestyles. Soc Sci Med. 2020;265:113182. [FREE Full text] [doi: 10.1016/j.socscimed.2020.113182] [Medline: 32942201]
25. Wang Y, Cao P, Liu F, Chen Y, Xie J, Bai B, et al. Gender differences in unhealthy lifestyle behaviors among adults with diabetes in the United States between 1999 and 2018. Int J Environ Res Public Health. 2022;19(24):16412. [FREE Full text] [doi: 10.3390/ijerph192416412] [Medline: 36554290]
26. Shaikh R, Khan J. Clustering of lifestyle risk factors among adult population in India: a cross-sectional analysis from 2005 to 2016. PLoS One. 2021;16(1):e0244559. [FREE Full text] [doi: 10.1371/journal.pone.0244559] [Medline: 33395439]
27. Waldron I. Changing gender rolesgender differences in health behavior. In: Gochman DS, editor. Handbook of Health Behavior Research 1: Personal and Social Determinants. New York. Plenum Press; 1997;303-328.
28. Hernandez EM, Margolis R, Hummer RA. Educational and gender differences in health behavior changes after a gateway diagnosis. J Aging Health. 2018;30(3):342-364. [FREE Full text] [doi: 10.1177/0898264316678756] [Medline: 27940641]
29. Fukai K, Takaesu Y, Maki Y. Gender differences in oral health behavior and general health habits in an adult population. Bull Tokyo Dent Coll. 1999;40(4):187-193. [doi: 10.2209/tdcpublication.40.187] [Medline: 11933308]
30. Piko BF. Adolescent smoking and drinking: the role of communal mastery and other social influences. Addict Behav. 2006;31(1):102-114. [doi: 10.1016/j.addbeh.2005.04.013] [Medline: 15936154]
31. Kang J, Ciecierski CC, Malin EL, Carroll AJ, Gidea M, Craft LL, et al. A latent class analysis of cancer risk behaviors among U.S. college students. Prev Med. 2014;64:121-125. [FREE Full text] [doi: 10.1016/j.ypmed.2014.03.023] [Medline: 24704131]
32. Hu D, Taylor T, Blow J, Cooper TV. Multiple health behaviors: patterns and correlates of diet and exercise in a Hispanic college sample. Eat Behav. 2011;12(4):296-301. [FREE Full text] [doi: 10.1016/j.eatbeh.2011.07.009] [Medline: 22051363]
33. Thomas TL, Yarandi HN, Dalmida SG, Frados A, Klienert K. Cross-cultural differences and sexual risk behavior of emerging adults. J Transcult Nurs. 2015;26(1):64-72. [FREE Full text] [doi: 10.1177/1043659614524791] [Medline: 24692340]
34. Long KQ, Ngoc-Anh HT, Phuong NH, Tuyet-Hanh TT, Park K, Takeuchi M, et al. Clustering lifestyle risk behaviors among Vietnamese adolescents and roles of school: a Bayesian multilevel analysis of global school-based student health survey 2019. Lancet Reg Health West Pac. 2021;15:100225. [FREE Full text] [doi: 10.1016/j.lanwpc.2021.100225] [Medline: 34528007]
35. COVID-19 daily report in Vietnam. Ministry of Health. 2023. URL: https://moh.gov.vn/tin-tong-hop/-/asset_publisher/k206Q9qkZOqn/content/ban-tin-phong-chong-dich-covid-19-ngay-17-4-cua-bo-y-te?inheritRedirect=false&redirect=https%3A%2F%2Fmoh.gov.vn%3A443%2Ftin-tong-hop%3Fp_p_id%3D101_INSTANCE_k206Q9qkZOqn%26p_p_lifecycl [accessed 2024-03-05]
36. Shams-White MM, Chui K, Deuster PA, McKeown NM, Must A. Investigating items to improve the validity of the five-item healthy eating score compared with the 2015 healthy eating index in a military population. Nutrients. 2019;11(2):251. [FREE Full text] [doi: 10.3390/nu11020251] [Medline: 30678099]
37. Pham KM, Pham LV, Phan DT, Tran TV, Nguyen HC, Nguyen MH, et al. Healthy dietary intake behavior potentially modifies the negative effect of COVID-19 lockdown on depression: a hospital and health center survey. Front Nutr. 2020;7:581043. [FREE Full text] [doi: 10.3389/fnut.2020.581043] [Medline: 33304917]

XSL•FO
RenderX

38. Caspersen CJ, Powell KE, Christenson GM. Physical activity, exercise, and physical fitness: definitions and distinctions for health-related research. Public Health Rep. 1985;100(2):126-131. [FREE Full text] [Medline: 3920711]
39. Craig CL, Marshall AL, Sjöström M, Bauman AE, Booth ML, Ainsworth BE, et al. International physical activity questionnaire: 12-country reliability and validity. Med Sci Sports Exerc. 2003;35(8):1381-1395. [FREE Full text] [doi: 10.1249/01.MSS.0000078924.61453.FB] [Medline: 12900694]
40. Thivel D, Tremblay A, Genin PM, Panahi S, Rivière D, Duclos M. Physical activity, inactivity, and sedentary behaviors: definitions and implications in occupational health. Front Public Health. 2018;6:288. [FREE Full text] [doi: 10.3389/fpubh.2018.00288] [Medline: 30345266]
41. Whatnall MC, Kolokotroni KZ, Fozard TE, Evans TS, Marwood JR, Ells LJ, et al. How is online self-reported weight compared with image-captured weight? A comparative study using data from an online longitudinal study of young adults. Am J Clin Nutr. 2023;118(2):452-458. [doi: 10.1016/j.ajcnut.2023.05.029] [Medline: 37245719]
42. Lim JU, Lee JH, Kim JS, Hwang YI, Kim T, Lim SY, et al. Comparison of World Health Organization and Asia-Pacific body mass index classifications in COPD patients. Int J Chron Obstruct Pulmon Dis. 2017;12:2465-2475. [FREE Full text] [doi: 10.2147/COPD.S141295] [Medline: 28860741]
43. Bonita R, Beaglehole R, Kjellstrom T. Basic epidemiology, 2nd edition. World Health Organization. 2006. URL: https://iris.who.int/handle/10665/43541 [accessed 2024-03-11]
44. Lex A, Gehlenborg N, Strobelt H, Vuillemot R, Pfister H. UpSet: visualization of intersecting sets. IEEE Trans Vis Comput Graph. 2014;20(12):1983-1992. [FREE Full text] [doi: 10.1109/TVCG.2014.2346248] [Medline: 26356912]
45. Sinha P, Calfee CS, Delucchi KL. Practitioner's guide to latent class analysis: methodological considerations and common pitfalls. Crit Care Med. 2021;49(1):e63-e79. [FREE Full text] [doi: 10.1097/CCM.0000000000004710] [Medline: 33165028]
46. McLachlan GJ, Krishnan T. The EM Algorithm and Extensions. Hoboken, NJ. John Wiley & Sons; 2007.
47. McLachlan GJ, Lee SX, Rathnayake SI. Finite mixture models. Annu Rev Stat Its Appl. 2019;6(1):355-378. [FREE Full text] [doi: 10.1146/annurev-statistics-031017-100325]
48. Poznańska A, Lewtak K, Wojtyniak B, Stokwiszewski J, Moskalewicz B. Clustering of the adult population according to behavioural health risk factors as the focus of community-based public health interventions in Poland. Int J Environ Res Public Health. 2023;20(5):4402. [FREE Full text] [doi: 10.3390/ijerph20054402] [Medline: 36901412]
49. Matsungo TM, Chopera P. Effect of the COVID-19-induced lockdown on nutrition, health and lifestyle patterns among adults in Zimbabwe. BMJ Nutr Prev Health. 2020;3(2):205-212. [FREE Full text] [doi: 10.1136/bmjnph-2020-000124] [Medline: 33521530]
50. Rodríguez-Pérez C, Molina-Montes E, Verardo V, Artacho R, García-Villanova B, Guerra-Hernández EJ, et al. Changes in dietary behaviours during the COVID-19 outbreak confinement in the Spanish COVIDiet study. Nutrients. 2020;12(6):1730. [FREE Full text] [doi: 10.3390/nu12061730] [Medline: 32531892]
51. Pearson N, Biddle SJH. Sedentary behavior and dietary intake in children, adolescents, and adults. a systematic review. Am J Prev Med. 2011;41(2):178-188. [doi: 10.1016/j.amepre.2011.05.002] [Medline: 21767726]
52. Bennett G, Young E, Butler I, Coe S. The impact of lockdown during the COVID-19 outbreak on dietary habits in various population groups: a scoping review. Front Nutr. 2021;8:626432. [FREE Full text] [doi: 10.3389/fnut.2021.626432] [Medline: 33748175]
53. Gender equality index 2021: health. European Institute for Gender Equality. 2021. URL: https://eige.europa.eu/publications/gender-equality-index-2021-report/health-and-risk-behaviours-are-clearly-gendered [accessed 2024-03-05]
54. Quintiliani L, Allen J, Marino M, Kelly-Weeder S, Li Y. Multiple health behavior clusters among female college students. Patient Educ Couns. 2010;79(1):134-137. [FREE Full text] [doi: 10.1016/j.pec.2009.08.007] [Medline: 19767168]
55. Kwan MYW, Faulkner GEJ, Arbour-Nicitopoulos KP, Cairney J. Prevalence of health-risk behaviours among Canadian post-secondary students: descriptive results from the national college health assessment. BMC Public Health. 2013;13:548. [FREE Full text] [doi: 10.1186/1471-2458-13-548] [Medline: 23738785]
56. Silva DAS, Petroski EL. The simultaneous presence of health risk behaviors in freshman college students in Brazil. J Community Health. 2012;37(3):591-598. [doi: 10.1007/s10900-011-9489-9] [Medline: 21979565]
57. Mishra VK, Srivastava S, Muhammad T, Murthy PV. Relationship between tobacco use, alcohol consumption and non-communicable diseases among women in India: evidence from National Family Health Survey-2015-16. BMC Public Health. 2022;22(1):713. [FREE Full text] [doi: 10.1186/s12889-022-13191-z] [Medline: 35410193]
58. LeMasters TJ, Madhavan SS, Sambamoorthi U, Kurian S. Health behaviors among breast, prostate, and colorectal cancer survivors: a US population-based case-control study, with comparisons by cancer type and gender. J Cancer Surviv. 2014;8(3):336-348. [FREE Full text] [doi: 10.1007/s11764-014-0347-5] [Medline: 24532045]
59. Lim WY, Ma S, Heng D, Bhalla V, Chew SK. Gender, ethnicity, health behaviour & self-rated health in Singapore. BMC Public Health. 2007;7:184. [FREE Full text] [doi: 10.1186/1471-2458-7-184] [Medline: 17655774]
60. Keller S, Maddock JE, Hannöver W, Thyrian JR, Basler HD. Multiple health risk behaviors in German first year university students. Prev Med. 2008;46(3):189-195. [doi: 10.1016/j.ypmed.2007.09.008] [Medline: 18242666]
61. Yim HJ, Park HA, Kang JH, Kim KW, Cho YG, Hur YI, et al. Marital status and health behavior in middle-aged Korean adults. Korean J Fam Med. 2012;33(6):390-397. [FREE Full text] [doi: 10.4082/kjfm.2012.33.6.390] [Medline: 23267425]

XSL•FO
RenderX

62. Song L, Guan T, Guo P, Tan X, Bryant AL, Wood WA, et al. Health behaviors, obesity, and marital status among cancer survivors: a MEPS study. J Cancer Surviv. 2023;17(2):499-508. [FREE Full text] [doi: 10.1007/s11764-022-01269-x] [Medline: 36409440]
63. Park SJ, Kim SY, Lee ES, Park S. Associations among employment status, health behaviors, and mental health in a representative sample of South Koreans. Int J Environ Res Public Health. 2020;17(7):2456. [FREE Full text] [doi: 10.3390/ijerph17072456] [Medline: 32260265]
64. Lincoln M. Alcohol and drinking cultures in Vietnam: a review. Drug Alcohol Depend. 2016;159:1-8. [FREE Full text] [doi: 10.1016/j.drugalcdep.2015.10.030] [Medline: 26802499]
65. Kim O, Jeon HO. Relations of drinking motives and alcohol consumption in Korean male office workers. Psychol Rep. 2012;111(3):963-970. [doi: 10.2466/18.06.13.PR0.111.6.963-970] [Medline: 23402060]
66. Lee EK, Kim OS, Hong JY. Characteristics and factors associated with problem drinking in male workers. Asian Nurs Res (Korean Soc Nurs Sci). 2015;9(2):132-137. [FREE Full text] [doi: 10.1016/j.anr.2015.04.002] [Medline: 26160242]
67. KYODO. Drinking with colleagues loses appeal for Japanese workers amid pandemic. The Japan Times. 2021. URL: https://www.japantimes.co.jp/news/2021/11/30/business/japan-workers-drinking/ [accessed 2024-03-05]
68. Yoon J, Bernell SL. The effect of self-employment on health, access to care, and health behavior. Health. 2013;05(12):2116-2127. [FREE Full text] [doi: 10.4236/health.2013.512289]
69. Merchant JA, Kelly KM, Burmeister LF, Lozier MJ, Amendola A, Lind DP, et al. Employment status matters. J Occup Environ Med. 2014;56(7):686-698. [doi: 10.1097/jom.0000000000000149]
70. Parekh N, Deierlein AL. Health behaviours during the coronavirus disease 2019 pandemic: implications for obesity. Public Health Nutr. 2020;23(17):3121-3125. [FREE Full text] [doi: 10.1017/S1368980020003031] [Medline: 32746955]
71. Hu P, Samuels S, Maciejewski KR, Li F, Aloe C, Van Name M, et al. Changes in weight-related health behaviors and social determinants of health among youth with overweight/obesity during the COVID-19 pandemic. Child Obes. 2022;18(6):369-382. [FREE Full text] [doi: 10.1089/chi.2021.0196] [Medline: 34919458]
72. Hacker KA, Briss PA, Richardson L, Wright J, Petersen R. COVID-19 and chronic disease: the impact now and in the future. Prev Chronic Dis. 2021;18:E62. [FREE Full text] [doi: 10.5888/pcd18.210086] [Medline: 34138696]
73. Almandoz JP, Xie L, Schellinger JN, Mathew MS, Marroquin EM, Murvelashvili N, et al. Changes in body weight, health behaviors, and mental health in adults with obesity during the COVID-19 pandemic. Obesity (Silver Spring). 2022;30(9):1875-1886. [FREE Full text] [doi: 10.1002/oby.23501] [Medline: 35773790]

Abbreviations

AIC: Akaike information criterion
BIC: Bayesian information criterion
LCA: latent class analysis
NCD: noncommunicable disease
OR: odds ratio

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People with Suspected COVID-19 Symptoms Were More Likely Depressed and Had Lower Health-Related Quality of Life: The Potential Benefit of Health Literacy

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Abstract: The coronavirus disease 2019 (COVID-19) epidemic affects people's health and health-related quality of life (HRQoL), especially in those who have suspected COVID-19 symptoms (S-COVID-19-S). We examined the effect of modifications of health literacy (HL) on depression and HRQoL. A cross-sectional study was conducted from 14 February to 2 March 2020. 3947 participants were recruited from outpatient departments of nine hospitals and health centers across Vietnam. The interviews were conducted using printed questionnaires including participants' characteristics, clinical parameters, health behaviors, HL, depression, and HRQoL. People with S-COVID-19-S had a higher depression likelihood (OR, 2.88; $p < 0.001$), lower HRQoL-score (B, −7.92; $p < 0.001$). In comparison to people without S-COVID-19-S and low HL, those with S-COVID-19-S and low HL had 9.70 times higher depression likelihood ($p < 0.001$), 20.62 lower HRQoL-score ($p < 0.001$), for the people without S-COVID-19-S, 1 score increment of HL resulted in 5% lower depression likelihood ($p < 0.001$) and 0.45 higher HRQoL-score ($p < 0.001$), while for those people with S-COVID-19-S, 1 score increment of HL resulted in a 4% lower depression likelihood ($p = 0.004$) and 0.43 higher HRQoL-score ($p < 0.001$). People with S-COVID-19-S had a higher depression likelihood and lower HRQoL than those without. HL shows a protective effect on depression and HRQoL during the epidemic.

Keywords: coronavirus; COVID-19; epidemic; suspected COVID-19 symptoms; comorbidity; healthy eating; physical activity; health literacy; depression; health-related quality of life

1. Backgrounds

The outbreak of novel coronavirus disease (COVID-19) was first reported in December 2019 in Wuhan, China [1]. COVID-19 has been spreading to a growing number of countries and is recognized as a global health concern that has set global public health institutions on high alert [2–4]. The World Health Organization (WHO) declared the COVID-19 emergency to be the sixth public health emergency of international concern (PHEIC) on 30 January 2020 [5]. According to the report on 24 March 2020, the total number of people diagnosed with COVID-19 was 372,757 cases, with 16,231 deaths in 170 countries/regions; among these, 123 cases have been reported in Vietnam [6,7]. COVID-19 was officially declared a pandemic by WHO on 11 March 2020 [8]. Treatments and vaccines for COVID-19 are currently in development. Therefore, prevention and supportive care are highly recommended [7,9–13], especially in countries with weaker healthcare systems, as suggested by WHO director-general Tedros Adhanom Ghebreyesus [14]. Vitally, intense surveillance is emphasized to prevent the sustained transmission in new locations [15]. The public health response to prevent the spread of COVID-19 has been initiated at different levels in all countries affected [16].

The COVID-19 pandemic causes panic and mental health problems for the public [17,18], as experienced previously with the Middle-East respiratory syndrome coronavirus (MERS-CoV) [19,20]. Additionally, myths and misinformation about this epidemic, travel bans and executive orders to quarantine travelers might affect the public's psychological health [17,21,22]. This may influence people's health and quality of life. Health literacy (HL) is defined as the ability to find, understand, appraise and apply health-related information that could help healthcare systems and individuals achieve a better quality of care, lifestyle, disease management, treatment decision, and health outcomes [23,24]. Health literacy is recognized as a key factor in reducing health inequities and improving health and well-being [25,26]. Adequate HL enables health-friendly environments, efficient health policies implementation, effective health promotional efforts, better self-care, healthcare outcomes, and lower expenditures [27].

Vietnam has a long border and several bilateral communications with China [28]. This puts Vietnam at high risk for the COVID-19 pandemic. Vietnam also has the lowest health literacy score among studied Asian countries [29,30]. Health literacy is considered to be an essential element of public health practice to generate effective interventions and maximize health outcomes [31,32].

Improving health literacy is a strategic approach to preventing and controlling diseases [33]. Therefore, health professionals need to understand patients' health literacy before delivering interventions or education [34], in order to improve health-related quality of life [35,36].

People with health problems and who need to visit clinics are vulnerable populations. The COVID-19 pandemic causes panic and anxiety, which further exaggerates their health outcomes, especially for those who present at outpatient departments (OPD) with suspected COVID-19 symptoms (S-COVID-19-S). From a public health perspective, it is crucial to find the protective factors that benefit daily health-related behaviors, mental health, and quality of life. We hypothesized that people with S-COVID-19-S are more likely to have depression and lower health-related quality of life (HRQoL), while those with higher HL have better mental health and HRQoL during the COVID-19 pandemic. Therefore, we aimed to investigate the association of S-COVID-19-S with depression and HRQoL, and the effect modification of health literacy on the associations among people who visited OPDs of 9 hospitals and health centers in Vietnam.

2. Research Methods

2.1. Study Design and Settings

A cross-sectional study was conducted from 14 February to 2 March 2020. Participants were recruited from outpatient departments (OPD) of six hospitals and three health centers across Vietnam, including three hospitals and one health center in the North, one health center in the Center, and three hospitals and one health center in the South.

2.2. Sampling and Sample Size

People who visited the OPD in hospitals and health centers were invited to the survey. Studied participants were aged 18 to 85 years, understood the Vietnamese language, and were not in any emergency condition. Patients with a diagnosis of psychotic disorder, dementia, or blindness were excluded, to avoid interaction of health literacy measurements [37].

A total sample of 4029 participants was interviewed, including 500 from Thai Nguyen National Hospital in Thai Nguyen Province, 530 from the Military Medical Hospital 103 in Hanoi, 502 from Hai Phong University of Medicine and Pharmacy Hospital and 497 from Kien Thuy District Health Center in Haiphong city, 500 from Trieu Phong District Health Center, Thua Thien Hue province, 500 from Thu Duc Hospital, 250 from Tan Phu District Hospital, and 250 from Hospital District 2, and 500 from Thu Duc District Health Center in Ho Chi Minh city. After cleaning the data (82 individuals aged less than 18 or above 85 years, or with incomplete interviews, were excluded), the sample of 3947 participants was analyzed.

2.3. Research Instruments and Assessments

2.3.1. Social Demographics and Clinical Indicators

Participants were asked about the reason to visit the OPD, and screened for suspected COVID-19 symptoms (S-COVID-19-S) [38], e.g., common symptoms (fever, cough, dyspnea), and less common symptoms (myalgia, fatigue, sputum production, confusion, headache, sore throat, rhinorrhea, chest pain, hemoptysis, diarrhea, and nausea/vomiting). People presenting at OPD with any of those symptoms were classified as having S-COVID-19-S. They were also asked about age (years), gender (women vs. men), marital status (never married vs. ever married), education (elementary/illiterate, junior high school, senior high school, college/university or above), occupation (employed, own business, others), ability to pay for medication (very difficult to very easy), social status (people were asked to place themselves into the society at three levels from low, middle to high), body height (cm), weight (kg), and comorbidity. Body mass index (BMI, kg/m^2) was calculated.

2.3.2. Health-Related Behaviors

Participants were asked about the current smoking status (yes vs. no), drinking status (yes vs. no), eating behavior (less healthy or unchanged vs. healthier during the outbreak). The physical activity was assessed using the short version of the International Physical Activity Questionnaire (IPAQ) with seven items was used to evaluate the physical activity level, which was widely used [39]. Patients were asked about their time spent (days per week, and minutes per day) over the last 7 days, on different levels of physical intensity (vigorous, moderate, walking, and sitting). The IPAQ was validated and used in the Vietnamese context [40,41]. The overall physical activity was scored using a metabolic equivalent task scored in minutes per week (named as MET-min/week) [42]. The MET-min/week was calculated as the sum of minutes spent on activities at different levels of vigorous, moderate, walking, and sitting over the last seven days multiplied by 8.0, 4.0, and 3.3, 1.0, respectively [39].

2.3.3. Health Literacy

Health literacy (HL) was measured using the 12-item short form of the health literacy questionnaire (HLS-SF12), which has been validated in general populations in Asia [30], and in Vietnam [43]. Participants rated their perceived difficulty of each item on 4-point Likert scales (1 = very difficult, 2 = difficult, 3 = easy, and 4 = very easy). The HL index was standardized to unified metrics from 0 to 50 using the formula;

$$Index = (Mean - 1)*(50/3) \quad (1)$$

where *Index* is the specific index calculated, *Mean* is the mean of all participating items for each individual, *1* is the minimum possible value of the mean (leading to a minimum value of the index of 0), *3* is the range of the mean, and *50* is the chosen maximum value of the new metric. Thus, a higher HL index score represents a better HL level [44].

2.3.4. Depression

Depression was assessed using the patient health questionnaire (PHQ-9) [45]. The PHQ-9 is in use in the Vietnam context [40,46]. Participants rated each item on a 4-point Likert scale from 0 (not at all) to 3 (almost every day) over the last 2 weeks. Total PHQ-9 score ranges from 0–27. Scores ≥ 10 are classified as depression [45,47,48].

2.3.5. Health-Related Quality of Life

Health-related quality of life (HRQoL) was assessed using the 36-Item Short Form Survey (SF-36) which was developed at RAND as part of the Medical Outcomes Study [49]. This was also used in Vietnamese Americans [50]. Scoring algorithms are given in detail in the user manual [51,52]. The possible calculated scores range from 0 to 100, with a higher score representing a better HRQoL.

2.4. Data Collection Procedure

Research assistants (doctors, nurses, and medical students) received a 4 h training session on data collection by two senior researchers at each hospital or health center. The infection control training was also provided, e.g., using the mask, washing hands, positioning according to guidelines of the Centers for Disease Control and Prevention (CDC) [53], and World Health Organization (WHO) [54].

All qualified patients were invited to participate in the survey. Research assistants contacted and asked for voluntary participation from patients and relatives who visit the OPD. The consent form was obtained before administering the survey. The interviews were then conducted at the OPD. It takes about 30 min to complete the questionnaire. Finally, all the data was cleaned, keyed-in and analyzed confidentially by researchers.

2.5. Ethical Considerations

The study protocol was approved by each participating hospital, and the Institutional Ethical Review Committee of Hanoi School of Public Health, Vietnam (IRB No. 029/2020/YTCC-HD3).

2.6. Data Analysis

Firstly, descriptive analysis was used to explore the distribution of different variables. The chi-squared test and one-way ANOVA test were used, respectively. Secondly, we used bivariate and multivariate analyses to investigate the determinants of depression and HRQoL. The factors associated with depression or HRQoL at $p < 0.20$ in the bivariate model were selected into the multivariate model [55]. Finally, the interaction analysis was conducted to examine the potential benefit of health literacy on improving depression and HRQoL. The significance level was set at a p-value < 0.05. All statistical analyses were performed using the IBM SPSS Version 20.0 (IBM Corp, Armonk, NY, USA) [56].

3. Results

3.1. Participants' Characteristics

The mean age of the study population was 44.4 ± 17.0 years, with 23.5% of them aged 60 years or above. Out of all participants, 35.1% had presented at the outpatient department with suspected COVID-19 symptoms (S-COVID-19-S), 44.3% were men, and 7.4% were depressed. The mean scores of HL index and HRQoL were 29.9 ± 7.7 and 69.6 ± 17.5, respectively. The prevalence of depression was significantly higher in people with S-COVID-19-S, and varied by different groups of age, education, ability to pay for medication, social status, comorbidity, eating behavior, physical activity, and had lower HL score ($p < 0.05$; Table 1). The HRQoL score was significantly lower in the people with S-COVID-19-S, and varied by different categories of age, gender, marital status, education, occupation, ability to pay for medication, social status, comorbidity, and physical activity ($p < 0.001$; Table 1). Additionally, the HRQoL score was significantly lower in the people with depression ($p < 0.001$; Table 1).

Table 1. Participants' characteristics, health literacy index score, depression and health-related quality of life of participants.

	Total (n = 3947)	PHQ < 10 (n = 3653)	PHQ ≥ 10 (n = 294)		HRQoL	
	Frequency (%)	Frequency (%)	Frequency (%)	p [1]	Mean ± SD	p [2]
Reasons to visit OPD *				<0.001		<0.001
Without S-COVID-19-S	2560 (64.9)	2455 (67.2)	105 (35.7)		73.6 ± 15.2	
With S-COVID-19-S	1387 (35.1)	1198 (32.8)	189 (64.3)		62.1 ± 18.8	
Age, year				<0.001		<0.001
18–39	1788 (45.3)	1691 (46.3)	97 (33.0)		74.3 ± 15.6	
40–59	1231 (31.2)	1158 (31.7)	73 (24.8)		69.6 ± 17.1	
≥60	928 (23.5)	804 (22.0)	124 (42.2)		60.6 ± 17.9	
Gender				0.171		<0.001
Women	2197 (55.7)	2022 (55.4)	175 (59.5)		68.3 ± 17.7	
Men	1747 (44.3)	1628 (44.6)	119 (40.5)		71.2 ± 17.1	
Marital status				0.957		<0.001
Never married	865 (22.0)	800 (22.0)	65 (22.1)		75.3 ± 15.5	
Ever married	3070 (78.0)	2841 (78.0)	229 (77.9)		67.9 ± 17.6	
Education				<0.001		<0.001
Elementary school or Illiterate	347 (8.8)	294 (8.1)	53 (18.0)		55.1 ± 19.7	
Junior high school	869 (22.1)	820 (22.5)	49 (16.7)		68.3 ± 16.4	
Senior high school	1083 (27.5)	1021 (28.0)	62 (21.1)		72.3 ± 15.5	
College/university or above	1639 (41.6)	1509 (41.4)	130 (44.2)		71.5 ± 17.2	
Occupation				0.108		<0.001
Employed	753 (19.2)	700 (19.3)	53 (18.1)		72.6 ± 17.9	
Own business	1402 (35.7)	1311 (36.1)	91 (31.1)		69.7 ± 17.2	
Others	1770 (45.1)	1621 (44.6)	149 (50.9)		68.1 ± 17.3	
Ability to pay for medication				<0.001		<0.001
Very or fairly difficult	1764 (44.7)	1589 (43.5)	175 (59.5)		65.1 ± 17.8	
Very or fairly easy	2182 (55.3)	2063 (56.5)	119 (40.5)		73.2 ± 16.3	
Social status				<0.001		<0.001
Low	482 (12.2)	396 (10.8)	86 (29.3)		59.5 ± 18.3	
Middle or high	3464 (87.8)	3256 (89.2)	208 (70.7)		71.0 ± 16.9	
BMI, kg/m^2				0.085		0.241
Normal weight (BMI < 25.0)	3514 (89.1)	3244 (88.9)	270 (92.2)		69.5 ± 17.7	
Overweight/obese (BMI ≥ 25.0)	428 (10.9)	405 (11.1)	23 (7.8)		70.5 ± 15.6	
Comorbidity				0.034		<0.001

Table 1. *Cont.*

	Total (n = 3947)	PHQ < 10 (n = 3653)	PHQ ≥ 10 (n = 294)		HRQoL	
	Frequency (%)	Frequency (%)	Frequency (%)	p [1]	Mean ± SD	p [2]
None	3309 (84.4)	3076 (84.8)	233 (80.1)		70.8 ± 16.8	
One or more	611 (15.6)	553 (15.2)	58 (19.9)		63.3 ± 19.4	
Smoking				0.583		0.662
Smoke	471 (12.0)	433 (11.9)	38 (13.0)		69.9 ± 18.4	
No smoke	3465 (88.0)	3210 (88.1)	255 (87.0)		69.6 ± 17.3	
Drinking alcohol				0.379		0.080
Drink	1257 (32.1)	1170 (32.3)	87 (29.8)		70.3 ± 17.2	
No drink	2658 (67.9)	2453 (67.7)	205 (70.2)		69.3 ± 17.6	
Eating behavior **				<0.001		0.642
Eat less healthy or unchanged	2931(74.6)	2686 (73.9)	245 (83.6)		69.6 ± 17.8	
Eat healthier	996 (25.4)	948 (26.1)	48 (16.4)		69.9 ± 16.4	
Physical activity, MET-min/wk				<0.001		<0.001
Tertile 1 (0.0–748.5)	1314 (33.3)	1159 (31.7)	155 (52.7)		65.3 ± 19.1	
Tertile 2 (≥748.5–3399.0)	1316 (33.3)	1244 (34.1)	72 (24.5)		70.7 ± 16.1	
Tertile 3 (≥3399.0–4453.8)	1317 (33.4)	1250 (34.2)	67 (22.8)		72.7 ± 16.2	
HL index, mean ± SD	29.9 ± 7.7	30.4 ± 7.5	24.5 ± 8.4	<0.001		
HRQoL score, mean ± SD	69.6 ± 17.5	71.3 ± 16.5	48.1 ± 14.5	<0.001		

Abbreviations: PHQ, patient health questionnaire; HRQoL, health-related quality of life; SD, standard deviation; OPD, outpatient department; S-COVID-19-S, suspected corona virus disease-2019 symptoms; BMI, body mass index; MET-min/week, metabolic equivalent task scored in minute per week; HL, health literacy. [1] Result of Chi-square test. [2] Result of ANOVA test. * The suspected COVID-19 symptoms including common symptom (fever, cough, dyspnea), less common symptom (myalgia, fatigue, sputum production, confusion, headache, sore throat, rhinorrhea, chest pain, hemoptysis, diarrhea, and nausea/vomiting). ** People were asked whether their eating behavior is getting worse, better, or unchanged during COVID-19 outbreak as compared to those before the outbreak.

3.2. Depression

In the bivariate analysis, the odds of depression were significantly higher in people with S-COVID-19-S, aged 60 years or above, and with comorbidity ($p < 0.05$; Table 2). The odds of depression were significantly lower in people with higher education attainment, who found it very or fairly easy to pay for medication, with middle or high social status, who ate healthier, had more physical activity, and had a higher HL as compared to their counterparts ($p < 0.05$; Table 2). In multivariate analysis, as compared to the people without S-COVID-19-S, those people with S-COVID-19-S had a higher likelihood of depression (odds ratio, OR, 2.88; 95% confidence interval, 95%CI, 2.18, 3.80, $p < 0.001$). People with college/university or above educational attainment had higher odds of depression as compared to those people with elementary school/illiterate attainment (OR, 2.12; 95%CI, 1.34, 3.35, $p = 0.001$). In comparison to the people who had a low social status, ate less healthy or unchanged, had less physical activity (tertile 1), those people with middle or high social status (OR, 0.45; 95%CI, 0.33, 0.63, $p < 0.001$), ate healthier (OR, 0.59; 95%CI, 0.42, 0.83, $p = 0.003$), had more physical activity (OR, 0.59; 95%CI, 0.42, 0.82, $p = 0.001$ for tertile 2; OR, 0.56; 95%CI, 0.40, 0.78, $p = 0.001$ for tertile 3) had lower odds of depression, respectively (Table 2). People with higher HL score had lower odds of depression (OR, 0.91; 95%CI, 0.90, 0.93, $p < 0.001$; Table 2).

Table 2. Determinants of depression and health-related quality of life among people visiting outpatient department (n = 3947).

	Depression (PHQ ≥ 10)				HRQoL			
	Bivariate		Multivariate		Bivariate		Multivariate	
	OR (95%CI)	p	OR (95%CI)	p	B (95%CI)	p	B (95%CI)	p
Reasons to visit OPD *								
Without S-COVID-19-S	1.00		1.00		0.00		0.00	
With S-COVID-19-S	3.69 (2.88, 4.73)	<0.001	2.88 (2.18, 3.80)	<0.001	−11.53 (−12.61, −10.45)	<0.001	−7.92 (−8.95, −6.89)	<0.001
Age, year, mean ± SD								
18–39	1.00		1.00		0.00		0.00	
40–59	1.10 (0.80, 1.50)	0.554	0.81 (0.56, 1.15)	0.244	−4.71 (−5.91, −3.50)	<0.001	−0.91 (−2.11, 0.30)	0.141
≥60	2.69 (2.04, 3.55)	<0.001	1.15 (0.79, 1.68)	0.464	−13.65 (−14.96, −12.33)	<0.001	−3.60 (−5.13, −2.08)	<0.001
Gender								
Women	1.00		1.00		0.00		0.00	
Men	0.85 (0.66, 1.08)	0.171	0.92 (0.71, 1.20)	0.556	2.85 (1.76, 3.95)	<0.001	1.89 (0.82, 2.95)	0.001
Marital status								
Never married	1.00				0.00		0.00	
Ever married	0.99 (0.75, 1.32)	0.957			−7.31 (−8.61, −6.02)	<0.001	−2.82 (−4.12, −1.51)	<0.001
Education								
Elementary school or Illiterate	1.00		1.00		0.00		0.00	
Junior high school	0.33 (0.22, 0.50)	<0.001	0.72 (0.45, 1.16)	0.175	13.20 (11.11, 15.28)	<0.001	6.82 (4.85, 8.78)	< 0.001
Senior high school	0.34 (0.23, 0.50)	<0.001	1.24 (0.78, 1.99)	0.363	17.15 (15.12, 19.17)	<0.001	6.70 (4.71, 8.69)	<0.001
College/university or higher	0.48 (0.34, 0.67)	<0.001	2.12 (1.34, 3.35)	0.001	16.40 (14.45, 18.35)	<0.001	4.70 (2.66, 6.75)	<0.001
Occupation								
Employed	1.00				0.00		0.00	
Own business	0.92 (0.65, 1.30)	0.627			−2.88 (−4.42, −1.34)	<0.001	2.25 (0.73, 3.77)	0.004
Others	1.21 (0.88, 1.68)	0.243			−4.53 (−6.01, −3.05)	<0.001	0.18 (−1.26, 1.61)	0.808
Ability to pay for medication								
Very or fairly difficult	1.00		1.00		0.00		0.00	
Very or fairly easy	0.52 (0.41, 0.67)	<0.001	1.02 (0.77, 1.34)	0.909	8.13 (7.06, 9.19)	<0.001	2.75 (1.74, 3.76)	<0.001
Social status								
Low	1.00		1.00		0.00		0.00	
Middle or high	0.29 (0.22, 0.39)	<0.001	0.45 (0.33, 0.63)	<0.001	11.54 (9.92, 13.17)	<0.001	4.62 (3.09, 6.15)	<0.001
BMI, kg/m^2								
Normal weight (BMI < 25.0)	1.00		1.00		0.00			

Table 2. *Cont.*

	Depression (PHQ ≥ 10)				HRQoL			
	Bivariate		Multivariate		Bivariate		Multivariate	
	OR (95%CI)	*p*	OR (95%CI)	*p*	B (95%CI)	*p*	B (95%CI)	*p*
Overweight/obese (BMI ≥ 25.0)	0.68 (0.44, 1.06)	0.087	0.90 (0.57, 1.44)	0.669	1.05 (−0.71, 2.80)	0.241		
Comorbidity								
None	1.00		1.00		0.00		0.00	
One or more	1.39 (1.02, 1.87)	0.034	0.98 (0.69, 1.39)	0.907	−7.44 (−8.93, −5.96)	<0.001	−2.81 (−4.18, −1.45)	<0.001
Smoking								
Smoke	1.00				0.00			
No smoke	0.91 (0.64, 1.29)	0.583			−0.38 (−2.06, 1.31)	0.662		
Drinking alcohol								
Drink	1.00				0.00		0.00	
No drink	1.12 (0.87, 1.46)	0.379			−1.05 (−2.22, 0.13)	0.080	1.74 (0.61, 2.87)	0.003
Eating behavior *								
Eat less healthy or unchanged	1.00		1.00		0.00			
Eat healthier	0.56 (0.40, 0.76)	<0.001	0.59 (0.42, 0.83)	0.003	0.30 (−0.96, 1.55)	0.642		
Physical activity, MET-min/wk								
Tertile 1 (0.0–748.5)	1.00		1.00		0.00		0.00	
Tertile 2 (≥748.5–3399.0)	0.43 (0.32, 0.58)	<0.001	0.59 (0.42, 0.82)	0.001	5.44 (4.12, 6.75)	<0.001	1.11 (−0.08, 2.29)	0.067
Tertile 3 (≥3399.0–44538)	0.40 (0.30, 0.54)	<0.001	0.56 (0.40, 0.78)	0.001	7.37 (6.05, 8.68)	<0.001	2.72 (1.52, 3.92)	<0.001
HL index (1 score increment)	0.91 (0.90, 0.93)	<0.001	0.93 (0.91, 0.95)	<0.001	0.94 (0.87, 1.00)	<0.001	0.59 (0.52, 0.66)	<0.001

Abbreviations: PHQ, patient health questionnaire; HRQoL, health-related quality of life; OR, odd ratio; B, regression coefficient; CI, confidence interval; OPD, outpatient department; S-COVID-19-S, suspected corona virus disease-2019 symptoms; BMI, body mass index; MET-min/week, metabolic equivalent task scored in minute per week; HL, health literacy. * People were asked whether their eating behavior is getting worse, better, or unchanged during Covid-19 outbreak as compared to those before the outbreak.

3.3. Health-Related Quality of Life

In the bivariate analysis, the HRQoL score was significantly lower in people with S-COVID-19-S, older age, ever married, had own business or others, with comorbidity ($p < 0.05$; Table 2). The HRQoL score was significantly higher in men and in people with higher education attainment, with better ability to pay for medication, with middle or high social status, who did more physical activity, and who had higher HL as compared to their counterparts ($p < 0.05$; Table 2). In multivariate analysis, the HRQoL score was significantly lower in the people with S-COVID-19-S (regression coefficient, B, −7.92; 95% confidence interval, 95%CI, −8.95, −6.89, $p < 0.001$), aged 60 years or older (B, −3.60; 95%CI, −5.13, −2.08, $p < 0.001$), ever married (B, −2.82; 95%CI, −4.12, −1.51, $p < 0.001$), with comorbidity (B, −2.81; 95%CI, −4.18, −1.45, $p < 0.001$; Table 2). The HRQoL score was significantly higher in men (B, 1.89; 95%CI, 0.82, 2.95, $p = 0.001$), and in people with higher education attainment (B, 6.82; 95%CI, 4.85, 8.78, $p < 0.001$ for junior high school; B, 6.70; 95%CI, 4.71, 8.69, $p < 0.001$ for senior high school; and B, 4.70; 95%CI, 2.66, 6.75, $p < 0.001$ for college/university or higher), in people with their own business (B, 2.25; 95%CI, 0.73, 3.77, $p = 0.004$), in people with better ability to pay for medication (B, 2.75; 95%CI, 1.74, 3.76, $p < 0.001$), in people with middle or high social status (B, 4.62; 95%CI, 3.09, 6.15, $p < 0.001$), in people who did not drink (B, 1.74; 95%CI, 0.61, 2.87, $p = 0.003$), in those who did more physical activity (B, 2.72; 95%CI, 1.52, 3.92, $p < 0.001$ for the 3rd tertile), and in people with higher HL (B, 0.59; 95%CI, 0.52, 0.66, $p < 0.001$; Table 2).

3.4. Effect Modification of Health Literacy

The results of interaction analysis showed that as compared to people without S-COVID-19-S and low HL, those people with S-COVID-19-S and low HL had a 9.70 times higher likelihood of depression (OR, 9.70; 95%CI, 4.02, 23.41, $p < 0.001$) and a 20.62 lower HRQoL score (B, −20.62; 95%CI, −24.63, −16.62, $p < 0.001$); for people without S-COVID-19-S, 1 score increment of HL resulted in 5% lower likelihood of depression (OR, 0.95; 95%CI, 0.93, 0.97, $p < 0.001$) and 0.45 higher HRQoL score (B, 0.45; 95%CI, 0.37, 0.54, $p < 0.001$), while for those people with S-COVID-19-S, 1 score increment of HL had 4% lower likelihood of depression (OR, 0.96; 95%CI, 0.93, 0.99, $p = 0.004$) and 0.43 higher HRQoL score (B, 0.43; 95%CI, 0.30, 0.57, $p < 0.001$; Table 3). Since it is suspected that people with low HL, presenting less common symptoms only, may not suspect COVID-19 infection, we conducted a sensitivity analysis for the sample with less common symptoms excluded ($n = 700$). The results showed that the effect modification of HL on depression and HRQoL remained significant (Table S1).

Table 3. Interaction effect of suspected Covid-19 symptoms and health literacy on depression and health-related quality of life (n = 3947).

Interaction	Depression (PHQ ≥ 10)				HRQoL			
	Model 1		Model 2		Model 1		Model 2	
	OR (95%CI)	*p*	OR (95%CI)	*p*	B (95%CI)	*p*	B (95%CI)	*p*
Without S-COVID-19-S	1.00		1.00		0.00		0.00	
With S-COVID-19-S	12.09 (5.06, 28.89)	<0.001	9.70 (4.02, 23.41)	<0.001	−24.88 (−28.86, −20.90)	<0.001	−20.62 (−24.63, −16.62)	<0.001
HL index (1-score increment)	0.95 (0.93, 0.97)	<0.001	0.95 (0.93, 0.97)	<0.001	0.66 (0.58, 0.73)	<0.001	0.45 (0.37, 0.54)	<0.001
With S-COVID-19-S × HL index (1-score increment)	0.95 (0.92, 0.98)	0.001	0.96 (0.93, 0.99)	0.004	0.54 (0.41, 0.68)	<0.001	0.43 (0.30, 0.57)	<0.001

Abbreviations: PHQ, patient health questionnaire; HRQoL, health-related quality of life; OR, odd ratio; B, regression coefficient; CI, confidence interval; S-COVID-19-S, suspected corona virus disease-2019 symptoms; HL, health literacy. Model 1: interaction between S-COVID-19-S and health literacy, Model 2: interaction between S-COVID-19-S and health literacy after adjusted for education, social status, eating behavior, and physical activity, as analyzed for depression; adjusted for age, gender, marital status, education, occupation, ability to pay for medication, social status, comorbidity, drinking and physical activity as analyzed for HRQoL.

4. Discussion

The most important finding of the current study was that people with S-COVID-19-S had a higher likelihood of depression and lower HRQoL. Fortunately, those people having S-COVID-19-S and with higher HL had a low occurrence of depression and better HRQoL compared to those people with lower HL. Health literacy was found to be a protective factor for improving depression and HRQoL during the COVID-19 epidemic, especially for those who have S-COVID-19-S. To improve health literacy and control the disease and its consequences during the outbreak, governments must firstly recognize COVID-19 as an emergency public health concern [5], and find the balance between public health and civil liberties [57], as well as cultural sensitivity [58]. The government needs to provide the public with updated, timely, accurate, transparent, brief, simple information and knowledge regarding the epidemic, pathogenicity, and transmissibility which help with better controlling the disease [58,59]. In Vietnam, the leaders of the government have been leading the government in actions against COVID-19 directly [60]. The healthcare and public health communities and global and domestic public health preparedness capacity buildings need to be sustained and strengthened in order to effectively respond to the epidemic [61,62]. The ministry of health of Vietnam has been directing all healthcare institutions at all levels and collaborating with other sectors to communicate with the public, in order to prevent and control the disease [7]. These messages apply for every government, especially in Vietnam, a country with the lowest HL level among all studied Asian countries [29,30]. The main reason for the low HL level may be linked with accessibility of reliable information. Therefore, it is critical for the government and the ministry of health to provide accessible platforms with official and reliable information regarding the COVID-19 pandemic. In addition, it is suggested that people should enhance their life-long learning behaviors (e.g., watching health-related television programs, reading official websites) to improve individual health literacy [63]. The above may further contribute to preventing and controlling infectious diseases [64,65].

We also found that older people had a lower HRQoL score compared to the younger age groups. This was consistent with previous studies in Vietnam [66–68]. Furthermore, men had a better HRQoL score than women did, which was found in the current study and in previous studies [68,69]. People with comorbidities had a lower HRQoL score than those people without, which was in the line with previous studies [68,70,71]. In respiratory patients, those who suffer from at least one chronic condition were significantly associated with decreased HRQoL [72].

The present study shows that people who have attained college/university level of education or above had a higher prevalence of depression. Members of this group usually have jobs and have to work every day, while their children's schools have postponed the new semester [73]. Going to work and/or taking care of children during the pandemic creates a burden of stress which further affects their HRQoL, as found in the current study. Therefore, people with education at college/university level or above had slightly lower HRQoL as compared to those with high school levels of education [71]. Nevertheless HRQoL was still higher in people with higher levels of educational attainment in the current study and in the previous one [68]. Furthermore, people who had ever married had lower HRQoL. Logically, people who had their own businesses had better HRQoL than those who employed. In addition, participants with middle or high social status had a lower likelihood of depression and better HRQoL. People with higher social status are likely wealthier. The present study demonstrates that people with a better ability to pay for medication had better HRQoL. Similarly, previous studies have shown that higher income is positively associated with higher HRQoL in the general population [68,71].

Physical activity was positively associated with HRQoL, whereby people with more physical activity had better HRQoL [68]. Physical activity was also summarized as a protective factor of depression [74], and exercise is suggested to be an effective treatment for depression [75]. In addition, people who did not drink had better HRQoL than those who drank alcohol. The association between alcohol consumption and reduced HRQoL has been found in previous studies [76–78]. Healthy eating was associated with a lower likelihood of depression in the current study. Previous studies have elucidated that higher diet quality is associated with a lower risk of depression [79,80]. Dietary

intake has been recommended for prevention of depression [81,82]. Therefore, healthy lifestyles are highly recommended to preventing depression and improving the quality of life during the COVID-19 pandemic.

There are limitations in the current study. Firstly, the study was conducted during the global COVID-19 outbreak, and both interviewers and the studied participants were vulnerable to coronavirus infection. This requires great effort on the parts of institutions, researchers, and assistants in order to strictly follow the safety guidelines during data collection. Fortunately, there no new cases were detected during the data collection period [7]. Secondly, causal relationships cannot be determined from this cross-sectional study. The sample size was adequate for exploring the associations and interactions that provide substantial evidence and directions for future studies and public health interventions for controlling the disease.

5. Conclusions

During the global COVID-19 pandemic, people with S-COVID-19-S were more likely to have depression and low HRQoL. Meanwhile, higher HL was associated with a lower depression likelihood and higher HRQoL. Importantly, a potential benefit of HL was found in that it can help to protect the mental health and HRQoL of people with S-COVID-19-S during the pandemic. Further studies are required to explore the benefits of HL in healthcare providers and medical students. Efforts of individuals and governments to improve health literacy can significantly contribute to COVID-19 prevention and control.

Supplementary Materials: The following are available online at http://www.mdpi.com/2077-0383/9/4/965/s1, Table S1: Interaction effect of common suspected Covid-19 symptoms and health literacy on depression and health-related quality of life.

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References

1. Ren, L.-L.; Wang, Y.-M.; Wu, Z.-Q.; Xiang, Z.-C.; Guo, L.; Xu, T.; Jiang, Y.-Z.; Xiong, Y.; Li, Y.-J.; Li, X.-W.; et al. Identification of a novel coronavirus causing severe pneumonia in human: A descriptive study. *Chin. Med. J. (Engl.)* **2020**. [CrossRef] [PubMed]
2. Wang, C.; Horby, P.W.; Hayden, F.G.; Gao, G.F. A novel coronavirus outbreak of global health concern. *Lancet* **2020**, *395*, 470–473. [CrossRef]
3. Thompson, R. Pandemic potential of 2019-nCoV. *Lancet Infect. Dis.* **2020**. [CrossRef]
4. Wu, J.T.; Leung, K.; Leung, G.M. Nowcasting and forecasting the potential domestic and international spread of the 2019-nCoV outbreak originating in Wuhan, China: A modelling study. *Lancet* **2020**. [CrossRef]

5. World Health Organization (WHO). *Statement on the Second Meeting of the International Health Regulations (2005) Emergency Committee Regarding the Outbreak of Novel Coronavirus (2019-nCoV)*; WHO: Geneva, Switzerland; Available online: https://www.who.int/news-room/detail/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-(2005)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-(2019-ncov) (accessed on 30 January 2020).
6. World Health Organisation. *Coronavirus Disease (COVID-2019) Situation Reports*; WHO: Geneva, Switzerland; Available online: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports/ (accessed on 24 March 2020).
7. Ministry of Health. Coronavirus Disease (COVID-19) Outbreak in Vietnam. Available online: https://ncov.moh.gov.vn/ (accessed on 10 March 2020).
8. World Health Organisation. *WHO Director-General's Opening Remarks at the Media Briefing on COVID-19–11 March 2020*; WHO: Geneva, Switzerland; Available online: https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020 (accessed on 12 March 2020).
9. World Health Organisation. *Coronavirus Disease (COVID-19) Outbreak*; WHO: Geneva, Switzerland; Available online: https://www.who.int/emergencies/diseases/novel-coronavirus-2019 (accessed on 11 March 2020).
10. World Health Organization (WHO). *Home Care for Patients with Suspected Novel Coronavirus (nCoV) Infection Presenting with Mild Symptoms and Management of Contacts: Interim Guidance*; WHO: Geneva, Switzerland; Available online: https://www.who.int/publications-detail/home-care-for-patients-with-suspected-novel-coronavirus-(ncov)-infection-presenting-with-mild-symptoms-and-management-of-contacts (accessed on 20 January 2020).
11. World Health Organization (WHO). *Clinical Management of Severe Acute Respiratory Infection When Novel Coronavirus (nCoV) Infection is Suspected: Interim Guidance*; WHO: Geneva, Switzerland; Available online: https://www.who.int/publications-detail/clinical-management-of-severe-acute-respiratory-infection-when-novel-coronavirus-(ncov)-infection-is-suspected (accessed on 28 January 2020).
12. World Health Organization (WHO). *Infection Prevention and Control during Health Care When Novel Coronavirus (nCoV) Infection Is Suspected: Interim Guidance*; WHO: Geneva, Switzerland; Available online: https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-(ncov)-infection-is-suspected-20200125 (accessed on 25 January 2020).
13. Zhou, T.; Liu, Q.; Yang, Z.; Liao, J.; Yang, K.; Bai, W.; Lu, X.; Zhang, W. Preliminary prediction of the basic reproduction number of the Wuhan novel coronavirus 2019-nCoV. *J. Evid. Based Med.* **2020**. [CrossRef]
14. World Health Organization. *WHO Director-General's Statement on IHR Emergency Committee on Novel Coronavirus (2019-nCoV)*; WHO: Geneva, Switzerland; Available online: https://www.who.int/dg/speeches/detail/who-director-general-s-statement-on-ihr-emergency-committee-on-novel-coronavirus-(2019-ncov) (accessed on 10 February 2020).
15. Thompson, R.N. Novel Coronavirus Outbreak in Wuhan, China, 2020: Intense Surveillance Is Vital for Preventing Sustained Transmission in New Locations. *J. Clin. Med.* **2020**, *9*, 498. [CrossRef]
16. Deng, S.-Q.; Peng, H.-J. Characteristics of and Public Health Responses to the Coronavirus Disease 2019 Outbreak in China. *J. Clin. Med.* **2020**, *9*, 575. [CrossRef]
17. Bao, Y.; Sun, Y.; Meng, S.; Shi, J.; Lu, L. 2019-nCoV epidemic: Address mental health care to empower society. *Lancet* **2020**. [CrossRef]
18. Xu, Z.; Li, S.; Tian, S.; Li, H.; Kong, L.-Q. Full spectrum of COVID-19 severity still being depicted. *Lancet* **2020**. [CrossRef]
19. Jack, A. Why the panic? South Korea's MERS response questioned. *BMJ (Clin. Res. Ed.)* **2015**, *350*, h3403. [CrossRef]
20. Abdel-Moneim, A.S. Middle-East respiratory syndrome coronavirus: Is it worth a world panic? *World J. Virol.* **2015**, *4*, 185–187. [CrossRef] [PubMed]
21. Shimizu, K. 2019-nCoV, fake news, and racism. *Lancet* **2020**. [CrossRef]
22. Brooks, S.K.; Webster, R.K.; Smith, L.E.; Woodland, L.; Wessely, S.; Greenberg, N.; Rubin, G.J. The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. *Lancet* **2020**. [CrossRef]
23. Lancet. The health illiteracy problem in the USA. *Lancet* **2009**, *374*, 2028. [CrossRef]

24. Sørensen, K.; Van den Broucke, S.; Brand, H.; Fullam, J.; Doyle, G.; Pelikan, J.; Slonszka, Z. Health literacy and public health: A systematic review and integration of definitions and models. *BMC Public Health* **2012**, *12*, 80. [CrossRef]
25. Watson, R. Europeans with poor "health literacy" are heavy users of health services. *BMJ* **2011**, *343*. [CrossRef]
26. Greenhalgh, T. Health literacy: Towards system level solutions. *BMJ* **2015**, *350*, h1026. [CrossRef]
27. Ishikawa, H.; Yano, E. Patient health literacy and participation in the healthcare process. *Health Expect.* **2008**, *11*, 113–122. [CrossRef]
28. The World Bank. *Country Profile: Vietnam*; World Bank Group: Washington, DC, USA; Available online: https://data.worldbank.org/country/vietnam (accessed on 8 August 2019).
29. Duong, T.V.; Aringazina, A.; Baisunova, G.; Pham, T.V.; Pham, K.M.; Truong, T.Q.; Nguyen, K.T.; Oo, W.M.; Mohamad, E.; Su, T.T.; et al. Measuring health literacy in Asia: Validation of the HLS-EU-Q47 survey tool in six Asian countries. *J. Epidemiol.* **2017**, *27*, 80–86. [CrossRef]
30. Duong, T.V.; Aringazina, A.; Baisunova, G.; Nurjanah, N.; Pham, T.V.; Pham, K.M.; Truong, T.Q.; Nguyen, K.T.; Oo, W.M.; Su, T.T.; et al. Development and validation of a new short-form health literacy instrument (HLS-SF12) for the general public in six Asian countries. *Health Lit. Res. Pract.* **2019**, *3*, e91–e102. [CrossRef]
31. Rudd, R.E. Health literacy skills of US adults. *Am. J. Health Behav.* **2007**, *31*, S8–S18. [CrossRef] [PubMed]
32. Mackert, M. Introduction to a Colloquium: Challenges and Opportunities in Advancing Health Literacy Research. *Health Commun.* **2015**, *30*, 1159–1160. [CrossRef] [PubMed]
33. Qin, L.; Xu, H. A cross-sectional study of the effect of health literacy on diabetes prevention and control among elderly individuals with prediabetes in rural China. *BMJ Open* **2016**, *6*, e011077. [CrossRef] [PubMed]
34. Raynor, D.K. Health literacy. *BMJ* **2012**, *344*, e2188. [CrossRef]
35. Hu, Z.; Qin, L.; Xu, H. Association between diabetes-specific health literacy and health-related quality of life among elderly individuals with pre-diabetes in rural Hunan Province, China: A cross-sectional study. *BMJ Open* **2019**, *9*, e028648. [CrossRef]
36. Kugbey, N.; Meyer-Weitz, A.; Oppong Asante, K. Access to health information, health literacy and health-related quality of life among women living with breast cancer: Depression and anxiety as mediators. *Patient Educ. Couns.* **2019**, *102*, 1357–1363. [CrossRef]
37. Kirk, J.K.; Grzywacz, J.G.; Arcury, T.A.; Ip, E.H.; Nguyen, H.T.; Bell, R.A.; Saldana, S.; Quandt, S.A. Performance of health literacy tests among older adults with diabetes. *J. Gen. Intern. Med.* **2012**, *27*, 534–540. [CrossRef]
38. Editorial Team. Overview of Novel Coronavirus (2019-nCoV). BMJ Best Practice. Available online: https://bestpractice.bmj.com/topics/en-gb/3000165 (accessed on 10 February 2020).
39. Craig, C.L.; Marshall, A.L.; Sjöström, M.; Bauman, A.E.; Booth, M.L.; Ainsworth, B.E.; Pratt, M.; Ekelund, U.; Yngve, A.; Sallis, J.F.; et al. International physical activity questionnaire: 12-country reliability and validity. *Med. Sci. Sports Exerc.* **2003**, *35*, 1381–1395. [CrossRef]
40. Pham, T.; Bui, L.; Nguyen, A.; Nguyen, B.; Tran, P.; Vu, P.; Dang, L. The prevalence of depression and associated risk factors among medical students: An untold story in Vietnam. *PLoS ONE* **2019**, *14*, e0221432. [CrossRef]
41. Tran, D.V.; Lee, A.H.; Au, T.B.; Nguyen, C.T.; Hoang, D.V. Reliability and validity of the International Physical Activity Questionnaire-Short Form for older adults in Vietnam. *Health Promot. J. Aust.* **2013**, *24*, 126–131. [CrossRef]
42. Lee, P.H.; Macfarlane, D.J.; Lam, T.H.; Stewart, S.M. Validity of the international physical activity questionnaire short form (IPAQ-SF): A systematic review. *Int. J. Behav. Nutr. Phys. Act.* **2011**, *8*, 115. [CrossRef] [PubMed]
43. Duong, T.V.; Nguyen, T.T.P.; Pham, K.M.; Nguyen, K.T.; Giap, M.H.; Tran, T.D.X.; Nguyen, C.X.; Yang, S.-H.; Su, C.-T. Validation of the Short-Form Health Literacy Questionnaire (HLS-SF12) and Its Determinants among People Living in Rural Areas in Vietnam. *Int. J. Environ. Res. Public Health* **2019**, *16*, 3346. [CrossRef] [PubMed]
44. HLS-EU Consortium. *Comparative Report of Health Literacy in Eight EU Member States. The European Health Literacy Project 2009–2012*; Maastricht University: Maastricht, The Netherlands; Available online: https://www.healthliteracyeurope.net/hls-eu (accessed on 22 October 2012).
45. Kroenke, K.; Spitzer, R.L.; Williams, J.B.W. The PHQ-9: Validity of a brief depression severity measure. *J. Gen. Intern. Med.* **2001**, *16*, 606–613. [CrossRef] [PubMed]

46. Nguyen, T.Q.; Bandeen-Roche, K.; Bass, J.K.; German, D.; Nguyen, N.T.T.; Knowlton, A.R. A tool for sexual minority mental health research: The Patient Health Questionnaire (PHQ-9) as a depressive symptom severity measure for sexual minority women in Viet Nam. *J. Gay Lesbian Ment. Health* **2016**, *20*, 173–191. [CrossRef]
47. Manea, L.; Gilbody, S.; McMillan, D. A diagnostic meta-analysis of the Patient Health Questionnaire-9 (PHQ-9) algorithm scoring method as a screen for depression. *Gen. Hosp. Psychiatry* **2015**, *37*, 67–75. [CrossRef]
48. Levis, B.; Benedetti, A.; Thombs, B.D. Accuracy of Patient Health Questionnaire-9 (PHQ-9) for screening to detect major depression: Individual participant data meta-analysis. *BMJ* **2019**, *365*, l1476. [CrossRef]
49. Hays, R.D.; Morales, L.S. The RAND-36 measure of health-related quality of life. *Ann. Med.* **2001**, *33*, 350–357. [CrossRef]
50. Ngo-Metzger, Q.; Sorkin, D.H.; Mangione, C.M.; Gandek, B.; Hays, R.D. Evaluating the SF-36 Health Survey (Version 2) in Older Vietnamese Americans. *J. Aging Health* **2008**, *20*, 420–436. [CrossRef]
51. Hays, R.D.; Kallich, J.; Mapes, D.; Coons, S.; Amin, N.; Carter, W.B.; Kamberg, C. *Kidney Disease Quality of Life Short Form (KDQOL-SF), Version 1.3: A Manual for Use and Scoring*; RAND Corporation: Santa Monica, CA, USA, 1997.
52. Hays, R.D.; Sherbourne, C.D.; Mazel, R.M. The RAND 36-Item Health Survey 1.0. *Health Econ.* **1993**, *2*, 217–227. [CrossRef]
53. National Center for Immunization and Respiratory Diseases (NCIRD). *What Healthcare Personnel Should Know about Caring for Patients with Confirmed or Possible 2019-nCoV Infection*; Centers for Disease Control and Prevention: Atlanta, GA, USA. Available online: https://www.cdc.gov/coronavirus/2019-ncov/hcp/caring-for-patients.html (accessed on 7 February 2020).
54. World Health Organization (WHO). *Novel Coronavirus (2019-nCoV) Technical Guidance*; WHO: Geneva, Switzerland; Available online: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance (accessed on 10 February 2020).
55. Maldonado, G.; Greenland, S. Simulation Study of Confounder-Selection Strategies. *Am. J. Epidemiol.* **1993**, *138*, 923–936. [CrossRef]
56. IBM SPSS. *IBM SPSS Statistics for Windows, Version 20.0*; IBM Corp: New York, NY, USA, 2011.
57. Gostin, L.O.; Hodge, J.G., Jr. US Emergency Legal Responses to Novel Coronavirus: Balancing Public Health and Civil Liberties. *JAMA* **2020**, *323*, 1131–1132. [CrossRef] [PubMed]
58. Wang, C.J.; Ng, C.Y.; Brook, R.H. Response to COVID-19 in Taiwan: Big Data Analytics, New Technology, and Proactive Testing. *JAMA* **2020**. [CrossRef]
59. Chen, J. Pathogenicity and Transmissibility of 2019-nCoV-A Quick Overview and Comparison with Other Emerging Viruses. *Microbes Infect.* **2020**. [CrossRef] [PubMed]
60. The Government of the Socialist Republic of Vietnam. Government in Action. Hanoi, Vietnam, Online Newspaper of the Government. Available online: http://news.chinhphu.vn/Home/Government-in-action.vgp (accessed on 24 January 2020).
61. Smith, N.; Fraser, M. Straining the System: Novel Coronavirus (COVID-19) and Preparedness for Concomitant Disasters. *Am. J. Public Health* **2020**, e1–e2. [CrossRef] [PubMed]
62. Adalja, A.A.; Toner, E.; Inglesby, T.V. Priorities for the US Health Community Responding to COVID-19. *JAMA* **2020**. [CrossRef]
63. Duong, T.V.; Sørensen, K.; Pelikan, J.; Van den Broucke, S.; Lin, I.F.; Lin, Y.-C.; Huang, H.-L.; Chang, P.W. Health-related behaviors moderate the association between age and self-reported health literacy among Taiwanese women. *Women Health* **2017**, *58*, 632–646. [CrossRef]
64. Sun, X.; Yang, S.; Fisher, E.B.; Shi, Y.; Wang, Y.; Zeng, Q.; Ji, Y.; Chang, C.; Du, W. Relationships of Health Literacy, Health Behavior, and Health Status Regarding Infectious Respiratory Diseases: Application of a Skill-Based Measure. *J. Health Commun.* **2014**, *19*, 173–189. [CrossRef]
65. Castro-Sánchez, E.; Chang, P.W.S.; Vila-Candel, R.; Escobedo, A.A.; Holmes, A.H. Health literacy and Infectious Diseases: Why does it matter? *Int. J. Infect. Dis.* **2016**, *43*, 103–110. [CrossRef]
66. Huong, N.T.; Ha, L.T.H.; Tien, T.Q. Determinants of Health-Related Quality of Life Among Elderly: Evidence From Chi Linh Town, Vietnam. *Asia Pac. J. Public Health* **2017**, *29*, 84S–93S. [CrossRef]
67. Hoi, L.V.; Chuc, N.T.; Lindholm, L. Health-related quality of life, and its determinants, among older people in rural Vietnam. *BMC Public Health* **2010**, *10*, 549. [CrossRef]

68. Ha, N.T.; Duy, H.T.; Le, N.H.; Khanal, V.; Moorin, R. Quality of life among people living with hypertension in a rural Vietnam community. *BMC Public Health* **2014**, *14*, 833. [CrossRef] [PubMed]
69. Pham, T.; Nguyen, N.T.T.; ChieuTo, S.B.; Pham, T.L.; Nguyen, T.X.; Nguyen, H.T.T.; Nguyen, T.N.; Nguyen, T.H.T.; Nguyen, Q.N.; Tran, B.X.; et al. Sex Differences in Quality of Life and Health Services Utilization among Elderly People in Rural Vietnam. *Int. J. Environ. Res. Public Health* **2018**, *16*, 69. [CrossRef] [PubMed]
70. Nguyen, H.V.; Tran, T.T.; Nguyen, C.T.; Tran, T.H.; Tran, B.X.; Latkin, C.A.; Ho, C.S.H.; Ho, R.C.M. Impact of Comorbid Chronic Conditions to Quality of Life among Elderly Patients with Diabetes Mellitus in Vietnam. *Int. J. Environ. Res. Public Health* **2019**, *16*, 531. [CrossRef] [PubMed]
71. Nguyen, L.H.; Tran, B.X.; Hoang Le, Q.N.; Tran, T.T.; Latkin, C.A. Quality of life profile of general Vietnamese population using EQ-5D-5L. *Health Qual. Life Outcomes* **2017**, *15*, 199. [CrossRef]
72. Ngo, C.Q.; Phan, P.T.; Vu, G.V.; Pham, Q.L.T.; Nguyen, L.H.; Vu, G.T.; Tran, T.T.; Nguyen, H.L.T.; Tran, B.X.; Latkin, C.A.; et al. Effects of Different Comorbidities on Health-Related Quality of Life among Respiratory Patients in Vietnam. *J. Clin. Med.* **2019**, *8*, 214. [CrossRef]
73. Ministry of Education and Training. Postpone the New Semester to Prevent Covid-19 Outbreak in 63/63 Cities and Provinces. Available online: https://moet.gov.vn/tintuc/Pages/phong-chong-nCoV.aspx?ItemID=6454 (accessed on 11 March 2020).
74. Mammen, G.; Faulkner, G. Physical activity and the prevention of depression: A systematic review of prospective studies. *Am. J. Prev. Med.* **2013**, *45*, 649–657. [CrossRef]
75. Kvam, S.; Kleppe, C.L.; Nordhus, I.H.; Hovland, A. Exercise as a treatment for depression: A meta-analysis. *J. Affect. Disord.* **2016**, *202*, 67–86. [CrossRef]
76. Santos, M.V.F.D.; Campos, M.R.; Fortes, S.L.C.L. Relationship of alcohol consumption and mental disorders common with the quality of life of patients in primary health care. *Cien. Saude Colet.* **2019**, *24*, 1051–1063. [CrossRef]
77. Daeppen, J.-B.; Faouzi, M.; Sanchez, N.; Rahhali, N.; Bineau, S.; Bertholet, N. Quality of life depends on the drinking pattern in alcohol-dependent patients. *Alcohol Alcohol.* **2014**, *49*, 457–465. [CrossRef]
78. Levola, J.; Aalto, M.; Holopainen, A.; Cieza, A.; Pitkänen, T. Health-related quality of life in alcohol dependence: A systematic literature review with a specific focus on the role of depression and other psychopathology. *Nord. J. Psychiatry* **2014**, *68*, 369–384. [CrossRef]
79. Molendijk, M.; Molero, P.; Ortuño Sánchez-Pedreño, F.; Van der Does, W.; Angel Martínez-González, M. Diet quality and depression risk: A systematic review and dose-response meta-analysis of prospective studies. *J. Affect. Disord.* **2018**, *226*, 346–354. [CrossRef] [PubMed]
80. Li, Y.; Lv, M.-R.; Wei, Y.-J.; Sun, L.; Zhang, J.-X.; Zhang, H.-G.; Li, B. Dietary patterns and depression risk: A meta-analysis. *Psychiatry Res.* **2017**, *253*, 373–382. [CrossRef] [PubMed]
81. Opie, R.S.; Itsiopoulos, C.; Parletta, N.; Sanchez-Villegas, A.; Akbaraly, T.N.; Ruusunen, A.; Jacka, F.N. Dietary recommendations for the prevention of depression. *Nutr. Neurosci.* **2017**, *20*, 161–171. [CrossRef] [PubMed]
82. Martínez-González, M.A.; Sánchez-Villegas, A. Food patterns and the prevention of depression. *Proc. Nutr. Soc.* **2016**, *75*, 139–146. [CrossRef] [PubMed]

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Article

Osteoporosis Risk in Hemodialysis Patients: The Roles of Gender, Comorbidities, Biochemical Parameters, Health and Diet Literacy

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Abstract: Osteoporosis is a common bone health disorder in hemodialysis patients that is linked with a higher morbidity and mortality rate. While previous studies have explored the associated factors of osteoporosis, there is a lack of studies investigating the impacts of health literacy (HL) and digital healthy diet literacy (DDL) on osteoporosis. Therefore, we aimed to investigate the associations of HL, DDL, and other factors with osteoporosis among hemodialysis patients. From July 2020 to March 2021, a cross-sectional study was conducted on 675 hemodialysis patients in eight hospitals in Vietnam. The data were collected by using the osteoporosis self-assessment tool for Asians (OSTA) and the 12-item short form of the health literacy questionnaire (HLS-SF12) on digital healthy diet literacy (DDL) and hemodialysis dietary knowledge (HDK). In addition, we

also collected information about the socio-demographics, the clinical parameters, the biochemical parameters, and physical activity. Unadjusted and adjusted multinomial logistic regression models were utilized in order to investigate the associations. The proportion of patients at low, medium, and high levels of osteoporosis risk was 39.6%, 40.6%, and 19.8%, respectively. In the adjusted models, women had a higher likelihood of osteoporosis risk than men (odds ratio, OR, 3.46; 95% confidence interval, 95% CI, 1.86, 6.44; $p < 0.001$; and OR, 6.86; 95% CI, 2.96, 15.88; $p < 0.001$). The patients with rheumatoid arthritis (OR, 4.37; 95% CI, 1.67, 11.52; $p = 0.003$) and stomach ulcers (OR, 1.95; 95% CI, 1.01, 3.77; $p = 0.048$) were more likely to have a higher likelihood of osteoporosis risk than those without. The patients who had a higher waist circumference (WC), HL, and DDL were less likely to have a medium level of osteoporosis risk (OR, 0.95; 95% CI, 0.92, 0.98; $p = 0.004$; OR, 0.92; 95% CI, 0.88, 0.96; $p < 0.001$; OR, 0.96; 95% CI, 0.93, 0.99; $p = 0.017$, respectively) and a high level of osteoporosis risk (OR, 0.93; 95% CI, 0.89, 0.97; $p = 0.001$; OR, 0.89; 95% CI, 0.84, 0.94; $p < 0.001$; OR, 0.95; 95% CI, 0.91, 0.99; $p = 0.008$, respectively) compared with a low level of osteoporosis risk and to those with a lower WC, HL, and DDL. In addition, higher levels of hemoglobin (Hb) (OR, 0.79; 95% CI, 0.66, 0.95; $p = 0.014$), hematocrit (Hct) (OR, 0.95; 95% CI, 0.92, 0.99; $p = 0.041$), albumin (OR, 0.91; 95% CI, 0.83, 0.99; $p = 0.030$), and education (OR, 0.37; 95% CI, 0.16, 0.88; $p = 0.025$) were associated with a lower likelihood of a high level of osteoporosis risk. In conclusion, osteoporosis risk is highly prevalent in hemodialysis patients. Improved HL, DDL, education, WC, albumin, Hb, and Hct levels should be considered in preventing hemodialysis patients from developing osteoporosis.

Keywords: hemodialysis; osteoporosis; fracture; health literacy; digital healthy diet literacy; comorbidities; biochemical parameters; detection; prevention; Vietnam

1. Introduction

End-stage renal disease is a global health crisis [1,2]. The worldwide use of renal replacement therapies has increased remarkably from 2618 million people in 2010 to an estimated 5439 million people by 2030 [1]. Among the treatment modalities, hemodialysis is the most common in most countries, including Vietnam [2,3].

Osteoporosis is "a skeletal condition characterized by decreased density (mass/volume) of normally mineralized bone", which leads to a high risk of fracture [4]. Osteoporosis is observed in a large number of hemodialysis patients, ranging from 23% to 41% [5–7]. The consequences of osteoporosis, such as the increased risk of fracture and the greater morbidity and mortality rate, have been documented in the literature [8,9]. Therefore, osteoporosis should be taken into account in the management of hemodialysis patients in order to reduce the burdens on the healthcare system and patients.

There are many factors that may contribute to an increased osteoporosis risk in chronic kidney patients, including abnormal biochemical markers (e.g., calcium, phosphorus, vitamin D, and parathyroid hormone), inflammatory cytokines status, sarcopenia, corticoid use, and lifestyle [10–13]. Factors that are associated with osteoporosis in pre-dialysis or hemodialysis patients have been found in previous studies, e.g., being female, being of an older age, and having a low body mass index [7,14,15]. Abdominal obesity was found to be a preventable factor for osteoporosis risk in hemodialysis patients [16].

Health literacy (HL) and digital healthy diet literacy (DDL) are defined as the individual's capacity to find, understand, appraise, and apply the information that is related to health and digital-healthy-diet-related information in order to prevent disease, to improve healthy eating behavior, and to promote health outcomes [17,18]. The benefits of adequate health literacy in hemodialysis patients have been reported in prior studies, such as improved fluid management and psychological health [19,20]. However, there is limited information about the impacts of health literacy and digital healthy diet literacy on osteoporosis risk in hemodialysis patients. Meanwhile, insufficient health literacy has been associated with a lower adoption rate of osteoporosis-preventive behaviors [21], as well as a higher non-adherence to osteoporosis treatment [22].

Therefore, we conducted a multi-center study in order to explore the associated factors of osteoporosis in hemodialysis patients, where the roles of gender, comorbidities, biochemical parameters, HL, and DDL were emphasized. We hypothesized that the patients with higher HL and DDL, and greater levels in some biochemical components, had a lower likelihood of osteoporosis, whereas being female and living with comorbidities had an increased likelihood of osteoporosis.

2. Materials and Methods

2.1. Study Design and Sample

A cross-sectional study was conducted from July 2020 to March 2021. A total of 1048 eligible participants who were being treated at hemodialysis centers from eight hospitals in Vietnam were recruited, including Bai Chay Hospital (n = 81), Quang Ninh General Hospital (n = 103), Hai Phong International Hospital (n = 43), Hai Phong University of Medicine and Pharmacy Hospital (n = 82), Bach Mai Hospital (n = 251), Military Hospital 103 (n = 147), General Hospital of Agricultural(n = 171), and National Thai Nguyen Hospital (n = 170). A sample of 675 participants (who were aged 45 years or older, had received hemodialysis treatment for at least three months, and were able to communicate in Vietnamese) was analyzed.

2.2. Measurements

2.2.1. The Risk of Osteoporosis

The osteoporosis self-assessment tool for Asians (OSTA) was used to evaluate the risk of osteoporosis. Koh et al. (2001) developed OSTA to screen the fracture risk among postmenopausal women in Asia. This self-assessment tool was not only applied to women, but also to men at risk of osteoporosis [23]. The OSTA score was calculated using Formula (1). Our present study used the dry weight of the participants to calculate the OSTA score.

$$\text{OSTA score} = [\text{weight (kg)} - \text{age (year)}] \times 0.2 \quad (1)$$

The risk of osteoporosis was classified into three groups, in which a score > -1 presents a low risk, a score between -4 and -1 presents a medium risk, and a score < -4 presents a high risk [24].

The OSTA has been reported to be an acceptable tool in detecting the fracture risk and osteoporosis risk in hemodialysis patients [25]. It has also been tested in the Vietnamese population and has shown high sensitivity and specificity, at 74.6% and 81.4%, respectively [26].

2.2.2. Socio-Demographics

The socio-demographic information was collected, including the age (year), gender (men vs. women), marital status (living with/without partner), educational status (illiterate or elementary, junior high school, and senior high school or above), occupation (working vs. not working), social status (low vs. medium or high), ability to pay for medication (very or fairly difficult vs. very or fairly easy), dry weight (kg), and hemodialysis vintage (years).

2.2.3. Clinical Parameters

The clinical parameters were assessed, including comorbid conditions such as rheumatoid arthritis, stomach ulcers, and suspected COVID-19 symptoms (S-COVID19-S), waist circumference after dialysis (cm), and diuretic usage. The participants were screened and categorized as having S-COVID-19-S if they experienced any of the following symptoms: fever, cough, fatigue, dyspnea, myalgia, sputum production/expectoration, sore throat, running nose, confusion, headache, chest pain, rhinorrhea, diarrhea, and/or nausea/vomiting [27].

2.2.4. Biochemical Parameters

The laboratory indicators were collected using chart review, including Hb (g/dL); mean corpuscular volume, MCV (fL); Hct (%); blood cells (white blood cells, $10^3/\mu L$; red blood cells, $10^6/\mu L$; platelet, $10^3/\mu L$); albumin (mg/dL); serum electrolytes (K^+, mEq/L; Na^+ and Cl^-, mmol/L); phosphates (mg/dL); and parathyroid hormone (pg/mL).

2.2.5. Physical Activities

The level of physical activity was measured using the international physical activity questionnaire, short version [28]. The tool was validated and used in Vietnam [20,29]. The patients rated their time spent on four daily activities, including sitting, walking, moderate, and vigorous physical activities throughout the last seven days. The overall physical activity score was calculated as per the instructions from previous studies [20,28].

2.2.6. Health Literacy, Digital Healthy Diet Literacy, and Hemodialysis Diet Knowledge

The 12-item short form of the health literacy questionnaire (HLS-SF12) [30,31] and the digital healthy diet literacy (DDL-4) [18] were used to assess the HL and DDL of the participants. These scales have been validated and widely used in the Vietnamese population [18,30,32,33]. The participants chose one of four options to describe their difficulty for each question, in which, "1" was "very difficult" "2" was "fairly difficult", "3" was "fairly easy", and "4" was "very easy". The HL and DDL indices were calculated using Formula (2). The higher index scores present the better HL or DDL levels [18,34].

$$\text{Index} = (\text{Mean} - 1) \times (50/3) \quad (2)$$

where *Index* is the specific index calculated, *Mean* is the mean of all participating items for each individual, 1 is the minimal possible value of the mean (leading to a minimum value of the index of 0), 3 is the range of the mean, and 50 is the chosen maximum value.

In addition, we used the hemodialysis dietary knowledge (HDK) scale to investigate the participants' knowledge about the hemodialysis diet. This scale contains ten questions about protein, potassium, phosphorus, sodium, and water [35]. There are three possible options, including "correct," "incorrect," and "not sure". The correct answer was categorized as "correct", while incorrect or "not sure" answers were categorized as "incorrect". The possible HDK score varies from 0 to 10, in which a higher score indicates better knowledge. The psychometric testing of HDK was conducted in a previous study [20].

2.3. Data Collection Procedure

The research assistants, including doctors, nurses, and medical students, collected the data after receiving a 4-h training session by two senior researchers at each hospital. Safety guidance for the prevention and control of COVID-19 was also provided during the training, including wearing masks, washing hands, and maintaining physical distance [36].

Participation in this study was completely voluntary. After receiving the consent forms, face-to-face interviews were conducted on patients at the hemodialysis departments. It took about 20–30 min to complete the questionnaire. Then, the research assistants collected information related to the clinical and biochemical parameters from medical records. Finally, all of the data were coded, cleaned, and analyzed confidentially by the researchers.

2.4. Data Analysis

Frequency and percentage were used for a categorical variable, while mean and standard deviation were used for a continuous variable using the chi-square test and one-way ANOVA appropriately. For the non-normal distributed variables, median and interquartile range were reported using the Kruskal–Wallis test. The unadjusted and adjusted models were performed by multinomial logistic regression to identify the associated factors of osteoporosis risks (using the low risk group as the reference). Only the factors with $p < 0.20$ in

the unadjusted model were selected into the adjusted model [37]. In the adjusted model, each factor in each subgroup was adjusted by other factors in other subgroups. The correlations among the independent variables were checked prior to running the multinomial logistic regression to determine if these variables were highly correlated. The Spearman correlation coefficients of these variables that were less than 0.3 were accepted to be added to the adjusted model (Supplementary Table S1). All statistical analyses were performed using IBM SPSS Version 26.0 (IBM Corp., Armonk, NY, USA). Statistical significance was established at $p < 0.05$.

3. Results

3.1. Participants' Socio-Demographics

The participants' characteristics are described in Table 1. Of the 675 patients, 337 (50.1%) were male and 336 (49.9%) were female, with a mean age of 61.1 ± 9.6. Overall, the prevalence of osteoporosis risks at low, medium, and high levels were 39.6%, 40.6%, and 19.8%, respectively. The prevalence of low, medium, and high risks of osteoporosis was significantly different in some variables in the groups of socio-demographics (gender, education level, marital status, and medication payment ability); the clinical parameters (rheumatoid arthritis, waist circumference, and diuretic usage); the biochemical parameters (level of serum albumin); and the health literacy and digital health diet literacy ($p < 0.05$).

Table 1. Patients' characteristics and OSTA (n = 675).

Variables	Total n (%)	OSTA			*p*
		Low (n;% = 267; 39.6)	Medium (n;% = 274; 40.6)	High (n;% = 134; 19.8)	
Socio-demographics					
Gender					<0.001 [a]
Male	337 (50.1)	176 (65.9)	119 (43.6)	42 (31.6)	
Female	336 (49.9)	91 (34.1)	154 (56.4)	91 (68.4)	
Education					0.001 [a]
Illiterate or elementary	316 (50.5)	101 (41.4)	142 (55.7)	73 (57.5)	
Junior high school	182 (29.1)	91 (31.3)	67 (26.3)	24 (18.9)	
Senior high school or above	128(20.4)	52 (21.3)	46 (18.0)	30 (23.6)	
Working status					0.660 [a]
Not working	249 (36.9)	93 (34.8)	104 (38.0)	52.0 (38.8)	
Working	426 (63.1)	174 (65.2)	170 (62.0)	82 (61.2)	
Marital status					0.009 [a]
Without partner	52 (7.8)	13 (4.9)	21 (7.8)	18 (13.6)	
With partner	616 (92.2)	253 (95.1)	249 (92.2)	114 (86.4)	
Social status					0.318 [a]
Low	198 (29.3)	70 (26.2)	88 (32.1)	40 (29.9)	
Middle and high	477 (70.7)	197 (73.8)	186 (67.9)	94 (70.1)	
Medication payment ability					0.035 [a]
Very or fairly difficult	521 (782)	219 (82.3)	209 (77.7)	93 (71.0)	
Very or fairly easy	145 (21.8)	47 (17.7)	60 (22.3)	38 (29.0)	
Hemodialysis vintage, years (Median, IQR)	4.4 (2.2, 7.9)	4.4 (2.4, 7.9)	4.4 (2.4, 8.2)	4.2 (2.0, 7.9)	0.966 [b]

Table 1. *Cont.*

Variables	Total n (%)	OSTA			*p*
		Low (n;% = 267; 39.6)	Medium (n;% = 274; 40.6)	High (n;% = 134; 19.8)	
Clinical Parameters					
S-COVID-19-S					0.057 [a]
Without S-COVID-19-S	204 (30.2)	94 (35.2)	77 (28.1)	33 (24.6)	
With S-COVID-19-S	471 (69.8)	173 (64.8)	197 (71.9)	101 (74.4)	
Rheumatoid arthritis					<0.001 [a]
No	606 (89.8)	251 (94.0)	248 (90.5)	107 (79.9)	
Yes	69 (10.2)	16 (6.0)	26 (9.5)	27 (20.1)	
Stomach ulcers					0.068 [a]
No	538 (79.7)	224 (83.9)	208 (75.9)	106 (79.1)	
Yes	137 (20.3)	43 (16.1)	66 (24.1)	28 (20.9)	
Diuretic usage					0.002 [a]
No	351 (73.1)	156 (81.3)	135 (69.9)	60 (63.2)	
Yes	129 (26.9)	36 (18.8)	58 (30.1)	35 (36.8)	
HBsAg					0.853 [a]
Negative	425 (91.6)	164 (91.6)	170 (90.9)	91 (92.9)	
Positive	39 (8.4)	15 (8.4)	17 (9.1)	7 (7.1)	
HCV					0.678 [a]
Negative	330 (71.1)	127 (70.9)	130 (69.5)	73 (74.5)	
Positive	134 (28.9)	52 (29.1)	57 (30.5)	25 (25.5)	
WC, cm (Mean ± SD)	76.9 ± 9.9	78.9 ± 9.7	75.7 ± 9.8	75.5 ±10.4	0.001 [c]
Biochemical parameters					
Hb, g/dL (Median, IQR)	9.7 (8.4, 11.1)	9.8 (8.6, 11.1)	9.8 (8.3, 11.3)	9.4 (7.9, 10.7)	0.064 [b]
WBC, $10^3/\mu L$ (Median, IQR)	5.9 (4.5, 7.3)	5.8 (4.5, 7.0)	6.0 (4.5, 7.5)	6.0 (4.6, 7.4)	0.606 [b]
RBC, $10^6/\mu L$ (Median, IQR)	3.3 (2.7, 3.7)	3.3 (2.8, 3.8)	3.3 (2.7, 3.8)	3.1 (2.7, 3.7)	0.593 [b]
MCV, fL (Median, IQR)	90.0 (83.0, 94.6)	89.7 (83.4, 94.2)	89.9 (80.7, 94.1)	91.6 (85.3, 95.9)	0.099 [b]
Hct, % (Mean ± SD)	30.0 ± 5.8	30.1 ± 5.3	30.5 ± 6.3	28.9 ± 5.7	0.095 [c]
PLT, $10^3/\mu L$ (Median, IQR)	205.0 (163.0, 245.0)	197.0 (163.0, 236.0)	206.0 (168.0, 252.0)	208.0 (157.0, 251.0)	0.200 [b]
PO_4, mg/dL (Median, IQR)	1.8 (1.4, 2.6)	1.8 (1.4, 2.4)	1.7 (1.4, 2.8)	2.0 (1.3, 3.4)	0.800[b]
PTH, pg/mL (Median, IQR)	23.9 (16.4, 45.8)	23.4 (16.5, 43.5)	25.2 (14.1, 46.5)	25.2 (19.1, 51.0)	0.568 [b]
K^+, mEq/L (Mean ± SD)	4.2 ± 0.9	4.2 ± 0.9	4.3 ± 0.9	4.2 ± 0.8	0.817 [c]
Na^+, mmol/L (Mean ± SD)	135.9 ± 4.7	136.3 ± 3.1	135.7 ± 5.3	135.9 ± 5.9	0.518 [c]
Cl^-, mmol/L (Mean ± SD)	97.8 ± 5.1	97.3 ± 4.4	97.9 ± 5.9	98.5 ± 4.7	0.193 [c]
Albumin, mg/dL (Mean ± SD)	38.7 ± 5.6	39.3 ± 6.3	38.7 ± 4.9	37.3 ± 5.6	0.047 [c]
Physical activity, MET-min/wk					0.895 [a]
Tertile 1 (MET ≤ 180)	168 (33.5)	67 (34.5)	68 (33.0)	33 (32.4)	
Tertile 2 (180 < MET ≤ 723)	164 (32.7)	59 (30.4)	72 (35.0)	33 (32.4)	
Tertile 3 (MET > 723)	170 (33.9)	68 (35.1)	66 (32.0)	36 (35.3)	

Table 1. *Cont.*

Variables	Total n (%)	OSTA			*p*
		Low (n;% = 267; 39.6)	Medium (n;% = 274; 40.6)	High (n;% = 134; 19.8)	
Health/diet literacy and diet knowledge					
HL index (Mean ± SD)	25.2 ± 9.2	25.6 ± 8.6	22.9 ± 9.3	22.2 ± 9.3	<0.001 [c]
DDL index (Mean ± SD)	24.1 ± 11.4	25.1 ± 11.1	21.2 ± 11.3	20.6 ± 1.7	<0.001 [c]
HDK (Mean ± SD)	5.4 ± 2.5	5.2 ± 2.5	5.3 ± 2.4	5.3 ± 2.6	0.788 [c]

Abbreviation: SD, standard deviation; IQR, interquartile range; S-COVID-19-S, suspected COVID-19 symptoms; HBsAg, hepatitis B surface antigen; HCV, hepatitis C virus; WC, waist circumference; Hb, hemoglobin; WBC, white blood cell; RBC, red blood cell; MCV, mean corpuscular volume; Hct, hematocrit; PLT, platelet count; PO4, phosphates; PTH, parathyroid hormone; K^+, kali; Na^+, natri; Cl^-, clo; MET-min/wk, metabolic equivalent task scored in minutes per week; HL, health literacy; DDL, digital health diet literacy; HDK, hemodialysis dietary knowledge; OSTA, osteoporosis self-assessment tool for Asians. [a] Result of the chi-square test; [b] Result of Kruskal–Wallis test; [c] Result of one-way ANOVA.

3.2. Associated Factors of Osteoporosis

Table 2 shows the results of the unadjusted and the adjusted multinomial logistic regression models. In the adjusted model, a medium osteoporosis risk (OR, 3.46; 95% CI, 1.86, 6.44; $p < 0.001$) and a high osteoporosis risk (OR, 6.86; 95% CI, 2.96, 15.88; $p < 0.001$) were more likely in the female participants. The participants who were at a high risk of osteoporosis were more likely to have rheumatoid arthritis (OR, 4.37; 95% CI, 1.67, 11.52; $p = 0.003$), while those at a medium risk of osteoporosis were more likely to have stomach ulcers (OR, 1.95; 95% CI, 1.01, 3.77; $p = 0.048$). The odds of a medium osteoporosis risk decreased by 5%, 8%, and 4% for each increment by one unit in waist circumference (OR, 0.95; 95% CI, 0.92, 0.98; $p = 0.004$), HL (OR, 0.92; 95% CI, 0.88, 0.96; $p < 0.001$), and DDL (OR, 0.96; 95% CI, 0.93, 0.99; $p = 0.017$), respectively. The odds of a high osteoporosis risk declined by 7%, 21%, 5%, 9%, 11%, and 5% for each increment by one unit in waist circumference (OR, 0.93; 95% CI, 0.89, 0.97; $p = 0.001$), Hb level (OR, 0.79; 95% CI, 0.66, 0.95; $p = 0.014$), Hct (OR, 0.95; 95% CI, 0.92, 0.99; $p = 0.041$), albumin level (OR, 0.91; 95% CI, 0.83, 0.99; $p = 0.030$), HL (OR, 0.89; 95% CI, 0.84, 0.94; $p < 0.001$), and DDL (OR, 0.95; 95% CI, 0.91, 0.99; $p = 0.008$), respectively. The patients with a junior high school level of education had a lower likelihood of having osteoporosis risk compared to those who were illiterate or at the elementary level of education (OR, 0.37; 95% CI, 0.16, 0.88; $p = 0.025$).

Table 2. Associated factors of osteoporosis via unadjusted and adjusted multinominal logistic regression analysis.

Associated Factors	Medium Risk of Osteoporosis *				High Risk of Osteoporosis *			
	Unadjusted Model		Adjusted Model		Unadjusted Model		Adjusted Model	
	OR (95% CI)	*p*	OR (95% CI)	*p*	OR (95% CI)	*p*	OR (95% CI)	*p*
Socio-demographics								
Gender			1.00					
Male	1.00				1.00		1.00	
Female	2.50 (1.77, 3.55)	<0.001	3.46 (1.86, 6.44)	<0.001 [a]	4.19 (2.69, 6.54)	<0.001	6.86 (2.96, 15.88)	<0.001 [a]
Education								
Illiterate or elementary	1.00		1.00		1.00		1.00	
Junior high school	0.52 (0.35, 0.79)	0.002	0.63 (0.33, 1.20)	0.158 [a]	0.37 (0.21, 0.63)	<0.001	0.37 (0.16, 0.88)	0.025 [a]
Senior high school or above	0.63 (0.39, 1.01)	0.054	1.02 (0.41, 2.53)	0.963 [a]	0.80 (0.47, 1.37)	0.414	0.82 (0.27, 2.53)	0.731 [a]

Table 2. *Cont.*

Associated Factors	Medium Risk of Osteoporosis *				High Risk of Osteoporosis *			
	Unadjusted Model		Adjusted Model		Unadjusted Model		Adjusted Model	
	OR (95% CI)	*p*	OR (95% CI)	*p*	OR (95% CI)	*p*	OR (95% CI)	*p*
Working status								
Not working	1.00				1.00			
Working	0.87 (0.62, 1.24)	0.450			0.84 (0.55, 1.29)	0.435		
Marital status								
Without partner	1.00				1.00		1.00	
With partner	0.61 (0.30, 1.24)	0.173	0.82 (0.09, 6.97)	0.817 [a]	0.33 (0.15, 0.69)	0.003	0.60 (0.06, 6.46)	0.674 [a]
Social status								
Low	1.00		1.00		1.00		1.00	
Middle and high	0.75 (0.52, 0.09)	0.132	1.15 (0.60, 2.23)	0.673 [a]	0.84 (0.53, 1.32)	0.442	1.07 (0.46, 2.50)	0.874 [a]
Medication payment ability								
Very or fairly difficult	1.00		1.00		1.00		1.00	
Very or fairly easy	1.34 (0.87, 2.05)	0.181	1.63 (0.69, 3.84)	0.265 [a]	1.90 (1.16, 3.11)	0.010	0.98 (0.32, 2.97)	0.968 [a]
Hemodialysis vintage, years	1.01 (0.97, 1.05)	0.620			0.99 (0.94, 1.04)	0.609		
Clinical parameters								
S-COVID-19-S								
Without S-COVID-19-S	1.00		1.00		1.00		1.00	
With S-COVID-19-S	1.39 (0.97, 2.00)	0.076	1.18 (0.62, 2.24)	0.620 [b]	1.66 (1.04, 2.65)	0.033	2.37 (0.93, 6.07)	0.071 [b]
Rheumatoid arthritis								
No	1.00		1.00		1.00		1.00	
Yes	1.65 (0.86, 3.14)	0.132	0.92 (0.37, 2.33)	0.865 [b]	3.96 (2.05, 7.65)	<0.001	4.37 (1.67, 11.52)	0.003 [b]
Stomach ulcers								
No	1.00		1.00		1.00		1.00	
Yes	1.65 (1.08, 2.54)	0.021	1.95 (1.01, 3.77)	0.048 [b]	1.38 (0.81, 2.34)	0.237	1.53 (0.66, 3.54)	0.322 [b]
Diuretic usage								
No	1.00		1.00		1.00		1.00	
Yes	1.86 (1.16, 2.99)	0.010	1.22 (0.63, 2.34)	0.562 [b]	2.53 (1.46, 4.39)	0.001	2.19 (0.99, 4.86)	0.053 [b]
HBsAg								
Negative	1.00				1.00			
Positive	1.09 (0.53, 2.26)	0.810			0.84 (0.33, 2.14)	0.716		
HCV								
Negative	1.00				1.00			
Positive	1.07 (0.68, 1.68)	0.765			0.84 (0.48, 1.46)	0.530		
WC	0.97 (0.95, 0.99)	0.001	0.95 (0.92, 0.98)	0.004 [b]	0.97 (0.94, 0.99)	0.008	0.93 (0.89, 0.97)	0.001 [b]
Biochemical parameters								
Hb	0.99 (0.87, 1.09)	0.779	0.98 (0.86, 1.13)	0.802 [c]	0.85 (0.75, 0.97)	0.017	0.79 (0.66, 0.95)	0.014 [c]
WBC	1.05 (0.97, 1.14)	0.248			1.06 (0.96, 1.18)	0.266		
RBC	1.07 (0.85, 1.35)	0.569			0.89 (0.66, 1,21)	0.465		
MCV	0.99 (0.98, 1.01)	0.814	0.99 (0.97, 1.01)	0.411 [c]	1.02 (0.99, 1.04)	0.124	1.01 (0.98, 1.04)	0.549 [c]
Hct	1.01 (0.98, 1.05)	0.592	1.01 (0.97, 1.06)	0.679 [c]	0.96 (0.92, 1.01)	0.089	0.95 (0.92, 0.99)	0.041 [c]
PLT	1.01 (0.99, 1.01)	0.221			1.01 (0.99, 1.01)	0.441		
PO_4	1.08 (0.89, 1.32)	0.435			1.06 (0.84, 1.35)	0.610		
PTH	1.01 (0.98, 1.02)	0.876			1.01 (0.99, 1.03)	0.311		

Table 2. *Cont.*

Associated Factors	Medium Risk of Osteoporosis *				High Risk of Osteoporosis *			
	Unadjusted Model		Adjusted Model		Unadjusted Model		Adjusted Model	
	OR (95% CI)	*p*	OR (95% CI)	*p*	OR (95% CI)	*p*	OR (95% CI)	*p*
K^+	1.09 (0.84, 1.40)	0.524			1.05 (0.77, 1.43)	0.768		
Na^+	0.97 (0.92, 1.02)	0.257			0.98 (0.92, 1.04)	0.506		
Cl^-	1.03 (0.98, 1.08)	0.200	1.02 (0.96, 1.07)	0.538 [c]	1.05 (0.99, 1.11)	0.083	1.02 (0.96, 1.10)	0.503 [c]
Albumin	0.98 (0.96, 1.02)	0.395	0.98 (0.91, 1.05)	0.286 [c]	0.93 (0.88, 0.98)	0.012	0.91 (0.83, 0.99)	0.030 [c]
Physical activity								
Tertile 1 (MET $\leq$ 180)	1.00				1.00			
Tertile 2 (180 < MET $\leq$ 723)	1.20 (0.74, 1.95)	0.454			1.14 (0.63, 2.06)	0.676		
Tertile 3 (MET > 723)	0.96 (0.59, 1.54)	0.855			1.08 (0.60, 1.92)	0.807		
Health/diet literacy and diet knowledge								
HL index	0.97 (0.95, 0.99)	0.001	0.92 (0.88, 0.96)	<0.001 [d]	0.96 (0.94, 0.98)	0.001	0.89 (0.84, 0.94)	<0.001 [c]
DDL index	0.97 (0.95, 0.98)	<0.001	0.96 (0.93, 0.99)	0.017 [d]	0.97 (0.95, 0.98)	<0.001	0.95 (0.91, 0.99)	0.008 [c]
HDK	1.02 (0.95, 1.09)	0.668			1.03 (0.95, 1.12)	0.502		

Abbreviation: OR, odds ratio; CI, confidence interval; SD, standard deviation; S-COVID-19-S, suspected COVID-19 symptoms; HBsAg, hepatitis B surface antigen; HCV, hepatitis C virus; WC, waist circumference; Hb, hemoglobin; WBC, white blood cell; RBC, red blood cell; MCV, mean corpuscular volume; Hct, hematocrit; PLT, platelet count; PO_4, phosphates; PTH, parathyroid hormone; K^+, kali; Na^+, natri; Cl^-, clo; HL, health literacy; DDL, digital health diet literacy; HDK, hemodialysis dietary knowledge; OSTA, osteoporosis self-assessment tool for Asians. * Low risk of osteoporosis is the reference group. [a] the adjusted multinominal logistic regression, which adjusted for variables ($p < 0.2$) in the groups of clinical parameters, biochemical parameters, health/diet literacy and diet knowledge; [b] the adjusted multinominal logistic regression, which adjusted for variables ($p < 0.2$) in the groups of socio-demographics, biochemical parameters, health/diet literacy and diet knowledge; [c] the adjusted multinominal logistic regression, which adjusted for variables ($p < 0.2$) in the groups of socio-demographics, clinical parameters, health/diet literacy and diet knowledge; [d] the adjusted multinominal logistic regression, which adjusted for variables ($p < 0.2$) in the groups of socio-demographics, clinical parameters, and biochemical parameters.

4. Discussion

Using a self-assessment tool, more than 60% of our hemodialysis patients presented a medium and high level of osteoporosis risk. The high prevalence of osteoporosis in hemodialysis patients has been reported in previous studies that used different diagnostic methods, such as an ultrasound bone densitometry [38], a bone density scan [5,6], and a bone histomorphometry [39]. The OSTA has been suggested for early osteoporosis detection in the healthy population [26] or in individuals with type 2 diabetes mellitus [40]. It is also capable of distinguishing the fracture status in hemodialysis patients [25]. This screening tool may help physicians to prioritize the high-risk patients for further diagnosis and for specific strategies to manage those patients.

In this study, we found that higher HL, DDL, and waist circumference, and higher levels of Hb, Hct, albumin, and education, protected our participants from osteoporosis risk, while being female and having comorbid diseases were associated with a higher likelihood of having bone health disorder.

The most important finding in this study is that higher HL and DDL were associated with a lower likelihood of osteoporosis risk in patients who were undergoing hemodialysis. Similarly, our patients with a higher education level had lower odds of osteoporosis, which is in line with another study's findings [41]. In fact, the promotion of healthy habits, a balanced nutrient intake, and regular exercise is highly recommended in order to reduce the risk of osteoporosis [42,43]. People with higher HL and DDL scores tend to have better eating behaviors [18,44]. However, the level of HL among hemodialysis patient was insufficient [45]. Nowadays, numerous resources, such as the Internet, media, books, etc., can provide hemodialysis patients with information about healthy eating; however,

not all of these methods are qualified. Thus, particular attention should be given to such interventions in order to improve patients' health and healthy diet literacy. For example, these patients should be educated and suggested formal websites in order to help them with adequate literacy about the hemodialysis diet.

Another important finding in the present study is that the waist circumference protected our participants from the risk of osteoporosis. This finding is congruent with a previous study that supported a lower risk of osteoporosis in hemodialysis patients with abdominal obesity [16]. A higher waist circumference reflects abdominal obesity, which may increase bone density by stimulating bone growth and improving the bones' weight tolerance [46]. However, other studies have reported that people with a higher waist circumference/abdominal obesity have a higher risk of osteoporosis/fractures or a worse bone mineral density [47–49]. The inconsistency between these results may be due to the difference between the studies in the measuring methods, the fracture sites, the covariates, and the waist circumference classification. Thus, further studies assessing the relationship between waist circumference and osteoporosis risk among hemodialysis patients are needed.

Remarkably, in this study, higher serum albumin was significantly associated with lower odds of osteoporosis risk. In line with our findings, another study on rheumatoid arthritis patients during the postmenopausal stage revealed that the serum albumin concentrations were lower in the osteoporosis group than in the non-osteoporosis group [50]. Likewise, hypoalbuminemia was associated with a higher risk of osteoporosis and future fractures [51,52]. A possible explanation for this association is that low levels of serum albumin may directly activate osteoclasts and inhibit osteogenesis through its link with the nuclear factor-κB [53]. Moreover, our study found that higher Hb and Hct levels were protective factors against osteoporosis. This concurs with other studies [54–56]. In fact, lower levels of Hb and Hct reflect an anemia status, which increases osteoclast activity [55]. Hence, in clinical practice, health care providers should be aware of the correction between albumin, Hb, and Hct levels in order to protect against osteoporosis in hemodialysis patients.

Inversely, being female was associated with an increased level of osteoporosis risk in our participants. It has been indicated consistently in the literature that women have a higher risk of osteoporosis than men [7,57]. Bone loss may be due to a deficiency in estrogen, which is highly prevalent in menopausal women [58]. However, other studies have found that decreased estrogen levels play a major role in osteoporosis development for both sexes [59,60]. Therefore, although female patients receive more attention in early osteoporosis detection, osteoporosis in men should also be taken into account.

Our findings have also indicated that hemodialysis patients who have comorbid diseases tend to have a higher level of osteoporosis risk. Patients who are diagnosed with rheumatoid arthritis have a higher risk of osteoporosis, which is possibly due to their inflammation status, cytokine release, and autoantibody production [61]. Meanwhile, persistent inflammation in chronic kidney disease is obviously present [62]. Notably, having stomach ulcers was another risk factor of osteoporosis in our participants. This finding is consistent with the findings from previous studies [63,64]. A possible explanation for this association is that patients with peptic ulcers are usually treated with omeprazole, which has a negative association with the risk of vertebral fractures [65]. Therefore, early diagnosis and the establishment and implementation of appropriate alternative treatments for hemodialysis patients with other diseases could reduce osteoporosis risk.

This study has some limitations. Firstly, the causality of the protective factors on osteoporosis was not able to be confirmed in a cross-sectional study design. Further experimental studies are suggested in order to examine the effects of the biochemical components and health and diet literacy on osteoporosis in hemodialysis patients. Secondly, the biochemical parameters (e.g., vitamin D, calcium, and liver enzymes) that may contribute to osteoporosis have not been investigated in this study due to insufficient data. Thirdly, the OSTA score was intended to reflect the osteoporosis risk or the fracture risk instead of

confirmed osteoporosis status. Therefore, the results should be interpreted with caution. The use of a combination of osteoporosis diagnosis methods (e.g., using bone biopsy or biochemical parameters) is suggested in future research and clinical practice. Despite the limitations, OSTA may be an acceptable solution in detecting the osteoporosis risk in some contexts, particularly those regarding issues such as the trained technicians required, high cost, and instrument availability.

5. Conclusions

In this study, we have found that female patients and those with comorbid conditions were more likely to have osteoporosis/fracture risk. Meanwhile, patients with higher health and diet literacy, education, waist circumference, and greater levels of some biochemical components (albumin, Hb, and Hct) had a lower likelihood of osteoporosis risk. The results suggest that these protective factors should be a consideration in future interventions in order to prevent osteoporosis/fracture risk in hemodialysis patients.

Supplementary Materials: The following supporting information can be downloaded at: https://www.mdpi.com/article/10.3390/nu14235122/s1, Table S1: The correlations between independent variables.

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References

1. Liyanage, T.; Ninomiya, T.; Jha, V.; Neal, B.; Patrice, H.M.; Okpechi, I.; Zhao, M.H.; Lv, J.; Garg, A.X.; Knight, J.; et al. Worldwide access to treatment for end-stage kidney disease: A systematic review. *Lancet* **2015**, *385*, 1975–1982. [CrossRef] [PubMed]
2. Thurlow, J.S.; Joshi, M.; Yan, G.; Norris, K.C.; Agodoa, L.Y.; Yuan, C.M.; Nee, R. Global Epidemiology of End-Stage Kidney Disease and Disparities in Kidney Replacement Therapy. *Am. J. Nephrol.* **2021**, *52*, 98–107. [CrossRef] [PubMed]
3. Bhargava, V.; Jasuja, S.; Tang, S.C.; Bhalla, A.K.; Sagar, G.; Jha, V.; Ramachandran, R.; Sahay, M.; Alexander, S.; Vachharajani, T.; et al. Peritoneal dialysis: Status report in South and South East Asia. *Nephrology* **2021**, *26*, 898–906. [CrossRef] [PubMed]
4. Glaser, D.L.; Kaplan, F.S. Osteoporosis. Definition and clinical presentation. *Spine* **1997**, *22*, 12s–16s. [CrossRef]
5. Slouma, M.; Sahli, H.; Bahlous, A.; Laadhar, L.; Smaoui, W.; Rekik, S.; Gharsallah, I.; Sallami, M.; Moussa, F.B.; Elleuch, M.; et al. Mineral bone disorder and osteoporosis in hemodialysis patients. *Adv. Rheumatol.* **2020**, *60*, 15. [CrossRef]
6. Hashimoto, H.; Shikuma, S.; Mandai, S.; Adachi, S.; Uchida, S. Calcium-based phosphate binder use is associated with lower risk of osteoporosis in hemodialysis patients. *Sci. Rep.* **2021**, *11*, 1648. [CrossRef]
7. Karatas, A.; Erdem, E.; Arıcı, Y.K.; Canakci, E.; Turkmen, E.; Turker, N.T. The frequency of osteoporosis in patients with predialysis chronic renal failure and the factors affecting the development of osteoporosis. *Niger. J. Clin. Pract.* **2022**, *25*, 137–143. [CrossRef]
8. Yenchek, R.H.; Ix, J.H.; Shlipak, M.G.; Bauer, D.C.; Rianon, N.J.; Kritchevsky, S.B.; Harris, T.B.; Newman, A.B.; Cauley, J.A.; Fried, L.F. Bone mineral density and fracture risk in older individuals with CKD. *Clin. J. Am. Soc. Nephrol.* **2012**, *7*, 1130–1136. [CrossRef]
9. Lin, Z.Z.; Wang, J.J.; Chung, C.R.; Huang, P.C.; Su, B.A.; Cheng, K.C.; Chio, C.C.; Chien, C.C. Epidemiology and mortality of hip fracture among patients on dialysis: Taiwan National Cohort Study. *Bone* **2014**, *64*, 235–239. [CrossRef]
10. Hsu, C.Y.; Chen, L.R.; Chen, K.H. Osteoporosis in Patients with Chronic Kidney Diseases: A Systemic Review. *Int. J. Mol. Sci.* **2020**, *21*, 6846. [CrossRef]
11. Tasnim, N.; Dutta, P.; Nayeem, J.; Masud, P.; Ferdousi, A.; Ghosh, A.S.; Hossain, M.; Rajia, S.; Kubra, K.T.; Sakibuzzaman, M.; et al. Osteoporosis, an Inevitable Circumstance of Chronic Kidney Disease: A Systematic Review. *Cureus* **2021**, *13*, e18488. [CrossRef] [PubMed]
12. Panuccio, V.; Enia, G.; Tripepi, R.; Aliotta, R.; Mallamaci, F.; Tripepi, G.; Zoccali, C. Pro-inflammatory cytokines and bone fractures in CKD patients. An exploratory single centre study. *BMC Nephrol.* **2012**, *13*, 134. [CrossRef] [PubMed]
13. Rashid, A.; Chaudhary Hauge, S.; Suetta, C.; Hansen, D. Sarcopenia and risk of osteoporosis, falls and bone fractures in patients with chronic kidney disease: A systematic review. *PLoS ONE* **2022**, *17*, e0262572. [CrossRef] [PubMed]
14. Najar, M.S.; Mir, M.M.; Muzamil, M. Prevalence of osteoporosis in patients with chronic kidney disease (stages 3–5) in comparison with age- and sex-matched controls: A study from Kashmir Valley Tertiary Care Center. *Saudi J. Kidney Dis. Transplant.* **2017**, *28*, 538–544. [CrossRef]
15. Mahzari, M.M.; Alibrahim, A.R.; Alghamdi, N.A.; Alsadhan, M.A.; Almoamary, S.M.; Masuadi, E.M.; Al Shahrani, A.S. Prevalence and Risk Factors of Osteoporosis in Saudi End-Stage Renal Disease Patients on Hemodialysis. *Saudi J. Med. Med. Sci.* **2022**, *10*, 259–265. [CrossRef]
16. Wung, C.H.; Chung, C.Y.; Wu, P.Y.; Huang, J.C.; Tsai, Y.C.; Chen, S.C.; Chiu, Y.W.; Chang, J.M. Associations between Metabolic Syndrome and Obesity-Related Indices and Bone Mineral Density T-Score in Hemodialysis Patients. *J. Pers. Med.* **2021**, *11*, 775. [CrossRef]
17. Sørensen, K.; Van den Broucke, S.; Fullam, J.; Doyle, G.; Pelikan, J.; Slonska, Z.; Brand, H. Health literacy and public health: A systematic review and integration of definitions and models. *BMC Public Health* **2012**, *12*, 80. [CrossRef]
18. Duong, T.V.; Pham, K.M.; Do, B.N.; Kim, G.B.; Dam, H.T.B.; Le, V.T.; Nguyen, T.T.P.; Nguyen, H.T.; Nguyen, T.T.; Le, T.T.; et al. Digital Healthy Diet Literacy and Self-Perceived Eating Behavior Change during COVID-19 Pandemic among Undergraduate Nursing and Medical Students: A Rapid Online Survey. *Int. J. Environ. Res. Public Health* **2020**, *17*, 7185. [CrossRef]
19. Chen, C.; Zheng, J.; Driessnack, M.; Liu, X.; Liu, J.; Liu, K.; Peng, J.; You, L. Health literacy as predictors of fluid management in people receiving hemodialysis in China: A structural equation modeling analysis. *Patient Educ. Couns.* **2021**, *104*, 1159–1167. [CrossRef]
20. Dang, L.T.; Luong, T.C.; Nguyen, D.H.; Hoang, T.A.; Nguyen, H.T.; Nguyen, H.C.; Duong, T.H.; Tran, T.T.; Pham, L.V.; Ngo, T.V.; et al. The Associations of Suspected COVID-19 Symptoms with Anxiety and Depression as Modified by Hemodialysis Dietary Knowledge: A Multi-Dialysis Center Study. *Nutrients* **2022**, *14*, 2364. [CrossRef]
21. Panahi, R.; Yekefallah, L.; Shafaei, M.; Dehghankar, L.; Anbari, M.; Hosseini, N.; Hasannia, E. Effect of health literacy among students on the adoption of osteoporosis-preventive behaviors in Iran. *J. Educ. Health Promot.* **2020**, *9*, 191. [CrossRef] [PubMed]
22. Roh, Y.H.; Koh, Y.D.; Noh, J.H.; Gong, H.S.; Baek, G.H. Effect of health literacy on adherence to osteoporosis treatment among patients with distal radius fracture. *Arch. Osteoporos* **2017**, *12*, 42. [CrossRef] [PubMed]
23. Kung, A.W.; Ho, A.Y.; Ross, P.D.; Reginster, J.Y. Development of a clinical assessment tool in identifying Asian men with low bone mineral density and comparison of its usefulness to quantitative bone ultrasound. *Osteoporos Int.* **2005**, *16*, 849–855. [CrossRef] [PubMed]
24. Koh, L.K.; Sedrine, W.B.; Torralba, T.P.; Kung, A.; Fujiwara, S.; Chan, S.P.; Huang, Q.R.; Rajatanavin, R.; Tsai, K.S.; Park, H.M.; et al. A simple tool to identify asian women at increased risk of osteoporosis. *Osteoporos Int.* **2001**, *12*, 699–705. [CrossRef] [PubMed]
25. Chang, A.J.; Ying, Q.; Chen, X.N.; Wang, W.M.; Chen, N. Evaluation of three risk assessment tools in discriminating fracture status among Chinese patients undergoing hemodialysis. *Osteoporos Int.* **2016**, *27*, 3599–3606. [CrossRef]

26. Bui, M.H.; Dao, P.T.; Khuong, Q.L.; Le, P.A.; Nguyen, T.T.; Hoang, G.D.; Le, T.H.; Pham, H.T.; Hoang, H.T.; Le, Q.C.; et al. Evaluation of community-based screening tools for the early screening of osteoporosis in postmenopausal Vietnamese women. *PLoS ONE* **2022**, *17*, e0266452. [CrossRef]
27. BMJ Best Practice. Coronavirus Disease 2019 (COVID-19), History and Exam. 2020. Available online: https://bestpractice.bmj.com/topics/en-gb/3000201/history-exam (accessed on 19 May 2021).
28. Craig, C.L.; Marshall, A.L.; Sjöström, M.; Bauman, A.E.; Booth, M.L.; Ainsworth, B.E.; Pratt, M.; Ekelund, U.; Yngve, A.; Sallis, J.F.; et al. International physical activity questionnaire: 12-country reliability and validity. *Med. Sci. Sport. Exerc.* **2003**, *35*, 1381–1395. [CrossRef]
29. Pham, T.; Bui, L.; Nguyen, A.; Nguyen, B.; Tran, P.; Vu, P.; Dang, L. The prevalence of depression and associated risk factors among medical students: An untold story in Vietnam. *PLoS ONE* **2019**, *14*, e0221432. [CrossRef]
30. Duong, T.V.; Aringazina, A.; Kayupova, G.; Nurjanah; Pham, T.V.; Pham, K.M.; Truong, T.Q.; Nguyen, K.T.; Oo, W.M.; Su, T.T.; et al. Development and Validation of a New Short-Form Health Literacy Instrument (HLS-SF12) for the General Public in Six Asian Countries. *Health Lit. Res. Pract.* **2019**, *3*, e91–e102. [CrossRef]
31. Duong, T.V.; Chang, P.W.; Yang, S.-H.; Chen, M.-C.; Chao, W.-T.; Chen, T.; Chiao, P.; Huang, H.-L. A new comprehensive short-form health literacy survey tool for patients in general. *Asian Nurs. Res. (Korean Soc. Nurs. Sci.)* **2017**, *11*, 30–35. [CrossRef]
32. Duong, T.V.; Nguyen, T.T.P.; Pham, K.M.; Nguyen, K.T.; Giap, M.H.; Tran, T.D.X.; Nguyen, C.X.; Yang, S.-H.; Su, C.-T. Validation of the short-form health literacy questionnaire (HLS-SF12) and its determinants among people living in rural areas in Vietnam. *Int. J. Environ. Res. Public Health* **2019**, *16*, 3346. [CrossRef] [PubMed]
33. Ho, H.V.; Hoang, G.T.; Pham, V.T.; Duong, T.V.; Pham, K.M. Factors associated with health literacy among the elderly people in Vietnam. *Biomed. Res. Int.* **2020**, *2020*, 3490635. [CrossRef]
34. HLS-EU Consortium. Comparative Report of Health literacy in Eight EU Member States. The European Health Literacy Project 2009–2012. 2012. Available online: https://www.healthliteracyeurope (accessed on 19 May 2021).
35. Ryu, H.; Jeon, H.J.; Sun, H.-K.; Han, K.H.; Whang, C.G.; Han, S.Y. Repeated education improves diet compliance in maintenance Hemodialysis Patients. *Int. J. Urol. Nephrol.* **2014**, *2*, 63–68.
36. WHO. Coronavirus Disease (COVID-19) Technical Guidance: Infection Prevention and Control/Wash. Available online: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/infection-prevention-and-control (accessed on 20 May 2020).
37. Maldonado, G.; Greenland, S. Simulation study of confounder-selection strategies. *Am. J. Epidemiol.* **1993**, *138*, 923–936. [CrossRef]
38. Kuo, L.-L.; Tsai, W.-H.; Yu, C.-M.; Yang, C.-C. Risk Factors for Osteoporosis among Hemodialysis Patients. *Taipei City Med. J.* **2012**, *9*, 234–243. [CrossRef]
39. Barreto, F.C.; Barreto, D.V.; Moyses, R.M.; Neves, C.L.; Jorgetti, V.; Draibe, S.A.; Canziani, M.E.; Carvalho, A.B. Osteoporosis in hemodialysis patients revisited by bone histomorphometry: A new insight into an old problem. *Kidney Int.* **2006**, *69*, 1852–1857. [CrossRef]
40. Tang, J.L.; Pan, B.B.; Shu, Y.; Gu, Y.F.; Liu, S. Evaluation of two tools for the early screening of osteoporosis in postmenopausal Chinese women with type 2 diabetes mellitus. *J. Int. Med. Res.* **2020**, *48*, 300060520903889. [CrossRef]
41. Maddah, M.; Sharami, S.H.; Karandish, M. Educational difference in the prevalence of osteoporosis in postmenopausal women: A study in northern Iran. *BMC Public Health* **2011**, *11*, 845. [CrossRef]
42. Muñoz-Garach, A.; García-Fontana, B.; Muñoz-Torres, M. Nutrients and Dietary Patterns Related to Osteoporosis. *Nutrients* **2020**, *12*, 1986. [CrossRef]
43. Baccaro, L.F.; Conde, D.M.; Costa-Paiva, L.; Pinto-Neto, A.M. The epidemiology and management of postmenopausal osteoporosis: A viewpoint from Brazil. *Clin. Interv. Aging* **2015**, *10*, 583–591. [CrossRef]
44. Do, B.N.; Nguyen, P.A.; Pham, K.M.; Nguyen, H.C.; Nguyen, M.H.; Tran, C.Q.; Nguyen, T.T.P.; Tran, T.V.; Pham, L.V.; Tran, K.V.; et al. Determinants of Health Literacy and Its Associations With Health-Related Behaviors, Depression Among the Older People With and Without Suspected COVID-19 Symptoms: A Multi-Institutional Study. *Front. Public Health* **2020**, *8*, 581746. [CrossRef] [PubMed]
45. Khamis, S.; Emara, M.; Elnashar, M.; Khalil, M.; Kasemy, Z. Development of Health Literacy for Regular Hemodialysis Patients in Menoufia Governorate: A Cross-Sectional Study. *Open J. Nephrol.* **2021**, *11*, 199–216. [CrossRef]
46. Reid, I.R. Fat and bone. *Arch. Biochem. Biophys.* **2010**, *503*, 20–27. [CrossRef]
47. Park, G.R.; Kim, H.S.; Kim, Y.T.; Chung, H.J.; Ha, S.J.; Kim, D.W.; Kang, D.R.; Kim, J.Y.; Lee, M.Y.; Lee, J.Y. Waist circumference and the risk of lumbar and femur fractures: A nationwide population-based cohort study. *Eur. Rev. Med. Pharmacol. Sci.* **2021**, *25*, 1198–1205. [CrossRef] [PubMed]
48. Ofir, O.; Buch, A.; Rouach, V.; Goldsmith, R.; Stern, N.; Monsonego-Ornan, E. Association between abdominal obesity and fragility fractures among elderly Israeli women. *Aging Clin. Exp. Res.* **2020**, *32*, 1459–1467. [CrossRef]
49. Hua, Y.; Fang, J.; Yao, X.; Zhu, Z. Can waist circumference be a predictor of bone mineral density independent of BMI in middle-aged adults? *Endocr. Connect.* **2021**, *10*, 1307–1314. [CrossRef]
50. Nagayama, Y.; Ebina, K.; Tsuboi, H.; Hirao, M.; Hashimoto, J.; Yoshikawa, H.; Okada, S.; Nakata, K. Low serum albumin concentration is associated with increased risk of osteoporosis in postmenopausal patients with rheumatoid arthritis. *J. Orthop. Sci.* **2021**, *27*, 1283–1290. [CrossRef]

51. Kunutsor, S.K.; Voutilainen, A.; Whitehouse, M.R.; Seidu, S.; Kauhanen, J.; Blom, A.W.; Laukkanen, J.A. Serum Albumin and Future Risk of Hip, Humeral, and Wrist Fractures in Caucasian Men: New Findings from a Prospective Cohort Study. *Med. Princ. Pract.* **2019**, *28*, 401–409. [CrossRef]
52. Afshinnia, F.; Wong, K.K.; Sundaram, B.; Ackermann, R.J.; Pennathur, S. Hypoalbuminemia and Osteoporosis: Reappraisal of a Controversy. *J. Clin. Endocrinol. Metab.* **2016**, *101*, 167–175. [CrossRef]
53. Abu-Amer, Y. NF-κB signaling and bone resorption. *Osteoporos Int.* **2013**, *24*, 2377–2386. [CrossRef]
54. Xiu, S.; Mu, Z.; Sun, L.; Zhao, L.; Fu, J. Hemoglobin level and osteoporosis in Chinese elders with type 2 diabetes mellitus. *Nutr. Diabetes* **2022**, *12*, 19. [CrossRef]
55. Kim, S.Y.; Yoo, D.M.; Min, C.; Choi, H.G. Association between Osteoporosis and Low Hemoglobin Levels: A Nested Case-Control Study Using a National Health Screening Cohort. *Int. J. Environ. Res. Public Health* **2021**, *18*, 8598. [CrossRef] [PubMed]
56. Yoo, J.; Lee, B.J. Anthropometric, biochemical, and nutritional risk factors for osteoporosis in Korean adults based on a large cross-sectional study. *PLoS ONE* **2021**, *16*, e0261361. [CrossRef] [PubMed]
57. Alswat, K.A. Gender Disparities in Osteoporosis. *J. Clin. Med. Res.* **2017**, *9*, 382–387. [CrossRef] [PubMed]
58. Klein-Nulend, J.; van Oers, R.F.; Bakker, A.D.; Bacabac, R.G. Bone cell mechanosensitivity, estrogen deficiency, and osteoporosis. *J. Biomech* **2015**, *48*, 855–865. [CrossRef] [PubMed]
59. Gennari, L.; Khosla, S.; Bilezikian, J.P. Estrogen and fracture risk in men. *J. Bone Miner. Res.* **2008**, *23*, 1548–1551. [CrossRef]
60. Atroshi, I.; Ahlander, F.; Billsten, M.; Ahlborg, H.G.; Mellström, D.; Ohlsson, C.; Ljunggren, O.; Karlsson, M.K. Low calcaneal bone mineral density and the risk of distal forearm fracture in women and men: A population-based case-control study. *Bone* **2009**, *45*, 789–793. [CrossRef]
61. Adami, G.; Fassio, A.; Rossini, M.; Caimmi, C.; Giollo, A.; Orsolini, G.; Viapiana, O.; Gatti, D. Osteoporosis in Rheumatic Diseases. *Int. J. Mol. Sci.* **2019**, *20*, 5867. [CrossRef]
62. Akchurin, O.M.; Kaskel, F. Update on inflammation in chronic kidney disease. *Blood Purif.* **2015**, *39*, 84–92. [CrossRef]
63. Yoon, P.H.; An, S.J.; Jeong, S.H.; Yang, Y.J.; Hong, Y.P. Association between Peptic Ulcer Disease and Osteoporosis: The Population-Based Longitudinal Cohort Study in Korea. *Int. J. Environ. Res. Public Health* **2019**, *16*, 2777. [CrossRef]
64. Wu, C.H.; Tung, Y.C.; Chai, C.Y.; Lu, Y.Y.; Su, Y.F.; Tsai, T.H.; Kuo, K.L.; Lin, C.L. Increased Risk of Osteoporosis in Patients With Peptic Ulcer Disease: A Nationwide Population-Based Study. *Medicine* **2016**, *95*, e3309. [CrossRef] [PubMed]
65. Roux, C.; Briot, K.; Gossec, L.; Kolta, S.; Blenk, T.; Felsenberg, D.; Reid, D.M.; Eastell, R.; Glüer, C.C. Increase in vertebral fracture risk in postmenopausal women using omeprazole. *Calcif. Tissue Int.* **2009**, *84*, 13–19. [CrossRef] [PubMed]

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Negative Impacts of COVID-19 Induced Lockdown on Changes in Eating Behavior, Physical Activity, and Mental Health as Modified by Digital Healthy Diet Literacy and eHealth Literacy

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Background: The COVID-19-induced lockdown has been implemented in many countries, which may cause unfavorable changes in lifestyles and psychological health. People's health literacy, healthy diet, and lifestyles play important roles in mitigating the negative impacts of the pandemic. Therefore, we aimed to examine associations of COVID-19 lockdown with changes in eating behavior, physical activity, and mental health; and the modification effects by digital healthy diet literacy (DDL) and eHealth literacy (eHEALS) on the associations.

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Methods: We conducted an observational study on 4,348 outpatients from 7th April to 31st May 2020. Data from 11 hospitals in Vietnam included demographic characteristics, DDL, eHEALS, eating behavior, physical activity, and mental health changes. Multiple logistic regression and interaction models were performed to examine associations.

Results: Patients under lockdown had a lower likelihood of having "unchanged or healthier" eating behavior (odds ratio, OR, 0.38; 95% confidence interval, 95%CI, 0.29 to 0.51; $p < 0.001$), "unchanged or more" physical activity (OR, 0.79; 95% CI, 0.69 to 0.90; $p < 0.001$), and "stable or better" mental health (OR, 0.77; 95% CI, 0.67 to 0.89; $p < 0.001$), as compared to those after lockdown. In interaction models, as compared to patients after lockdown and with the lowest DDL score, those under lockdown and with a one-score increment of DDL had a higher likelihood of having "unchanged or healthier" eating behavior (OR, 1.05; 95% CI, 1.02 to 1.07; $p < 0.001$), and "stable or better" mental health (OR, 1.02; 95% CI, 1.01 to 1.04; $p < 0.001$). Similarly, as compared to patients after lockdown and with the lowest eHEALS score, those under lockdown and with a one-score increment of eHEALS had a higher likelihood of having an "unchanged or more" physical activity (OR, 1.03; 95% CI, 1.01 to 1.05; $p < 0.001$).

Conclusion: The COVID-19 lockdown measure could negatively affect eating behavior, physical activity, and mental health among outpatients. Better DDL and eHEALS were found to mitigate the negative impacts of the lockdown, which may empower outpatients to maintain healthy lifestyles and protect mental health. However, this study holds several limitations that may undermine the certainty of reported findings.

Keywords: lockdown, mental health, digital healthy diet literacy, eHealth literacy, eating behavior, outpatient, physical activity

INTRODUCTION

New waves of COVID-19 outbreaks continuously re-emerged in many countries around the world (1, 2). Although vaccination programs have been deployed globally, the disproportionate distribution of vaccines (3, 4) and the emergence of new COVID-19 variants make the pandemic still uncontrolled (5, 6). Affected countries have been applying strict prevention measures such as lockdown, home confinement, and social distancing (7). Although these measures have effectively prevented the spread of the virus, it causes significant changes in people's lives, including working from home and lack of connection with family and friends (8, 9). In addition, lockdown or home confinement measures make people feel bored and isolated, negatively affecting their psychological health (10, 11). These adverse impacts on mental health can cause harmful lifestyle changes such as increasing unhealthy eating habits (12–15), sedentary behavior, or sleeping disorders (16). Recent literature also indicated that the isolation and COVID-19 lockdown had negative impacts on eating habits and emotional processing (17, 18). Furthermore, movement restrictions and difficulty accessing fresh food during the lockdown period could significantly affect people's eating patterns and physical activity habits (19–25). Therefore, it is urgent to assess the impacts of COVID-19 lockdown on changes in eating behavior, physical activity, and mental health and find protective factors that could mitigate such impacts.

The advent of the Internet and the advancement of smartphones and computer technology make it easier for people to access health information (26, 27). People could use and access web-based resources at any time to seek health advice, disease information, and check physician's consultation (28, 29). However, accessing health information and support through the Internet also has potential risks. With the ease of delivering health information through social networks and websites, it is difficult for people to recognize and evaluate which information is high-quality and reliable (30). Notably, the COVID-19 pandemic has caused an "infodemic" with a plethora of false and fake news about the disease (31, 32). This information could lead to worry and fear in the community, distrust in the government's epidemic containment efforts, and wrong health decisions (33–35). Therefore, improving skills to find, evaluate, and understand health information on the Internet is essential, especially during the COVID-19 lockdowns.

Digital healthy diet literacy (DDL) and eHealth literacy (eHEALS) have potential impacts in improving healthy lifestyles and general health during the pandemic. DDL is the ability to find, understand, evaluate, and apply healthy eating information from web-based sources to improve the eating behaviors" (36). Meanwhile, eHEALS is defined as the capacity to seek, understand, and appraise online health information and apply it

to solve health issues (37). Recent literature showed that DDL was found to be associated with a higher likelihood of healthier eating, better mental health, and quality of life during the pandemic (36, 38, 39). Meanwhile, people with higher eHEALS were more likely to have better psychological health, engage in positive health-related behaviors (e.g., healthy eating, physical activity) (40–43). In addition, previous research also indicated that DDL and eHEALS could help to mitigate the negative impacts of COVID-19 on quality of life among outpatients (39). Therefore, DDL and eHEALS roles should be investigated and paid more attention to in the lockdown period.

During the pandemic, people seeking medical care have faced many challenges, such as limited access to medical care, delays in treatment, fear of COVID-19 infection, and worry about their health (35, 44, 45). As a result, maintaining healthy lifestyles and stabilizing mental health is essential to improve their health and overcome difficulties, especially in the lockdown period (46). Therefore, we conducted this study to examine the associations of COVID-19 induced lockdown with changes in eating behavior, physical activity, and mental health; and further determine whether DDL and eHEALS could modify these associations among outpatients from 11 hospitals across Vietnam.

MATERIALS AND METHODS

Study Design, Settings, and Sampling

A cross-sectional survey was conducted in outpatients from eleven hospitals across Vietnam. Participants were recruited at selected hospitals using the convenience sampling method from 7th April to 31st May 2020. The Vietnamese Government announced a nationwide lockdown from 1 to 22 April to contain the spread of the COVID-19 pandemic (47, 48). During the lockdown period, all people are ordered not to leave their homes except for emergency cases, buying essential goods or medicine, and are prohibited from gathering more than two people in public. If going outside, people must wear a mask and keep a safe distance of two meters from others. The stringent social distancing and isolation measures yielded positive results, and no confirmed COVID-19 cases were recorded in Vietnam from mid-April to the end of May 2020 (49). After 22 April 2020, Vietnam began to gradually lift strict movement restrictions, including allowing businesses activities and schools in many parts of Viet Nam to re-open, and resuming domestic travel across the country. However, epidemic prevention measures continued to be implemented according to the "5K Rule" of the Vietnam Ministry of Health, including wearing a mask when going out, washing hands regularly with soap or sanitizer, keeping a safe distance from others, not gathering in crowds, and making a medical declaration (50).

Due to a convenience sample, we aimed to recruit as many participants as possible to reduce the sampling bias and increase the representativeness of the sample. Inclusion criteria were those who visited the outpatient department (OPD) of studied hospitals at the time of this study, aged 18–85, without emergency conditions (e.g., stroke, traumatic brain injury, etc.), and who agreed to participate in the survey. In addition, we excluded patients who had communication difficulties (e.g., deafness or blindness). Finally, we collected and analyzed the data of 4,348 participants. **Figure 1** showed the number of patients at each hospital participating in this study (39).

This study was approved by the Ethics Committee of Hanoi University of Public Health (IRB Number: 133/2020/YTCC-HD3).

Data Collection Procedure

At OPDs of studied hospitals, research assistants (physicians, nurses, and healthcare students) informed patients about the purposes of this study and invited them to participate in the investigation. Informed consent forms were signed before participants carried out the survey. Data was obtained through structured self-administered questionnaires. During the waiting time for examination, participants could take the survey using their smartphone to fill out the online questionnaire via QR code or the printed ones provided at OPDs. The online and printed versions of the questionnaire have the same structure and code. Throughout the time of the survey, research assistants supervised and assisted participants in completing the investigation. Printed questionnaires were checked as participants completed to ensure that all questions were answered. There was no missing data for the online version as all questions included the forced answering option. Therefore, the missing data in this study were minimal. We used the pair-wise deletion method to handle missing data. It took around 10–15 min for each survey. The patient's data was then coded and analyzed for study purposes only.

Assessments and Measurements

Participant's Characteristics

Demographic characteristics were obtained regarding age, gender, marital status (never married vs. ever married), education levels (junior high school or lower vs. senior high school vs. college/university or higher), occupational status (no job vs. has a job), ability to pay for medical care (easy vs. difficult), social status (low vs. middle or high). We calculated body mass index (BMI, kg/m^2) based on self-reported body weight (kg) and height (cm) and then categorized into three groups: underweight (BMI $<$ 18.5), normal weight (18.5 $\leq$ BMI $<$ 25.0), and overweight/obese (BMI $\geq$ 25.0). The questionnaire used the 14 items of the Charlson Comorbidity Index (51) to assess patients' comorbidities. We then categorized the comorbidity into two groups: "none" vs. "one or more" diseases. Participants with any symptoms resembling COVID-19 (Slike-CV19S), including fever, cough, dyspnea, myalgia, fatigue, sputum production, confusion, headache, sore throat, rhinorrhea, chest pain, hemoptysis, diarrhea, and vomiting (52), were classified as having Slike-CV19S.

COVID-19 Induced Lockdown

The national lockdown measure was implemented in Vietnam from April 1–22, 2020 (47, 48). The execution time was categorized into two groups: "under lockdown" vs. "after lockdown," where patients who conducted the survey in the lockdown period were classified as those under lockdown.

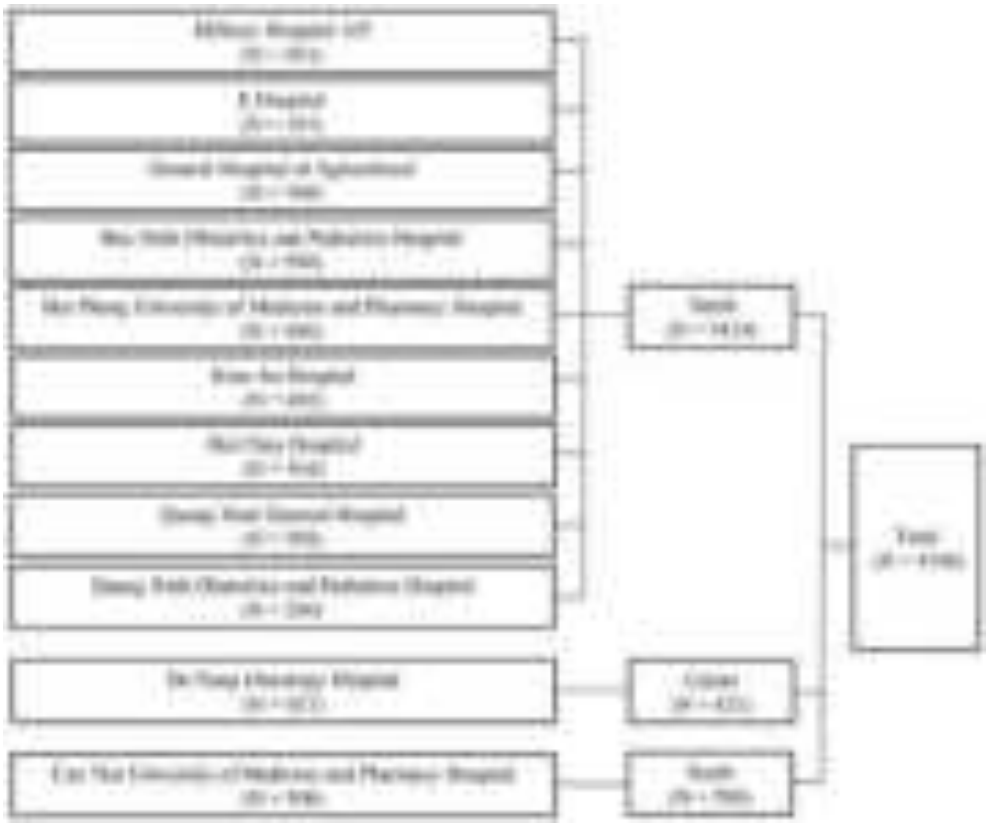

FIGURE 1 | Flow chart of the study sample.

Changes in Eating Behavior, Physical Activity, and Mental Health

The questionnaire asked participants about the changes in their current eating and physical activity behaviors compared to those before the COVID-19 pandemic. Patients responded on a five-point scale (never, stopped, less active, unchanged, and more active) for physical activity and a three-point scale (less healthy, unchanged, and healthier) for eating behavior. The World Health Organization (WHO) suggested that individuals should maintain unchanged or improve healthy lifestyles (healthy eating, physical activity) to stay healthy during the pandemic, especially in the lockdown period (46). In this study, participants with "never" and "unchanged" responses to physical activity were those who did not change their physical activity before and during the pandemic. However, a "never" reply was considered a negative behavior. In contrast, an "unchanged" response which means maintaining physical activity at a constant intensity, was considered a positive behavior during the pandemic. Therefore, we categorized physical activity and eating behavior changes into two groups: negative behaviors "never/stopped or less active" vs. positive behaviors "unchanged or more active" for physical activity, and negative behaviors "less healthy" vs. positive behaviors "unchanged or healthier" for eating behavior (43, 53).

We assessed the changes in participants' mental health using the question "How has your mental health changed compared to that before the pandemic?" Patients answered this question with three options, including 1 = "worse," 2 = "stable," and 3 = "better." To ease for analysis, we categorized mental health changes into two groups: "worse" vs. "stable or better" (38).

Digital Healthy Diet Literacy and Health Literacy

This study assessed the DDL and health literacy (HL) using the DDL-4 questionnaire and HLS-SF12 questionnaire, respectively. These instruments were developed, validated, and commonly used in previous studies in Vietnam (36, 38, 39, 43, 54–57). In the current study, the Cronbach's α of DDL-4 and HLS-SF12 tools were 0.96 and 0.95, respectively. The patients were asked to rank their difficulty to perform each questionnaire item on four-point responses from 1 = "very difficult" to 4 = "very easy." We then transformed DDL and HL scores into unified metrics with the ranges from 0 to 50, where participants with a greater DDL score or HL score had better DDL or HL. The formula was documented in prior papers (36, 58).

eHealth Literacy

Our study evaluated the eHEALS of participants using an eHealth literacy scale. This instrument consists of eight items, which were validated and utilized in the Vietnamese context (39, 43). The Cronbach's α of eHEALS was 0.96 in this study. Patients ranked their agreement with eight opinions regarding their

ability to identify and evaluate health information from online sources. The responses range from 1 = "strongly disagree" to 5 = "strongly agree." The sum scores were from 8 to 40, in which patients with a greater eHEALS score had better eHEALS.

Fear of COVID-19

The fear of COVID-19 scale (FCoV-19S) with seven items was used to assess the fear level of patients. This questionnaire was developed, validated, and used during the pandemic in different countries (59, 60), including Vietnam previous (39, 61). The Cronbach's α of this tool was 0.92 in our study. Patients ranked their consent with seven statements regarding their feelings related to COVID-19 infectability. The possible answers range from 1 = "strongly disagree" to 5 = "strongly agree." The answers were added up, and the sum scores were from 7 - 35, in which participants with a higher score presented a greater degree of fear of COVID-19.

Data Analysis

First, we presented independent variables (IVs) as the mean, standard deviation, frequency, and proportion appropriately. Missing data were handled by the pair-wise deletion method. Second, the Chi-squared test and one-way ANOVA test were appropriately performed to compare the proportion of three outcomes (changes in eating behavior, physical activity, and mental health) by different IVs. We used the Benjamini-Hochberg method to decrease the false discovery rate (FDR) when performing multiple comparisons. The raw *p*-values were adjusted to control the level of FDR at 5% using the Benjamini-Hochberg method. Third, we used unadjusted and adjusted logistic regression models to explore the associations of lockdown, DDL, and eHEALS with three outcomes. We chose IVs linked to outcomes at $p < 0.2$ in simple logistic regression models to put in adjusted models. We also performed the Spearman correlation test to check relationships between IVs to avoid multicollinearity. If a moderate or high ($rho \geq 0.30$) correlation was found between two IVs, we selected a representative one to adjust the final models. Finally, we performed interaction models to examine the modification effects of DDL and eHEALS on the associations between COVID-19 lockdown and three outcomes. If DDL or eHEALS was not associated with outcomes in adjusted logistic regression models, we did not perform the interaction analyses between lockdown and DDL or eHEALS for those outcomes. Unadjusted interaction models were run with three terms that were X1, X2, and X1 × X2. In which X1 is the main effect of lockdown ("Under lockdown × lowest DDL" or "under lockdown × lowest eHEALS"), X2 is the main effects of DDL or eHEALS ("After lockdown × 1-point increment of DDL" or "after lockdown × 1-point increment of eHEALS"), and X1×X2 is the interaction term ("Under lockdown × 1-point increment of DDL" or "under lockdown × 1-point increment of eHEALS"). Adjusted interaction models were tested with three interaction terms and potential confounders. For visualizing interactions, we conducted the simple slope analyses using PROCESS Marco version 3.5 in SPSS. Before performing simple slope tests, DDL and eHEALS were centralized with a new mean of zero. The graphs were drawn by calculating the expected probability of outcomes by the lockdown variable at three values of DDL or eHEALS (the mean, −1 SD, and +1 SD from the mean). We also reported the coefficients of conditional effects to calculate the odds ratios for the impacts of COVID-19 lockdown on outcomes at three values of DDL or eHEALS. The $p < 0.05$ was defined as a significant level. All analyses were conducted by the IBM SPSS Version 26.0 (IBM Corp, Armonk, NY, United States).

RESULTS

Characteristics of Participants

In 4,348 participants, the means of age (year), DDL scores, and eHEALS scores were 42.8 ± 16.7, 25.9 ± 12.2, and 27.9 ± 6.9, respectively. Out of all outpatients, 38.0% (1,654/4,348) were male, 17.8% (772/4,348) were never married, 89.1% (3,874/4,348) had a job, 62.5% (2,712/4,348) found it difficult to pay for medical care, 28.8% (1,254/4,348) had one or more comorbidities, 37.0 % (1,609/4,348) took the survey by online questionnaires. The percentages of outpatients with unchanged or healthier eating behavior, unchanged or more physical activity, and stable or better mental health were 92.5% (4,002/4,348), 42.1% (1,833/4,348), and 62.2% (2,705/4,348), respectively. The proportions of unchanged or healthier eating behavior, unchanged or more physical activity, and stable or better mental health were varied by different categories of age, gender (only for physical activity), marital status, education, occupation, ability to pay for medical care, social status (only for mental health), BMI (only for physical activity), COVID-19 lockdown, Slike-CV19S, comorbidity, health literacy, and fear of COVID-19 (only for mental health) (Benjamini-Hochberg adjusted $p < 0.05$) (**Table 1**). In addition, two groups "under lockdown" and "after lockdown" had differences in several characteristics, including age, gender, marital status, education, ability to pay for health care, social status, BMI, Slike-CV19S, comorbidity, HL, and fear of COVID-19 (**Table 1**).

Associations of COVID-19 Lockdown, Digital Healthy Diet Literacy, EHealth Literacy With Changes in Eating Behavior, Physical Activity, and Mental Health

After checking Spearman correlations between IVs, we found that age moderately correlates with education levels ($rho = -0.34$); ability to pay for medical care moderately correlates with social status ($rho = 0.30$); health literacy moderately correlates with comorbidities ($rho = -0.38$), and COVID-19-like symptoms ($rho = -0.34$) (**Supplementary Table 1**). Therefore, age, gender, ability to pay for medical care, health literacy, and other confounding factors associated with outcomes at $p < 0.2$ were added to adjusted logistic regression models (**Supplementary Table 2**).

The results of adjusted logistic regression models showed that patients under lockdown had a lower likelihood of having unchanged or healthier eating behavior (odds ratio, OR, 0.38; 95% confidence interval, 95% CI, 0.29 to 0.51; $p < 0.001$), unchanged or more physical activity (OR, 0.79; 95% CI, 0.69 to 0.90; $p < 0.001$), and stable or better mental health (OR, 0.77; 95%

TABLE 1 | Characteristics of outpatients by COVID-19 lockdown, and changes in eating behavior, physical activity, mental health (n = 4,348).

Variables	Total (n = 4,348)	COVID-19 lockdown			Eating behavior			Physical activity			Mental health		
		After lockdown (n = 1,972)	Under lockdown (n = 2,376)		Less healthy (n = 325)	Unchanged or healthier (n = 4,002)		Never/stopped or less active (n = 2,515)	Unchanged or more active (n = 1,833)		Worse MH (n = 1,643)	Stable or better MH (n = 2,705)	
	n (%)	n (%)	n (%)	p^a	n (%)	n (%)	p^a	n (%)	n (%)	p^a	n (%)	n (%)	p^a
Age (years), mean (SD)	42.8 (16.7)												
Age groups				<0.001			<0.001			<0.001			<0.001
<60	3,412 (78.5)	1,676 (85.0)	1,736 (73.1)		164 (50.5)	3,233 (80.8)		1,838 (73.1)	1,574 (85.9)		1,068 (65.0)	2,344 (86.7)	
≥60	936 (21.5)	296 (15.0)	640 (26.9)		161 (49.5)	769 (19.2)		677 (26.9)	259 (14.1)		575 (35.0)	361 (13.3)	
Gender				<0.001			0.129			0.009			0.155
Women	2,694 (62.0)	1,312 (66.5)	1,382 (58.2)		188 (57.8)	2,494 (62.3)		1,601 (63.7)	1,093 (59.6)		995 (60.6)	1,699 (62.8)	
Men	1,654 (38.0)	660 (33.5)	994 (41.8)		137 (42.2)	1,508 (37.7)		914 (36.3)	740 (40.4)		648 (39.4)	1,006 (37.2)	
Marital status				<0.001			0.030			<0.001			<0.001
Never married	772 (17.8)	480 (24.4)	292 (12.3)		43 (13.2)	726 (18.2)		343 (13.7)	429 (23.4)		204 (12.4)	568 (21.1)	
Ever married	3,560 (82.2)	1,485 (75.6)	2,075 (87.7)		282 (86.8)	3,261 (81.8)		2,156 (86.3)	1,404 (76.6)		1,438 (87.6)	2,122 (78.9)	
Education level				<0.001			<0.001			<0.001			0.007
Junior high school or lower	1,007 (23.2)	415 (21.1)	592 (24.9)		99 (30.6)	906 (22.7)		588 (23.4)	419 (22.9)		413 (25.2)	594 (22.0)	
Senior high school	1,196 (27.5)	465 (23.6)	731 (30.8)		106 (32.7)	1,079 (27.0)		759 (30.2)	437 (23.9)		471 (28.7)	725 (26.9)	
College/university or higher	2,139 (49.3)	1,088 (55.3)	1,051 (44.3)		119 (36.7)	2,012 (50.3)		1,163 (46.3)	976 (53.3)		758 (46.2)	1,381 (51.1)	
Occupational status				0.227			0.024			0.008			<0.001
No job	474 (10.9)	202 (10.2)	272 (11.4)		48 (14.8)	423 (10.6)		302 (12.0)	172 (9.4)		245 (14.9)	229 (8.5)	
Having a job	3,874 (89.1)	1,770 (89.8)	2,104 (88.6)		277 (85.2)	3,579 (89.4)		2,213 (88.0)	1,661 (90.6)		1,398 (85.1)	2,476 (91.5)	
Ability to pay for medical care				<0.001			<0.001			<0.001			<0.001
Very or fairly easy	1,626 (37.5)	1,063 (54.0)	1,649 (69.5)		253 (77.8)	2,442 (61.1)		1,698 (67.8)	1,014 (55.3)		1,167 (71.0)	1,545 (57.3)	
Very or fairly difficult	2,712 (62.5)	904 (46.0)	722 (30.5)		72 (22.2)	1,552 (38.9)		808 (32.2)	818 (44.7)		476 (29.0)	1,150 (42.7)	
Social status				0.005			0.129			0.422			<0.001
Low	921 (21.2)	379 (19.3)	542 (22.8)		58 (17.8)	863 (21.6)		543 (21.7)	378 (20.6)		433 (26.4)	488 (18.1)	
Middle or high	3,419 (78.8)	1,589 (80.7)	1,830 (77.2)		267 (82.2)	3,132 (78.4)		1,964 (78.3)	1,455 (79.4)		1,210 (73.6)	2,209 (81.9)	
BMI, kg/m^2				0.012			0.246			0.003			0.292
Underweight	398 (9.2)	195 (9.9)	203 (8.6)		23 (7.1)	372 (9.3)		205 (8.2)	193 (10.6)		139 (8.5)	259 (9.6)	
Normal weight	3,393 (78.0)	1,496 (76.2)	1,897 (80.0)		253 (78.1)	3,124 (78.3)		1,959 (78.1)	1,434 (78.4)		1,302 (79.5)	2,091 (77.5)	

(Continued)

TABLE 1 | Continued

Variables	Total (n = 4,348)	COVID-19 lockdown			Eating behavior			Physical activity			Mental health		
		After lockdown (n = 1,972)	Under lockdown (n = 2,376)		Less healthy (n = 325)	Unchanged or healthier (n = 4,002)		Never/stopped or less active (n = 2,515)	Unchanged or more active (n = 1,833)		Worse MH (n = 1,643)	Stable or better MH (n = 2,705)	
	n (%)	n (%)	n (%)	p^a	n (%)	n (%)	p^a	n (%)	n (%)	p^a	n (%)	n (%)	p^a
Overweight/obese	546 (12.6)	274 (13.9)	272 (11.5)		48 (14.8)	496 (12.4)		345 (13.8)	201 (11.0)		197 (12.0)	349 (12.9)	
COVID-19-like symptoms				<0.001			<0.001			<0.001			<0.001
No	2,595 (59.7)	1,343 (68.1)	1,252 (52.7)		115 (35.4)	2,473 (61.8)		1,223 (48.6)	1,372 (74.8)		567 (34.5)	2,028 (75.0)	
Yes	1,753 (40.3)	629 (31.9)	1,124 (47.3)		210 (64.6)	1,529 (38.2)		1,292 (51.4)	461 (25.2)		1,076 (65.5)	677 (25.0)	
Comorbidity				<0.001			<0.001			<0.001			<0.001
None	3,094 (71.2)	1,534 (77.7)	1,560 (65.6)		145 (44.6)	2,938 (73.4)		1,660 (66.0)	1,444 (78.7)		747 (45.4)	2,357 (87.1)	
One or more	1,254 (28.8)	438 (22.3)	816 (34.4)		180 (55.4)	1,064 (26.6)		855 (34.0)	389 (21.3)		896 (54.6)	348 (12.9)	
COVID-19 lockdown		–	–	–			<0.001			<0.001			<0.001
After lockdown	1,972 (45.4)	–	–	–	72 (22.2)	1,899 (47.5)		1,046 (41.6)	926 (50.5)		652 (39.7)	1,320 (48.8)	
Under lockdown	2,376 (54.6)	–	–	–	253 (77.8)	2,103 (52.5)		1,469 (58.4)	907 (49.5)		991 (60.3)	1,385 (51.2)	
Eating behavior changes				<0.001	–	–	–	–	–	–	–	–	–
Less healthy	325 (7.5)	72 (3.7)	253 (10.7)		–	–	–	–	–	–	–	–	–
Unchanged	3,169 (73.2)	1,517 (76.9)	1,652 (69.5)		–	–	–	–	–	–	–	–	–
Healthier	833 (19.3)	382 (19.4)	451 (19.8)		–	–	–	–	–	–	–	–	–
Physical activity changes				<0.001	–	–	–	–	–	–	–	–	–
Never	628 (14.4)	359 (18.2)	269 (11.3)		–	–	–	–	–	–	–	–	–
Stopped	285 (6.6)	101 (5.1)	184 (7.7)		–	–	–	–	–	–	–	–	–
Less active	1,602 (36.8)	586 (29.7)	1,016 (42.8)		–	–	–	–	–	–	–	–	–
Unchanged	1,188 (27.3)	608 (30.8)	580 (24.4)		–	–	–	–	–	–	–	–	–
More active	645 (14.9)	318 (16.2)	327 (13.8)		–	–	–	–	–	–	–	–	–
Mental health changes				<0.001	–	–	–	–	–	–	–	–	–
Worse	1,643 (37.8)	652 (33.1)	991 (41.7)		–	–	–	–	–	–	–	–	–
Stable	2,573 (59.2)	1,255 (63.6)	1,318 (55.5)		–	–	–	–	–	–	–	–	–
Better	132 (3.0)	65 (3.3)	67 (2.8)		–	–	–	–	–	–	–	–	–
HL, mean (SD)	26.5 (10.5)	26.9 (9.9)	26.1 (10.9)	0.026	24.7 (11.1)	26.5 (10.5)	0.004	24.7 (10.5)	28.9 (10.1)	<0.001	22.2 (9.9)	29.0 (9.9)	<0.001
eHEALS, mean (SD)	27.9 (6.9)	27.7 (7.2)	27.9 (6.7)	0.292	27.7 (5.2)	27.8 (7.0)	0.765	26.9 (6.9)	29.1 (6.8)	<0.001	25.3 (6.8)	29.4 (6.5)	<0.001
DDL, mean (SD)	25.9 (12.2)	26.2 (12.1)	25.6 (12.3)	0.105	22.5 (12.6)	26.1 (12.2)	<0.001	23.9 (12.2)	28.7 (11.7)	<0.001	20.8 (11.7)	28.9 (11.5)	<0.001
Fear of COVID-19, mean (SD)	20.6 (5.4)	20.9 (5.6)	20.2 (5.1)	<0.001	20.5 (4.8)	20.6 (5.4)	0.836	20.4 (5.3)	20.7 (5.5)	0.062	21.4 (5.1)	20.0 (5.5)	<0.001

MH, mental health; SD, standard deviation; DDL, digital healthy diet literacy; eHEALS, eHealth literacy; HL, health literacy.

[a]*Results of the Chi-square test or one-way ANOVA test appropriately with Benjamini-Hochberg adjusted p-values.*

CI, 0.67 to 0.89; $p < 0.001$) (**Table 2**). Conversely, participants with a higher DDL had a higher likelihood of having unchanged or healthier eating behavior (OR, 1.02; 95% CI, 1.01 to 1.03; $p = 0.043$), and stable or better mental health (OR, 1.02; 95% CI, 1.01 to 1.03; $p < 0.001$), while participants with a higher eHEALS had a higher likelihood of having unchanged or more physical activity (OR, 1.01; 95% CI, 1.00 to 1.03; $p = 0.043$), and stable or better mental health (OR, 1.06; 95% CI, 1.05 to 1.08; $p < 0.001$) (**Table 2**).

Effect Modification by Digital Healthy Diet Literacy and EHealth Literacy on the Associations of COVID-19 Lockdown With Changes in Eating Behavior, Physical Activity, and Mental Health

In the interaction model between COVID-19 lockdown and DDL on eating behavior changes, as compared to patients after the lockdown and with the lowest DDL score, those under lockdown and with the lowest DDL score had a lower likelihood of maintaining unchanged or healthier eating behavior (OR, 0.12; 95% CI, 0.06 to 0.23; $p < 0.001$), while those under lockdown and with one DDL-point increment had a higher likelihood of having unchanged or healthier eating behavior (OR, 1.05; 95% CI, 1.02 to 1.07; $p < 0.001$) (**Table 3**). **Figure 2** illustrated the change in the expected probability of unchanged or healthier eating by COVID-19 lockdown at three levels of DDL (the mean, −1 SD, and +1 SD from the mean). The negative impact of COVID-19 lockdown on unchanged or healthier eating was attenuated by higher DDL values from 1 SD below the mean (OR = 0.22, 95% CI, 0.15 to 0.34, $p < 0.001$), the mean (OR = 0.39, 95% CI, 0.30 to 0.54, $p < 0.001$), to 1 SD above the mean (OR = 0.70, 95% CI, 0.50 to 0.99, $p = 0.048$) (**Supplementary Table 3**). Overall, the significant interaction suggested that when DDL was higher, the inverse association between COVID-19 lockdown and eating behavior changes became weaker.

In the interaction model between COVID-19 lockdown and DDL on mental health changes, as compared patients after the lockdown and with the lowest DDL score, those under lockdown and with the lowest DDL score had lower odds of stable or better mental health (OR, 0.44; 95% CI, 0.32 to 0.61; $p < 0.001$), while those under lockdown and with one DDL-point increment had a higher likelihood of stable or better mental health (OR, 1.02; 95% CI, 1.01 to 1.04; $p < 0.001$) (**Table 3**). **Figure 3** showed the change in the expected probability of stable or better mental health by COVID-19 lockdown at three values of DDL. The negative impact of COVID-19 lockdown on stable or better mental health was attenuated by higher DDL values from 1 SD below the mean (OR = 0.60, 95% CI, 0.50 to 0.72, $p < 0.001$), the mean (OR = 0.79, 95% CI, 0.69 to 0.91, $p = 0.001$), to 1 SD above the mean (OR = 1.05, 95% CI, 0.84 to 1.30, $p = 0.665$) (**Supplementary Table 3**). Overall, the significant interaction suggested that when DDL was higher, the inverse association between COVID-19 lockdown and mental health changes became weaker.

In the interaction model between COVID-19 lockdown and eHEALS on physical activity changes, as compared to patients

TABLE 2 | Associations of COVID-19 lockdown, digital healthy diet literacy, eHealth literacy with changes in eating behavior, physical activity, and mental health ($n = 4,348$).

Variables[a]	Eating behavior changes[b]				Physical activity changes[c]				Mental health changes[d]			
	Unadjusted model		Adjusted model[e]		Unadjusted model		Adjusted model[f]		Unadjusted model		Adjusted model[g]	
	OR (95% CI)	*p*	OR (95% CI)	*p*	OR (95% CI)	*p*	OR (95% CI)	*p*	OR (95% CI)	*p*	OR (95% CI)	*p*
COVID-19 lockdown												
After lockdown	1.00		1.00		1.00		1.00		1.00		1.00	
Under lockdown	0.32 (0.24, 0.41)	<0.001	0.45 (0.33, 0.62)	<0.001	0.69 (0.62, 0.79)	<0.001	0.79 (0.69, 0.90)	<0.001	0.69 (0.61, 0.79)	<0.001	0.77 (0.67, 0.89)	<0.001
Digital healthy diet literacy, 1-score increment	1.02 (1.01, 1.03)	<0.001	1.02 (1.00, 1.04)	0.018	1.03 (1.03, 1.04)	<0.001	1.01 (0.99, 1.02)	0.064	1.06 (1.05, 1.07)	<0.001	1.02 (1.01, 1.03)	<0.001
eHealth literacy, 1-score increment	1.00 (0.98, 1.02)	0.753	0.98 (0.96, 1.01)	0.206	1.05 (1.04, 1.06)	<0.001	1.01 (1.00, 1.03)	0.043	1.10 (1.09, 1.11)	<0.001	1.06 (1.05, 1.08)	<0.001

OR, odds ratio; CI, confidence interval.

[a]Each independent variable was analyzed separately in different models.

[b]The reference group is "less healthy," the test group is "unchanged or healthier."

[c]The reference group is "never/stopped or less active," the test group is "unchanged or more active."

[d]The reference group is "worse," the test group is "stable or better."

[e]Adjusted for age, gender, marital status, occupational status, ability to pay for medical care, health literacy.

[f] Adjusted for age, gender, marital status, occupational status, ability to pay for medical care, BMI, health literacy, fear of COVID-19.

[g] Adjusted for age, gender, marital status, occupational status, ability to pay for medical care, health literacy, fear of COVID-19.

TABLE 3 | Interactions of COVID-19 lockdown with digital healthy diet literacy and eHealth literacy on changes in eating behavior, physical activity, and mental health (n = 4,348).

Variables	Eating behavior changes[a]				Physical activity changes[b]				Mental health changes[c]			
	Unadjusted model		Adjusted model[d]		Unadjusted model		Adjusted model[e]		Unadjusted model		Adjusted model[f]	
	OR (95% CI)	*p*	OR (95% CI)	*p*	OR (95% CI)	*p*	OR (95% CI)	*p*	OR (95% CI)	*p*	OR (95% CI)	*p*
Interaction of lockdown with DDL[g]												
After lockdown × lowest DDL	1.00		1.00		–	–	–	–	1.00		1.00	
Under lockdown × lowest DDL	0.10 (0.05, 0.18)	<0.001	0.13 (0.07, 0.26)	<0.001	–	–	–	–	0.42 (0.31, 0.57)	<0.001	0.44 (0.32, 0.61)	<0.001
After lockdown × DDL, 1-score increment	0.98 (0.97, 1.01)	0.148	0.98 (0.96, 1.01)	0.160	–	–	–	–	1.05 (1.04, 1.06)	<0.001	1.01 (1.00, 1.02)	0.057
Under lockdown × DDL, 1-score increment	1.05 (1.03, 1.07)	<0.001	1.05 (1.03, 1.07)	<0.001	–	–	–	–	1.02 (1.01, 1.03)	<0.001	1.02 (1.01, 1.04)	<0.001
Interaction of lockdown with eHEALS[h]												
After lockdown × lowest eHEALS	–	–	–	–	1.00		1.00		1.00		1.00	
Under lockdown × lowest eHEALS	–	–	–	–	0.30 (0.18, 0.51)	<0.001	0.31 (0.18, 0.53)	<0.001	1.55 (0.89, 2.71)	0.122	1.25 (0.69, 2.24)	0.458
After lockdown × eHEALS, 1-score increment	–	–	–	–	1.03 (1.02, 1.05)	<0.001	0.99 (0.98, 1.01)	0.671	1.12 (1.10, 1.14)	<0.001	1.08 (1.06, 1.09)	<0.001
Under lockdown × eHEALS, 1-score increment	–	–	–	–	1.03 (1.01, 1.05)	0.002	1.03 (1.01, 1.05)	0.001	0.97 (0.95, 0.99)	0.002	0.98 (0.96, 1.01)	0.065

OR, odds ratio; CI, confidence interval; DDL, digital healthy diet literacy; eHEALS, eHealth literacy.

[a] The reference group is "less healthy," the test group is "unchanged or healthier."

[b] The reference group is "never/stopped or less active," the test group is "unchanged or more active."

[c] The reference group is "worse," the test group is "stable or better."

[d] Adjusted for age, gender, marital status, occupational status, ability to pay for medical care, health literacy.

[e] Adjusted for age, gender, marital status, occupational status, ability to pay for medical care, BMI, health literacy, fear of COVID-19.

[f] Adjusted for age, gender, marital status, occupational status, ability to pay for medical care, health literacy, fear of COVID-19.

*[g] In **Table 2**, DDL was not associated with physical activity changes. Thus, the interaction model between lockdown and DDL on physical activity changes was not performed.*

*[h] In **Table 2**, eHEALS was not associated with eating behavior changes. Thus, the interaction model between lockdown and eHEALS on eating behavior changes was not performed.*

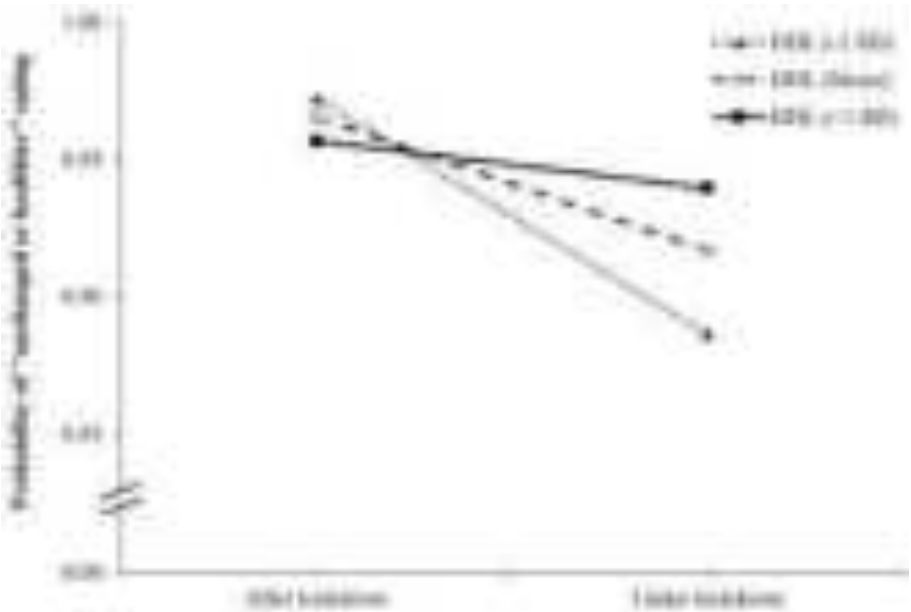

FIGURE 2 | Simple slope plot for interaction between lockdown and digital healthy diet literacy on eating behavior changes among outpatients ($n = 4,348$). DDL, digital healthy diet literacy; SD, standard deviation.

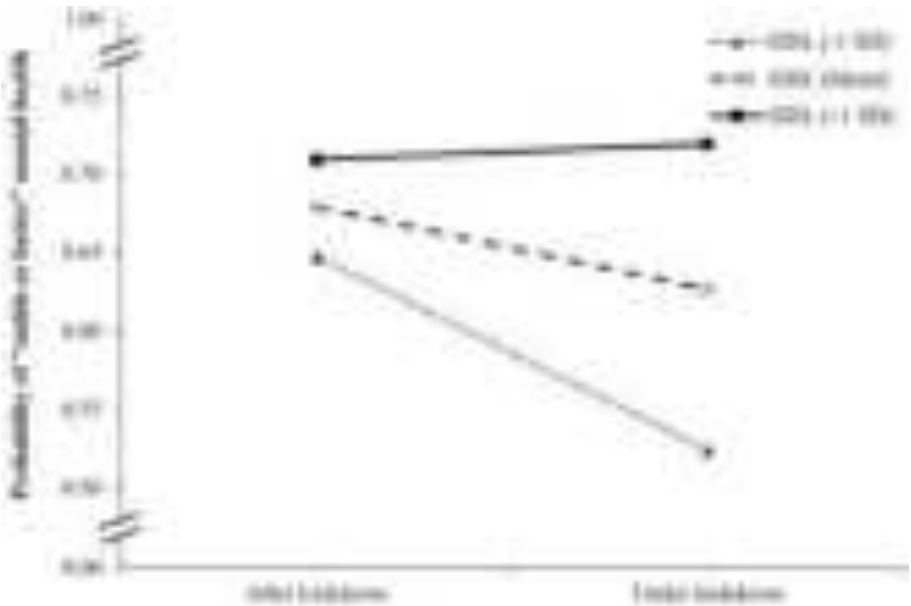

FIGURE 3 | Simple slope plot for interaction between lockdown and digital healthy diet literacy on mental health changes among outpatients ($n = 4,348$). DDL, digital healthy diet literacy; SD, standard deviation.

after the lockdown and with the lowest eHEALS score, those under lockdown and with the lowest eHEALS score had a lower likelihood of maintaining unchanged or more physical activity (OR, 0.31; 95% CI, 0.18 to 0.53; $p < 0.001$), while those under lockdown and with one eHEALS-point increment had higher odds of having an unchanged or more physical activity (OR, 1.03; 95% CI, 1.01 to 1.05; $p < 0.001$) (**Table 3**). **Figure 4** showed the change in the expected probability of unchanged or more physical activity by COVID-19 lockdown at three values of eHEALS. The negative impact of COVID-19 lockdown on unchanged or more physical activity was attenuated by higher eHEALS values from 1 SD below the mean (OR = 0.62, 95% CI, 0.52 to 0.75, $p < 0.001$), the mean (OR = 0.78, 95% CI, 0.68 to 0.89, $p < 0.001$), to 1 SD above the mean (OR = 0.98, 95%

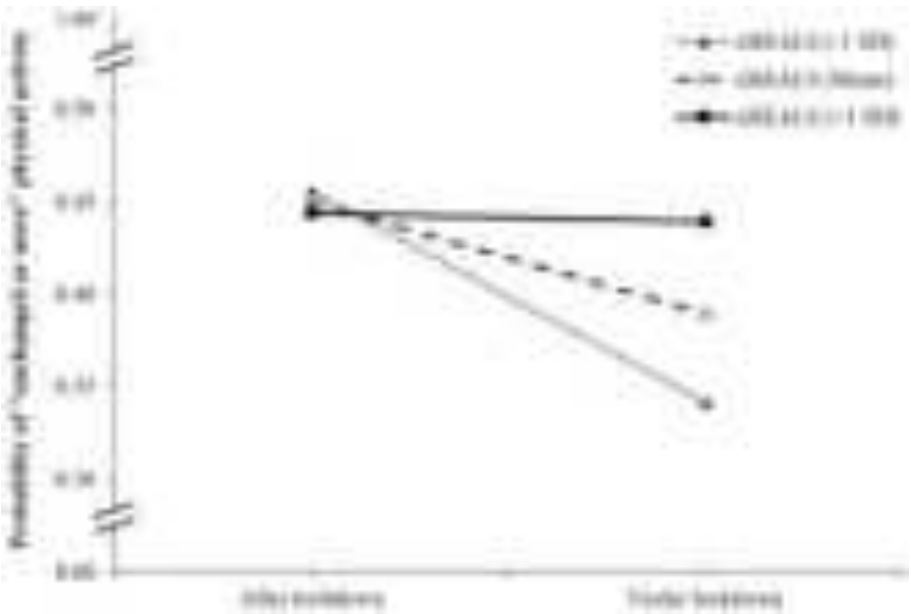

FIGURE 4 | Simple slope plot for interaction between lockdown and eHealth literacy on physical activity changes among outpatients ($n = 4{,}348$). Note: eHEALS, eHealth literacy; SD, standard deviation.

CI, 0.82 to 1.17, $p = 0.837$) (**Supplementary Table 3**). Overall, the significant interaction suggested that when eHEALS was higher, the inverse association between COVID-19 lockdown and physical activity changes became weaker.

DISCUSSION

Our findings highlighted the impacts of COVID-19 induced lockdown on changes in eating behavior, physical activity, mental health, and the modification effect of DDL and eHEALS on these associations in outpatients.

The current study found that the lockdown measure was negatively associated with maintaining unchanged or healthier eating behavior, unchanged or more physical activity, and stable or better mental health. A previous systematic review of 64 articles indicated that as compared with pre-lockdown, there was a decrease in physical activity in different populations during the lockdown period (25). Other studies conducted in different countries also showed that the COVID-19 lockdown or home confinement measures had harmful impacts on mental health and health-related behaviors with higher percentages of psychological disorders, physical inactivity, and unhealthy eating habits (11, 19, 23, 24, 62, 63). During the COVID-19 lockdown, restrictions on outside activities and travel, and limited food availability could cause negative changes in physical activity and dietary patterns (20–22, 25). In addition, the lockdown measure could adversely affect patients' mental health due to the difficulty in accessing medical care, delay in treatment, and feelings of boredom or isolation in the home confinement period (10, 11, 35). However, the current study did not study the potential impact of hospitalization and reasons of hospital visits on health-related behaviors, which might have biased the reported results. Therefore, appropriate strategies should be promoted to improve healthy lifestyles and psychological health during the COVID-19 lockdown.

Our study indicated that patients with higher DDL were more likely to have unchanged or healthier eating habits and stable or better psychological health during the pandemic. These findings are consistent with prior studies on front-line medical staff and healthcare students amidst the pandemic (36, 38). Importantly, we found that DDL could help to mitigate the adverse impacts of the lockdown measure on eating behavior and mental health. These findings could be explained that although there was a limited food availability and accessibility, patients with higher DDL may have the ability to evaluate and find for themselves a proper diet and avoid unhealthy foods (e.g., snacks, processed food) through reliable online health information sources during the COVID-19 lockdown. Meanwhile, higher DDL was found to be linked with higher health-related quality of life (39) and healthier eating behavior (36). Furthermore, the beneficial impacts of better dietary intake on psychological health were also documented in previous studies (53, 64, 65). Therefore, by improving the quality of life and diet, DDL could help patients to maintain stable or better mental health during the lockdown period.

Moreover, the results of this study demonstrated that higher eHEALS was associated with a higher likelihood of having unchanged or more physical activity and stable or better mental health. The role of eHEALS in maintaining positive health-related behaviors and protecting mental health has been reported in previous research (40–43). Furthermore, in the interaction

model, higher eHEALS could attenuate the harmful effects of COVID-19 induced lockdown on physical activity habits. An explanation for this association is that during the lockdown period, as people have to stay at home and restrict travel, they are more likely to engage in sedentary behaviors and increase screen time (66–68), which in the long term can cause weight gain and chronic diseases (63, 69). Patients with higher eHEALS have higher health awareness, and they have the skills to seek and identify suitable methods to help them maintain physical activity during the home confinement time. Maintaining a healthy diet and staying physically active are essential to improve physical and mental health during the pandemic, especially among people with health problems (46). Therefore, as the lockdown measure was implemented in many countries, enhancing EHL and DDL is critical to help patients to evaluate and identify trusted health information and make the right decisions about their health-related behavior and health.

In the present study, although the magnitude of changes in eating behavior, physical activity, and mental health during and after the lockdown was not substantial, statistically significant results also indicated a negative impact of COVID-19 lockdown on such changes in the short term. In the long run, when the COVID-19 pandemic is uncertain and the lockdown is prolonged, those changes may be more significant and worse without appropriate interventions. Therefore, with a relatively large sample size collected in many hospitals, our research has suggested timely evidence about the adverse impact of lockdowns and protective factors, which may help policymakers develop proper strategies to improve lifestyles and psychological health. In addition, some findings of this study (e.g., associations of DDL and eHEALS with physical activity changes) indicated that a 1-point increase in DDL or eHEALS resulted in a 1% increase in the proportion of unchanged or more physical activity. Although the size of the effects was not large, it would be meaningful if DDL and eHEALS enhancement interventions were implemented comprehensively. It could help people and patients to improve all skills in DDL or eHEALS, not just a specific skill. Therefore, DDL or eHEALS could be enhanced better, leading to a broader and more significant impact of DDL or eHEALS on the outcomes. Besides, mitigating the adverse impact of COVID-19 lockdown may depend on other factors, such as social security policies, food security, unemployment. Therefore, the results of the current study on improving DDL or eHEALS could provide substantive implications, helping patients to improve health-related behaviors and mental health, not only during the lockdown period but also in normal life.

Our study has several drawbacks. First, the causal relationship cannot be inferred from a cross-sectional study. Second, given the urgency of providing timely preliminary evidence for interventions in the initial stage of the pandemic, we used the consecutive convenience sampling method to recruit as many participants as possible. However, we had no data about patients approached in this survey, and only patients who agreed to join and completed the study were recorded. In addition, the total number of patients who visited hospitals during the study period was not recorded and not available on the system. Therefore, we cannot calculate the response rate of this study, which may affect the generalizability of our findings. Third, we used secondary data to analyze the associations in the present study, leading to an increase in the false discovery rate when testing multiple hypotheses on the same sample. Thus, the Benjamini-Hochberg method was used to adjust the *p*-value. Fourth, changes in eating behavior, physical activity, and mental health were assessed using single-item questionnaires, which may be subjective and cause reporting bias. In addition, the current study evaluated the change in physical activity with five answer options: never, stopped, less active, unchanged, and more active. However, the response "never" is an absolute answer that has not changed before and during the pandemic. Besides, it was also assumed that people who were never physically active might improve their behavior over time during the pandemic, while they could not make their physical activity worse than "never." Due to a cross-sectional study, we classified the "never" response as a negative behavior, which may cause some bias in the classification of physical activity changes. Therefore, results related to physical activity in this study should be applied with caution. Future studies also need to use a better approach for the assessment and classification of these outcomes. Next, we collected data using online and printed versions of the questionnaire, which may affect the results of this study. In addition, because comorbidities and health literacy were moderately correlated ($rho = -0.38$), we chose health literacy to adjust in the final models. However, it is suspected that the findings of this study may be affected by comorbidities. Therefore, we conducted the sensitivity analyses, which added comorbidities ("none" vs. "one or more") and questionnaire types ("online" vs. "printed") to adjust in final models. The results showed that the associations and interactions remained significant (**Supplementary Tables 4**, **5**). Finally, other variables influencing outcomes of this study, such as food insecurity, financial difficulty, social support, should be studied in future research.

CONCLUSION

The COVID-19 induced lockdown could negatively affect changes in eating behavior, physical activity, and mental health among outpatients. Digital healthy diet literacy and eHealth literacy could help to alleviate the adverse impacts of the COVID-19 induced lockdown on eating behavior, physical activity, and psychological health. Therefore, health organizations and policymakers should promote appropriate interventions to enhance DDL and eHEALS, which help patients to maintain their healthy lifestyles and protect mental health during the lockdown period. However, this study holds several limitations that may undermine the certainty of reported findings.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available on reasonable request to the corresponding author.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by Hanoi University of Public Health, Vietnam (IRB Number: 133/2020/YTCC-HD3). The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

ThamN, MN, TP, V-TL, TaN, TL, BD, HD, HN, TH, LP, PN, HoN, TDo, HuN, MT, TL, AT, ThaoN, KN, DP, KP, C-HB, and TDu: conceptualization, methodology, validation, investigation, data curation, and writing review and editing draft. MN, ThamN, and TDu: formal analysis and writing-original draft. MN, TP, and ThaoN: project administration. TDu: supervision and funding acquisition. All authors have read and approved the final manuscript.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fnut.2021.774328/full#supplementary-material

REFERENCES

1. Mahase E. Covid-19: what new variants are emerging and how are they being investigated? *BMJ.* (2021) 372:n158. doi: 10.1136/bmj.n158
2. Dyer O. Covid-19: variants are spreading in countries with low vaccination rates. *BMJ.* (2021) 373:n1359. doi: 10.1136/bmj.n1359
3. Mathieu E, Ritchie H, Ortiz-Ospina E, Roser M, Hasell J, Appel C, et al. A global database of COVID-19 vaccinations. *Nat Hum Behav.* (2021) 5:947–53. doi: 10.1101/2021.03.22.21254100
4. World Health Organisation. *Coronavirus Disease (COVID-19): Vaccines.* (2021). Available online at: https://www.who.int/news-room/q-a-detail/coronavirus-disease-(covid-19)-vaccines? (accessed March 15, 2021).
5. Anderson RM, Vegvari C, Truscott J, Collyer BS. Challenges in creating herd immunity to SARS-CoV-2 infection by mass vaccination. *Lancet.* (2020) 396:1614–6. doi: 10.1016/S0140-6736(20)32318-7
6. McKie R. *Would Herd Immunity Stop the Spread of Coronavirus?* (2020). Available online at: https://www.theguardian.com/world/2020/oct/11/would-herd-immunity-stop-the-spread-of-coronavirus (accessed May 15, 2021).
7. Oraby T, Tyshenko MG, Maldonado JC, Vatcheva K, Elsaadany S, Alali WQ, et al. Modeling the effect of lockdown timing as a COVID-19 control measure in countries with differing social contacts. *Sci Rep.* (2021) 11:3354. doi: 10.1038/s41598-021-82873-2
8. World Health Organisation. *Impact of COVID-19 on People's Livelihoods, Their Health and Our Food Systems.* (2020). Available online at: https://www.who.int/news/item/13-10-2020-impact-of-covid-19-on-people%27s-livelihoods-their-health-and-our-food-systems (accessed June 15, 2021).
9. World Health Organization. *Mental Health & COVID-19.* (2021). Available online at: https://www.who.int/teams/mental-health-and-substance-use/covid-19 (accessed April 15, 2021).
10. Brooks SK, Webster RK, Smith LE, Woodland L, Wessely S, Greenberg N, et al. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *Lancet.* (2020) 395:912–20. doi: 10.1016/S0140-6736(20)30460-8
11. Ammar A, Trabelsi K, Brach M, Chtourou H, Boukhris O, Masmoudi L, et al. Effects of home confinement on mental health and lifestyle behaviours during the COVID-19 outbreak: insights from the ECLB-COVID19 multicentre study. *Biol Sport.* (2021) 38:9–21. doi: 10.1101/2020.05.04.20091017
12. Hootman KC, Guertin KA, Cassano PA. Stress and psychological constructs related to eating behavior are associated with anthropometry and body composition in young adults. *Appetite.* (2018) 125:287–94. doi: 10.1016/j.appet.2018.01.003
13. Penaforte FRO, Minelli MCS, Anastácio LR, Japur CC. Anxiety symptoms and emotional eating are independently associated with sweet craving in young adults. *Psychiatry Res.* (2019) 271:715–20. doi: 10.1016/j.psychres.2018.11.070
14. Moynihan AB, van Tilburg WA, Igou ER, Wisman A, Donnelly AE, Mulcaire JB. Eaten up by boredom: consuming food to escape awareness of the bored self. *Front Psychol.* (2015) 6:369. doi: 10.3389/fpsyg.2015.00369
15. Khalid S, Williams CM, Reynolds SA. Is there an association between diet and depression in children and adolescents? A systematic review. *Br J Nutr.* (2016) 116:2097–108. doi: 10.1017/S0007114516004359
16. Van Dyk TR, Becker SP, Byars KC. Rates of mental health symptoms and associations with self-reported sleep quality and sleep hygiene in adolescents presenting for insomnia treatment. *J Clin Sleep Med.* (2019) 15:1433–42. doi: 10.5664/jcsm.7970
17. Cecchetto C, Aiello M, Gentili C, Ionta S, Osimo SA. Increased emotional eating during COVID-19 associated with lockdown, psychological and social distress. *Appetite.* (2021) 160:105122. doi: 10.1016/j.appet.2021.105122
18. Osimo SA, Aiello M, Gentili C, Ionta S, Cecchetto C. The influence of personality, resilience, and alexithymia on mental health during COVID-19 pandemic. *Front Psychol.* (2021) 12:630751. doi: 10.3389/fpsyg.2021.630751
19. Yang GY, Lin XL, Fang AP, Zhu HL. Eating habits and lifestyles during the initial stage of the COVID-19 lockdown in China: a cross-sectional study. *Nutrients.* (2021) 13:970. doi: 10.3390/nu13030970
20. Jia P, Liu L, Xie X, Yuan C, Chen H, Guo B, et al. Changes in dietary patterns among youths in China during COVID-19 epidemic: the COVID-19 impact on lifestyle change survey (COINLICS). *Appetite.* (2021) 158:105015. doi: 10.1016/j.appet.2020.105015
21. Hall G, Laddu DR, Phillips SA, Lavie CJ, Arena R. A tale of two pandemics: how will COVID-19 and global trends in physical inactivity and sedentary behavior affect one another? *Prog Cardiovasc Dis.* (2021) 64:108–10. doi: 10.1016/j.pcad.2020.04.005
22. Grant F, Scalvedi ML, Scognamiglio U, Turrini A, Rossi L. Eating Habits during the COVID-19 Lockdown in Italy: the nutritional and lifestyle side effects of the pandemic. *Nutrients.* (2021) 13:2279. doi: 10.3390/nu13072279
23. Galali Y. The impact of COVID-19 confinement on the eating habits and lifestyle changes: a cross sectional study. *Food Sci Nutr.* (2021) 9:2105–13. doi: 10.1002/fsn3.2179
24. Ammar A, Brach M, Trabelsi K, Chtourou H, Boukhris O, Masmoudi L, et al. Effects of COVID-19 home confinement on eating behaviour and physical activity: results of the ECLB-COVID19 international online survey. *Nutrients.* (2020) 12:1583.
25. Stockwell S, Trott M, Tully M, Shin J, Barnett Y, Butler L, et al. Changes in physical activity and sedentary behaviours from before to during the COVID-19 pandemic lockdown: a systematic review. *BMJ Open Sport Exerc Med.* (2021) 7:e000960. doi: 10.1136/bmjsem-2020-000960
26. Warren E, Footman K, Tinelli M, McKee M, Knai C. Do cancer-specific websites meet patient's information needs?

Patient Educ Couns. (2014) 95:126–36. doi: 10.1016/j.pec.2013.12.013
27. El-Gayar O, Timsina P, Nawar N, Eid W. Mobile applications for diabetes self-management: status and potential. *J Diabetes Sci Technol.* (2013) 7:247–62. doi: 10.1177/193229681300700130
28. Ziebland S, Chapple A, Dumelow C, Evans J, Prinjha S, Rozmovits L. How the internet affects patients' experience of cancer: a qualitative study. *BMJ.* (2004) 328:564. doi: 10.1136/bmj.328.7439.564
29. Dadaczynski K, Okan O, Messer M, Leung AYM, Rosário R, Darlington E, et al. Digital health literacy and web-based information-seeking behaviors of university students in Germany during the COVID-19 pandemic: cross-sectional survey study. *J Med Internet Res.* (2021) 23:e24097. doi: 10.2196/preprints.24097
30. Liebl P, Seilacher E, Koester MJ, Stellamanns J, Zell J, Hübner J. What cancer patients find in the internet: the visibility of evidence-based patient information - analysis of information on German websites. *Oncol Res Treat.* (2015) 38:212–8. doi: 10.1159/000381739
31. Hua J, Shaw R. Corona Virus (COVID-19) "Infodemic" and emerging issues through a data lens: the case of China. *Int J Environ Res Public Health.* (2020) 17:2309. doi: 10.3390/ijerph17072309
32. Zarocostas J. How to fight an infodemic. *Lancet.* (2020) 395:676. doi: 10.1016/S0140-6736(20)30461-X
33. Islam MS, Sarkar T, Khan SH, Mostofa Kamal AH, Hasan SMM, Kabir A, et al. COVID-19-related infodemic and its impact on public health: a global social media analysis. *Am J Trop Med Hyg.* (2020) 103:1621–9. doi: 10.4269/ajtmh.20-0812
34. Ahmad AR, Murad HR. The impact of social media on panic during the COVID-19 pandemic in Iraqi Kurdistan: online questionnaire study. *J Med Internet Res.* (2020) 22:e19556. doi: 10.2196/19556
35. Riera R, Bagattini Â M, Pacheco RL, Pachito DV, Roitberg F, Ilbawi A. Delays and disruptions in cancer health care due to COVID-19 pandemic: systematic review. *JCO Glob Oncol.* (2021) 7:311–23. doi: 10.1200/GO.20.00639
36. Duong TV, Pham KM, Do BN, Kim GB, Dam HTB, Le VT, et al. Digital healthy diet literacy and self-perceived eating behavior change during COVID-19 pandemic among undergraduate nursing and medical students: a rapid online survey. *Int J Environ Res Public Health.* (2020) 17:7185. doi: 10.3390/ijerph17197185
37. Norman CD, Skinner HA. eHealth literacy: essential skills for consumer health in a networked world. *J Med Internet Res.* (2006) 8:e9. doi: 10.2196/jmir.8.2.e9
38. Vu DN, Phan DT, Nguyen HC, Le LT, Nguyen HC, Ha TH, et al. Impacts of digital healthy diet literacy and healthy eating behavior on fear of COVID-19, changes in mental health, and health-related quality of life among front-line health care workers. *Nutrients.* (2021) 13:2656. doi: 10.3390/nu13082656
39. Nguyen MH, Pham TTM, Nguyen KT, Nguyen YH, Tran TV, Do BN, et al. Negative impact of fear of COVID-19 on health-related quality of life was modified by health literacy, eHealth literacy, and digital healthy diet literacy: a multi-hospital survey. *Int J Environ Res Public Health.* (2021) 18:4929 doi: 10.3390/ijerph18094929
40. Yang BX, Xia L, Huang R, Chen P, Luo D, Liu Q, et al. Relationship between eHealth literacy and psychological status during COVID-19 pandemic: a survey of Chinese residents. *J Nurs Manag.* (2021) 29:805–12. doi: 10.1111/jonm.13221
41. Tsukahara S, Yamaguchi S, Igarashi F, Uruma R, Ikuina N, Iwakura K, et al. Association of eHealth literacy with lifestyle behaviors in university students: questionnaire-based cross-sectional study. *J Med Internet Res.* (2020) 22:e18155. doi: 10.2196/18155
42. Yang SC, Luo YF, Chiang CH. Electronic health literacy and dietary behaviors in Taiwanese college students: cross-sectional study. *J Med Internet Res.* (2019) 21:e13140. doi: 10.2196/13140
43. Do BN, Tran TV, Phan DT, Nguyen HC, Nguyen TTP, Nguyen HC, et al. Health literacy, eHealth literacy, adherence to infection prevention and control procedures, lifestyle changes, and suspected COVID-19 symptoms among health care workers during lockdown: online survey. *J Med Internet Res.* (2020) 22:e22894. doi: 10.2196/22894
44. World Health Organisation. *COVID-19: Vulnerable and High Risk Groups.* (2020). Available online at: https://www.who.int/westernpacific/emergencies/covid-19/information/high-risk-groups (accessed May 8, 2020).
45. Barach P, Fisher SD, Adams MJ, Burstein GR, Brophy PD, Kuo DZ, et al. Disruption of healthcare: will the COVID pandemic worsen non-COVID outcomes and disease outbreaks? *Prog Pediatr Cardiol.* (2020) 59:101254. doi: 10.1016/j.ppedcard.2020.101254
46. World Health Organisation. *Coronavirus Disease (COVID-19) Advice for the Public.* (2020). Available online at: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public (accessed May 10, 2020).
47. Prime Minister of Vietnam. *PM Orders Strict Nationwide Social Distancing Rules, Starting April 1. 2020*. Available online at: https://vietnamlawmagazine.vn/pm-orders-strict-nationwide-social-distancing-rules-starting-april-1-27108.html (accessed March 31, 2020).
48. Prime Minister of Vietnam. *Gov't Extends Social Distancing for at Least One Week in 28 Localities.* (2020). Available online at: http://news.chinhphu.vn/Home/Govt-extends-social-distancing-for-at-least-one-week-in-28-localities/20204/39735.vgp (accessed April 20, 2020).
49. Vietnam Ministry of Health. *Vietnam COVID-19 Data*. (2021). Available online at: https://ncov.vncdc.gov.vn/viet-nam.html (accessed April 30, 2021).
50. Vietnam Ministry of Health. *Prime Minister Instructed to Continue Measures to Prevent and Control the COVID-19 Epidemic in the New Situation.* (2020). Available online at: https://covid19.gov.vn/thu-tuong-chi-thi-tiep-tuc-cac-bien-phap-phong-chong-dich-covid-19-trong-tinh-hinh-moi-1717039716.htm (accessed April 15, 2021).
51. Quan HD, Li B, Couris CM, Fushimi K, Graham P, Hider P, et al. Updating and validating the Charlson comorbidity index and score for risk adjustment in hospital discharge abstracts using data from 6 countries. *Am J Epidemiol.* (2011) 173:676–82. doi: 10.1093/aje/kwq433
52. BMJ Editorial Team. *Overview of Novel Coronavirus (2019-nCoV).* BMJ Best Practice (2020). Available online at: https://bestpractice.bmj.com/topics/en-gb/3000165 (accessed March 10, 2020).
53. Nguyen MH, Pham TTM, Pham LV, Phan DT, Tran TV, Nguyen HC, et al. Associations of underlying health conditions with anxiety and depression among outpatients: modification effects of suspected COVID-19 symptoms, health-related and preventive behaviors. *Int J Public Health.* (2021) 66:634904. doi: 10.3389/ijph.2021.634904
54. Duong TV, Nguyen TTP, Pham KM, Nguyen KT, Giap MH, Tran TDX, et al. Validation of the short-form health literacy questionnaire (HLS-SF12) and its determinants among people living in rural areas in Vietnam. *Int J Environ Res Public Health.* (2019) 16:3346. doi: 10.3390/ijerph16183346
55. Van Hoa H, Giang HT, Vu PT, Van Tuyen D, Khue PM. Factors associated with health literacy among the elderly people in Vietnam. *Biomed Res Int.* (2020) 2020:3490635. doi: 10.1155/2020/3490635
56. Do BN, Nguyen PA, Pham KM, Nguyen HC, Nguyen MH, Tran CQ, et al. Determinants of health literacy and its associations with health-related behaviors, depression among the older people with and without suspected COVID-19 symptoms: a multi-institutional study. *Front Public Health.* (2020) 8:581746. doi: 10.3389/fpubh.2020.581746
57. Nguyen TT, Le NT, Nguyen MH, Pham LV, Do BN, Nguyen HC, et al. Health literacy and preventive behaviors modify the association between pre-existing health conditions and suspected COVID-19 symptoms: a multi-institutional Survey. *Int J Environ Res Public Health.* (2020) 17:8598. doi: 10.3390/ijerph17228598
58. Duong TV, Aringazina A, Kayupova G, Nurjanah, Pham TV, Pham KM, et al. Development and validation of a new short-form health literacy instrument (HLS-SF12) for the general public in six Asian countries. *Health Lit Res Pract.* (2019) 3:e91–102. doi: 10.3928/24748307-20190225-01
59. Ahorsu DK, Lin CY, Imani V, Saffari M, Griffiths MD, Pakpour AH. The Fear of COVID-19 scale: development and initial validation. *Int J Ment Health Addict.* (2020) 1–9. doi: 10.1007/s11469-020-00270-8
60. Perz CA, Lang BA, Harrington R. Validation of the fear of COVID-19 scale in a US college sample. *Int J Ment Health Addict.* (2020) 1–11. doi: 10.1007/s11469-020-00356-3
61. Nguyen HT, Do BN, Pham KM, Kim GB, Dam HTB, Nguyen TT, et al. Fear of COVID-19 scale-associations of its scores with health literacy and health-related behaviors among medical students. *Int J Environ Res Public Health.* (2020) 17:4164. doi: 10.3390/ijerph17114164
62. Ruiz-Roso MB, Knott-Torcal C, Matilla-Escalante DC, Garcimartín A, Sampedro-Nuñez MA, Dávalos A, et al. COVID-19 lockdown and changes

of the dietary pattern and physical activity habits in a cohort of patients with type 2 diabetes mellitus. *Nutrients.* (2020) 12:2327. doi: 10.3390/nu12082327
63. Jia P, Zhang L, Yu W, Yu B, Liu M, Zhang D, et al. Impact of COVID-19 lockdown on activity patterns and weight status among youths in China: the COVID-19 impact on lifestyle change survey (COINLICS). *Int J Obes.* (2021) 45:695–9. doi: 10.1038/s41366-020-00710-4
64. Pham KM, Pham LV, Phan DT, Tran TV, Nguyen HC, Nguyen MH, et al. Healthy dietary intake behavior potentially modifies the negative effect of COVID-19 lockdown on depression: a hospital and health center survey. *Front Nutr.* (2020) 7:581043. doi: 10.3389/fnut.2020.581043
65. Li Y, Lv MR, Wei YJ, Sun L, Zhang JX, Zhang HG, et al. Dietary patterns and depression risk: a meta-analysis. *Psychiatry Res.* (2017) 253:373–82. doi: 10.1016/j.psychres.2017.04.020
66. Górnicka M, Drywień ME, Zielinska MA, Hamułka J. Dietary and lifestyle changes during covid-19 and the subsequent lockdowns among polish adults: a cross-sectional online survey PLifeCOVID-19 study. *Nutrients.* (2020) 12:2324. doi: 10.3390/nu12082324
67. Greaney ML, Kunicki ZJ, Drohan MM, Ward-Ritacco CL, Riebe D, Cohen SA. Self-reported changes in physical activity, sedentary behavior, and screen time among informal caregivers during the COVID-19 pandemic. *BMC Public Health.* (2021) 21:1292. doi: 10.1186/s12889-021-11294-7
68. Schmidt SCE, Anedda B, Burchartz A, Eichsteller A, Kolb S, Nigg C, et al. Physical activity and screen time of children and adolescents before and during the COVID-19 lockdown in Germany: a natural experiment. *Sci Rep.* (2020) 10:21780. doi: 10.1038/s41598-020-78438-4
69. Hallal PC, Andersen LB, Bull FC, Guthold R, Haskell W, Ekelund U. Global physical activity levels: surveillance progress, pitfalls, and prospects. *Lancet.* (2012) 380:247–57. doi: 10.1016/S0140-6736(12)60646-1

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Impacts and interactions of COVID-19 response involvement, health-related behaviours, health literacy on anxiety, depression and health-related quality of life among healthcare workers: a cross-sectional study

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ABSTRACT

Objectives We examined impacts and interactions of COVID-19 response involvement, health-related behaviours and health literacy (HL) on anxiety, depression, and health-related quality of life (HRQoL) among healthcare workers (HCWs).

Design A cross-sectional study was conducted. Data were collected 6 April to 19 April 2020 using online-based, self-administered questionnaires.

Setting 19 hospitals and health centres in Vietnam.

Participants 7 124 HCWs aged 21–60 years.

Results The COVID-19 response-involved HCWs had higher anxiety likelihood (OR (95% CI)=4.41 (3.53 to 5.51)), higher depression likelihood (OR(95% CI)=3.31 (2.71 to 4.05)) and lower HRQoL score (coefficient, b(95% CI)=−2.14 (−2.89 to −1.38)), compared with uninvolved HCWs. Overall, HCWs who smoked or drank at unchanged/increased levels had higher likelihood of anxiety, depression and lower HRQoL scores; those with unchanged/healthier eating, unchanged/more physical activity and higher HL scores had lower likelihood of anxiety, depression and higher HRQoL scores. In comparison to uninvolved HCWs who smoked or drank at never/stopped/reduced levels, involved HCWs with unchanged/increased smoking or drinking had lower anxiety likelihood (OR(95% CI)=0.34 (0.14 to 0.83)) or (OR(95% CI)=0.26 (0.11 to 0.60)), and lower depression likelihood (OR(95% CI)=0.33 (0.15 to 0.74)) or (OR(95% CI)=0.24 (0.11 to 0.53)), respectively. In comparison with uninvolved HCWs who exercised at never/stopped/reduced levels, or with those in the lowest HL quartile, involved HCWs with unchanged/increased exercise or with one-quartile HL increment reported lower anxiety likelihood (OR(95% CI)=0.50 (0.31 to 0.81)) or (OR(95% CI)=0.57 (0.45 to 0.71)), lower depression likelihood (OR(95% CI)=0.40 (0.27 to 0.61)) or (OR(95% CI)=0.63 (0.52 to 0.76)), and higher HRQoL scores (b(95% CI)=2.08 (0.58 to 3.58)), or (b(95% CI)=1.10 (0.42 to 1.78)), respectively.

Conclusions Physical activity and higher HL were found to protect against anxiety and depression and were associated with higher HRQoL. Unexpectedly, smoking and drinking were also found to be coping behaviours. It is important to have strategic approaches that protect HCWs' mental health and HRQoL.

Strengths and limitations of this study

- ► Both research assistants and studied healthcare workers were vulnerable to COVID-19 infection.
- ► Hospitals, health centres, researchers and assistants were required to strictly follow the safety guidelines during data collection.
- ► Causality cannot be drawn from a cross-sectional design.
- ► Findings from a large studied sample can be generated to healthcare workers.
- ► Findings can be helpful for future studies and strategic interventions to contain the pandemic.

INTRODUCTION

The COVID-19 disease caused by the SARS-CoV-2 virus has been recognised as a global public health concern.[1–3] The pandemic posts a huge burden to all governments and healthcare systems worldwide.[4 5] It influences people's mental health and health-related quality of life (HRQoL)[6] and delays

access to the provision of care.[7] There is currently no specific antiviral treatment for COVID-19 and no available vaccine.[8] Therefore, prevention and supportive care are highly recommended.[9–14]

All nations' medical and public health workforces and response capacities have been mobilised to prevent COVID-19 from spreading.[15] High demand for healthcare facilities outstrips supply dilemmas,[16–20] especially in low-income and middle-income countries.[21] Affected countries have mobilised and reallocated resources to respond to the COVID-19 pandemic.[22–24] In addition, increases in healthcare professionals' absenteeism and malpractice due to the epidemic have been reported,[25] as have reassignment of healthcare personnel, and involvement of students in healthcare delivery during the pandemic.[22 23 26] This situation will not improve if medical facilities are not sufficiently equipped and workforces are not well prepared.[27]

Public health response measures including the social distancing and lockdown have been implemented to contain the COVID-19 pandemic. These measures have adverse psychological consequences such as fear, anxiety, depression.[28 29] As unfavourable mental health, outcomes may affect people's HRQoL. Therefore, these issues should be addressed as part of any pandemic response.[30–32]

While healthcare workers (HCWs) are at high risk of developing anxiety, depression, insomnia and distress, these risks are higher among HCWs in frontline settings and those exposed to COVID-19.[33 34] During the social distancing recommendations, the general public is urged to work and study remotely if possible. But because HCWs still have to commute to work and continue providing care, they are more likely to have psychological health problems.[35–38] HCWs need to stay calm, reassure the public and save lives.[39 40] They play an important role in monitoring and supporting patients' and families' psychological health.[38]

Early detection of mental health issues and interventions can help minimise COVID-19 infections and adverse psychological outcomes.[41–44] In order to develop strategies, it is critical to understand the status, sources and protective factors of anxiety, depression and HRQoL in healthcare professionals,[45] especially those involved in the COVID-19 response.[46] We thus examined the impacts and interactions of COVID-19 response involvement with lifestyles and health literacy (HL) on anxiety, depression and HRQoL among HCWs.

METHODS

Study design and settings

A cross-sectional study was conducted on HCWs. Data were collected 6 April to 19 April 2020 using online-based and self-administered questionnaires. The study participants were recruited from 15 hospitals and 4 health centres across Vietnam, including 11 hospitals and 1 health centre in the nation's northern provinces; 1 hospital and 1 health centre in the central Vietnam and 3 hospitals and 2 health centres in the southern provinces.

Study sample

We intentionally invited 19 hospitals and health centres to participate in our study. All HCWs received the announcement about the survey. All were invited to participate. A total sample of 7124 HCWs (out of 11 517 possible participants) aged 21–60 years completed the survey. table 1 lists numbers of studied and possible participants from each hospital and health centre.

Research instruments and assessments

Social demographics and clinical indicators

HCWs' information included age (years), gender (women vs men), marital status (never married vs ever married), ability to pay for medication (very difficult to very easy), body height (cm), weight (kg). Body mass index (kg/m^2) also was calculated. Social status (low, middle, high) was assessed by HCWs themselves based on education, career and salary. The high level when people have the most money, most education and most respected jobs, whereas the low level when people have the least money, least education, and least respected jobs or no job.

HCWs were asked whether they have been involved in healthcare interactions with other departments or facilities responding to the COVID-19 pandemic. In addition, HCWs' information includes type of healthcare personnel—job category (doctors, nurses or others) and type of care facility (non-frontline vs frontline), with frontline positions defined as those in outpatient departments, emergency departments, quarantine, isolation areas, medical imaging and laboratory diagnosis departments, patient administration areas. Respondents were also asked whether they had previous experience with epidemic containment (no vs yes).

HCWs also were asked to report suspected health problems similar to symptoms of COVID-19, named as suspected COVID-19 symptoms (S-COVID-19-S)[47]: common symptoms (fever, cough, dyspnoea), along with less common symptoms (myalgia, fatigue, sputum production, confusion, headache, sore throat, rhinorrhea, chest pain, haemoptysis, diarrhoea and nausea/vomiting). HCWs with any of those symptoms were classified as having S-COVID-19-S. The comorbidity was assessed using the items of the Charlson comorbidity index.[48 49] Finally, HCWs were asked about the pregnancy status, with men also asked whether their wives were pregnant.

Health-related behaviours

HCWs rated their current health-related behaviours compared with before the pandemic. Participants ranked their smoking, drinking and physical activity on a scale ranging from never to stopped, less, unchanged and more. Participants also rated their eating behaviour as less healthy, unchanged and healthier. We then categorised responses into two groups for analysis, for example, never/stopped/less versus unchanged/more for

Table 1 Study participants in different hospitals and health centres

Geographic location	Hospital/health centre	Possible participants	Studied participants
North			
Ha Noi	1. Military Hospital 103	1660	951
	2. E Hospital	1125	335
	3. General Hospital of Agricultural	555	424
	4. Thien An Obstetrics and Gynecology Hospital	68	63
Thai Nguyen	5. Thai Nguyen National Hospital	1186	988
Bac Ninh	6. Bac Ninh Obstetrics and Pediatrics Hospital	391	364
Hai Phong	7. Hai Phong University of Medicine and Pharmacy Hospital	319	316
	8. Kien An Hospital	659	483
	9. Kien Thuy District Health Center	271	271
Quang Ninh	10. Quang Ninh General Hospital	922	683
	11. Bai Chay Hospital	819	476
	12. Quang Ninh Obstetrics and Pediatrics Hospital	478	290
Centre			
Quang Tri	13. Trieu Phong District Health Center	271	203
Da Nang	14. Da Nang Oncology Hospital	555	134
South			
Ho Chi Minh	15. Tan Phu District Hospital	530	241
	16. Hospital District 2	812	318
	17. District 9 Health Center	170	102
	18. Thu Duc District Health Center	302	291
Can Tho	19. Can Tho University Of Medicine and Pharmacy Hospital	424	191
Total		11517	7124

smoking, drinking and doing physical activity; less healthy versus unchanged/healthier for eating behaviour.

Health literacy

HL was assessed using a short-form health literacy questionnaire of 12 items that has been validated and used in Asian countries,[50] including Vietnam.[6 51 52] HCWs rated their perceived difficulty of each item based on 4-point Likert scales from 1=very difficult to 4=veryeasy. The HL index score was standardised to an unified metric from 0 to 50 with higher score representing better HL[53] using the formula:

$$Index = (Mean - 1) \times (50/3) \quad (1)$$

Where Index is the specific index calculated, Mean is the mean of all participating items for each individual, 1 is the minimal possible value of the mean (leading to a minimum value of the index of 0), 3 is the range of the mean and 50 is the chosen maximum value.

Mental health

Anxiety was assessed using the Generalised Anxiety Disorder (GAD-7),[54] an efficient screening and assessment tool that has been validated in Vietnam.[55] HCWs were asked how often they had seven core symptoms in the previous 2 weeks, with 0='not at all', 1='several days', 2='more than half the days' and 3='nearly everyday'. As total GAD-7 scores range from 0 to 21, a GAD-7 score of ≥8 is considered as the optimal cut-off point for identifying anxiety disorder.[56 57]

Depression was assessed using a patient health questionnaire (PHQ)-9,[58] that has been validated and used in Vietnam.[6 59 60] HCWs were asked how often they had been bothered by nine symptoms during the previous 2 weeks on the same as anxiety above; with total PHQ-9 scores ranging from 0 to 27, a score of ≥10 is classified as depression.[58 61 62]

Health-related quality of life

The 36-Item Short Form Survey developed at Research and Development Corporation (RAND) as part of the Medical Outcomes Study was used to assess HRQoL.[63] This also has been used in previous Vietnamese studies.[6 64] The HRQoL score was calculated following the user manual.[65 66] The possible calculated scores range from 0 to a maximum of 100.

Data collection procedure

Research assistants (doctors, nurses and medical students) received a 4-hour training session on data collection by senior researchers at each hospital or health centre. The infection control training was also provided, for example, using masks, washing hands, positioning according to guidelines of the Centers for Disease Control and Prevention,[67] WHO[68] and Vietnam Ministry of Health.[10]

The online survey links were sent via text messages or emails to HCWs at most of the hospitals and health centres. Printed questionnaires were sent to HCWs for self-administration at the following institutions: 774 were returned from Military

Hospital 103; 56 from Thien An Obstetrics and Gynecology Hospital in Ha Noi; 316 from Hai Phong University of Medicine and Pharmacy Hospital, 483 from Kien An Hospital, 271 from Kien Thuy District Health Center in Hai Phong city; and 8 from Quang Ninh General Hospital in Quang Ninh Province. All available HCWs were invited to participate in the survey. Most respondents took 15–20 min to complete the questionnaires. Because all questions were marked as mandatory fields on the online survey, and printed questionnaires were double-checked by research assistants to make sure all questions were answered, there are no missing data. Responses were coded, cleaned and analysed by researchers confidentially.

Data analysis

Different variables' distribution was first explored using descriptive analysis. The distribution of HRQoL scores was checked for normality using a visual inspection of its histogram, normal Q-Q plot.[69] Second, the univariable and multivariable analyses were used to examine the determinants of anxiety, depression and HRQoL. Finally, we conducted the interaction analysis (using the interaction terms) to examine the effect modification of lifestyles and HL on the association of COVID-19 response involvement with anxiety, depression and HRQoL. The unadjusted model (model 1) was run with three terms including X1, X2 and interaction of X1*X2. X can be categorical independent variables (coded as 0 and 1 for eating behaviour, smoking, drinking, physical activity) or ordinal independent variable (with one quartile increment for HL). The adjusted model (model 2) was run with terms in model 1 and selected confounders. The univariable and multivariable logistic regression models were used for dichotomised-dependent variables (eg, anxiety and depression). The univariable and multivariable linear regression models also were used for the continuous dependent variable (eg, HRQoL). Factors that showed associations with anxiety, depression or HRQoL at p<0.20 in the univariable model were selected into the multivariable model. In addition, age and gender were forced into the multivariable models to avoid their residual confounding.[70] HL was analysed as 1 score increment in univariable and multivariable models and as 1 quartile increment in the univariable and multivariable interaction models. All statistical analyses were performed using the IBM SPSS V.20.0 (IBM, Armonk, New York, USA).[71] The significance level was set at a p value <0.05.

Patient and public involvement

Patients or the public were not involved in the design, or conduct, or reporting or dissemination plans of our research.

RESULTS

Participants' characteristics

The mean age of HCWs was 34.4±8.8 years, with 20.9% aged between 41 and 60 years. Of the study sample, 33.8% were men, 49.3% were nurses, 28.8% were doctors, 21.9% were other HCWs. In all, 27.0% of the HCWs were involved in healthcare interactions with other departments or healthcare facilities to respond to the COVID-19 pandemic. During the pandemic, the proportion of HCWs who had 'unchanged/healthier' eating behaviour and those reporting 'unchanged/more' smoking, drinking and physical activity was 95.7%, 3.6%, 4.0% and 61.6%, respectively. Their proportion of anxiety (GAD ≥8) and depression (PHQ ≥10) were 6.6% (473/7124) and 7.9% (561/7124), respectively (table 2). A visual inspection of histogram and normal Q-Q plot showed that HRQoL score was approximately normally distributed (online supplemental figure 1).

Associated factors of anxiety

In the multivariable analysis, the odds of anxiety were statistically significantly smaller in HCWs aged 41–60 years (OR, 0.58; 95% CI 0.42 to 0.78; p<0.001). They were also smaller for those stating they could very easily or fairly easily pay for medication (OR, 0.40; 95% CI 0.31 to 0.51; p<0.001), those who were nurses (OR, 0.58; 95% CI 0.43 to 0.77; p<0.001, reference group was 'others'), those with 'unchanged/healthier' eating behaviour (OR, 0.21; 95% CI 0.15 to 0.28; p<0.001), those with 'unchanged/more' physical activity (OR, 0.24; 95% CI 0.19 to 0.31; p<0.001) and those scoring 1 increment higher on HL (OR, 0.92; 95% CI 0.90 to 0.93; p<0.001) compared with counterparts (table 3).

The likelihood of anxiety was significantly greater in HCWs working at frontline areas (OR, 1.69; 95% CI 1.35 to 2.11; p<0.001), those involved in healthcare interactions in other departments or healthcare facilities (OR, 4.41; 95% CI 3.53 to 5.51; p<0.001) and those who reported 'unchanged/more' smoking (OR, 3.46; 95% CI 2.12 to 5.66; p<0.001) or 'unchanged/more' drinking (OR, 2.14; 95% CI 1.32 to 3.47; p=0.002) compared with counterparts (table 3).

Associated factors of depression

In the multivariable analysis, the odds of depression were statistically significantly smaller in HCWs aged 41–60 years (OR, 0.67; 95% CI 0.51 to 0.87; p=0.003), men (OR, 0.73; 95% CI 0.59 to 0.91; p=0.005), those who could pay for medication very or fairly easily (OR, 0.58; 95% CI 0.47 to 0.71; p<0.001), those who were nurses (OR, 0.60; 95% CI 0.46 to 0.78; p<0.001, reference group was 'others'), those with 'unchanged/healthier' eating behaviour (OR, 0.23; 95% CI 0.17 to 0.30; p<0.001) or 'unchanged/more' physical activity (OR, 0.36; 95% CI 0.29 to 0.44; p<0.001) and those with 1 score increment of HL (OR, 0.92; 95% CI 0.91 to 0.93; p<0.001) compared with counterparts (table 3).

The odds of depression were statistically significantly greater in HCWs who worked in frontline areas (OR, 1.48; 95% CI 1.21 to 1.81; p<0.001), who were involved in healthcare interactions in other departments or healthcare facilities (OR, 3.31; 95% CI 2.71 to 4.05; p<0.001) and who reported 'unchanged/more' smoking (OR, 3.11; 95% CI 1.99 to 4.84; p<0.001) or 'unchanged/

Table 2 Participants' characteristics and anxiety, depression and health-related quality of life

Variables	Total (n=7124)	GDA <8 (n=6651)	GDA≥8 (n=473)	PHQ <10 (n=6563)	PHQ ≥10 (n=561)	HRQoL (n=7124)
	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Mean±SD
COVID-19 response involvement*						
Not involved	5201 (73.0)	4989 (75.0)	212 (44.8)	4915 (74.9)	286 (51.0)	73.9±15.0
Involved	1923 (27.0)	1662 (25.0)	261 (55.2)	1648 (25.1)	275 (49.0)	71.7±15.9
Age, years						
21–40	5638 (79.1)	5228 (78.6)	410 (86.7)	5167 (78.7)	471 (84.0)	73.4±15.4
41–60	1486 (20.9)	1423 (21.4)	63 (13.3)	1396 (21.3)	90 (16.0)	72.9±15.0
Gender						
Women	4713 (66.2)	4412 (66.3)	301 (63.6)	4350 (66.3)	363 (64.7)	73.2±14.9
Men	2411 (33.8)	2239 (33.7)	172 (36.4)	2213 (33.7)	198 (35.3)	73.5±16.1
Marital status						
Never married	1574 (22.1)	1470 (22.1)	104 (22.0)	1449 (22.1)	125 (22.3)	73.0±15.6
Ever married	5550 (77.9)	5181 (77.9)	369 (78.0)	5114 (77.9)	436 (77.7)	73.4±15.2
Ability to pay for medication						
Very or fairly difficult	3744 (52.6)	3396 (51.1)	348 (73.6)	3373 (51.4)	371 (66.1)	71.7±15.7
Very or fairly easy	3380 (47.4)	3255 (48.9)	125 (26.4)	3190 (48.6)	190 (33.9)	75.1±14.6
Social status						
Low	972 (13.6)	907 (13.6)	65 (13.7)	900 (13.7)	72 (12.8)	69.7±16.5
Middle or high	6152 (86.4)	5744 (86.4)	408 (86.3)	5663 (86.3)	489 (87.2)	73.8±15.0
Type of healthcare personnel						
Others	1560 (21.9)	1450 (21.8)	110 (23.3)	1431 (21.8)	129 (23.0)	73.4±15.4
Nurse	3510 (49.3)	3315 (49.8)	195 (41.2)	3281 (50.0)	229 (40.8)	72.6±15.0
Doctor	2054 (28.8)	1886 (28.4)	168 (35.5)	1851 (28.2)	203 (36.2)	74.4±15.6
Type of healthcare facility †						
Non-front-line	4198 (58.9)	3952 (59.4)	246 (52.0)	3895 (59.3)	303 (54.0)	73.2±15.3
Front-line	2926 (41.1)	2699 (40.6)	227 (48.0)	2668 (40.7)	258 (46.0)	73.5±15.2
Epidemic containment experience						
No	4490 (63.0)	4187 (63.0)	303 (64.1)	4122 (62.8)	368 (65.6)	73.1±15.3
Yes	2634 (37.0)	2464 (37.0)	170 (35.9)	2441 (37.2)	193 (34.4)	73.7±15.2
S-COVID-19-S ‡						
No	6323 (88.8)	5905 (88.8)	418 (88.4)	5831 (88.8)	492 (87.7)	74.0±15.1
Yes	801 (11.2)	746 (11.2)	55 (11.6)	732 (11.2)	69 (12.3)	67.9±15.9
BMI, kg/m^2						
Normal weight (BMI <25.0)	6330 (88.9)	5904 (88.8)	426 (90.1)	5836 (88.9)	494 (88.1)	73.4±15.2
Overweight/obese (BMI ≥25.0)	794 (11.1)	747 (11.2)	47 (9.9)	727 (11.1)	67 (11.9)	72.7±16.2
Comorbidity						
None	6845 (96.1)	6386 (96.0)	459 (97.0)	6307 (96.1)	538 (95.9)	73.5±15.2
One or more	279 (3.9)	265 (4.0)	14 (3.0)	256 (3.9)	23 (4.1)	69.4±16.7
Pregnancy status §						
Not pregnant	6694 (94.0)	6245 (93.9)	449 (94.9)	6164 (93.9)	530 (94.5)	73.6±15.2
Pregnant	430 (6.0)	406 (6.1)	24 (5.1)	399 (6.1)	31 (5.5)	67.9±15.9
Eating behaviour ¶						
Eat less-healthy diet	306 (4.3)	189 (2.8)	117 (24.7)	187 (2.8)	119 (21.2)	62.6±14.6
Unchanged or healthier diet	6818 (95.7)	6462 (97.2)	356 (75.3)	6376 (97.2)	442 (78.8)	73.8±15.1
Smoking ¶						
Never, stopped, or smoke less	6870 (96.4)	6434 (96.7)	436 (92.2)	6354 (96.8)	516 (92.0)	73.4±15.2

Continued

Table 2 Continued

Variables	Total (n=7124)	GDA <8 (n=6651)	GDA≥8 (n=473)	PHQ <10 (n=6563)	PHQ ≥10 (n=561)	HRQoL (n=7124)
	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Frequency (%)	Mean±SD
Unchanged or smoke more	254 (3.6)	217 (3.3)	37 (7.8)	209 (3.2)	45 (8.0)	70.1±16.7
Drinking alcohol ¶						
Never, stopped, or drink less	6840 (96.0)	6406 (96.3)	434 (91.8)	6328 (96.4)	512 (91.3)	73.3±15.2
Unchanged or drink more	284 (4.0)	245 (3.7)	39 (8.2)	235 (3.6)	49 (8.7)	73.2±16.2
Physical activity ¶						
Never, stopped, or exercise less	2735 (38.4)	2376 (35.7)	359 (75.9)	2350 (35.8)	385 (68.6)	68.0±15.7
Unchanged or exercise more	4389 (61.6)	4275 (64.3)	114 (24.1)	4213 (64.2)	176 (31.4)	76.6±14.0
HL index, mean±SD	33.9±9.0	34.3±8.9	28.1±7.7	34.4±8.9	28.5±8.2	
HRQoL score, mean±SD	73.3±15.3	74.5±14.9	55.9±9.1	74.6±14.8	58.0±11.8	

*Healthcare workers have involved in healthcare interactions with other departments or healthcare facilities in order to response to the COVID-19 pandemic.
†Frontline areas are outpatient department, emergency department, isolation areas, imaging and laboratory diagnosis department, patient administration areas.
‡The suspected COVID-19 symptoms including common symptom (fever, cough, dyspnoea), less common symptom (myalgia, fatigue, sputum production, confusion, headache, sore throat, rhinorrhea, chest pain, haemoptysis, diarrhoea, and nausea/vomiting).
§Healthcare workers were asked whether they (or their wife if they are men) are currently pregnant.
¶People were asked whether their health-related behaviours are getting worse, better, or unchanged during COVID-19 pandemic as compared with those before the pandemic.
BMI, body mass index; GAD, generalised anxiety disorder; HL, health literacy; HRQoL, health-related quality of life; PHQ, patient health questionnaire; S-COVID-19-S, suspected COVID-19- symptoms.;

more' drinking (OR, 2.24; 95% CI 1.46 to 3.43; p<0.001), compared with counterparts (table 3).

Associated factors of HRQoL

In multivariable analysis, HRQoL scores were significantly lower in HCWs aged 41–60 years (regression coefficient, b, −1.14; 95% CI −1.99 to −0.29; p=0.009) and for those involved in healthcare interactions in other departments or healthcare facilities (b, −2.14; 95% CI −2.89 to −1.38; p<0.001), with S-COVID-19-S (b, −5.28; 95% CI −6.33 to −4.23; p<0.001) and those with comorbidity (b, −3.71; 95% CI −5.42 to −1.99; p<0.001), those who had a pregnancy status (b, −6.09; 95% CI −7.47 to −4.71; p<0.001) and those who reported unchanged or increased smoking (b, −4.72; 95% CI −6.50 to −2.94; p<0.001) compared with counterparts. HRQoL scores were significantly higher in HCWs who could pay for medication very or fairly easily (b, 2.82; 95% CI, 2.14 to 3.49; p<0.001), who were doctors (b, 1.40; 95% CI, 0.44 to 2.37; p<0.001, the reference group was 'others'), whose eating behaviours were unchanged or healthier (b, 6.14; 95% CI, 4.49 to 7.78; p<0.001), whose physical activity was unchanged or increased (b, 6.95; 95% CI, 6.26 to 7.65; p<0.001) and who had a 1-score increment of HL (b, 0.33; 95% CI, 0.29 to 0.37; p<0.001; table 3).

Interactions of COVID-19 response involvement with lifestyles and health literacy

The results of interaction analysis showed that in comparison to HCWs who uninvolved in the COVID-19 response and smoked 'never/stopped/less', those involved in the COVID-19 response, and 'never/stop/less' smoking status had 4.60 times greater anxiety likelihood (p<0.001) and 3.42 times greater depression likelihood (p<0.001), those uninvolved in the pandemic response who reported 'unchanged/more' smoking had 5.46 times greater anxiety likelihood (p<0.001) and 4.69 times greater depression likelihood (p<0.001), those involved in the response with 'unchanged/more' smoking status had 66% lower anxiety likelihood (p=0.017) and 67% lower depression likelihood (p=0.007; table 4).

In comparison to HCWs who were not involved in the COVID-19 response with 'never/stopped/less' drinking status, those who involved in the response with 'never/stopped/less' drinking status had 4.74 times greater anxiety likelihood (p<0.001) and 3.54 times greater depression likelihood (p<0.001), those uninvolved in the pandemic response with "unchanged/more" drinking status had 3.89 times greater anxiety likelihood (p<0.001) and 3.85 times greater depression likelihood (p<0.001), those involved in the pandemic response with 'unchanged/more' drinking status had 74% lower anxiety likelihood (p<0.001) and 76% lower depression likelihood (p<0.001; table 4).

In comparison to HCWs who uninvolved in the COVID-19 response and reported "never/stopped/less" physical activity status, those who involved in the response with 'never/stopped/less' physical activity status had 5.26 times greater anxiety likelihood (p<0.001), 4.42 times greater depression likelihood (p<0.001) and 3.31 lower HRQoL scores (p<0.001), those uninvolved in the response with 'unchanged/more' physical activity status had 65% lower anxiety likelihood (p<0.001), 46% lower

Table 3 Determinants of anxiety, depression and health-related quality of life among healthcare workers (n=7124)

Variables	GDA≥8				PHQ ≥10				HRQoL			
	Univariable		Multivariable		Univariable		Multivariable		Univariable		Multivariable	
	OR (95% CI)	P*	OR (95% CI)	P*	OR (95% CI)	P*	OR (95% CI)	P*	b (95% CI)	P†	b (95% CI)	P†
COVID-19 response involvement ‡												
Not involved	1.00		1.00		1.00		1.00		0.00		0.00	
Involved	3.70 (3.06 to 4.47)	<0.001	4.41 (3.53 to 5.51)	<0.001	2.87 (2.41 to 3.42)	<0.001	3.31 (2.71 to 4.05)	<0.001	−2.21 (−3.01 to −1.42)	<0.001	−2.14 (−2.89 to −1.38)	<0.001
Age, year												
21–40	1.00		1.00		1.00		1.00		0.00		0.00	
41–60	0.57 (0.43 to 0.74)	<0.001	0.58 (0.42 to 0.78)	<0.001	0.71 (0.56 to 0.89)	0.004	0.67 (0.51 to 0.87)	0.003	−0.48 (−1.36 to 0.39)	0.278	−1.14 (−1.99 to −0.29)	0.009
Gender												
Women	1.00		1.00		1.00		1.00		0.00		0.00	
Men	1.13 (0.93 to 1.37)	0.231	0.80 (0.63 to 1.02)	0.074	1.07 (0.90 to 1.28)	0.449	0.73 (0.59 to 0.91)	0.005	0.31 (−0.44 to 1.06)	0.417	0.39 (−0.35 to 1.13)	0.302
Marital status												
Never married	1.00				1.00				0.00			
Ever married	1.01 (0.80 to 1.26)	0.954			0.99 (0.80 to 1.22)	0.911			0.39 (−0.47 to 1.24)	0.373		
Ability to pay for medication												
Very or fairly difficult	1.00		1.00		1.00		1.00		0.00		0.00	
Very or fairly easy	0.38 (0.30 to 0.46)	<0.001	0.40 (0.31 to 0.51)	<0.001	0.54 (0.45 to 0.65)	<0.001	0.58 (0.47 to 0.71)	<0.001	3.41 (2.71 to 4.12)	<0.001	2.82 (2.14 to 3.49)	<0.001
Social status												
Low	1.00				1.00				0.00			
Middle or high	0.99 (0.76 to 1.30)	0.949			1.08 (0.84 to 1.40)	0.561			4.10 (3.08 to 5.13)	<0.001		
Type of healthcare personnel												
Others	1.00		1.00		1.00		1.00		0.00		0.00	
Nurse	0.78 (0.61 to 0.99)	0.039	0.58 (0.43 to 0.77)	<0.001	0.77 (0.62 to 0.97)	0.026	0.60 (0.46 to 0.78)	<0.001	−0.78 (−1.69 to 0.14)	0.095	−0.01 (−0.87 to 0.86)	0.987
Doctor	1.17 (0.92 to 1.51)	0.208	1.15 (0.85 to 1.57)	0.372	1.22 (0.97 to 1.53)	0.097	1.15 (0.87 to 1.52)	0.319	0.96 (−0.05 to −1.96)	0.062	1.40 (0.44 to 2.37)	0.004
Type of healthcare facility§												
Non-front-line	1.00		1.00		1.00		1.00		0.00			
Front-line	1.35 (1.12 to 1.63)	0.002	1.69 (1.35 to 2.11)	<0.001	1.24 (1.05 to 1.48)	0.014	1.48 (1.21 to 1.81)	<0.001	0.33 (−0.39 to 1.05)	0.372		
Epidemic containment experience												
No	1.00				1.00		1.00		0.00		0.00	
Yes	0.95 (0.79 to 1.16)	0.630			0.89 (0.74 to 1.06)	0.189	1.07 (0.87 to 1.31)	0.537	0.61 (−0.12 to 1.35)	0.101	−0.23 (−0.92 to 0.47)	0.521
S-COVID-19-S ¶												
No	1.00				1.00				0.00		0.00	
Yes	1.04 (0.78 to 1.39)	0.784			1.12 (0.86 to 1.45)	0.410			−6.04 (−7.15 to −4.93)	<0.001	−5.28 (−6.33 to −4.23)	<0.001
BMI, kg/m^2												
Normal weight (BMI <25.0)	1.00				1.00				0.00			
Overweight/obese (BMI ≥25.0)	0.87 (0.64 to 1.19)	0.388			1.09 (0.83 to 1.42)	0.532			−0.63 (−1.76 to 0.50)	0.274		
Comorbidity												
None	1.00				1.00				0.00		0.00	
One or more	0.74 (0.43 to 1.27)	0.269			1.05 (0.68 to 1.63)	0.815			−4.09 (−5.91 to −2.26)	<0.001	−3.71 (−5.42 to −1.99)	<0.001

Continued

Table 3 Continued

Variables	GDA≥8				PHQ ≥10				HRQoL			
	Univariable		Multivariable		Univariable		Multivariable		Univariable		Multivariable	
	OR (95% CI)	P*	OR (95% CI)	P*	OR (95% CI)	P*	OR (95% CI)	P*	b (95% CI)	P†	b (95% CI)	P†
Pregnancy status **												
Not pregnant	1.00				1.00				0.00		0.00	
Pregnant	0.82 (0.54 to 1.26)	0.364			0.90 (0.62 to 1.32)	0.597			−5.76 (−7.25 to −4.28)	<0.001	−6.09 (−7.47 to −4.71)	<0.001
Eating behaviour ††												
Eat less-healthy diet	1.00		1.00		1.00		1.00		0.00		0.00	
Unchanged or healthier diet	0.09 (0.07 to 0.12)	<0.001	0.21 (0.15 to 0.28)	<0.001	0.11 (0.09 to 0.14)	<0.001	0.23 (0.17 to 0.30)	<0.001	11.17 (9.44 to 12.90)	<0.001	6.14 (4.49 to 7.78)	<0.001
Smoking ††												
Never, stopped, or smoke less	1.00		1.00		1.00		1.00		0.00		0.00	
Unchanged or smoke more	2.52 (1.75 to 3.61)	<0.001	3.46 (2.12 to 5.66)	<0.001	2.65 (1.90 to 3.70)	<0.001	3.11 (1.99 to 4.84)	<0.001	−3.32 (−5.24 to −1.41)	0.001	−4.72 (−6.50 to −2.94)	<0.001
Drinking alcohol ††												
Never, stopped, or drink less	1.00		1.00		1.00		1.00		0.00			
Unchanged or drink more	2.35 (1.65 to 3.34)	<0.001	2.14 (1.32 to 3.47)	0.002	2.58 (1.87 to 3.55)	<0.001	2.24 (1.46 to 3.43)	<0.001	−0.05 (−1.86 to 1.77)	0.961		
Physical activity ††												
Never, stopped, or exercise less	1.00		1.00		1.00		1.00		0.00		0.00	
Unchanged or exercise more	0.18 (0.14 to 0.22)	<0.001	0.24 (0.19 to 0.31)	<0.001	0.26 (0.21 to 0.31)	<0.001	0.36 (0.29 to 0.44)	<0.001	8.60 (7.90 to 9.31)	<0.001	6.95 (6.26 to 7.65)	<0.001
HL index, 1 score increment	0.93 (0.92 to 0.94)	<0.001	0.92 (0.90 to 0.93)	<0.001	0.93 (0.92 to 0.94)	<0.001	0.92 (0.91 to 0.93)	<0.001	0.38 (0.34 to 0.42)	<0.001	0.33 (0.29 to 0.37)	<0.001

*Result of logistic regression models.
†Result of linear regression models.
‡Healthcare workers have involved in healthcare interactions with other departments or healthcare facilities in order to response to the COVID-19 pandemic.
§Frontline areas are outpatient department, emergency department, isolation areas, imaging and laboratory diagnosis department, patient administration areas.
¶The suspected COVID-19 symptoms including common symptom (fever, cough, dyspnoea), less common symptom (myalgia, fatigue, sputum production, confusion, headache, sore throat, rhinorrhea, chest pain, haemoptysis, diarrhoea, and nausea/vomiting).
**Healthcare workers were asked whether they (or their wife if they are men) are currently pregnant.
††People were asked whether their health-related behaviours are getting worse, better, or unchanged during COVID-19 pandemic as compared with those before the pandemic.
b, regression coefficient; BMI, body mass index; GAD, generalised anxiety disorder; HL, health literacy; HRQoL, health-related quality of life; PHQ, patient health questionnaire; S-COVID-19-S, suspected COVID-19 symptoms.

Table 4 Interactions of COVID-19 response involvement with health-related behaviours and health literacy on anxiety, depression and health-related quality of life among healthcare workers (n=7124)

Interactions	GDA≥8 Model 1 OR (95% CI)	P*	GDA≥8 Model 2 OR (95% CI)	P*	PHQ ≥10 Model 1 OR (95% CI)	P*	PHQ ≥10 Model 2 OR (95% CI)	P*	HRQoL Model 1 b (95% CI)	P†	HRQoL Model 2 b (95% CI)	P†
Interaction with eating behaviour												
Not Involved × Less Healthy	1.00		1.00		1.00		1.00		0.00		0.00	
Involved × Less Healthy	4.58 (2.80 to 7.51)	<0.001	4.65 (2.64 to 8.16)	<0.001	4.31 (2.64 to 7.03)	<0.001	4.05 (2.36 to 6.96)	<0.001	−3.02 (−6.45 to 0.41)	0.084	−1.59 (−4.77 to 1.58)	0.326
Not Involved × Unchanged/Healthier	0.11 (0.08 to 0.17)	<0.001	0.24 (0.16 to 0.37)	<0.001	0.15 (0.11 to 0.22)	<0.001	0.29 (0.19 to 0.43)	<0.001	10.38 (8.12 to 12.64)	<0.001	5.95 (3.84 to 8.06)	<0.001
Involved × Unchanged/Healthier	0.72 (0.42 to 1.23)	0.232	0.91 (0.49 to 1.67)	0.758	0.58 (0.34 to 0.97)	0.040	0.75 (0.42 to 1.35)	0.340	1.22 (−2.30 to 4.75)	0.496	−0.47 (−3.74 to 2.80)	0.777
Interaction with smoking												
Not Involved × Never/Stopped/Less	1.00		1.00		1.00		1.00		0.00		0.00	
Involved × Never/Stopped/Less	3.99 (3.28 to 4.87)	<0.001	4.60 (3.65 to 5.80)	<0.001	3.08 (2.57 to 3.69)	<0.001	3.42 (2.78 to 4.21)	<0.001	−2.08 (−2.90 to −1.27)	<0.001	−1.97 (−2.73 to −1.20)	<0.001
Not Involved × Unchanged/More	4.04 (2.56 to 6.36)	<0.001	5.46 (3.12 to 9.56)	<0.001	3.97 (2.64 to 5.97)	<0.001	4.69 (2.85 to 7.72)	<0.001	−2.38 (−4.67 to −0.10)	0.041	−3.97 (−6.09 to −1.85)	<0.001
Involved × Unchanged/More	0.32 (0.15 to 0.70)	0.004	0.34 (0.14 to 0.83)	0.017	0.34 (0.17 to 0.70)	0.003	0.33 (0.15 to 0.74)	0.007	−2.86 (−7.02 to 1.29)	0.177	−1.99 (−5.81 to 1.83)	0.308
Interaction with drinking alcohol												
Not Involved × Never/Stopped/Less	1.00		1.00		1.00		1.00					
Involved × Never/Stopped/Less	4.02 (3.30 to 4.90)	<0.001	4.74 (3.75 to 5.98)	<0.001	3.12 (2.60 to 3.75)	<0.001	3.54 (2.87 to 4.36)	<0.001				
Not involved × Unchanged/More	3.84 (2.46 to 5.99)	<0.001	3.89 (2.24 to 6.76)	<0.001	4.04 (2.73 to 5.97)	<0.001	3.85 (2.38 to 6.22)	<0.001				
Involved × Unchanged/More	0.30 (0.15 to 0.63)	0.002	0.26 (0.11 to 0.60)	<0.001	0.30 (0.15 to 0.59)	<0.001	0.24 (0.11 to 0.53)	<0.001				
Interaction with physical activity												
Not Involved × Never/Stopped/Less	1.00		1.00		1.00		1.00		0.00		0.00	
Involved × Never/Stopped/Less	4.66 (3.70 to 5.87)	<0.001	5.26 (4.03 to 6.87)	<0.001	4.01 (3.21 to 5.01)	<0.001	4.42 (3.44 to 5.68)	<0.001	−3.70 (−4.93 to −2.48)	<0.001	−3.31 (−4.49 to −2.12)	<0.001
Not Involved × Unchanged/More	0.24 (0.18 to 0.33)	<0.001	0.35 (0.26 to 0.49)	<0.001	0.38 (0.30 to 0.48)	<0.001	0.54 (0.41 to 0.70)	<0.001	7.84 (7.02 to 8.66)	<0.001	6.29 (5.49 to 7.09)	<0.001
Involved × Unchanged/More	0.50 (0.32 to 0.77)	0.002	0.50 (0.31 to 0.81)	0.005	0.39 (0.27 to 0.58)	<0.001	0.40 (0.27 to 0.61)	<0.001	2.69 (1.12 to 4.26)	0.001	2.08 (0.58 to 3.58)	0.007
Interaction with health literacy												
Not Involved × Lowest Quartile of HL	1.00		1.00		1.00		1.00		0.00		0.00	
Involved × Lowest Quartile of HL	18.96 (12.40 to 28.99)	<0.001	12.06 (7.59 to 19.16)	<0.001	11.93 (8.06 to 17.67)	<0.001	7.84 (5.14 to 11.96)	<0.001	−7.71 (−9.76 to −5.67)	<0.001	−5.00 (−6.97 to −3.02)	<0.001
Not involved × 1-Quartile Increment of HL	0.53 (0.46 to 0.61)	<0.001	0.55 (0.48 to 0.64)	<0.001	0.56 (0.50 to 0.63)	<0.001	0.58 (0.51 to 0.65)	<0.001	3.07 (2.72 to 3.43)	<0.001	2.53 (2.19 to 2.88)	<0.001
Involved × 1-Quartile Increment of HL	0.47 (0.38 to 0.58)	<0.001	0.57 (0.45 to 0.71)	<0.001	0.53 (0.44 to 0.64)	<0.001	0.63 (0.52 to 0.76)	<0.001	1.82 (1.11 to 2.52)	<0.001	1.10 (0.42 to 1.78)	0.002

*Result of logistic regression models.
†Result of linear regression models.
b, regression coefficient; BMI, body mass index; GAD, generalised anxiety disorder; HL, health literacy; HRQoL, health-related quality of life; PHQ, patient health questionnaire.

depression likelihood (p<0.001) and 6.29 higher HRQoL scores (p<0.001), their counterparts involved in the response with 'unchanged/more' physical activity status had 50% lower anxiety likelihood (p=0.005), 60% lower depression likelihood (p<0.001) and 2.08 higher HRQoL scores (p=0.007; table 4).

In comparison to HCWs uninvolved in the COVID-19 response in the lowest HL quartile, those who involved in the response with the lowest quartile of HL had 12.06 times greater anxiety likelihood (p<0.001), 7.84 times greater depression likelihood (p<0.001) and 5.00 lower HRQoL scores (p<0.001), those uninvolved in the response and with a one-quartile increment of HL had 45% lower anxiety likelihood (p<0.001), 42% lower depression likelihood (p<0.001) and 2.53 higher HRQoL score (p<0.001), their counterparts involved in the response with a one-quartile increment of HL had 43% lower anxiety likelihood (p<0.001), 37% lower depression likelihood (p<0.001) and 1.10 higher HRQoL scores (p=0.002; table 4).

DISCUSSION

Findings of the current study illustrate an important aspect of COVID-19 containment strategies: adverse psychological outcomes among HCWs. Those HCWs involved in healthcare interactions with other departments or healthcare facilities to responding to the COVID-19 pandemic had a greater likelihood of anxiety, depression and lower HRQoL. This finding is consistent with recent literature finding HCWs suffer from mental health problems (eg, fear, anxiety, depression, insomnia and distress), especially those working in the frontline positions.[33 34] These adverse psychological outcomes may affect HCWs' HRQoL. Governments and organisations urgently need to implement appropriate preparations and interventions to mitigate such psychological consequences of COVID-19.[28 29 72 73] Authorities also need to reinforce the HCWs' capacity for compassion and help them overcome the distress and fear so they can provide effective care under difficult clinical circumferences.[74] The roles of governments and leaders are critically important in containing and responding to the COVID-19 pandemic.[75]

Overall, our results showed that smoking and drinking are harmful to HCWs' mental health and HRQoL, while healthy eating and higher HL are protective factors. However, in the sample of HCWs who were involved in the pandemic response, the association was interestingly changed in the interaction analysis finding that smoking and drinking were associated with better mental health in response-involved HCWs. Previous studies illustrated that in the unpleasant events, cigarette smoking may help to relieve negative emotions such as anxiety and stress.[76 77] In addition, the smoking rates are higher in people with mental health problems than in the general population.[78] Alcohol consumption has been associated with reduction of tensions, which has a positive impact on mental health.[79] Even so, smoking still considered harmful to HRQoL in the current study, consistent with the previous studies.[80 81] It is critical to consider alternative coping strategies when designing intervention programmes, to avoid adverse long-term effects of smoking and drinking.[82 83]

In our study, physical activity was found to protect the response-involved HCWs' mental health and HRQoL. Physical activity has been shown to be a protective factor of depression an effective treatment for depression[84 85] In addition, physical activity has shown a positive association with HRQoL.[86]

Importantly, the response-involved HCWs with higher HL had a lower likelihood of anxiety and depression and higher HRQoL. HL plays an important role in evaluating online health information.[87] The HL skill is critical for people with diverse digital information sources,[88] especially during the COVID-19 pandemic. HL is necessary if HCWs are to conduct accurate and timely consultations, particularly in the fast-changing conditions and possible mobility limitations of the pandemic. In addition, higher HL scores were independently associated with healthier behaviours (eg, exercise, balanced diet)[89 90] that further contribute to improved mental health and well-being.[91]

In the present study, the effect modification of healthy eating was not found in the interaction analysis, but it was found as a protective factor of mental health and HRQoL in the multivariable analysis. The effect of diet and nutrition on mental health and well-being has been discussed previously.[91 92] Better diet's role in lowering depression risk also has been documented.[93 94] Among risk management strategies, studies have shown that diet and nutrition are important factors protecting against SARS-CoV-II infection.[95–97] Foods provide antioxidant and anti-inflammatory nutrients that influence the immune function, reduce infection risk and modulate COVID-19's clinical course.[95 96 98]

We found that older HCWs had a lower likelihood of anxiety and depression during the pandemic. This might be explained by longer working experience that can help in regulating negative emotions. However, older HCWs had lower HRQoL than younger respondents, as has been found in previous studies in Vietnam.[86 99 100] In addition, men had a lower likelihood of depression as compared with women, possibly because women face increased burdens during the pandemic such as difficulties in sourcing food and financing household costs as well as housework, child care and disrupted women's health services.[101] Clearly, it is important to equally address women's and men's health issues to most effectively fight pandemic illness.[101] Furthermore, HCWs with better ability to pay for medication had a lower likelihood of anxiety and depression as well as better HRQoL. Previous studies have shown a positive association between higher income and higher HRQoL in the general population.[86 102]In the current study, HCWs who worked at the front-line areas had a higher likelihood of anxiety and depression. The finding is consistent with previous studies.[33 34] In addition, HCWs with S-COVID-19-S or with comorbidity had lower HRQoL. These findings were

consistent with a previous study conducted in the general population who visit the outpatient department during the COVID-19 pandemic.[6] Additionally, women, or men whose wife got pregnant during the pandemic had lower HRQoL. This could be the result of nausea and vomiting of pregnancy[103] and the decreased sexual function and activity during the pregnancy.[104 105] HCWs are recognised as a groups with middle or high social status, high standard of health-related knowledge and skills. Therefore, the associations found in the current study might not as strong as that in other populations. However, the finding of a large sample study can be generated among HCWs in Vietnam and possibly in other countries.

CONCLUSIONS

Our study shows that HCWs involved in healthcare interactions in other departments or health facilities involved with the COVID-19 pandemic had a higher likelihood of anxiety, depression, and lower HRQoL. Overall, healthy eating, physical activity, and higher HL were associated with lower likelihood of anxiety and depression, and with higher HRQoL. Smoking and drinking were associated with poorer mental health and HRQoL. Physical activity and health literacy appear to protect mental health and HRQoL in response-involved HCWs, but drinking was harmful to HRQoL. Unexpectedly, smoking and drinking also were negatively associated with response-involved HCWs' mental health. The long-term effect of lifestyles and HL needs to be investigated in future studies. The findings of the current study provide evidence for governments and organisations strategizing to protect HCWs' mental health and HRQoL during and after the pandemic.

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REFERENCES

1 Wang C, Horby PW, Hayden FG, *et al*. A novel coronavirus outbreak of global health concern. *Lancet* 2020;395:470–3.

2 Thompson R. Pandemic potential of 2019-nCoV. *Lancet Infect Dis* 2020;20:280.
3 Wu JT, Leung K, Leung GM. Nowcasting and forecasting the potential domestic and international spread of the 2019-nCoV outbreak originating in Wuhan, China: a modelling study. *Lancet* 2020;395:689–97.
4 The Lancet Infectious Diseases. COVID-19: endgames. *Lancet Infect Dis* 2020;20:511.
5 Duan H, Wang S, Yang C. Coronavirus: limit short-term economic damage. *Nature* 2020;578:515–15.
6 Nguyen HC, Nguyen MH, Do BN, *et al*. People with suspected COVID-19 symptoms were more likely depressed and had lower health-related quality of life: the potential benefit of health literacy. *J Clin Med* 2020;9:965.
7 Lazzerini M, Barbi E, Apicella A, *et al*. Delayed access or provision of care in Italy resulting from fear of COVID-19. *Lancet Child Adolesc Health* 2020;4:e10–11.
8 Nicola M, O'Neill N, Sohrabi C, *et al*. Evidence based management guideline for the COVID-19 pandemic - Review article. *Int J Surg* 2020;77:206–16.
9 World Health Organisation. Coronavirus disease (COVID-19) outbreak, 2020. Available: https://www.who.int/emergencies/diseases/novel-coronavirus-2019 [Accessed 11 Mar 2020].
10 Ministry of Health. Coronavirus disease (COVID-19) outbreak in Vietnam, 2020. Available: https://ncov.moh.gov.vn/ [Accessed 4 May 2020].
11 World Health Organization (WHO). Home care for patients with suspected novel coronavirus (nCoV) infection presenting with mild symptoms and management of contacts: interim guidance. Geneva: WHO, 2020. Available: https://www.who.int/publications-detail/home-care-for-patients-with-suspected-novel-coronavirus-(ncov)-infection-presenting-with-mild-symptoms-and-management-of-contacts [Accessed 20 Jan 2020].
12 World Health Organization (WHO). Clinical management of severe acute respiratory infection when novel coronavirus (nCoV) infection is suspected: interim guidance. Geneva: WHO, 2020. Available: https://www.who.int/publications-detail/clinical-management-of-severe-acute-respiratory-infection-when-novel-coronavirus-(ncov)-infection-is-suspected [Accessed 28 Jan 2020].
13 World Health Organization (WHO). Infection prevention and control during health care when novel coronavirus (nCoV) infection is suspected: interim guidance. Geneva: who, 2020. Available: https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-(ncov)-infection-is-suspected-20200125 [Accessed 25 Jan 2020].
14 Zhou T, Liu Q, Yang Z, *et al*. Preliminary prediction of the basic reproduction number of the Wuhan novel coronavirus 2019-nCoV. *J Evid Based Med* 2020;13:3–7.
15 Deng S-Q, Peng H-J. Characteristics of and public health responses to the coronavirus disease 2019 outbreak in China. *JCM* 2020;9:575.
16 Remuzzi A, Remuzzi G. COVID-19 and Italy: what next? *Lancet* 2020;395:1225–8.
17 Rodriguez-Morales AJ, Cardona-Ospina JA, Gutiérrez-Ocampo E, *et al*. Clinical, laboratory and imaging features of COVID-19: a systematic review and meta-analysis. *Travel Med Infect Dis* 2020;34:101623.
18 McMichael TM, Currie DW, Clark S, *et al*. Epidemiology of Covid-19 in a long-term care facility in King County, Washington. *N Engl J Med* 2020;382:2005–11.
19 Hopman J, Allegranzi B, Mehtar S. Managing COVID-19 in low- and middle-income countries. *JAMA* 2020;323:1549–50.
20 Ji Y, Ma Z, Peppelenbosch MP, *et al*. Potential association between COVID-19 mortality and health-care resource availability. *Lancet Glob Health* 2020;8:e480.
21 Bong C-L, Brasher C, Chikumba E, *et al*. The COVID-19 pandemic: effects on low- and middle-income countries. *Anesth Analg* 2020;131:86–92.
22 Gallagher TH, Schleyer AM. "We Signed Up for This!" - Student and trainee responses to the Covid-19 pandemic. *N Engl J Med* 2020;382:e96.
23 Bauchner H, Sharfstein J. A BOLD response to the COVID-19 pandemic: medical students, National service, and public health. *JAMA* 2020;323:1790–1.
24 Fisher D, Wilder-Smith A. The global community needs to swiftly ramp up the response to contain COVID-19. *Lancet* 2020;395:1109–10.
25 Ip DKM, Lau EHY, Tam YH, *et al*. Increases in absenteeism among health care workers in Hong Kong during influenza epidemics, 2004-2009. *BMC Infect Dis* 2015;15:586.
26 Representatives of the STARSurg Collaborative, EuroSurg Collaborative, and TASMAN Collaborative. Medical student involvement in the COVID-19 response. *Lancet* 2020;395:1254.
27 Chen K-Y, Yang C-M, Lien C-H, *et al*. Burnout, job satisfaction, and medical malpractice among physicians. *Int J Med Sci* 2013;10:1471–8.
28 Xiang Y-T, Jin Y, Cheung T. Joint international collaboration to combat mental health challenges during the coronavirus disease 2019 pandemic. *JAMA Psychiatry*. In Press 2020;77:989.
29 Galea S, Merchant RM, Lurie N. The mental health consequences of COVID-19 and physical distancing: the need for prevention and early intervention. *JAMA Intern Med* 2020;180:817–8.
30 Roy D, Tripathy S, Kar SK, *et al*. Study of knowledge, attitude, anxiety & perceived mental healthcare need in Indian population during COVID-19 pandemic. *Asian J Psychiatr* 2020;51:102083.
31 Banerjee D. The COVID-19 outbreak: crucial role the psychiatrists can play. *Asian J Psychiatr* 2020;50:102014.
32 Stein MB. Mental health participation in the fight against the COVID-19 pandemic. *Depress Anxiety* 2020;37:404.
33 Lai J, Ma S, Wang Y, *et al*. Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. *JAMA Netw Open* 2020;3:e203976–e76.
34 Kang L, Li Y, Hu S, *et al*. The mental health of medical workers in Wuhan, China dealing with the 2019 novel coronavirus. *Lancet Psychiatry* 2020;7:e14.
35 Lima CKT, Carvalho PMdeM, Lima IdeAAS, *et al*. The emotional impact of coronavirus 2019-nCoV (new coronavirus disease). *Psychiatry Res* 2020;287:112915.
36 Li Z, Ge J, Yang M, *et al*. Vicarious traumatization in the general public, members, and non-members of medical teams Aiding in COVID-19 control. *Brain Behav Immun* 2020;88:916–9.
37 Wu W, Zhang Y, Wang P, *et al*. Psychological stress of medical staffs during outbreak of COVID-19 and adjustment strategy. *J Med Virol* 202010.1002/jmv.25914. [Epub ahead of print: 21 Apr 2020].
38 Pfefferbaum B, North CS. Mental health and the Covid-19 pandemic. *N Engl J Med* 2020;383:510–2.
39 Harrington RA, Elkind MSV, Benjamin IJ. Protecting medical trainees on the COVID-19 Frontlines saves us all. *Circulation* 2020;141:e775–7.
40 Schwartz J, King C-C, Yen M-Y. Protecting healthcare workers during the Coronavirus disease 2019 (COVID-19) outbreak: Lessons from Taiwan's severe acute respiratory syndrome response. *Clin Infect Dis* 2020.
41 Xiang Y-T, Yang Y, Li W, *et al*. Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. *Lancet Psychiatry* 2020;7:228–9.
42 Duan L, Zhu G. Psychological interventions for people affected by the COVID-19 epidemic. *Lancet Psychiatry* 2020;7:300–2.
43 Marques L, Bartuska AD, Cohen JN, *et al*. Three steps to flatten the mental health need curve amid the COVID-19 pandemic. *Depress Anxiety* 2020;37:405–6.
44 Rauch SAM, Simon NM, Rothbaum BO. Rising tide: responding to the mental health impact of the COVID-19 pandemic. *Depress Anxiety* 2020;37:505–9.
45 Shanafelt T, Ripp J, Trockel M. Understanding and addressing sources of anxiety among health care professionals during the COVID-19 pandemic. *JAMA* 2020;323:2133–4.
46 Sim MR. The COVID-19 pandemic: major risks to healthcare and other workers on the front line. *Occup Environ Med* 2020;77:281–2.
47 Editorial Team. Overview of novel coronavirus (2019-nCoV). *BMJ Best Practice* 2020.
48 Quan H, Li B, Couris CM, *et al*. Updating and validating the Charlson comorbidity index and score for risk adjustment in hospital discharge Abstracts using data from 6 countries. *Am J Epidemiol* 2011;173:676–82.
49 Charlson ME, Pompei P, Ales KL, *et al*. A new method of classifying prognostic comorbidity in longitudinal studies: development and validation. *J Chronic Dis* 1987;40:373–83.
50 Duong TV, Aringazina A, Kayupova G, *et al*. Development and validation of a new short-form health literacy instrument (HLS-SF12) for the general public in six Asian countries. *Health Lit Res Pract* 2019;3:e91–102.
51 Duong TV, Nguyen TTP, Pham KM, *et al*. Validation of the short-form health literacy questionnaire (HLS-SF12) and its determinants among people living in rural areas in Vietnam. *Int J Environ Res Public Health* 2019;16:3346.
52 Van Hoa H, Giang HT, Vu PT, *et al*. Factors associated with health literacy among the elderly people in Vietnam. *Biomed Res Int* 2020;2020:1–7.
53 HLS-EU Consortium. Comparative report of health literacy in eight EU member states. The European health literacy project 2009–

2012. *Maastricht University* 2012. [Epub ahead of print: 22 Oct 2020] https://www.healthliteracyeurope.net/hls-eu
54 Spitzer RL, Kroenke K, Williams JBW, *et al*. A brief measure for assessing generalized anxiety disorder: the GAD-7. *Arch Intern Med* 2006;166:1092–7.
55 Pollack AA, Weiss B, Trung LT. Mental health, life functioning and risk factors among people exposed to frequent natural disasters and chronic poverty in Vietnam. *BJPsych Open* 2016;2:221–32.
56 Kroenke K, Spitzer RL, Williams JBW, *et al*. Anxiety disorders in primary care: prevalence, impairment, comorbidity, and detection. *Ann Intern Med* 2007;146:317–25.
57 Plummer F, Manea L, Trepel D, *et al*. Screening for anxiety disorders with the GAD-7 and GAD-2: a systematic review and diagnostic metaanalysis. *Gen Hosp Psychiatry* 2016;39:24–31.
58 Kroenke K, Spitzer RL, Williams JB. The PHQ-9: validity of a brief depression severity measure. *J Gen Intern Med* 2001;16:606–13.
59 Pham T, Bui L, Nguyen A, *et al*. The prevalence of depression and associated risk factors among medical students: an untold story in Vietnam. *PLoS One* 2019;14:e0221432.
60 Nguyen TQ, Bandeen-Roche K, Bass JK, *et al*. A tool for sexual minority mental health research: the patient health questionnaire (PHQ-9) as a depressive symptom severity measure for sexual minority women in Viet Nam. *J Gay Lesbian Ment Health* 2016;20:173–91.
61 Manea L, Gilbody S, McMillan D. A diagnostic meta-analysis of the patient health Questionnaire-9 (PHQ-9) algorithm scoring method as a screen for depression. *Gen Hosp Psychiatry* 2015;37:67–75.
62 Levis B, Benedetti A, Thombs BD, *et al*. Accuracy of patient health Questionnaire-9 (PHQ-9) for screening to detect major depression: individual participant data meta-analysis. *BMJ* 2019;365:l1476.
63 Hays RD, Morales LS. The RAND-36 measure of health-related quality of life. *Ann Med* 2001;33:350–7.
64 Ngo-Metzger Q, Sorkin DH, Mangione CM, *et al*. Evaluating the SF-36 health survey (version 2) in older Vietnamese Americans. *J Aging Health* 2008;20:420–36.
65 Hays RD, Kallich J, Mapes D, *et al*. *Kidney disease quality of life short form (KDQOL-SF), version 1.3: a manual for use and scoring*. Santa Monica, CA: RAND Corporation, 1997.
66 Hays RD, Sherbourne CD, Mazel RM. The Rand 36-Item health survey 1.0. *Health Econ* 1993;2:217–27.
67 National Center for Immunization and Respiratory Diseases (NCIRD) Division of Viral Diseases. What healthcare personnel should know about caring for patients with confirmed or possible 2019-nCoV infection. United States: centers for disease control and prevention, 2020. Available: https://www.cdc.gov/coronavirus/2019-ncov/hcp/caring-for-patients.html [Accessed 07 Feb 2020].
68 World Health Organization (WHO). *Country & technical guidance - Coronavirus disease (COVID-19)*. Geneva: WHO, 2020. https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance
69 Field A. *Discovering statistics using IBM SPSS statistics*. 4 edn. London, UK: Sage, 2013.
70 Maldonado G, Greenland S. Simulation study of confounder-selection strategies. *Am J Epidemiol* 1993;138:923–36.
71 IBM SPSS. *Ibm SPSS statistics for windows, version 20.0*. New York, USA: IBM Corp, 2011.
72 Druss BG. Addressing the COVID-19 pandemic in populations with serious mental illness. *JAMA Psychiatry* 2020;77:891.
73 Holmes EA, O'Connor RC, Perry VH, *et al*. Multidisciplinary research priorities for the COVID-19 pandemic: a call for action for mental health science. *Lancet Psychiatry* 2020;7:547–60.
74 Singer T, Klimecki OM. Empathy and compassion. *Curr Biol* 2014;24:R875–8.
75 Stoller JK. Reflections on leadership in the time of COVID-19. *BMJ Leader* 2020;4:77–9.
76 Choi D, Ota S, Watanuki S. Does cigarette smoking relieve stress? Evidence from the event-related potential (ERP). *Int J Psychophysiol* 2015;98:470–6.
77 Stubbs B, Veronese N, Vancampfort D, *et al*. Perceived stress and smoking across 41 countries: a global perspective across Europe, Africa, Asia and the Americas. *Sci Rep* 2017;7:7597.
78 Cruvinel E, Liebman E, Leite I, *et al*. Prevalence of smoking, quit attempts and access to cessation treatment among adults with mental illness in Brazil: a cross-sectional analysis of a national health survey. *BMJ Open* 2020;10:e033959.
79 Awaworyi Churchill S, Farrell L. Alcohol and depression: evidence from the 2014 health survey for England. *Drug Alcohol Depend* 2017;180:86–92.
80 López-Nicolás Ángel, Trapero-Bertran M, Muñoz C. Smoking, health-related quality of life and economic evaluation. *Eur J Health Econ* 2018;19:747–56.
81 Vogl M, Wenig CM, Leidl R, *et al*. Smoking and health-related quality of life in English general population: implications for economic evaluations. *BMC Public Health* 2012;12:203.
82 Saffari M, Koenig HG, O'Garo KN, *et al*. Mediating effect of spiritual coping strategies and family stigma stress on caregiving burden and mental health in caregivers of persons with dementia. *Dementia* 2018:147130121879808.
83 Hasan AA, Tumah H. The correlation between occupational stress, coping strategies, and the levels of psychological distress among nurses working in mental health hospital in Jordan. *Perspect Psychiatr Care* 2019;55:153–60.
84 Mammen G, Faulkner G. Physical activity and the prevention of depression: a systematic review of prospective studies. *Am J Prev Med* 2013;45:649–57.
85 Kvam S, Kleppe CL, Nordhus IH, *et al*. Exercise as a treatment for depression: a meta-analysis. *J Affect Disord* 2016;202:67–86.
86 Ha NT, Duy HT, Le NH, *et al*. Quality of life among people living with hypertension in a rural Vietnam community. *BMC Public Health* 2014;14:833–33.
87 Diviani N, van den Putte B, Giani S, *et al*. Low health literacy and evaluation of online health information: a systematic review of the literature. *J Med Internet Res* 2015;17:e112.
88 Norman CD, Skinner HA. eHealth literacy: essential skills for consumer health in a networked world. *J Med Internet Res* 2006;8:e9.
89 Mitsutake S, Shibata A, Ishii K, *et al*. Associations of eHealth literacy with health behavior among adult Internet users. *J Med Internet Res* 2016;18:e192.
90 Duong TV, Chiu C-H, Lin C-Y, *et al*. E-healthy diet literacy scale and its relationship with behaviors and health outcomes in Taiwan. *Health Promot Int* 2020. doi:10.1093/heapro/daaa033. [Epub ahead of print: 08 Apr 2020].
91 Owen L, Corfe B. The role of diet and nutrition on mental health and wellbeing. *Proc Nutr Soc* 2017;76:425–6.
92 Marx W, Moseley G, Berk M, *et al*. Nutritional psychiatry: the present state of the evidence. *Proc Nutr Soc* 2017;76:427–36.
93 Molendijk M, Molero P, Ortuño Sánchez-Pedreño F, *et al*. Diet quality and depression risk: a systematic review and dose-response meta-analysis of prospective studies. *J Affect Disord* 2018;226:346–54.
94 Li Y, Lv M-R, Wei Y-J, *et al*. Dietary patterns and depression risk: a meta-analysis. *Psychiatry Res* 2017;253:373–82.
95 Gasmi A, Noor S, Tippairote T, *et al*. Individual risk management strategy and potential therapeutic options for the COVID-19 pandemic. *Clin Immunol* 2020;215:108409.
96 Zhang L, Liu Y. Potential interventions for novel coronavirus in China: a systematic review. *J Med Virol* 2020;92:479–90.
97 Kakodkar P, Kaka N, Baig MN. A comprehensive literature review on the clinical presentation, and management of the pandemic coronavirus disease 2019 (COVID-19). *Cureus* 2020;12:e7560.
98 Kritas SK, Ronconi G, Caraffa A, *et al*. Mast cells contribute to coronavirus-induced inflammation: new anti-inflammatory strategy. *J Biol Regul Homeost Agents*. In Press 2020;34:34.
99 Huong NT, Ha LTH, Tien TQ. Determinants of health-related quality of life among elderly: evidence from chi Linh town, Vietnam. *Asia Pac J Public Health* 2017;29:84S–93.
100 Hoi LV, Chuc NT, Lindholm L. Health-related quality of life, and its determinants, among older people in rural Vietnam. *BMC Public Health* 2010;10:549–49.
101 The Lancet. The gendered dimensions of COVID-19. *Lancet* 2020;395:1168.
102 Nguyen LH, Tran BX, Hoang Le QN, *et al*. Quality of life profile of general Vietnamese population using EQ-5D-5L. *Health Qual Life Outcomes* 2017;15:199–99.
103 Tan A, Lowe S, Henry A. Nausea and vomiting of pregnancy: effects on quality of life and day-to-day function. *Aust N Z J Obstet Gynaecol* 2018;58:278–90.
104 Gałązka I, Drosdzol-Cop A, Naworska B, *et al*. Changes in the sexual function during pregnancy. *J Sex Med* 2015;12:445–54.
105 Chang S-R, Ho H-N, Chen K-H, *et al*. Depressive symptoms as a predictor of sexual function during pregnancy. *J Sex Med* 2012;9:2582–9.

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Healthy Dietary Intake Behavior Potentially Modifies the Negative Effect of COVID-19 Lockdown on Depression: A Hospital and Health Center Survey

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Background: The COVID-19 pandemic causes a huge burden for affected countries. Several public health interventions were applied to contain the infection. However, the pandemic itself and the lockdown measure negatively influence people's lifestyles and psychological health.

Purpose: To explore determinants of healthy dietary intake and depression, and examine the interaction between healthy dietary intake and COVID-19 lockdown on depression.

Methods: A cross-sectional study was conducted at 18 hospitals and health centers from February 14 to May 31, 2020. Data of 8,291 outpatients were collected including patients' characteristics, clinical parameters, health literacy, healthy dietary intake (using the healthy eating score, HES), other health-related behaviors, and depression (using the patient health questionnaire, PHQ). Depression was defined as PHQ score $\geq$ 10.

Results: Protective factors of healthy dietary intake and depression were higher education, better medication payment ability, higher social status, more physical activity, and higher health literacy, whereas older age, ever married, own business or other types of occupation, lockdown, suspected COVID-19 symptoms, and comorbidity were associated with lower HES scores and a higher depression likelihood. Besides, overweight/obesity and alcohol drinking were associated with lower HES scores. As compared with patients not under lockdown and with lowest HES score, those who were under lockdown and with lowest HES score had 10.6 times higher depression likelihood (odds ratio, OR, 10.60; 95% CI 6.88, 16.32; $p < 0.001$), whereas people with higher HES score had 15% lower depression likelihood (OR 0.85; 95% CI 0.82, 0.89; $p < 0.001$).

Conclusions: Healthy dietary intake and depression were determined by several sociodemographic, clinical, and behavioral factors. Lockdown measure affects people's dietary intake behavior and depression. Importantly, healthy dietary intake potentially modifies the negative effect of lockdown on depression.

Keywords: COVID-19, coronavirus, lockdown, healthy eating, psychological, physical activity, comorbidity, obesity

INTRODUCTION

The COVID-19 pandemic is caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which sets the whole world in unprecedented challenges (1–6). It creates a huge burden, in terms of socioeconomic effects (7), morbidity, and mortality (8, 9). Infections and deaths are dramatically increasing in all the affected countries (10). Multidisciplinary and multidimensional approaches are required to contain the pandemic (11–13). In the situation of unavailable effective treatments and vaccination, social and behavioral changes are highly recommended to control the massive global health crisis (14, 15).

Among COVID-19 management strategies, healthy diet and nutrition show potential impacts on immune system and health outcomes (16–18). A diversified and balanced diet can improve the immune response to viral infection (19). Healthy foods have been found as a potential therapy to enhance immunity, to improve the acute respiratory symptoms and health outcomes which may help to protect people during the COVID-19 pandemic (20). Some food groups (e.g., fruits and vegetables, fish and fish oils) and key nutrients (e.g., fiber, vitamins A, B, C, D, and E, selenium, iron, copper, zinc) have shown the benefit for protecting against viral infection (17, 21, 22). Adequate intake of relevant nutrients can help to reduce inflammation and oxidative stress, which further strengthens the immune system of individuals during the COVID-19 pandemic (22, 23).

The COVID-19–induced lockdown or home confinement measure was applied in many countries including Vietnam (24). This measure is a necessary public health approach to protect people from virus infection. However, it has undesirable consequences (25), e.g., negative impacts on psychological consequences (26, 27), eating behavior, and changes in dietary habits (28–31). Fortunately, healthy diet has potential benefits to reduce the risk of severity (32) and complications of COVID-19 (33). People with a better diet quality intake had a lower risk of depression (34, 35). Moreover, assessment of dietary intake behavior is critically important for identifying the comprehensive approach to manage COVID-19 (36) and indicating the sustainable food intake during the lockdown (37). The healthy eating score (HES-5) is a short, simple, and valid tool to quickly assess the overall diet quality which is comparable with the 2015 health eating index (38). The HES-5 has an advantage of timely and easy assessment of healthy dietary intake behavior in the time of COVID-19 pandemic.

Therefore, we investigated the associated factors of healthy dietary intake behavior and depression, as well as examined the interaction of COVID-19 lockdown and healthy dietary intake on depression among people who visited outpatient departments from 18 hospitals and health centers across Vietnam.

METHODS

Study Design and Settings

A cross-sectional study was conducted from February 14 to May 31, 2020. Study duration in each hospital/health center was 7–10 days. The study participants were consecutively recruited at outpatient departments (OPDs) from 15 hospitals and three health centers across Vietnam. The study sites were conveniently selected, including 10 hospitals and one health center in the North, one hospital and one health center in the Center, and four hospitals and one health center in the South.

Study Sample

Participants were those who visited the OPDs of selected hospitals and health centers. The recruited participants were those aged 18 to 85 years, understood Vietnamese, and without emergency conditions. After excluding 60 individuals with age <18 years (26 cases), more than 85 years (19 cases), and incomplete survey (15 cases), a total sample of 8,291 outpatients were analyzed. Participants in studied hospitals and health centers are presented in **Table 1**.

Assessments and Measurements

Participants' Characteristics

Participants self-reported their information, including age (years), gender (women vs. men), marital status (never married vs. ever married), educational attainment (illiterate/elementary, junior high school, senior high school, college/university or higher), occupation (employed, own business, and others), ability to pay for medication (very difficult to very easy), and social status (patients placed themselves into the society regarding education, career, and salary, at three levels from low, middle to high). Vietnam had applied the nationwide lockdown measure from April 1 to 22, 2020 (24, 39). Therefore, the lockdown was defined for patients who took the survey during that period.

Clinical Parameters

Patients were asked to report their body height (cm) and weight (kg). Body mass index (BMI, kg/m^2) was calculated. The suspected COVID-19 symptoms (S-COVID-19-S) were assessed (40), including common symptoms (fever, cough, dyspnea) and less common symptoms (myalgia, fatigue, sputum production, confusion, headache, sore throat, rhinorrhea, chest pain, hemoptysis, diarrhea, and nausea/vomiting). Patients were classified as having S-COVID-19-S if they had any of those symptoms. Items of the Charlson Comorbidity Index were used to screen for comorbidity (41).

Health-Related Behaviors

Patients reported their current behaviors as compared with before the pandemic, including smoking status (never/stop/less vs. unchanged or more), drinking status (never/stop/less vs. unchanged or more), and physical activities (never/stop/less vs. unchanged or more).

Health Literacy

The short-form health literacy questionnaire with 12 items (HLS-SF12) was used to assess health literacy (HL). The tool was

TABLE 1 | Participants in studied hospitals and health centers.

Geographic location	Hospital/health center	Studied participants
North		
Ha Noi city	Military Hospital 103	1,028
	E hospital	183
	General Hospital of Agricultural	300
Thai Nguyen province	Thai Nguyen National Hospital	469
Bac Ninh city	Bac Ninh Obstetrics and Pediatrics Hospital	500
Hai Phong city	Hai Phong University of Medicine and Pharmacy Hospital	982
	Kien An Hospital	492
	Kien Thuy District Health Center	484
Quang Ninh province	Quang Ninh General Hospital	309
	Bai Chay Hospital	364
	Quang Ninh Obstetrics and Pediatrics Hospital	280
Center		
Quang Tri province	Trieu Phong District Health Center	495
Da Nang city	Da Nang Oncology Hospital	421
South		
Ho Chi Minh city	Thu Duc District Hospital	489
	Thu Duc District Health Center	497
	Hospital District 2	248
	Tan Phu District Hospital	242
Can Tho city	Can Tho University Of Medicine and Pharmacy Hospital	508
Total		8,291

validated and used in Asian countries (42) including Vietnam (43–46). Patients were asked to rate their perceived difficulty of each item based on 4-point Likert scales from 1 = "very difficult" to 4 = "very easy." The overall score was standardized to an index ranged from 0 to 50, with higher score presenting better HL, using the formula (1):

$$Index = (Mean - 1) \times (\frac{50}{3}) \quad (1)$$

where *Index* is the specific index score calculated, *Mean* is the mean of 12 items for each individual, 1 is the minimal possible value of the mean (leading to a minimum index value of 0), 3 is the range of the mean, and 50 is the chosen maximum value of HL index.

Health Dietary Intake Behavior

The 5-item healthy eating score (HES-5) was used to assess healthy dietary intake behavior. HES-5 was validated and used in previous studies (38, 47). The utilization of HES-5 was comparable with the 2015 health eating index and quickly assesses the overall diet quality (38). The tool is expected to be useful for assessing the healthy dietary intake behavior during the sensitive period of the pandemic. The questionnaire was translated into Vietnamese by researchers. The content was then validated by an expert panel (28 medical doctors, 7 nurses, 9 nutrition and public health professionals). The expert panel suggested using the rating and the scoring of the original scale. The unidimensional construct was expressed with all five items loaded on one component (factor loadings ranged from 0.63 to 0.75), which explained 49.43% of the variance. The tool was showed with adequate convergent validity (item–scale correlation ranged from 0.57 to 0.73), satisfactory reliability (Cronbach's alpha of 0.74), and without floor or ceiling effects (**Supplementary Table 1**). Participants were asked about how often did they eat/drink fruits, vegetables, whole grains, dairy, and fish over the last 30 days. The rating scale was from 0 = "Rarely or never," 1 = "1–2 times per week," 2 = "3–6 times per week," 3 = "once per day," 4 = "twice per day," to 5 = "3 or more times per day." The total score of healthy dietary intake (HDI-score, or HES) ranged from 0 to 25, with the higher score indicating the better healthy eating behavior.

Depression

The patient health questionnaire with 9 items (PHQ-9) was used to assess depression. PHQ-9 is a screening tool that helps clinicians in making the diagnosis of depression, quantifying depression symptom, and monitoring the severity (48). This tool was used in Vietnam (45). Patients were asked about how often they have been bothered by nine symptoms during the last 2 weeks on the scale from 0 (not at all), 1 (several days), 2 (more than half the days), to 3 (nearly every day). The overall PHQ-9 score ranges from 0 to 27. Patients were classified as having depression if their PHQ score ≥10 (48).

Data Collection Procedure

Before the data collection, we provided research assistants (doctors, nurses, and medical students) a 4 h training session on data collection. Research assistants also received the infection control training from each health facility, e.g., using masks, washing hands, and physical distancing according to guidelines of the Centers for Disease Control and Prevention (49), World Health Organization (50), and Vietnam Ministry of Health (51).

Research assistants contacted and asked patients who visited the OPDs for voluntary participation. The OPD visitors were consecutively invited to the survey. The consent form was obtained from qualified patients before administering the survey. The survey took place during the waiting time, before and/or after physical examination. At the early stage of the pandemic, face-to-face interviews were conducted. At the peak stage of the pandemic, self-administered questionnaires were used via an online version (QR code provided at each OPD) or printed version. It took about 20–30 min to complete survey questionnaires. Finally, data were confidentially analyzed by researchers.

Ethical Consideration

The study was reviewed and approved by each participating hospital, and the Institutional Ethical Review Committee of Hanoi University of Public Health, Vietnam (IRB No. 029/2020/YTCC-HD3 for the first period from February 14 to March 31, 2020; and IRB No. 133/2020/YTCC-HD3 for the second period from April 1 to May 31, 2020).

Statistical Analysis

First, distributions of studied variables were explored using the χ^2 test and one-way ANOVA test appropriately. Second, associated factors of healthy dietary intake behavior (HES) and depression (PHQ) were examined using linear regression models and logistic regression models, respectively. To minimize residual effects of confounders on the associations, factors associated with HES or PHQ at $p < 0.20$ in the bivariate model were selected into the multivariate model (52). To avoid the multicollinearity in the multivariate models, the correlations of factors were tested using Spearman correlation. If the moderate or high correlations exist, a representative factor was selected to final models. Finally, the interaction analysis was conducted to examine the potential mental health benefits of healthy dietary intake behavior. Data were analyzed using the IBM SPSS version 20.0 (IBM, Armonk, NY, USA). The significance level was set at a $p < 0.05$.

RESULTS

Participants' Characteristics

Mean values of age, health literacy, and healthy eating score (HES) were 43.6 ± 16.9, 28.1 ± 9.4, and 11.9 ± 4.6, respectively. Proportions of people who participated during the lockdown measure and with depression (PHQ ≥ 10) were 28.7% (2,376/8,291) and 12.5% (1,033/8,291), respectively. The HES was varied by different categories of age, gender, marital status, education, occupation, ability to pay for medication, social status, lockdown, S-COVID-19-S, BMI, comorbidity, smoking, drinking, and physical activity ($p < 0.001$), whereas the prevalence of depression was varied by different categories of age, marital status, education, occupation, ability to pay for

TABLE 2 | Participants' characteristics, healthy dietary intake behavior, and depression.

Variables	Overall (*N* = 8,291)	HES (*N* = 8,291)		PHQ < 10 (*N* = 7,258)	PHQ ≥ 10 (*N* = 1,033)	
	N (%)	Mean ± SD	p^*	*N* (%)	*N* (%)	p^{**}
Age, years			<0.001			<0.001
18–39	3,955 (47.7)	12.6 ± 4.7		3,688 (50.8)	267 (25.8)	
40–59	2,473 (29.8)	11.5 ± 4.5		2,220 (30.6)	253 (24.5)	
60–85	1,863 (22.5)	11.3 ± 4.4		1,350 (18.6)	513 (49.7)	
Gender			<0.001			0.906
Women	4,890 (53)	12.1 ± 4.6		4,279 (59.0)	611 (59.1)	
Men	3,401 (41)	11.7 ± 4.6		2,979 (41.0)	422 (40.9)	
Marital status			<0.001			<0.001
Never married	1,635 (19.8)	12.4 ± 4.5		1,496 (20.7)	139 (13.5)	
Ever married	6,628 (80.2)	11.8 ± 4.6		5,734 (79.3)	894 (86.5)	
Education attainment			<0.001			<0.001
Elementary school or illiterate	593 (7.2)	11.3 ± 4.7		480 (6.6)	113 (10.9)	
Junior high school	1,630 (19.7)	11.1 ± 4.3		1,431 (19.8)	199 (19.3)	
Senior high school	2,277 (27.5)	11.8 ± 4.4		1,995 (27.5)	282 (27.3)	
College/university or higher	3,776 (45.6)	12.5 ± 4.8		3,337 (46.1)	439 (42.5)	
Occupation			<0.001			<0.001
Employed	2,390 (28.9)	12.2 ± 4.7		2,149 (29.7)	241 (23.3)	
Own business	3,044 (36.8)	11.7 ± 4.6		2,709 (37.4)	335 (32.4)	
Others	2,843 (34.3)	12.1 ± 4.5		2,386 (32.9)	457 (44.2)	
Ability to pay for medication			<0.001			<0.001
Very or fairly difficult	4,475 (54)	11.5 ± 4.7		3,710 (51.2)	765 (74.1)	
Very or fairly easy	3,805 (46)	12.4 ± 4.4		3,537 (48.8)	268 (25.9)	
Social status			<0.001			<0.001
Low	1,403 (16.9)	10.9 ± 4.7		1,187 (16.4)	216 (20.9)	
Middle or high	6,879 (83.1)	12.2 ± 4.5		6,062 (83.6)	817 (79.1)	
Lockdown measure			<0.001			<0.001
No	5,915 (71.3)	12.4 ± 4.5		5,428 (74.8)	487 (47.1)	
Yes	2,376 (28.7)	10.9 ± 4.6		1,830 (25.2)	546 (52.9)	
S-COVID-19-S[a]			<0.001			<0.001
No	5162 (62.3)	12.7 ± 4.7		4,827 (66.5)	335 (32.4)	
Yes	3129 (37.7)	11.0 ± 4.6		2,431 (33.5)	698 (67.6)	
BMI, kg/m^2			0.026			0.028
Underweight (BMI < 18.5)	783 (9.5)	12.3 ± 4.7		709 (9.8)	74 (7.2)	
Normal weight (18.5 ≤ BMI < 25.0)	6,518 (78.8)	11.9 ± 4.6		5,685 (78.4)	833 (81.0)	
Overweight/obese (BMI ≥ 25.0)	974 (11.8)	11.7 ± 4.6		853 (11.8)	121 (11.8)	
Comorbidity			<0.001			<0.001
None	6,415 (77.5)	12.5 ± 4.6		5,877 (81.1)	538 (52.1)	
One	1,458 (17.6)	10.4 ± 4.1		1,132 (15.6)	326 (31.6)	
Two or more	409 (4.9)	8.7 ± 3.2		241 (3.3)	168 (16.3)	
Smoking[b]			<0.001			0.867
Never, stopped, or smoke less	7,541 (91.0)	12.1 ± 4.6		6,600 (90.9)	941 (91.1)	
Unchanged or smoke more	750 (9.0)	10.6 ± 4.6		658 (9.1)	92 (8.9)	
Drinking alcohol[b]			<0.001			0.680
Never, stopped, or drink less	7,044 (85.1)	12.1 ± 4.6		6,178 (85.1)	866 (84.7)	
Unchanged or drink more	1,235 (14.9)	11.1 ± 4.6		1,078 (14.9)	157 (15.3)	
Physical activity[b]			<0.001			<0.001
Never, stopped, or exercise less	2,778 (33.6)	11.6 ± 4.9		2,190 (30.3)	588 (57.1)	
Unchanged or exercise more	5,480 (66.4)	12.1 ± 4.4		5,038 (69.7)	442 (42.9)	
HL index, 1-score increment	28.1 ± 9.4			28.7 ± 9.3	24.1 ± 9.6	<0.001*
HES, 1-score increment	11.9 ± 4.6			12.1 ± 4.6	10.9 ± 4.6	<0.001*

HES, healthy eating score; PHQ, patient health questionnaire; S-COVID-19-S, suspected corona virus disease-2019 symptoms; BMI, body mass index; HL, health literacy.

**Result of one-way ANOVA test.*

***Result of χ^2 test.*

[a]*The suspected COVID-19 symptoms including common symptom (fever, cough, dyspnea), less common symptom (myalgia, fatigue, sputum production, confusion, headache, sore throat, rhinorrhea, chest pain, hemoptysis, diarrhea, and nausea/vomiting).*

[b]*People were asked whether their health-related behaviors are getting worse, better, or unchanged during COVID-19 pandemic as compared with those before the pandemic.*

medication, social status, lockdown, comorbidity ($p < 0.001$), and BMI ($p = 0.028$; **Table 2**).

Associated Factors of Healthy Dietary Intake

In bivariate analysis, patients with lower HES were those with older age, being male, ever married, having own business, during the lockdown period, with S-COVID-19-S, underlying comorbidity, and smoking and drinking at unchanged or more level ($p < 0.001$). In contrast, patients with higher HES were those with higher educational attainment, better ability to pay for medication, higher social status, doing physical activity at unchanged or more level, and higher health literacy ($p < 0.05$; **Table 3**). Correlations among covariates were checked to eliminate the multicollinearity. Moderate correlations were found between age and marital status (rho = 0.38), education (rho = −0.42), comorbidity (rho = 0.31), and health literacy (rho = −0.32); between S-COVID-19-S and comorbidity (rho = 0.31); between lockdown measure and physical activity (rho = −0.38); and between smoking and drinking (rho = 0.45; **Supplementary Table 2**). Therefore, age, gender, occupation, ability to pay for medication, social status, lockdown, S-COVID-19-S, BMI, and drinking alcohol were selected to multivariate models. Results showed that as compared with counterparts, people with lower HES were those with older age (regression coefficient, B, −0.81, 95% CI −1.03, −0.58, $p < 0.001$ for age 40–59 years; and B, −0.70, 95% CI −0.95, −0.44, $p < 0.001$ for age 60–85 years), having own business (B,; 95% CI −0.53, −0.04; $p = 0.021$), during the lockdown period (B, −1.35; 95% CI −1.57, −1.13; $p < 0.001$), with S-COVID-19-S (B, −1.14; 95% CI −1.35, −0.94; $p < 0.001$), being overweight/obese (B, −0.34; 95% CI −0.64, −0.04; $p = 0.025$), and drinking alcohol at unchanged or more level (B, −1.29; 95% CI −1.57, −1.00; $p < 0.001$; **Table 3**). On the other hand, people with higher HES were those with better ability to pay for medication (B, 0.26; 95% CI 0.05, 0.47; $p = 0.016$) and higher social status (B, 0.92; 95% CI 0.65, 1.19; $p < 0.001$; **Table 3**).

Associated Factors of Depression

In bivariate analysis, odds of depression were significantly higher in older people, those ever married, other types of occupation, in lockdown period, with S-COVID-19-S, and underlying comorbidity as compared with their counterparts ($p < 0.001$). Odds of depression were significantly lower in people with higher education, better ability to pay for medication, higher social status, being underweight, doing physical activity at unchanged or more level, higher health literacy, and higher HES as compared with their counterparts ($p < 0.01$). To avoid multicollinearity, age, gender, occupation, ability to pay for medication, social status, lockdown measure, S-COVID-19-S, BMI, comorbidity, physical activity, and HES were included in multivariate models. The results showed that people with higher odds of depression were those with older age (odds ratio, OR, 1.33, 95% CI 1.10, 1.60, $p = 0.004$ for age 40–59 years; OR 3.03, 95% CI 2.52, 3.64, $p < 0.001$ for age 60–85 years) as compared with age 18–39 years, other type of occupation (OR 1.27; 95% CI 1.05, 1.54; $p = 0.013$) as compared with employed group, during lockdown (OR 1.85; 95% CI 1.56, 2.18; $p < 0.001$) as compared with not during the lockdown period, with S-COVID-19-S (OR 2.40; 95% CI 2.05, 2.81; $p < 0.001$) as compared with those without S-COVID-19-S, and those with comorbidity (OR 1.51, 95% CI 1.26, 1.80, $p < 0.001$; OR 2.19, 95% CI 1.68, 2.85, $p < 0.001$) as compared with those without chronic conditions. In contrast, people with lower odds of depression were those with better ability to pay for medication (OR 0.66; 95% CI 0.56, 0.78; $p < 0.001$) and doing physical activity at unchanged or more level (OR 0.62; 95% CI 0.53, 0.73; $p < 0.001$; **Table 4**).

Mental Health Benefits of Healthy Dietary Intake

The results of interaction analysis showed that as compared with people who were not under the lockdown period and lowest HES, those who were under the lockdown period and lowest HES score had 10.6 times higher likelihood of depression (OR 10.60; 95% CI 6.88, 16.32; $p < 0.001$), whereas during the lockdown period, people with one score increment of HES resulted in 15% lower depression likelihood (OR 0.85; 95% CI 0.82, 0.89; $p < 0.001$; **Table 5**).

DISCUSSION

In the current study, people who were under the lockdown period had lower healthy dietary intake scores. This was similar to previous studies which illustrated that lockdown or home confinement measure negatively influenced dietary eating behaviors and habits (28–31, 54, 55). In addition, overweight and obese people ate less healthy than normal-weight individuals, which was found in the current study and previous studies (30). Besides, people with older age, being ever married, with S-COVID-19-S, comorbidity, and smoking and drinking behaviors also had worse dietary intake behavior. Social and environmental factors were found as determinants of eating behavior in a previous study (56). Therefore, nutrition support programs are important for vulnerable people to improve their dietary intake behavior (57, 58), especially during the pandemic and home confinement (30, 31).

Our study shows that people who were under the lockdown period had a higher likelihood of depression. Previous studies found that the proportion of psychological problems (e.g., depression, anxiety, and stress) has risen during the lockdown in general populations (27, 59) and in psychiatric patients (26). People with S-COVID-19-S had higher depression likelihood that was found in the current study and the previous one (45). In addition, people with older age and comorbidity were vulnerable to depression in the present study. The psychological consequence of COVID-19 pandemic was well-reported (53, 60), especially in the elderly (61, 62). Besides, people with underlying health conditions had a worse clinical course that was also reported (63, 64). Strategic mental health interventions are highly recommended to manage the psychological consequence of COVID-19 pandemic (65–68).

TABLE 3 | Associated factors of healthy dietary intake behavior via linear regression analysis ($N = 8,291$).

Variables	HES			
	Bivariate		Multivariate	
	B (95% CI)	*p*	B (95% CI)	*p*
Age, years				
18–39	0.00		0.00	
40–59	−1.09 (−1.32, −0.86)	<0.001	−0.81 (−1.03, −0.58)	<0.001
60–85	−1.27 (−1.52, −1.02)	<0.001	−0.70 (−0.95, −0.44)	<0.001
Gender				
Women	0.00		0.00	
Men	−0.37 (−0.57, −0.17)	<0.001	−0.04 (−0.24, 0.17)	0.710
Marital status				
Never married	0.00			
Ever married	−0.56 (−0.81, −0.31)	<0.001		
Education attainment				
Elementary school or illiterate	0.00			
Junior high school	−0.16 (−0.59, 0.27)	0.460		
Senior high school	0.54 (0.13, 0.96)	0.010		
College/university or higher	1.16 (0.77, 1.56)	<0.001		
Occupation				
Employed	0.00		0.00	
Own business	−0.51 (−0.76, −0.27)	<0.001	−0.28 (−0.53, −0.04)	0.021
Others	−0.12 (−0.37, 0.13)	0.363	0.02 (−0.23, 0.27)	0.878
Ability to pay for medication				
Very or fairly difficult	0.00		0.00	
Very or fairly easy	0.94 (0.74, 1.14)	<0.001	0.26 (0.05, 0.47)	0.016
Social status				
Low	0.00		0.00	
Middle or high	1.31 (1.05, 1.57)	<0.001	0.92 (0.65, 1.19)	<0.001
Lockdown measure				
No	0.00		0.00	
Yes	−1.51 (−1.72, −1.29)	<0.001	−1.35 (−1.57, −1.13)	<0.001
S-COVID-19-S[a]				
No	0.00		0.00	
Yes	−1.46 (−1.67, −1.26)	<0.001	−1.14 (−1.35, −0.94)	<0.001
BMI, kg/m^2				
Underweight (BMI $<$ 18.5)	0.33 (−0.01, 0.67)	0.059	0.14 (−0.19, 0.47)	0.410
Normal weight (18.5 $\leq$ BMI $<$ 25.0)	0.00		0.00	
Overweight/obese (BMI $\geq$ 25.0)	−0.27 (−0.58, 0.04)	0.091	−0.34 (−0.64, −0.04)	0.025
Comorbidity				
None	0.00			
One	−2.15 (−2.40, −1.89)	<0.001		
Two or more	−3.86 (−4.30, −3.41)	<0.001		
Smoking[b]				
Never, stopped, or smoke less	0.00			
Unchanged or smoke more	−1.48 (−1.82, −1.13)	<0.001		
Drinking alcohol[b]				
Never, stopped, or drink less	0.00		0.00	
Unchanged or drink more	−0.99 (−1.27, −0.71)	<0.001	−1.29 (−1.57, −1.00)	<0.001
Physical activity[b]				
Never, stopped, or exercise less	0.00			
Unchanged or exercise more	0.54 (0.33, 0.75)	<0.001		
HL index, 1-score increment	0.10 (0.09, 0.11)	<0.001		

HES, healthy eating score; B, regression coefficient; PHQ, patient health questionnaire; S-COVID-19-S, suspected corona virus disease-2019 symptoms; BMI, body mass index; HL, health literacy.

[a] *The suspected COVID-19 symptoms including common symptom (fever, cough, dyspnea), less common symptom (myalgia, fatigue, sputum production, confusion, headache, sore throat, rhinorrhea, chest pain, hemoptysis, diarrhea, and nausea/vomiting).*

[b] *People were asked whether their health-related behaviors are getting worse, better, or unchanged during COVID-19 pandemic as compared with those before the pandemic.*

TABLE 4 | Associated factors of depression via logistic regression analysis ($N = 8,291$).

Variables	Depression (PHQ ≥ 10)			
	Bivariate		Multivariate	
	OR (95% CI)	*p*	OR (95% CI)	*p*
Age, years				
18–39	1.00		1.00	
40–59	1.57 (1.32, 1.88)	<0.001	1.33 (1.10, 1.60)	0.004
60–85	5.25 (4.47, 6.16)	<0.001	3.03 (2.52, 3.64)	<0.001
Gender				
Women	1.00		1.00	
Men	0.99 (0.87, 1.13)	0.906	0.93 (0.81, 1.08)	0.358
Marital status				
Never married	1.00			
Ever married	1.68 (1.39, 2.02)	<0.001		
Education attainment				
Elementary school or illiterate	1.00			
Junior high school	0.59 (0.46, 0.76)	<0.001		
Senior high school	0.60 (0.47, 0.76)	<0.001		
College/university or higher	0.56 (0.44, 0.70)	<0.001		
Occupation				
Employed	1.00		1.00	
Own business	1.10 (0.93, 1.31)	0.273	0.97 (0.80, 1.17)	0.766
Others	1.71 (1.45, 2.02)	<0.001	1.27 (1.05, 1.54)	0.013
Ability to pay for medication				
Very or fairly difficult	1.00		1.00	
Very or fairly easy	0.37 (0.32, 0.43)	<0.001	0.66 (0.56, 0.78)	<0.001
Social status				
Low	1.00		1.00	
Middle or high	0.74 (0.63, 0.87)	<0.001	1.16 (0.96, 1.40)	0.115
Lockdown measure				
No	1.00		1.00	
Yes	3.33 (2.91, 3.80)	<0.001	1.85 (1.56, 2.18)	<0.001
S-COVID-19-S[a]				
No	1.00		1.00	
Yes	4.14 (3.60, 4.75)	<0.001	2.40 (2.05, 2.81)	<0.001
BMI, kg/m^2				
Underweight (BMI < 18.5)	0.71 (0.55, 0.91)	0.008	0.78 (0.59, 1.02)	0.066
Normal weight (18.5 ≤ BMI < 25.0)	1.00		1.00	
Overweight/obese (BMI ≥ 25.0)	0.97 (0.79, 1.19)	0.755	0.96 (0.76, 1.20)	0.709
Comorbidity				
None	1.00		1.00	
One	3.15 (2.70, 3.66)	<0.001	1.51 (1.26, 1.80)	<0.001
Two or more	7.61 (6.14, 9.45)	<0.001	2.19 (1.68, 2.85)	<0.001
Smoking[b]				
Never, stopped, or smoke less	1.00			
Unchanged or smoke more	0.98 (0.78, 1.23)	0.867		
Drinking alcohol[b]				
Never, stopped, or drink less	1.00			
Unchanged or drink more	1.04 (0.87, 1.25)	0.680		
Physical activity[b]				
Never, stopped, or exercise less	1.00		1.00	
Unchanged or exercise more	0.33 (0.29, 0.37)	<0.001	0.62 (0.53, 0.73)	<0.001
HL index, 1-score increment	0.95 (0.94, 0.96)	<0.001		
HES, 1-score increment	0.94 (0.93, 0.95)	<0.001	1.00 (0.99, 1.02)	0.687

PHQ, patient health questionnaire; OR, odds ratio; S-COVID-19-S, suspected corona virus disease-2019 symptoms; BMI, body mass index; HL, health literacy; HES, healthy eating score.
[a]The suspected COVID-19 symptoms including common symptom (fever, cough, dyspnea), less common symptom (myalgia, fatigue, sputum production, confusion, headache, sore throat, rhinorrhea, chest pain, hemoptysis, diarrhea, and nausea/vomiting).
[b]People were asked whether their health-related behaviors are getting worse, better, or unchanged during COVID-19 pandemic as compared with those before the pandemic.

TABLE 5 | Interactions of the lockdown measure and healthy dietary intake behavior on depression ($N = 8,291$).

Interaction	Depression (PHQ ≥ 10)			
	Model 1		Model 2	
	OR (95% CI)	*p*	OR (95% CI)	*p*
No lockdown and lowest HES	1.00		1.00	
Lockdown and lowest HES	30.51 (20.78, 44.80)	<0.001	10.60 (6.88, 16.32)	<0.001
No lockdown and HES, 1-score increment	1.05 (1.03, 1.07)	<0.001	1.06 (1.04, 1.08)	<0.001
Lockdown and HES, 1-score increment	0.81 (0.79, 0.84)	<0.001	0.85 (0.82, 0.89)	<0.001

PHQ, patient health questionnaire; OR, odds ratio; HES, healthy eating score. Model 1: Interactions between the lockdown measure and healthy eating behavior on depression. Model 2: Adjusted for age, gender, occupation, ability to pay for medication, social status, suspected COVID-19 symptoms, body mass index, comorbidity, and physical activity.

The most important finding of our study was that people with better healthy dietary intake behavior had lower depression likelihood during the lockdown period. This could be explained that better diet quality had benefits for lower risk of depression (34, 35). Anti-oxidant and anti-inflammatory nutrients from healthy foods can boost the immune function, reduce infection risk, and modulate the prognosis of COVID-19 disease (16, 17, 22, 23). In addition, depression has been protected and improved by doing the physical activity which was found in the current study and previous studies (69, 70). Furthermore, physical activity was linked to healthier eating behavior in the current study which further protects the people's mental health. Dietary intake and exercise was recognized as a key to healthy living (71). The findings provide important evidence to governments and organizations to develop strategic nutrition support programs to contain the pandemic and its adverse psychological consequences (21). HES-5 tool is suggested to use in clinical settings to quickly assess people' healthy eating behavior (38, 47), especially during the sensitive time of COVID-19 pandemic.

The current study shows that people with higher health literacy scores had a lower likelihood of depression. Health literacy has demonstrated an important role in evaluating online health information (72) in the digital world with diverse information and sources (73). Therefore, it is a critical skill for people during the COVID-19 pandemic and lockdown period. In addition, higher HL scores were independently associated with healthier behaviors (e.g., exercise, balanced diet) (74, 75) which further contribute to improve mental health (76). The policy-makers should be aware of and emphasize the roles and interplay between information providers and receivers which can improve people's understanding of medication information (77). Moreover, improving people's health literacy can help fight the infodemic and flatten the curve during the global health crisis (78, 79).

The current study has some limitations. First, research assistants and patients were vulnerable to virus infection during the pandemic. It was required to strictly follow the guidelines during the survey. Fortunately, researchers received great support from participating hospitals and health centers. In addition, there was no new case detected in the study settings during the data collection period (51). Second, the cross-sectional design with a non-random sample cannot generate a causal relationship. We have conducted the study on a large sample from 18 hospitals and health centers across Vietnam which can help in exploring the associations and interactions, and the findings can be cautiously generalized. Third, subjective measures with patients' self-reported information (e.g., height, weight) potentially bias the analysis. Therefore, findings should be interpreted with caution. Even though the HES-5 questionnaire was used for assessing the quality of the diet, and lack specificity, it is fast and easier than other validated questionnaires to measure healthy dietary intake, especially during the pandemic. Despite the mentioned limitations, findings of the current study substantially provide the evidence and direction for future research and practices to contain the COVID-19 disease and its related consequences.

CONCLUSIONS

The COVID-19–induced lockdown or home confinement is a necessary measure to contain the viral infection. It shows negative impacts on dietary intake behavior and mental health. Fortunately, healthy dietary intake behavior can protect people's psychological health during the pandemic, especially during the lockdown period. The strategic public health approaches are required to develop nutritional support programs to improve the healthy eating behavior which further improves people's mental health and response to the pandemic.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available on reasonable request to the corresponding author.

ETHICS STATEMENT

The study protocol was approved by each participating hospital, and the Institutional Ethical Review Committee of Hanoi School

of Public Health, Vietnam (IRB No. 029/2020/YTCC-HD3 for the first stage from 14th February to 31st March 2020; and IRB No. 133/2020/YTCC-HD3 for the second stage from 1st April to 31st May 2020). The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

KP and TVDu analyzed the data and drafted the article. KP, LP, DP, TT, HoaN, MN, HuuN, TH, HD, PN, MT, ThinD, HunN, TN, NN, CT, KT, TranD, LN, ThaoD, TV, BD, ThaiD, TP, TL, ND, HoaiN TM, DH, HuoN, KN, S-HY, JC, and TuyeD contributed to conceptualization, investigation, methodology, validation, writing review, and editing. KP, LP, DP, TT, HoaN, MN, HuuN, TH, HD, PN, MT, ThinD, HunN, TN, NN, CT, KT, TranD, LN, ThaoD, TV, BD, ThaiD, TP, TL, ND, HoaiN, TM, DH, HuoN, KN, and TuyeD conducted data curation. All authors contributed to the article and approved the submitted version.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fnut.2020.581043/full#supplementary-material

REFERENCES

1. Greenberg N, Docherty M, Gnanapragasam S, Wessely S. Managing mental health challenges faced by healthcare workers during covid-19 pandemic. *BMJ.* (2020) 368:m1211. doi: 10.1136/bmj.m1211
2. Bassetti M, Vena A, Giacobbe DR. The novel Chinese coronavirus (2019-nCoV) infections: Challenges for fighting the storm. *Eur J Clin Invest.* (2020) 50:e13209. doi: 10.1111/eci.13209
3. Phelan AL, Katz R, Gostin LO. The novel coronavirus originating in Wuhan, China: challenges for global health governance. *JAMA.* (2020) 323:709–10. doi: 10.1001/jama.2020.1097
4. Rubin R. The challenge of preventing COVID-19 spread in correctional facilities. *JAMA.* (2020) 323:1760–1. doi: 10.1001/jama.2020.5427
5. Xiang YT, Jin Y, Cheung T. Joint international collaboration to combat mental health challenges during the coronavirus disease 2019 pandemic. *JAMA Psychiatry.* (2020) 77:989–90. doi: 10.1001/jamapsychiatry.2020.1057
6. Campion J, Javed A, Sartorius N, Marmot M. Addressing the public mental health challenge of COVID-19. *Lancet Psychiatry.* (2020) 7:657–9. doi: 10.1016/S2215-0366(20)30240-6
7. Nicola M, Alsafi Z, Sohrabi C, Kerwan A, Al-Jabir A, Iosifidis C, et al. The socio-economic implications of the coronavirus pandemic (COVID-19): a review. *Int J Surg.* (2020) 78:185–93. doi: 10.1016/j.ijsu.2020.04.018
8. Clark A, Jit M, Warren-Gash C, Guthrie B, Wang HHX, Mercer SW, et al. Global, regional, and national estimates of the population at increased risk of severe COVID-19 due to underlying health conditions in 2020: a modelling study. *Lancet Glob Health.* (2020) 8:e1003–17.
9. Banerjee A, Pasea L, Harris S, Gonzalez-Izquierdo A, Torralbo A, Shallcross L, et al. Estimating excess 1-year mortality associated with the COVID-19 pandemic according to underlying conditions and age: a population-based cohort study. *Lancet.* (2020) 395:1715–25. doi: 10.1016/S0140-6736(20)30854-0
10. World Health Organisation. *Coronavirus Disease (COVID-2019) Situation Reports.* (2020). Available online at: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports/ (accessed March 05, 2020).
11. Moradian N, Ochs HD, Sedikies C, Hamblin MR, Camargo CA Jr., et al. The urgent need for integrated science to fight COVID-19 pandemic and beyond. *J Transl Med.* (2020) 18:205. doi: 10.1186/s12967-020-02364-2
12. Holmes EA, O'Connor RC, Perry VH, Tracey I, Wessely S, Arseneault L, et al. Multidisciplinary research priorities for the COVID-19 pandemic: a call for action for mental health science. *Lancet Psychiatry.* (2020) 7:547–60. doi: 10.1016/S2215-0366(20)30168-1
13. Nazir M, Hussain I, Tian J, Akram S, Mangenda Tshiaba S, Mushtaq S, et al. A multidimensional model of public health approaches against COVID-19. *Int J Environ Res Public Health.* (2020) 17:3780. doi: 10.3390/ijerph17113780
14. Betsch C. How behavioural science data helps mitigate the COVID-19 crisis. *Nat Hum Behav.* (2020) 4:438. doi: 10.1038/s41562-020-0866-1
15. Bavel JJV, Baicker K, Boggio PS, Capraro V, Cichocka A, Cikara M, et al. Using social and behavioural science to support COVID-19 pandemic response. *Nat Hum Behav.* (2020) 4:460–71. doi: 10.1038/s41562-020-0884-z
16. Gasmi A, Noor S, Tippairote T, Dadar M, Menzel A, Bjørklund G. Individual risk management strategy and potential therapeutic options for the COVID-19 pandemic. *Clin Immunol.* (2020) 215:108409. doi: 10.1016/j.clim.2020.108409
17. Zhang L, Liu Y. Potential interventions for novel coronavirus in china: a systematic review. *J Med Virol.* (2020) 92:479–90. doi: 10.1002/jmv.25707
18. Kakodkar P, Kaka N, Baig MN. A comprehensive literature review on the clinical presentation, and management of the pandemic coronavirus disease 2019 (COVID-19). *Cureus.* (2020) 12:e7560. doi: 10.7759/cureus.7560
19. Morais AHA, Aquino JS, Silva-Maia JKD, Vale SHL, Maciel BLL, Passos TS. Nutritional status, diet and viral respiratory infections: perspectives for SARS-CoV-2. *Br J Nutr.* (2020) 1–12. doi: 10.1017/S0007114520003311. [Epub ahead of print].
20. Fan Y, Zhang Y, Tariq A, Jiang X, Ahamd Z, Zhihao Z, et al. Food as medicine: a possible preventive measure against coronavirus disease (COVID-19). *Phytother Res.* (2020). doi: 10.1002/ptr.6770. [Epub ahead of print].
21. Zabetakis I, Lordan R, Norton C, Tsoupras A. COVID-19: the inflammation link and the role of nutrition in potential mitigation. *Nutrients.* (2020) 12:1466. doi: 10.3390/nu12051466
22. Calder PC, Carr AC, Gombart AF, Eggersdorfer M. Optimal nutritional status for a well-functioning immune system is an important factor to protect against viral infections. *Nutrients.* (2020) 12:1181. doi: 10.3390/nu12041181
23. Iddir M, Brito A, Dingeo G, Fernandez Del Campo SS, Samouda H, La Frano MR, et al. Strengthening the immune system and reducing inflammation and oxidative stress through diet and nutrition: considerations during the COVID-19 crisis. *Nutrients.* (2020) 12:1562. doi: 10.3390/nu12061562
24. Vietnam Prime Minister. *PM Orders Strict Nationwide Social Distancing Rules, Starting April 1.* (2020). Available online at: https://vietnamlawmagazine.vn/pm-orders-strict-nationwide-social-distancing-rules-starting-april-1-27108.html (accessed March 31, 2020).
25. Lippi G, Henry BM, Bovo C, Sanchis-Gomar F. Health risks and potential remedies during prolonged lockdowns for coronavirus disease 2019 COVID-19. *Diagnosis.* (2020) 7:85–90. doi: 10.1515/dx-2020-0041
26. Hao F, Tan W, Jiang L, Zhang L, Zhao X, Zou Y, et al. Do psychiatric patients experience more psychiatric symptoms during COVID-19

pandemic and lockdown? A case-control study with service and research implications for immunopsychiatry. *Brain Behav Immun.* (2020) 87:100–6. doi: 10.1016/j.bbi.2020.04.069
27. Ozamiz-Etxebarria N, Idoiaga Mondragon N, Dosil Santamaría M, Picaza Gorrotxategi M. Psychological symptoms during the two stages of lockdown in response to the COVID-19 outbreak: an investigation in a sample of citizens in Northern Spain. *Front Psychol.* (2020) 11:1491. doi: 10.3389/fpsyg.2020.02116
28. Di Renzo L, Gualtieri P, Pivari F, Soldati L, Attinà A, Cinelli G, et al. Eating habits and lifestyle changes during COVID-19 lockdown: an Italian survey. *J Transl Med.* (2020) 18:229. doi: 10.1186/s12967-020-02399-5
29. Ammar A, Brach M, Trabelsi K, Chtourou H, Boukhris O, Masmoudi L, et al. Effects of COVID-19 home confinement on eating behaviour and physical activity: results of the ECLB-COVID19 International Online Survey. *Nutrients.* (2020) 12:1583. doi: 10.3390/nu12061583
30. Sidor A, Rzymski P. Dietary choices and habits during COVID-19 lockdown: experience from Poland. *Nutrients.* (2020) 12:1657. doi: 10.3390/nu12061657
31. Rodríguez-Pérez C, Molina-Montes E, Verardo V, Artacho R, García-Villanova B, Guerra-Hernández EJ, et al. Changes in dietary behaviours during the COVID-19 outbreak confinement in the Spanish COVIDiet study. *Nutrients.* (2020) 12:1730. doi: 10.3390/nu12061730
32. Martinez-Ferran M, de la Guía-Galipienso F, Sanchis-Gomar F, Pareja-Galeano H. Metabolic impacts of confinement during the COVID-19 pandemic due to modified diet and physical activity habits. *Nutrients.* (2020) 12:1549. doi: 10.3390/nu12061549
33. Butler MJ, Barrientos RM. The impact of nutrition on COVID-19 susceptibility and long-term consequences. *Brain Behav Immun.* (2020) 87:53–4. doi: 10.1016/j.bbi.2020.04.040
34. Molendijk M, Molero P, Ortuño Sánchez-Pedreño F, Van der Does W, Angel Martínez-González M. Diet quality and depression risk: a systematic review and dose-response meta-analysis of prospective studies. *J Affect Disord.* (2018) 226:346–54. doi: 10.1016/j.jad.2017.09.022
35. Li Y, Lv M-R, Wei Y-J, Sun L, Zhang J-X, Zhang H-G, et al. Dietary patterns and depression risk: a meta-analysis. *Psychiatry Res.* (2017) 253:373–82. doi: 10.1016/j.psychres.2017.04.020
36. Gasmi A, Tippairote T, Mujawdiya PK, Peana M, Menzel A, Dadar M, et al. Micronutrients as immunomodulatory tools for COVID-19 management. *Clin Immunol.* (2020) 220:108545. doi: 10.1016/j.clim.2020.108545
37. Batlle-Bayer L, Aldaco R, Bala A, Puig R, Laso J, Margallo M, et al. Environmental and nutritional impacts of dietary changes in Spain during the COVID-19 lockdown. *Sci Total Environ.* (2020) 748:141410. doi: 10.1016/j.scitotenv.2020.141410
38. Shams-White MM, Chui K, Deuster PA, McKeown NM, Must A. Investigating items to improve the validity of the five-item healthy eating score compared with the 2015 healthy eating index in a military population. *Nutrients.* (2019) 11:251. doi: 10.3390/nu11020251
39. Prime Minister of Vietnam. *Gov't Extends Social Distancing for at Least One Week in 28 Localities.* (2020). Available online at: http://news.chinhphu.vn/Home/Govt-extends-social-distancing-for-at-least-one-week-in-28-localities/20204/39735.vgp (accessed April 15, 2020).
40. Editorial Team. *Overview of Novel Coronavirus (2019-nCoV).* (2020). Available online at: https://bestpractice.bmj.com/topics/en-gb/3000165 (accessed February 10, 2020).
41. Quan H, Li B, Couris CM, Fushimi K, Graham P, Hider P, et al. Updating and validating the Charlson comorbidity index and score for risk adjustment in hospital discharge abstracts using data from 6 countries. *Am J Epidemiol.* (2011) 173:676–82. doi: 10.1093/aje/kwq433
42. Duong TV, Aringazina A, Baisunova G, Nurjanah N, Pham TV, Pham KM, et al. Development and validation of a new short-form health literacy instrument (HLS-SF12) for the general public in six Asian countries. *Health Lit Res Pract.* (2019) 3:e91–102. doi: 10.3928/24748307-20190225-01
43. Duong TV, Nguyen TTP, Pham KM, Nguyen KT, Giap MH, Tran TDX, et al. Validation of the short-form health literacy questionnaire (HLS-SF12) and its determinants among people living in rural areas in Vietnam. *Int J Environ Res Public Health.* (2019) 16:3346. doi: 10.3390/ijerph16183346
44. Ho HV, Hoang GT, Pham VT, Duong TV, Pham KM. Factors associated with health literacy among the elderly people in Vietnam. *Biomed Res Int.* (2020) 2020:3490635. doi: 10.1155/2020/3490635
45. Nguyen HC, Nguyen MH, Do BN, Tran CQ, Nguyen TTP, Pham KM, et al. People with suspected COVID-19 symptoms were more likely depressed and had lower health-related quality of life: The potential benefit of health literacy. *J Clin Med.* (2020) 9:965. doi: 10.3390/jcm9040965
46. Nguyen HT, Do BN, Pham KM, Kim GB, Dam HTB, Nguyen TT, et al. Fear of COVID-19 scale—associations of its scores with health literacy and health-related behaviors among medical students. *Int J Environ Res Public Health.* (2020) 17:4164. doi: 10.3390/ijerph17114164
47. Purvis DL, Lentino CV, Jackson TK, Murphy KJ, Deuster PA. Nutrition as a component of the performance triad: how healthy eating behaviors contribute to soldier performance and military readiness. *US Army Med Dep J.* (2013) 66–78.
48. Kroenke K, Spitzer RL, Williams JBW. The PHQ-9: validity of a brief depression severity measure. *J Gen Intern Med.* (2001) 16:606–13. doi: 10.1046/j.1525-1497.2001.016009606.x
49. National Center for Immunization and Respiratory Diseases (NCIRD) Division of Viral Diseases. *What Healthcare Personnel Should Know About Caring for Patients With Confirmed or Possible 2019-nCoV Infection.* (2020). Available online at: https://www.cdc.gov/coronavirus/2019-ncov/hcp/caring-for-patients.html (accessed February 07, 2020).
50. World Health Organization (WHO). *Country & Technical Guidance - Coronavirus Disease (COVID-19).* (2020). Available online at: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance (accessed February 10, 2020).
51. Ministry of Health. *Coronavirus Disease (COVID-19) Outbreak in Vietnam.* (2020). Available online at: https://ncov.moh.gov.vn/ (accessed April 05, 2020).
52. Maldonado G, Greenland S. Simulation study of confounder-selection strategies. *Am J Epidemiol.* (1993) 138:923–36. doi: 10.1093/oxfordjournals.aje.a116813
53. Vindegaard N, Eriksen Benros M. COVID-19 pandemic and mental health consequences: systematic review of the current evidence. *Brain Behav Immun.* (2020) 89:531–42. doi: 10.1016/j.bbi.2020.05.048
54. Di Renzo L, Gualtieri P, Cinelli G, Bigioni G, Soldati L, Attinà A, et al. Psychological aspects and eating habits during COVID-19 home confinement: results of EHLC-COVID-19 Italian Online Survey. *Nutrients.* (2020) 12:2152. doi: 10.3390/nu12072152
55. Cancello R, Soranna D, Zambra G, Zambon A, Invitti C. Determinants of the lifestyle changes during COVID-19 pandemic in the residents of Northern Italy. *Int J Environ Res Public Health.* (2020) 17:6287. doi: 10.3390/ijerph17176287
56. Marcone MF, Madan P, Grodzinski B. An overview of the sociological and environmental factors influencing eating food behavior in Canada. *Front Nutr.* (2020) 7:77. doi: 10.3389/fnut.2020.00077
57. Liu Y-H, Gao X, Mitchell DC, Wood GC, Still CD, Jensen GL. Diet quality is associated with mortality in adults aged 80 years and older: a prospective study. *J Am Geriatr Soc.* (2019) 67:2180–5. doi: 10.1111/jgs.16089
58. Willett W, Rockström J, Loken B, Springmann M, Lang T, Vermeulen S, et al. Food in the anthropocene: the EAT–lancet commission on healthy diets from sustainable food systems. *Lancet.* (2019) 393:447–92. doi: 10.1016/S0140-6736(18)31788-4
59. Odriozola-González P, Planchuelo-Gómez Á, Irurtia MJ, de Luis-García R. Psychological effects of the COVID-19 outbreak and lockdown among students and workers of a Spanish university. *Psychiatry Res.* (2020) 290:113108. doi: 10.1016/j.psychres.2020.113108
60. González-Sanguino C, Ausín B, Castellanos M, Saiz J, López-Gómez A, Ugidos C, et al. Mental health consequences during the initial stage of the 2020 Coronavirus pandemic (COVID-19) in Spain. *Brain Behav Immun.* (2020) 87:172–6. doi: 10.1016/j.bbi.2020.05.040
61. Meng H, Xu Y, Dai J, Zhang Y, Liu B, Yang H. The psychological effect of COVID-19 on the elderly in China. *Psychiatry Res.* (2020) 289:112983. doi: 10.1016/j.psychres.2020.112983
62. Armitage R, Nellums LB. COVID-19 and the consequences of isolating the elderly. *Lancet Public Health.* (2020) 5:e256. doi: 10.1016/S2468-2667(20)30061-X
63. Wang B, Li R, Lu Z, Huang Y. Does comorbidity increase the risk of patients with COVID-19: evidence from meta-analysis. *Aging.* (2020) 12:6049–57. doi: 10.18632/aging.103000

64. Guan WJ, Liang WH, Zhao Y, Liang HR, Chen ZS, Li YM, et al. Comorbidity and its impact on 1590 patients with COVID-19 in China: a nationwide analysis. *Eur Respir J.* (2020) 55:2000547. doi: 10.1183/13993003.01227-2020
65. Duan L, Zhu G. Psychological interventions for people affected by the COVID-19 epidemic. *Lancet Psychiatry.* (2020) 7:300–2. doi: 10.1016/S2215-0366(20)30073-0
66. Xiang Y-T, Yang Y, Li W, Zhang L, Zhang Q, Cheung T, et al. Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. *Lancet Psychiatry.* (2020) 7:228–9. doi: 10.1016/S2215-0366(20)30046-8
67. Liu S, Yang L, Zhang C, Xiang Y-T, Liu Z, Hu S, et al. Online mental health services in China during the COVID-19 outbreak. *Lancet Psychiatry.* (2020) 7:e17–8. doi: 10.1016/S2215-0366(20)30077-8
68. Galea S, Merchant RM, Lurie N. The mental health consequences of COVID-19 and physical distancing: the need for prevention and early intervention. *JAMA Intern Med.* (2020) 180:817–8. doi: 10.1001/jamainternmed.2020.1562
69. Mammen G, Faulkner G. Physical activity and the prevention of depression: a systematic review of prospective studies. *Am J Prev Med.* (2013) 45:649–57. doi: 10.1016/j.amepre.2013.08.001
70. Kvam S, Kleppe CL, Nordhus IH, Hovland A. Exercise as a treatment for depression: a meta-analysis. *J Affect Disord.* (2016) 202:67–86. doi: 10.1016/j.jad.2016.03.063
71. Burd NA, McKenna CF, Salvador AF, Paulussen KJM, Moore DR. Dietary protein quantity, quality, and exercise are key to healthy living: a muscle-centric perspective across the lifespan. *Front Nutr.* (2019) 6:83. doi: 10.3389/fnut.2019.00083
72. Diviani N, van den Putte B, Giani S, van Weert JC. Low health literacy and evaluation of online health information: a systematic review of the literature. *J Med Internet Res.* (2015) 17:e112. doi: 10.2196/jmir.4018
73. Norman CD, Skinner HA. eHealth literacy: Essential skills for consumer health in a networked world. *J Med Internet Res.* (2006) 8:e9. doi: 10.2196/jmir.8.2.e9
74. Mitsutake S, Shibata A, Ishii K, Oka K. Associations of eHealth literacy with health behavior among adult internet users. *J Med Internet Res.* (2016) 18:e192. doi: 10.2196/jmir.5413
75. Duong TV, Chiu C-H, Lin C-Y, Wong T-C, Chen Y-C, Chang PW, et al. E-healthy diet literacy scale and its relationship with behaviors and health outcomes in Taiwan. *Health Promot Int.* (2020) daaa033. doi: 10.1093/heapro/daaa033. [Epub ahead of print].
76. Owen L, Corfe B. The role of diet and nutrition on mental health and wellbeing. *Proc Nutr Soc.* (2017) 76:425–6. doi: 10.1017/S0029665117001057
77. Roshi D, Burazeri G, Schröder-Bäck P, Toçi E, Italia S, Ylli A, et al. Understanding of medication information in primary health care: a cross-sectional study in a South Eastern European population. *Front Public Health.* (2020) 8:388. doi: 10.3389/fpubh.2020.00388
78. Chong YY, Cheng HY, Chan HYL, Chien WT, Wong SYS. COVID-19 pandemic, infodemic and the role of eHealth literacy. *Int J Nurs Stud.* (2020) 108:103644. doi: 10.1016/j.ijnurstu.2020.103644
79. Košir U, Sørensen K. COVID-19: the key to flattening the curve is health literacy. *Perspect Public Health.* (2020) 1757913920936717. doi: 10.1177/1757913920936717 . [Epub ahead of print].

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Article

Health Literacy and Preventive Behaviors Modify the Association between Pre-Existing Health Conditions and Suspected COVID-19 Symptoms: A Multi-Institutional Survey

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Abstract: People with pre-existing health conditions (PEHC) are vulnerable to viral infection while health literacy (HL) and preventive behaviors (PB) have been shown to benefit people during the COVID-19 pandemic. The aim of this study was to examine the association between PEHC and suspected COVID-19 symptoms (S-COVID-19-S), and to investigate the modification effect of HL and PB. A cross-sectional study was conducted on 8291 participants visiting outpatient departments at 18 hospitals and health centers across Vietnam from 14 February to 31 May 2020. Data were collected regarding participant's characteristics, HL, PB, PEHC, and S-COVID-19-S. Regression models were used for analyzing the associations. Results showed that people with PEHC had a 3.38 times higher likelihood of having S-COVID-19-S (odds ratio, OR, 3.38; 95% confidence interval, 95% CI, 3.01, 3.79; $p < 0.001$). In comparison to participants without PEHC and with the lowest HL score, those with PEHC and one HL score increment had a 7% lower likelihood of having S-COVID-19-S (OR, 0.93; 95% CI, 0.92, 0.94; $p < 0.001$). In comparison to participants without PEHC and not adhering to mask wearing, those with PEHC and adhering to mask wearing had a 77% lower likelihood of having S-COVID-19-S (OR, 0.23; 95% CI, 0.16, 0.32; $p < 0.001$). Higher HL and adherence to mask wearing can protect people from having S-COVID-19-S, especially in those with PEHC.

Keywords: suspected COVID-19 symptoms; coronavirus; health literacy; preventive behaviors; mask wearing; hand washing; physical distancing; pre-existing health conditions

1. Introduction

The coronavirus disease 2019 (COVID-19) pandemic causes devastating healthcare and economic impacts on countries [1–4]. Pre-existing health conditions (PEHC) such as diabetes and cardiovascular disease (CVD) were pointed out to increase the risk of COVID-19 infection [5–7], and worsen the prognosis of COVID-19 infection [8,9]. People with COVID-19 and PEHC are more susceptible to die from COVID-19 [10,11].

Coronavirus has been indicated to be transmitted via the contact with virus-containing secretions expelled through expiratory human activities of infected persons such as breathing, talking, sneezing, coughing, and singing [12,13]. Thus, it is a matter of great concern and necessary to explore preventive factors that help to reduce the occurrence of viral infection.

Health literacy (HL) is defined as individuals' perceptions, knowledge, and ability to understand, access, appraise, and apply health information into disease prevention and treatment in their life course in order to improve their quality of life [14]. Low HL is associated with worse health decisions and outcomes [15–17]. People with low HL have difficulties communicating effectively with health care providers [18]. This requires more efforts from physicians to communicate in colloquial language to promote patients' involvement in shared decision-making [19]. People with high HL have been shown to be more likely to adopt protective methods and have the preparedness to get protected from the COVID-19 infection [15].

Preventive behaviors such as mask wearing, hand washing, and physical distancing have been recommended by World Health Organization (WHO) [12] and Centers for Disease Control and Prevention (CDC) [20] as effective personal methods to protect people from COVID-19 infection. These preventive behaviors have been indicated to significantly reduce the risk of viral transmission and infection in previous studies [21–23]. A systematic review and meta-analysis of 172 observational studies across 16 countries and six continents supports the physical distancing and face masking that

prove to be beneficial for preventing the infection [24]. In addition, wearing mask and washing hands with soap helps reduce the transmission of viruses [25].

Health literacy and preventive behaviors have shown the protective effects in containing the COVID-19 pandemic. However, their roles on controlling the infection in people with pre-existing health conditions remain to be explored. Therefore, in this study, we examined the association between pre-existing health conditions (PEHC) and suspected COVID-19 symptoms (S-COVID-19-S), and we investigated the effect modification of health literacy (HL) and preventive behaviors (PB) on the association between PEHC and S-COVID-19-S among outpatient department visitors in 18 hospitals and health centers across Vietnam during the pandemic.

2. Methods

2.1. Study Design

A cross-sectional study was conducted on adults visiting the outpatient department (OPD) at 18 hospitals and health centers across Vietnam from 14 February to 31 May 2020. The study was reviewed and approved by the Institutional Ethical Review Committee of Hanoi University of Public Health, Vietnam (IRB No. 029/2020/YTCC-HD3 for the first period from 14 February to 31 March 2020, and IRB No. 133/2020/YTCC-HD3 for the second period from 1 April to 31 May 2020).

2.2. Study Sample

Adults who visited the OPD, aged from 18 to 85 years old with Vietnamese listening and reading proficiency, were invited to join our survey. We excluded individuals with any emergency condition (e.g., positive with COVID-19, injuries from traffic accident, appendicitis, etc.), having a psychotic disorder, dementia, or blindness. The data collection procedures were described in a previous publication [26].

A total of 8291 participants from 18 hospitals and health centers across Vietnam, including 1028 from Military Hospital 103, 183 from E hospital, and 300 from General Hospital of Agricultural, in Hanoi; 469 from Thai Nguyen National Hospital, in Thai Nguyen Province; 500 from Bac Ninh Obstetrics and Pediatrics Hospital, in Bac Ninh city; 982 from Hai Phong University of Medicine and Pharmacy Hospital, 492 from Kien An Hospital, and 484 from Kien Thuy District Health Center, in Haiphong city; 309 from Quang Ninh General Hospital, 364 from Bai Chay Hospital, and 280 from Quang Ninh Obstetrics and Pediatrics Hospital, in Quang Ninh province; 495 from Trieu Phong District Health Center, Quang Tri province; 421 from Da Nang Oncology Hospital, in Da Nang city; 489 from Thu Duc District Hospital, 497 from Thu Duc District Health Center, 248 from Hospital District 2, and 242 from Tan Phu District Hospital, in Ho Chi Minh city; and 508 from Can Tho University of Medicine and Pharmacy Hospital, in Can Tho city.

2.3. Instruments and Measurements

2.3.1. Participant Characteristics

Participants were asked for socio-demographic information, including age (18–39, 40–64, 65–80 years old), gender (women, men), education attainment (junior high school or below, senior high school, college/university level or above), occupation (employed, own business, others), ability to pay for medication (very or fairly difficult, very or fairly easy to pay), and social status (low, middle and high). Body height (cm) and weight (kg) of participants was measured. Body mass index was calculated as (weight (kg))/(height (m))^2.

2.3.2. Health Literacy

The short version of the health literacy questionnaire (HLS-SF12) consisting of 12 items was used to assess the health literacy of participants in our study. This health literacy questionnaire has

been validated and used for the general population (aged ≥ 15 years, both sexes) in Asia [27], including Vietnam [28–34]. Participants responded to each item on 4-point Likert scales from 1 = very difficult to 4 = very easy. The HL index was standardized to a unified metric from 0 to 50, with a higher score that represents better health literacy, using the following Formula (1):

$$Index = (Mean - 1) \times (50/3) \quad (1)$$

where *Index* is the calculated HL index, *Mean* is the mean of all participating items for each individual, 1 is the possible minimum value of the mean (leading to a minimum value of the index equals 0), 3 is the range of the mean, and 50 is the chosen maximum value of the new metric. A higher HL index indicates a better HL level [27,35].

2.3.3. Preventive Behaviors

Participants were asked about their performance of preventive behaviors, including washing hands with soap or sanitizer when touching objects suspected to be contaminated or after going outside [20,36], wearing mask when going outside [20,36], and performing physical distancing (at least 2 m or 6 feet to people around) [37] since the COVID-19 outbreak started from the 23 January 2020 in Vietnam. The frequency of performing each behavior was rated on five levels (never, rarely, occasionally, often, and always/usually). Always/usually performing each preventive behavior during the COVID-19 outbreak was defined as adherence to that behavior [20]. Not always/usually (never, rarely, occasionally, or often) performing a preventive behavior was considered as non-adherence to that behavior.

2.3.4. Pre-Existing Health Condition

Participants self-reported their pre-existing health condition (PEHC). The PEHC were assessed using the Charlson Comorbidity Index items [38], including myocardial infarction, congestive heart failure, peripheral disease, cerebrovascular disease, chronic pulmonary disease, diabetes without complications, depression, taking anticoagulants (for cardiovascular disease, thrombosis), hemiplegia, diabetes with complications, moderate or severe renal disease, tumor without metastasis, moderate or severe liver disease, solid metastatic tumor, and HIV/AIDS. Participants with one or more of these conditions when presented at the OPD were classified as having PEHC.

2.3.5. Suspected COVID-19 Symptoms

Participants reported their health problems that are similar symptoms of COVID-19, including fever, cough, dyspnea, myalgia, fatigue, sputum production, confusion, headache, sore throat, rhinorrhea, chest pain, hemoptysis, diarrhea, and nausea/vomiting [39]. Individuals having one of those symptoms when visiting the OPD were classified as having suspected COVID-19 symptoms or symptoms like COVID-19 [33]. This did not imply that participants were suspected of having COVID-19.

2.4. Statistical Analysis

Firstly, the Chi-square test was used to compare the proportion of S-COVID-19-S by different categorical variables, including participant characteristics (age, gender, marital status, education, occupation, social status, ability to pay medication, BMI), PEHC, and PB (mask wearing, hand washing, physical distancing) in studied participants. The analysis of variance (ANOVA) test was used to examine the distribution of continuous variables, including the HL index. Secondly, unadjusted and adjusted logistic regression models were performed to explore the associations of PEHC, PB, and HL with S-COVID-19-S. The factors significantly associated with having S-COVID-19-S at $p < 0.05$ via bivariate logistic regression were considered as confounding factors and were adjusted in the multivariate model. To avoid multicollinearity, the correlations between covariates were examined. If the Spearman's rho ≥ 0.3 exists between covariates, one representative variable was selected into the

multivariate model. Finally, the interactions between HL, PB, and PEHC on having S-COVID-19-S were examined using bivariate and multivariate logistic regression models. All statistical analysis was performed by SPSS Version 20.0 (IBM Corp, Armonk, NY, USA), and a $p < 0.05$ was set as significance.

3. Results

3.1. Characteristics of Studied Participants

Out of all participants, the proportions of PEHC, adherence to mask wearing, hand washing, and social distancing were 22.6%, 44.2%, 24.3%, and 20.6%, respectively. The proportion of S-COVID-19-S was 37.7% (3129/8291). This proportion was significantly differed by participants' age, marital status, education, occupation, ability to pay, social status, and preventive behaviors. People with S-COVID-19-S had a lower health literacy score than those without S-COVID-19-S (Table 1).

Table 1. Characteristics of studied participants (N = 8291).

Variables	Total (N = 8291)	Without S-COVID-19-S † (N = 5162)	With S-COVID-19-S † (N = 3129)	p *
	N (%)	N (%)	N (%)	
Age, year				<0.001
18–39	3955 (47.7)	2830 (54.8)	1125 (36)	
40–59	2473 (29.8)	1487 (28.8)	986 (31.5)	
60–85	1863 (22.5)	845 (16.4)	1018 (32.5)	
Gender				0.837
Women	4890 (59)	3049 (59.1)	1841 (58.8)	
Men	3401 (41)	2113 (40.9)	1288 (41.2)	
Marital status				<0.001
Never married	1635 (19.8)	1223 (23.8)	412 (13.2)	
Ever married	6628 (80.2)	3924 (76.2)	2704 (86.8)	
Education attainment				0.017
Junior high school or below	2223 (26.9)	1361 (26.4)	862 (27.6)	
Senior high school	2277 (27.5)	1474 (28.6)	803 (25.7)	
College/university or higher	3776 (45.6)	2319 (45)	1457 (46.7)	
Occupation				0.006
Employed	2390 (28.9)	1455 (28.2)	935 (29.9)	
Own business	3044 (36.8)	1863 (36.1)	1181 (37.8)	
Others	2843 (34.3)	1837 (35.6)	1006 (32.2)	
Ability to pay for medication				<0.001
Very or fairly difficult	4475 (54)	2460 (47.7)	2015 (64.5)	
Very or fairly easy	3805 (46)	2698 (52.3)	1107 (35.5)	
Social status				<0.001
Low	1403 (16.9)	811 (15.7)	592 (19)	
Middle or high	6879 (83.1)	4349 (84.3)	2530 (81)	
BMI, kg/m^2				0.063
Underweight (BMI < 18.5)	783 (9.5)	494 (9.6)	289 (9.3)	
Normal weight (18.5 ≤ BMI < 25.0)	6518 (78.8)	4020 (78)	2498 (80)	
Overweight/obese (BMI ≥ 25.0)	974 (11.8)	638 (12.4)	336 (10.8)	
Pre-existing health conditions				<0.001
Non-PEHC	6415 (77.4)	4494 (87.1)	1921 (61.4)	
PEHC	1876 (22.6)	668 (12.9)	1208 (38.6)	
Preventive behaviors				
Mask wearing				<0.001
Not adhering	2427 (55.8)	1174 (45.2)	1253 (71.5)	
Adhering	1921 (44.2)	1421 (54.8)	500 (28.5)	
Hand washing				<0.001
Not adhering	3291 (75.7)	1779 (68.6)	1512 (86.3)	
Adhering	1057 (24.3)	816 (31.4)	241 (13.7)	
Physical distancing				<0.001
Not adhering	3453 (79.4)	1893 (72.9)	1560 (89)	
Adhering	895 (20.6)	702 (27.1)	193 (11.0)	
HL index, mean ± SD	28.1 ± 9.4	30.1 ± 9.2	24.9 ± 8.9	<0.001

Abbreviations: S-COVID-19-S, suspected coronavirus disease 2019 symptoms; BMI, body mass index; PEHC, pre-existing health condition; HL, health literacy. * Results of Chi-square test, or analysis of variance (ANOVA) test, appropriately. † Suspected COVID-19 symptoms included fever, cough, dyspnea, myalgia, fatigue, sputum production, confusion, headache, sore throat, rhinorrhea, chest pain, hemoptysis, diarrhea, and nausea/vomiting.

3.2. Associations between Health Literacy, Preventive Behaviors, and Suspected COVID-19 Symptoms

In the bivariate logistic analysis, participants with PEHC had a higher likelihood of having S-COVID-19 while those who adhered to PB had lower likelihood of having S-COVID-19-S than their counterparts ($p < 0.001$; Table 2). The association between associated factors and S-COVID-19-S was fully presented in Table S1. Age, education, marital status, occupation, ability to pay for medication, social status, and BMI were found to be significantly associated with the risk of having S-COVID-19-S ($p < 0.05$). To avoid multicollinearity, Spearman correlations among factors were examined. A moderate correlation between age and education level (Spearman's rho: −0.41), and between age and marital status (Spearman's rho: 0.38) were found (Table S2). Hence, education attainment and marital status were excluded, and finally, age, occupation, ability to pay for medication, social status, and BMI were selected into multivariate model.

Table 2. Associations of pre-existing health conditions, preventive behaviors, and health literacy with having S-COVID-19-S ($N = 8291$).

Variables	S-COVID-19-S *			
	Unadjusted OR (95% CI)	*p*	Adjusted OR (95% CI) †	*p*
Pre-existing health condition				
Non-PEHC	1.00		1.00	
PEHC	4.23 (3.80, 4.72)	<0.001	3.38 (3.01, 3.79)	<0.001
Preventive behaviors				
Mask wearing				
Not adhering	1.00		1.00	
Adhering	0.33 (0.29, 0.38)	<0.001	0.36 (0.31, 0.41)	<0.001
Hand washing				
Not adhering	1.00		1.00	
Adhering	0.35 (0.30, 0.41)	<0.001	0.38 (0.32, 0.45)	<0.001
Physical distancing				
Not adhering	1.00		1.00	
Adhering	0.33 (0.28, 0.40)	<0.001	0.35 (0.29, 0.42)	<0.001
HL index, 1-score increment	0.94 (0.93, 0.94)	<0.001	0.95 (0.94, 0.96)	<0.001

Abbreviations: OR, odds ratio; CI, confidence interval; S-COVID-19-S, suspected coronavirus disease 2019 symptoms; PEHC, pre-existing health condition; HL, health literacy. * Suspected COVID-19 symptoms including fever, cough, dyspnea, myalgia, fatigue, sputum production, confusion, headache, sore throat, rhinorrhea, chest pain, hemoptysis, diarrhea, and nausea/vomiting. † Adjusted for age, occupation, ability to pay for medication, social status, and body mass index.

After adjusting for selected variables, PEHC was significantly associated with a 3.38 times higher likelihood of S-COVID-19-S (odds ratio, OR, 3.38; 95% confidence interval, 95% CI, 3.01, 3.79; $p < 0.001$). Participants who adhered to mask wearing (OR, 0.36; 95% CI, 0.31, 0.41; $p < 0.001$), hand washing (OR, 0.38; 95% CI, 0.32, 0.45; $p < 0.001$), physical distancing (OR, 0.35; 95% CI, 0.29, 0.42; $p < 0.001$), and with 1-score increment of HL (OR, 0.95; 95% CI, 0.94, 0.96; $p < 0.001$) had a lower likelihood of having S-COVID-19-S, respectively (Table 2).

3.3. Effect Modifications of Health Literacy and Preventive Behaviors

In comparison to participants without PEHC and the lowest HL score, those with PEHC and lowest HL score had a 16.53 times higher likelihood of having S-COVID-19-S, while a 1-score increment of HL resulted in a 7% lower likelihood of having S-COVID-19-S (OR, 0.93; 95% CI, 0.92, 0.94; $p < 0.001$). Similarly, in comparison to participants without PEHC and not adhering to mask wearing, those with PEHC and not adhering to mask wearing had a 17.42 times higher likelihood of having S-COVID-19-S, while those with PEHC and adhering to mask wearing resulted in a 77% lower likelihood of having S-COVID-19-S (OR, 0.23; 95% CI, 0.16, 0.32; $p < 0.001$; Table 3). The modifying effect of adherence to

hand washing or social distancing to lower the likelihood of having S-COVID-19-S was not found ($p > 0.05$; Table 3).

Table 3. Interactions of health literacy and preventive behaviors with pre-existing health conditions on suspected COVID-19 symptoms ($N = 8291$).

Interaction	S-COVID-19-S †			
	Model 1		Model 2	
	OR (95% CI)	*p*	OR (95% CI)	*p*
PEHC and HL				
Non-PEHC × Lowest HL	1.00		1.00	
PEHC × Lowest HL	14.16 (9.85, 20.35)	<0.001	16.53 (11.41, 23.96)	<0.001
Non-PEHC × HL with 1-score increment	0.97 (0.96, 0.97)	<0.001	0.98 (0.97, 0.98)	<0.001
PEHC × HL with 1-score increment	0.94 (0.93, 0.96)	<0.001	0.93 (0.92, 0.94)	<0.001
PEHC and mask wearing				
Non-PEHC × Not adhering	1.00		1.00	
PEHC × Not adhering	19.57 (15.54, 24.64)	<0.001	17.24 (13.58, 21.88)	<0.001
Non-PEHC × Adhering	0.67 (0.57, 0.79)	<0.001	0.65 (0.55, 0.77)	<0.001
PEHC × Adhering	0.20 (0.14, 0.29)	<0.001	0.23 (0.16, 0.32)	<0.001
PEHC and hand washing				
Non-PEHC × Not adhering	1.00		1.00	
PEHC × Not adhering	11.67 (9.76, 13.97)	<0.001	10.31 (8.53, 12.46)	<0.001
Non-PEHC × Adhering	0.51 (0.42, 0.63)	<0.001	0.50 (0.40, 0.61)	<0.001
PEHC × Adhering	0.64 (0.43, 0.97)	0.035	0.78 (0.51, 1.19)	0.250
PEHC and physical distancing				
Non-PEHC × Not adhering	1.00		1.00	
PEHC × Not adhering	11.99 (10.03, 14.34)	<0.001	10.54 (8.73, 12.73)	<0.001
Non-PEHC × Adhering	0.43 (0.34, 0.54)	<0.001	0.41 (0.32, 0.51)	<0.001
PEHC × Adhering	0.67 (0.44, 1.02)	0.063	0.82 (0.53, 1.27)	0.376

Abbreviations: OR, odds ratio; CI, confidence interval; S-COVID-19-S, suspected coronavirus disease 2019 symptoms; PEHC, pre-existing health conditions; HL, health literacy. Model 1: Interaction between PEHC and health literacy, preventive behaviors. Model 2: Adjusted for age, occupation, ability to pay for medication, social status, and body mass index. † Suspected COVID-19 symptoms including fever, cough, dyspnea, myalgia, fatigue, sputum production, confusion, headache, sore throat, rhinorrhea, chest pain, hemoptysis, diarrhea, and nausea/vomiting.

4. Discussion

In this study, we found that participants with pre-existing health conditions (PEHC) had a significantly higher risk of having S-COVID-19-S than ones without PEHC. Participants, who adhered to performing preventive behaviors and who had higher health literacy scores had a lower risk of having S-COVID-19-S compared to their counterparts. Even though we did not study the symptoms of COVID-19, the symptoms like COVID-19 could possibly help to explore the associations and raise the awareness of the public. A meta-analysis of 1558 patients with COVID-19 showed that patients with certain underlying medical conditions such as hypertension, diabetes, chronic obstructive pulmonary disease (COPD), cardiovascular disease (CVD), and cerebrovascular disease had a higher risk of having COVID-19 than those without these illnesses [6]. Besides, patients with comorbidities, such as diabetes mellitus or chronic obstructive pulmonary disease (COPD), were prone to develop more severe progression of COVID-19 infection [6,9].

Preventive behaviors such as wearing mask, washing hands with soap, and performing physical distancing were proven to be effective in reducing the COVID-19 transmission and infection. A systematic review collecting 172 observational studies across 16 countries and six continents proved that lengthened physical distancing of at least two meters in public places has more effectively reduced the transmission of SARS-CoV-2 and beta coronaviruses (SARS-CoV or MERS-CoV) compared to a closer distance that is less than two meters [24]. Wearing mask and washing hands limit the contact with virus-containing secretion from infected people, thus wearing mask and washing hands with soap have been strongly recommended in the COVID-19 pandemic to reduce the spread of SARS-CoV-2 [40]. Mask wearing and hand washing have also been shown to be preventive measures

to reduce the transmission of viruses during the severe acute respiratory syndrome (SARS) [25,41] and novel influenza A (H1N1) pandemic [42].

Regarding health literacy (HL), a study of behavioral reactions to the H1N1 influenza pandemic showed that individuals who had perceptions of the effectiveness of preventive behaviors, such as washing hands with warm water and soap, using a napkin when sneezing, and avoidance responses such as avoiding crowd places and public transportation were more likely have a reduced risk of having the viral infection [43]. The possible explanation was that individuals with a high HL level possibly had more adequate and appropriate information and health knowledge [44–47], which assisted them to make better health decisions and adopt preventive methods to protect themselves from the disease during the pandemic [48]. Also, HL was indicated to be positively associated with better attitudes and preparedness for the outbreak during the early onset of COVID-19 [15]. In addition, people with higher health literacy had better health-related behaviors that may be a benefit to their health [29].

Importantly, we found that health literacy and preventive behaviors (mask wearing, hand washing, and physical distancing) have modification effects on reducing the risk of having S-COVID-19-S in patients with PEHC. The finding is similar with a previous study that higher health literacy was found to be associated with better adherence to infection prevention and control behaviors, and lower risk of having S-COVID-19-S in health care workers [30]. Health literacy was previously suggested as the driving factor between socioeconomic status and health outcomes [49] and between education level and health status [44]. Noticeably, mask wearing was found to be the most effective modifier to lower the risk of having S-COVID-19-S in patients with underlying medical condition (up to 77% reduction). Even though hand washing and physical distancing were shown to insignificantly modify the risk of having S-COVID-19-S in highly vulnerable people after being adjusted for socio-demographic factors, these preventive behaviors were still shown to have a potentially protective effect to protect people with PEHC from having suspected COVID-19 symptoms.

Our study is the first study to investigate modification effects of preventive factors (such as health literacy, preventive behaviors) on the risk of having S-COVID-19-S in patients with PEHC. However, in our cross-sectional study, it is not possible to explore the causal relationship between underlying medical condition, health literacy, and preventive behaviors and the risk of having S-COVID-19-S in the study. Besides, suspected COVID-19 symptoms and underlying medical condition of participants were self-reported. Although self-reporting is a common approach for collecting data in epidemiological and medical studies, this method may lead to recall bias due to recall error of the past events of participants [50]. Therefore, the findings should be interpreted with caution. Fortunately, a large sample size allows us to examine the associations and interactions that help to raise the phenomenon for the future research. Another limitation was that we cannot identify patients with symptoms of COVID-19 or symptoms like COVID-19 by asking them. Fortunately, there were no new confirmed cases in the studied hospitals and health centers during the data collection period [51].

Despite of remaining limitations, our study helps to explore the modifying effects of preventive factors (health literacy and preventive behaviors) mitigating the negative association between having an underlying medical condition and the risk of having S-COVID-19-S. In the limited scope of one study, we assessed the modifying effect of each preventive behavior separately, but not the combined effects of these behaviors. This approach, however, helps us to figure out the differences of the protective effect of each behavior in people with pre-existing health conditions, and helps to find out the most significantly effective modifier. In further studies, exploring the factors associated with the adherence to preventive behaviors, and the combined effects of preventive behaviors on having suspected COVID-19 symptoms is essential to help researchers and practitioners to have oversight of people's awareness and knowledge during the viral pandemic.

5. Conclusions

People with pre-existing health conditions had a higher likelihood of having S-COVID-19-S. Fortunately, higher health literacy and better adherence to mask wearing were associated with lower

likelihood of having suspected COVID-19 symptoms, especially in those with pre-existing health conditions. Strategic public health approaches are needed to promote health literacy and infection preventive behaviors (e.g., mask wearing, hand washing, and social distancing) that may help to contain the pandemic.

Supplementary Materials: The following are available online at http://www.mdpi.com/1660-4601/17/22/8598/s1, Table S1. Association between socio-demographic characteristics and having S-Covid-19-S in studied participants via logistic regression (N = 8291). Table S2. Spearman correlation among covariates.

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References

1. Pak, A.; Adegboye, O.A.; Adekunle, A.I.; Rahman, K.M.; McBryde, E.S.; Eisen, D.P. Economic Consequences of the COVID-19 Outbreak: The Need for Epidemic Preparedness. *Front. Public Health* **2020**, *8*, 241.
2. Ataguba, J.E. COVID-19 Pandemic, a War to be Won: Understanding its Economic Implications for Africa. *Appl. Health Econ. Health Policy* **2020**, *18*, 325–328.
3. Miller, I.F.; Becker, A.D.; Grenfell, B.T.; Metcalf, C.J.E. Disease and healthcare burden of COVID-19 in the United States. *Nat. Med.* **2020**, *26*, 1212–1217.
4. Banerjee, A.; Pasea, L.; Harris, S.; Gonzalez-Izquierdo, A.; Torralbo, A.; Shallcross, L.; Noursadeghi, M.; Pillay, D.; Sebire, N.; Holmes, C.; et al. Estimating excess 1-year mortality associated with the COVID-19 pandemic according to underlying conditions and age: A population-based cohort study. *Lancet* **2020**, *395*, 1715–1725.
5. Centers for Disease Control and Prevention. Coronavirus Disease 2019 (COVID-19). People with Certain Medical Conditions. Available online: https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-with-medical-conditions.html (accessed on 26 October 2020).
6. Wang, B.; Li, R.; Lu, Z.; Huang, Y. Does comorbidity increase the risk of patients with COVID-19: Evidence from meta-analysis. *Aging* **2020**, *12*, 6049–6057.
7. Mahumud, R.A.; Kamara, J.K.; Renzaho, A.M.N. The epidemiological burden of and overall distribution of chronic comorbidities in coronavirus disease-2019 among 202,005 infected patients: Evidence from a systematic review and meta-analysis. *Infection* **2020**, *48*, 1–21. [CrossRef]
8. Wang, D.; Hu, B.; Hu, C.; Zhu, F.; Liu, X.; Zhang, J.; Wang, B.; Xiang, H.; Cheng, Z.; Xiong, Y.; et al. Clinical Characteristics of 138 Hospitalized Patients With 2019 Novel Coronavirus-Infected Pneumonia in Wuhan, China. *JAMA* **2020**, *323*, 1061–1069.

9. Sanyaolu, A.; Okorie, C.; Marinkovic, A.; Patidar, R.; Younis, K.; Desai, P.; Hosein, Z.; Padda, I.; Mangat, J.; Altaf, M. Comorbidity and its Impact on Patients with COVID-19. *SN Compr. Clin. Med.* **2020**, *2*, 1–8. [CrossRef]
10. Grasselli, G.; Greco, M.; Zanella, A.; Albano, G.; Antonelli, M.; Bellani, G.; Bonanomi, E.; Cabrini, L.; Carlesso, E.; Castelli, G.; et al. Risk Factors Associated With Mortality Among Patients With COVID-19 in Intensive Care Units in Lombardy, Italy. *JAMA Int. Med.* **2020**, *180*, 1345.
11. Mikami, T.; Miyashita, H.; Yamada, T.; Harrington, M.; Steinberg, D.; Dunn, A.; Siau, E. Risk Factors for Mortality in Patients with COVID-19 in New York City. *J. Gen. Int. Med.* **2020**, 1–10. [CrossRef]
12. World Health Organization. Transmission of SARS-CoV-2: Implications for Infection Prevention Precautions. Available online: https://www.who.int/news-room/commentaries/detail/transmission-of-sars-cov-2-implications-for-infection-prevention-precautions (accessed on 9 July 2020).
13. Dhand, R.; Li, J. Coughs and Sneezes: Their Role in Transmission of Respiratory Viral Infections, Including SARS-CoV-2. *Am. J. Respir. Crit. Care Med.* **2020**, *202*, 651–659.
14. Sørensen, K.; Van den Broucke, S.; Fullam, J.; Doyle, G.; Pelikan, J.; Slonska, Z.; Brand, H. Health literacy and public health: A systematic review and integration of definitions and models. *BMC Public Health* **2012**, *12*, 80.
15. Wolf, M.S.; Serper, M.; Opsasnick, L.; O'Conor, R.M.; Curtis, L.; Benavente, J.Y.; Wismer, G.; Batio, S.; Eifler, M.; Zheng, P.; et al. Awareness, Attitudes, and Actions Related to COVID-19 Among Adults With Chronic Conditions at the Onset of the U.S. Outbreak. *Ann. Int. Med.* **2020**, *173*, 100–109.
16. Gaglio, B. Health Literacy—An Important Element in Patient-Centered Outcomes Research. *J. Health Commun.* **2016**, *21*, 1–3. [CrossRef]
17. Hahn, E.A.; Burns, J.L.; Jacobs, E.A.; Ganschow, P.S.; Garcia, S.F.; Rutsohn, J.P.; Baker, D.W. Health Literacy and Patient-Reported Outcomes: A Cross-Sectional Study of Underserved English- and Spanish-Speaking Patients With Type 2 Diabetes. *J. Health Commun.* **2015**, *20*, 4–15. [CrossRef]
18. McCabe, R.; Healey, P.G.T. Miscommunication in Doctor-Patient Communication. *Top. Cogn. Sci.* **2018**, *10*, 409–424. [CrossRef]
19. Wang, M.-J.; Hung, L.-C.; Lo, Y.-T. Glycemic control in type 2 diabetes: Role of health literacy and shared decision-making. *Patient Prefer. Adherence* **2019**, *13*, 871–879. [CrossRef]
20. Centers for Disease Control and Prevention. Coronavirus Disease 2019 (COVID-19). How to Protect Yourself & Others. Available online: https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/prevention.html (accessed on 26 October 2020).
21. Cheng, V.C.-C.; Wong, S.-C.; Chuang, V.W.-M.; So, S.Y.-C.; Chen, J.H.-K.; Sridhar, S.; To, K.K.-W.; Chan, J.F.-W.; Hung, I.F.-N.; Ho, P.-L.; et al. The role of community-wide wearing of face mask for control of coronavirus disease 2019 (COVID-19) epidemic due to SARS-CoV-2. *J. Infect.* **2020**, *81*, 107–114. [CrossRef]
22. Leung, N.H.; Chu, D.K.; Shiu, E.Y.; Chan, K.-H.; McDevitt, J.J.; Hau, B.J.; Yen, H.-L.; Li, Y.; Ip, D.K.; Peiris, J.M.; et al. Respiratory virus shedding in exhaled breath and efficacy of face masks. *Nat. Med.* **2020**, *26*, 676–680.
23. Chen, X.; Ran, L.; Liu, Q.; Hu, Q.; Du, X.; Tan, X. Hand Hygiene, Mask-Wearing Behaviors and Its Associated Factors during the COVID-19 Epidemic: A Cross-Sectional Study among Primary School Students in Wuhan, China. *Int. J. Environ. Res. Public Health* **2020**, *17*, 2893.
24. Chu, D.K.; Akl, E.A.; Duda, S.; Solo, K.; Yaacoub, S.; Schünemann, H.J.; Chu, D.K.; Akl, E.A.; El-harakeh, A.; Bognanni, A.; et al. Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: A systematic review and meta-analysis. *Lancet* **2020**, *395*, 1973–1987.
25. Fung, I.C.-H.; Cairncross, S. Effectiveness of handwashing in preventing SARS: A review. *Trop. Med. Int. Health* **2006**, *11*, 1749–1758. [CrossRef]
26. Pham, K.M.; Pham, L.V.; Phan, D.T.; Tran, T.V.; Nguyen, H.C.; Nguyen, M.H.; Nguyen, H.C.; Ha, T.H.; Dao, H.K.; Nguyen, P.B.; et al. Healthy Dietary Intake Behavior Potentially Modifies the Negative Effect of COVID-19 Lockdown on Depression: A Hospital and Health Center Survey. *Front. Nutr.* **2020**, *7*. [CrossRef]
27. Van Duong, T.; Aringazina, A.; Baisunova, G.; Nurjanah, N.; Pham, T.V.; Pham, K.M.; Truong, T.Q.; Nguyen, K.T.; Oo, W.M.; Su, T.T.; et al. Development and validation of a new short-form health literacy instrument (HLS-SF12) for the general public in six Asian countries. *Health Lit. Res. Pract.* **2019**, *3*, e91–e102. [CrossRef]

28. Van Duong, T.; Nguyen, T.T.P.; Pham, K.M.; Nguyen, K.T.; Giap, M.H.; Tran, T.D.X.; Nguyen, C.X.; Yang, S.-H.; Su, C.-T. Validation of the short-form health literacy questionnaire (HLS-SF12) and its determinants among people living in rural areas in Vietnam. *Int. J. Environ. Res. Public Health* **2019**, *16*, 3346. [CrossRef]
29. Do, B.N.; Nguyen, P.-A.; Pham, K.M.; Nguyen, H.C.; Nguyen, M.H.; Tran, C.Q.; Nguyen, T.T.P.; Tran, T.V.; Pham, L.V.; Tran, K.V.; et al. Determinants of Health Literacy and Its Associations With Health-Related Behaviors, Depression Among the Older People With and Without Suspected COVID-19 Symptoms: A Multi-Institutional Study. *Front. Public Health* **2020**, *8*, 581746. [CrossRef]
30. Do, B.N.; Tran, T.V.; Phan, D.T.; Nguyen, H.C.; Nguyen, T.T.P.; Nguyen, H.C.; Ha, T.H.; Dao, H.K.; Trinh, M.V.; Do, T.V.; et al. Health Literacy, eHealth Literacy, Adherence to Infection Prevention and Control Procedures, Lifestyle Changes, and Suspected COVID-19 Symptoms Among Health Care Workers During Lockdown: Online Survey. *J. Med. Int. Res.* **2020**, *22*, e22894.
31. Van Duong, T.; Pham, K.M.; Do, B.N.; Kim, G.B.; Dam, H.T.; Le, V.-T.T.; Nguyen, T.T.P.; Nguyen, H.T.; Nguyen, T.T.; Le, T.T.; et al. Digital Healthy Diet Literacy and Self-Perceived Eating Behavior Change during COVID-19 Pandemic among Undergraduate Nursing and Medical Students: A Rapid Online Survey. *Int. J. Environ. Res. Public Health* **2020**, *17*, 7185. [CrossRef]
32. Ho, H.V.; Hoang, G.T.; Pham, V.T.; Duong, T.V.; Pham, K.M. Factors Associated with Health Literacy among the Elderly People in Vietnam. *BioMed Res. Int.* **2020**, *2020*, 1–7. [CrossRef]
33. Nguyen, H.C.; Nguyen, M.H.; Do, B.N.; Tran, C.Q.; Nguyen, T.T.P.; Minh, K.P.; Pham, L.V.; Tran, K.V.; Duong, T.T.; Tran, T.V.; et al. People with suspected COVID-19 symptoms were more likely depressed and had lower health-related quality of life: The potential benefit of health literacy. *J. Clin. Med.* **2020**, *9*, 965. [CrossRef]
34. Nguyen, H.T.; Do, B.N.; Pham, K.M.; Giang, K.B.; Dam, H.T.B.; Nguyen, T.T.; Nguyen, T.T.P.; Nguyen, Y.H.; Sørensen, K.; Pleasant, A.; et al. Fear of COVID-19 Scale—Associations of Its Scores with Health Literacy and Health-Related Behaviors among Medical Students. *Int. J. Environ. Res. Public Health* **2020**, *17*, 4164. [CrossRef]
35. HLS-EU Consortium. Comparative Report of Health Literacy in Eight EU Member States. The European Health Literacy Project 2009–2012. Available online: https://www.healthliteracyeurope.net/hls-eu (accessed on 22 October 2012).
36. World Health Organization. Coronavirus Disease (COVID-19) Advice for the Public. Available online: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public (accessed on 1 October 2020).
37. Centers for Disease Control and Prevention. Coronavirus Disease 2019 (COVID-19). Social Distancing. Available online: https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/social-distancing.html (accessed on 24 October 2020).
38. Charlson, M.E.; Pompei, P.; Ales, K.L.; MacKenzie, C.R. A new method of classifying prognostic comorbidity in longitudinal studies: Development and validation. *J. Chronic Dis.* **1987**, *40*, 373–383. [CrossRef]
39. Editorial Team. Overview of Novel Coronavirus (2019-nCoV). Available online: https://bestpractice.bmj.com/topics/en-gb/3000165 (accessed on 10 February 2020).
40. Ma, Q.-X.; Shan, H.; Zhang, H.-L.; Li, G.-M.; Yang, R.; Chen, J.-M. Potential utilities of mask-wearing and instant hand hygiene for fighting SARS-CoV-2. *J. Med. Virol.* **2020**, *92*, 1567–1571. [CrossRef]
41. Jefferson, T.; Del Mar, C.B.; Dooley, L.; Ferroni, E.; Al-Ansary, L.A.; Bawazeer, G.A.; Van Driel, M.L.; Nair, N.S.; Jones, M.A.; Thorning, S.; et al. Physical interventions to interrupt or reduce the spread of respiratory viruses. *Cochrane Database Syst. Rev.* **2011**, *2011*, CD006207. [CrossRef]
42. Tracht, S.M.; Del Valle, S.Y.; Hyman, J.M. Mathematical Modeling of the Effectiveness of Facemasks in Reducing the Spread of Novel Influenza A (H1N1). *PLoS ONE* **2010**, *5*, e9018. [CrossRef]
43. Gaygısız, Ü.; Gaygısız, E.; Özkan, T.; Lajunen, T. Individual differences in behavioral reactions to H1N1 during a later stage of the epidemic. *J. Infect. Public Health* **2012**, *5*, 9–21. [CrossRef]
44. Van Der Heide, I.; Wang, J.; Droomers, M.; Spreeuwenberg, P.; Rademakers, J.; Uiters, E. The Relationship Between Health, Education, and Health Literacy: Results From the Dutch Adult Literacy and Life Skills Survey. *J. Health Commun.* **2013**, *18* (Suppl. 1), 172–184. [CrossRef]
45. Van Duong, T.; Sørensen, K.; Pelikan, J.; Van den Broucke, S.; Lin, I.-F.; Lin, Y.-C.; Huang, H.-L.; Chang, P.W. Health-related behaviors moderate the association between age and self-reported health literacy among Taiwanese women. *Women Health* **2017**, *58*, 632–646. [CrossRef]

46. Sørensen, K.; Pelikan, J.M.; Röthlin, F.; Ganahl, K.; Slonska, Z.; Doyle, G.; Fullam, J.; Kondilis, B.; Agrafiotis, D.; Uiters, E.; et al. Health literacy in Europe: Comparative results of the European health literacy survey (HLS-EU). *Eur. J. Public Health* **2015**, *25*, 1053–1058. [CrossRef]
47. Jayasinghe, U.W.; Harris, M.F.; Parker, S.M.; Litt, J.; van Driel, M.; Mazza, D.; Del Mar, C.; Lloyd, J.; Smith, J.; Zwar, N.; et al. Preventive Evidence into Practice Partnership, G., The impact of health literacy and life style risk factors on health-related quality of life of Australian patients. *Health Qual. Life Outcomes* **2016**, *14*, 68.
48. Rademakers, J.; Heijmans, M. Beyond Reading and Understanding: Health Literacy as the Capacity to Act. *Int. J. Environ. Res. Public Health* **2018**, *15*, 1676. [CrossRef]
49. Stormacq, C.; Van den Broucke, S.; Wosinski, J. Does health literacy mediate the relationship between socioeconomic status and health disparities? Integrative review. *Health Promot. Int.* **2018**, *34*, e1–e17. [CrossRef]
50. Althubaiti, A. Information bias in health research: Definition, pitfalls, and adjustment methods. *J. Multidiscip. Healthc.* **2016**, *9*, 211–217. [CrossRef]
51. Ministry of Health. Coronavirus Disease (COVID-19) Outbreak in Vietnam. Available online: https://ncov.moh.gov.vn/ (accessed on 4 May 2020).

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Determinants of Health Literacy and Its Associations With Health-Related Behaviors, Depression Among the Older People With and Without Suspected COVID-19 Symptoms: A Multi-Institutional Study

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Purpose: We examined factors associated with health literacy among elders with and without suspected COVID-19 symptoms (S-COVID-19-S).

Methods: A cross-sectional study was conducted at outpatient departments of nine hospitals and health centers 14 February−2 March 2020. Self-administered questionnaires were used to assess patient characteristics, health literacy, clinical information, health-related behaviors, and depression. A sample of 928 participants aged 60–85 years were analyzed.

Results: The proportion of people with S-COVID-19-S and depression were 48.3 and 13.4%, respectively. The determinants of health literacy in groups with and without S-COVID-19-S were age, gender, education, ability to pay for medication, and social status. In people with S-COVID-19-S, one-score increment of health literacy was associated with 8% higher healthy eating likelihood (odds ratio, OR, 1.08; 95% confidence interval, 95%CI, 1.04, 1.13; $p < 0.001$), 4% higher physical activity likelihood (OR, 1.04; 95%CI, 1.01, 1.08, $p = 0.023$), and 9% lower depression likelihood

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(OR, 0.90; 95%CI, 0.87, 0.94; $p < 0.001$). These associations were not found in people without S-COVID-19-S.

Conclusions: The older people with higher health literacy were less likely to have depression and had healthier behaviors in the group with S-COVD-19-S. Potential health literacy interventions are suggested to promote healthy behaviors and improve mental health outcomes to lessen the pandemic's damage in this age group.

Keywords: COVID-19, older people, health literacy, health-related behaviors, depression, Vietnam

INTRODUCTION

The COVID-19 pandemic has upended public health systems around the globe (1, 2), and spurring millions of health, research and administrative professionals to seek ways to mitigate transmission and mortality (3, 4). Older people are at high risk of more severe health conditions from COVID-19 disease (5, 6). By the time the virus killed 350,000 people, the over-60 death rate was estimated at 75%. The pandemic also has caused panic and mental illness, especially for the elderly (7, 8). Quarantine and lockdown contain infection but they negatively impact mental health (9–11). Different approaches are needed to mitigate the pandemic's psychological effects (12, 13).

Health literacy (HL) is known as a crucial means to appraise health-related information for preventing non-communicable and infectious diseases. It helps people achieve better quality care and improves disease management, lifestyle, and health outcomes (14, 15). Health literacy is considered a crucial element in public health strategies to protect people from disease (16, 17). This has never been more important than during the COVID-19 epidemic (18, 19). Vietnam has a high risk of coronavirus infection, having a long border with China, and Vietnamese people have lower health literacy scores when ranked among other Asian countries (20). Finding factors associated with health literacy can assist in planning interventions to reduce health inequalities during the epidemic.

This study explores determinants of health literacy and its associations with health-related behaviors and depression among older people with and without suspected COVID-19 symptoms (S-COVID-19-S).

MATERIALS AND METHODS

Study Design

We conducted a cross-sectional study on outpatient department (OPD) visitors 14 February−2 March 2020. The study was reviewed and approved by the nine participating hospitals and health centers as well as the Institutional Ethical Review Committee of Hanoi School of Public Health in Vietnam (IRB No. 029/2020/YTCC-HD3).

Study Participants and Settings

Patients recruited in the study were ages 60–85 years, able to communicate in Vietnamese, and visited an OPD during the study period. Participants were excluded if they were in any emergency condition or if they were diagnosed with psychotic disorders, dementia or blindness. The process of recruiting participants is detailed in a previous study (15).

We included 928 patients aged 60–85 years in the analysis, including 152 from Thai Nguyen National Hospital in Thai Nguyen Province, 56 from Military Hospital 103 in Hanoi; 162 from Hai Phong University of Medicine, and Pharmacy Hospital, 281 from Kien Thuy District Health Center, in Hai Phong city; 141 from Trieu Phong District Health Center in Quang Tri province; 40 from Thu Duc Hospital, 27 from Tan Phu District Hospital, 23 from Hospital District 2, and 46 from Thu Duc District Health Center, in Ho Chi Minh city.

Data Collection Procedure

The interviewers (e.g., nurses, staff, and medical students) at each hospital or health center had received 4 h of training for the data collection; the sessions were led by two senior researchers with a detailed protocol. Technical guidance for prevention and control of COVID-19 disease was also provided during the training, including mask use, hand washing and physical distancing (4).

Interviewers invited OPD visitors to participate in the survey after signing consent form. The interviews were conducted at the OPDs using printed questionnaires that took about 20 min to complete. Personal information (e.g., name, identification) was anonymized before the analysis.

Measurements

Demographic Characteristics and Clinical Indicators

Socio-demographic indicators assessed included age (date of birth), gender (female, male), marital status (never, ever married), education (illiterate or elementary school, junior high school, high school, college/university, or above), occupation (employed, business owner, others), social status (low, middle, or high level), and ability to pay for medication (very difficult to very easy).

Participants visiting the OPD were asked why they sought healthcare services, and were screened for suspected COVID-19 symptoms (S-COVID-19-S). Patients were classified in the S-COVID-19-S group if they carried any of the common symptoms (e.g., fever, cough, dyspnea, fatigue, myalgia, anorexia, or sore throat) or uncommon symptoms (e.g., confusion, headache, rhinorrhea, hemoptysis, chest pain, conjunctivitis, bronchial breath sounds, diarrhea, cyanosis, and nausea/vomiting) (21). In addition, height (cm), weight (kg), body mass index (BMI, kg/m^2), and comorbid conditions (Charlson comorbidity index diseases) were assessed.

Health-Related Behaviors

Health-related behaviors included current smoking status (no vs. yes), drinking status (no vs. yes), and eating behaviors during the COVID-19 outbreak (unchanged or less healthy, or healthier). The seven-item International Physical Activity Questionnaire short version (IPAQ-SF) asked patients' activities (vigorous, moderate, walking, and sitting) over the past 7 days before the OPD visiting date (22, 23). The overall physical activity score as MET-min/week was calculated for each subject and used in the analysis (24).

Health Literacy

We used a short-form questionnaire (HLS-SF12) to measure health literacy (15, 25, 26). People were asked about the perceived difficulty of 12 items on a 4-point Likert scale (1 = very difficult to 4 = very easy). We calculated the general health literacy (HL) index score using the formula (1):

$$HL\ index = (M - 1) * 50/3 \quad (1)$$

where the *HL index* is ranged from 0 to 50; *M* is the mean of 12 items of HLS-SF12. The higher HL index indicates a greater HL level (25, 27).

Depression

We assessed depression using patient health questionnaire with 9 items (PHQ-9) that had been validated and used in Vietnam (28–30). Patients rated each item using the 4-point Likert scale from 0 = not at all to 3 = almost every day for the past 14 days. The depression scores range from 0 to 27, with those scoring ≥10 classified as having depression (31).

Statistical Analysis

The distributions of studied variables were explored using descriptive analysis. The Student's *t*-test and Chi-square tests were used appropriately for continuous and categorical variables. The determinants of health literacy were examined using simple and multiple linear regression analysis. Next, the simple and multiple binary logistic regression analyses were used to examine the associations of health literacy (as a predictor/independent variable) with binary outcome variables such as BMI (normal weight vs. overweight/obese), smoking status (non-smoking vs. smoking), drinking (non-drinking vs. drinking), eating behavior (eat less healthily or unchanged vs. eating healthier diet), depression (not depressed vs. depressed). The simple and multiple multinomial logistic regression analyses were used to examine the association between health literacy and physical activity (tertile-1 vs. tertile-2, tertile-3). Variables showing significant associations with outcome variables in simple regression models were selected for multiple regression models. In order to avoid multicollinearity, the Spearman's correlation coefficient test was used to check associations between independent variables. If independent variables correlated with one another at $rho \geq 0.3$, one representative independent variable was selected to the multiple regression model. The significance level was set at a p-value < 0.05. Data were analyzed using SPSS for windows, version 20.0 (IBM Corp, Armonk, NY, USA).

RESULTS

Demographic Characteristics of Participants

Out of sample, percentages of older people with S-COVID-19-S, and depression were 48.3% (448/928), and 13.4% (124/928), respectively. The mean age and health literacy scores were 68.2 ± 6.51, and 25.7 ± 8.09, respectively. The proportion of people with S-COVID-19-S varied with different categories of educational attainment, occupation, comorbidity, ability to pay for medication, social status, BMI, drinking, physical activity, and depression. People with S-COVID-19-S also had lower HL score than those without (**Table 1**).

Determinants of Health Literacy

Table 2 illustrates the determinants of health literacy for both groups with and without S-COVID-19-S. We checked correlations among the independent variables and found education and social status moderately correlated for people without S-COVID-19-S (rho = 0.36; **Supplementary Table 1**). Social status was selected into the multiple linear regression model. There was no moderate or high correlation among confounders for people with S-COVID-19-S (**Supplementary Table 2**). Therefore, all independent variables in the simple regression model were retained in the multiple linear regression model. The results of multiple linear regression analysis show that in comparison to the 60–70 years group, people 71–85 had lower health literacy (regression coefficient, B, −4.36; 95% confidence interval, 95% CI, −5.95, −2.77; $p = 0.001$, for participants with S-COVID-19-S; and B, −3.74; 95% CI, −5.05, −2.43; $p < 0.001$, for those without S-COVID-19-S). Men had higher health literacy scores than women (B, 1.77; 95% CI, 0.42, 3.13; $p = 0.01$ for the S-COVID-19-S group; and B, 1.94; 95% CI, 0.42, 3.46; $p = 0.013$, for the without S-COVID-19-S group). People with higher educational attainment had higher health literacy scores (B, 3.28 ∼ 4.59, $p < 0.001$, for the group with S-COVID-19-S). People with a better ability to pay for medication had higher health literacy scores than their counterparts (B, 5.69; 95% CI, 4.33, 7.06; $p < 0.001$, for the group with S-COVID-19-S; and B, 1.53; 95% CI, 0.16, 2.90; $p = 0.028$). Finally, people with higher social status had higher health literacy scores (B, 3.33, 95%CI, 1.327, 5.33, $p = 0.001$, for the group without S-COVID-19-S; and B, 1.65 (0.22, 3.08), $p = 0.024$, for the group with S-COVID-19-S; **Table 2**).

Health Literacy and Its Consequences

Table 3 presents associations of health literacy (HL) and related outcomes (e.g., BMI, smoking status, drinking status, eating behavior, physical activity, and depression). To adjust for potential confounders of the association between HL and consequences, we conducted the analyses to explore the potential determinants of each outcome. The results are shown in **Supplementary Tables 3–8**. The results of multiple logistic regression analysis show that people with higher health literacy scores ate healthier diets in the group with S-COVID-19-S (odds ratio, OR, 1.08; 95% confidence interval, 95% CI, 1.04, 1.13; $p <$

TABLE 1 | Characteristics of patients with and without suspected COVID-19 symptoms.

Variables	Total (n = 928)	Without S-COVID-19-S[a] (n = 480)	With S-COVID-19-S[a] (n = 448)	
	n (%)	*n* (%)	*n* (%)	*p*-value[b]
Age, year				0.066
60–70	648 (69.8)	348 (72.5)	300 (67.0)	
71–85	280 (30.2)	132 (27.5)	148 (33.0)	
Gender				0.969
Women	522 (56.3)	270 (56.3)	252 (56.3)	
Men	405 (46.6)	210 (43.8)	195 (43.5)	
Marital status				0.742
Never married	33 (3.6)	18 (3.8)	15 (3.3)	
Ever married	895 (96.4)	462 (96.3)	433 (96.7)	
Education				0.019
Elementary school or illiterate	228 (24.6)	121 (25.2)	107 (23.9)	
Junior high school	293 (31.6)	166 (34.6)	127 (28.3)	
High school	199 (21.4)	102 (21.3)	97 (21.7)	
College/university or above	206 (22.2)	89 (18.5)	117 (26.1)	
Occupation				<0.001
Employed	34 (3.7)	19 (4.0)	15 (3.3)	
Business owner	282 (30.4)	102 (21.3)	180 (40.2)	
Others	609 (65.6)	358 (74.6)	251 (56.0)	
Comorbidity				<0.001
None	602 (64.9)	278 (57.9)	324 (72.3)	
One or more	323 (34.8)	196 (40.8)	124 (27.7)	
Ability to pay for medication				<0.001
Very or fairly difficult	544 (58.6)	217 (45.2)	327 (73.0)	
Very or fairly easy	383 (41.3)	262 (54.6)	121 (27.0)	
Social status				<0.001
Low	197 (21.2)	77 (16.0)	120 (26.8)	
Middle or high	730 (78.7)	402 (83.8)	328 (73.2)	
BMI, kg/m^2				<0.001
Normal weight (BMI $<$ 25.0)	800 (86.2)	395 (82.3)	405 (90.4)	
Overweight/obese (BMI $\geq$ 25.0)	126 (13.6)	84 (17.5)	42 (9.4)	
Current smoking status				0.384
Not smoking	819 (88.3)	427 (89)	392 (87.5)	
Smoking	105 (11.3)	50 (10.4)	55 (12.3)	
Current drinking status				0.390
Not drinking	711 (76.6)	364 (75.8)	347 (77.5)	
Drinking	207 (22.3)	113 (23.5)	94 (21.0)	
Eating behavior[c]				0.030
Less healthy diet or unchanged	754 (81.3)	404 (84.2)	350 (78.1)	
Healthier diet	165 (17.8)	73 (15.2)	92 (20.5)	
Physical activity, MET-min/wk				<0.001
Tertile-1 (MET-min/wk $<$ 500)	397 (42.8)	178 (37.1)	219 (48.9)	
Tertile-2 (500 $\leq$ MET-min/wk $<$ 1,000)	141 (15.2)	54 (11.3)	87 (19.4)	
Tertile-3 (MET-min/wk $\geq$ 1,000)	390 (42.0)	248 (51.7)	142 (31.7)	
HL index				
Mean $\pm$ SD	25.7 $\pm$ 8.09	26.7 $\pm$ 8.32	24.5 $\pm$ 7.70	<0.001
PHQ				
Not depressed (PHQ $<$ 10)	804 (86.6)	457 (95.2)	347 (77.5)	<0.001
Depressed (PHQ $\geq$ 10)	124 (13.4)	23 (4.8)	101 (22.5)	

S-COVID-19-S, suspected COVID-19 symptoms; BMI, body mass index; HL index, health literacy index; PHQ, patient health questionnaire score; MET-min/wk, metabolic equivalent task-minutes for a week.

[a] *With and without S-COVID-19-S groups indicate patients who had suspected COVID-19 symptoms and those who did not, respectively.*

[b] *The p-value is computed by Student t-test with continuous variables and Chi-square or Fisher exact test with category variables.*

[c] *People were asked whether their eating behavior was worse, better, or unchanged during COVID-19 outbreak as compared to before the outbreak.*

TABLE 2 | Factors associated with health literacy among participants with and without suspected COVID-19 symptoms.

Variables	Without S-COVID-19-S[a]				With S-COVID-19-S[a]			
	Unadjusted B-Coef (95% CI)[b]	*p*-value	Adjusted B-Coef (95% CI)[c]	*p*-value	Unadjusted B-Coef (95% CI)[b]	*p*-value	Adjusted B-Coef (95% CI)[c]	*p*-value
Age, years								
60–70	0.00		0.00		0.00		0.00	
71–85	−5.88 (−7.50, −4.27)	<0.001	−4.36 (−5.95, −2.77)	0.001	−5.66 (−7.09, −4.22)	<0.001	−3.74 (−5.05, −2.43)	<0.001
Gender								
Women	0.00		0.00		0.00		0.00	
Men	2.40 (0.89, 3.91)	0.002	1.94 (0.42, 3.46)	0.013	2.48 (1.05, 3.91)	0.001	1.77 (0.42, 3.13)	0.010
Marital status								
Never married	0.00		0.00		0.00		0.00	
Ever married	5.30 (1.31, 9.29)	0.009	3.11 (−0.52, 6.74)	0.093	−4.73 (−8.63, −0.84)	0.017	−1.93 (−5.07, 1.22)	0.230
Education								
Elementary school or illiterate	0.00				0.00		0.00	
Junior high school	7.56 (5.85, 9.28)	<0.001			4.26 (2.41, 6.11)	<0.001	3.28 (1.65, 4.90)	<0.001
High school	9.84 (7.91, 11.76)	<0.001			7.16 (5.20, 9.12)	<0.001	4.24 (2.47, 6.03)	<0.001
College/university or above	10.90 (8.87, 12.94)	<0.001			7.35 (5.47, 9.23)	<0.001	4.59 (2.88, 6.30)	<0.001
Occupation								
Employed	0.00		0.00		0.00		0.00	
Business owner	−3.37 (−7.54, 0.79)	0.112	−2.96 (−6.72, 0.80)	0.123	−4.36 (−8.31, −0.40)	0.031	−0.28 (−3.61, 3.05)	0.870
Others	−3.19 (−7.11, 0.74)	0.111	−1.67 (−5.20, 1.86)	0.352	−6.28 (−10.18, −2.37)	0.002	−1.26 (−4.53, 2.00)	0.448
Comorbidity								
None	0.00		0.00		0.00		0.00	
One or more	−1.71 (−3.24, −0.18)	0.029	−1.06 (−2.42, 0.31)	0.129	−2.59 (−4.18, −1.01)	0.001	−0.82 (−2.14, 0.50)	0.222
Ability to pay for medication								
Very or fairly difficult	0.00		0.00		0.00		0.00	
Very or fairly easy	2.58 (1.08, 4.08)	0.001	1.53 (0.16, 2.90)	0.028	6.21 (4.69, 7.72)	<0.001	5.69 (4.33, 7.06)	<0.001
Social status								
Low	0.00		0.00		0.00		0.00	
Middle or high	8.39 (6.47, 10.32)	<0.001	3.33 (1.327, 5.33)	0.001	4.43 (2.86, 6.01)	<0.001	1.65 (0.22, 3.08)	0.024

B-Coef, regression coefficient; CI, confidence interval.

[a] *With and without S-COVID-19-S groups indicate patients with suspected COVID-19 symptoms and those without.*

[b] *The simple linear regression model was used.*

[c] *The multiple linear regression model was used.*

TABLE 3 | Health literacy as a predictor associates with body mass index, health-related behaviors, and depression among participants with and without suspected COVID-19 symptoms.

Health literacy (1-score increment)	Overweight/obese (BMI ≥ 25.0 kg/m^2)[a]		Smoking[a]		Drinking[a]		Healthier diet[a]		Physical activity (Tertile-2)[a]		Physical activity (Tertile-3)[a]		Depression (PHQ ≥ 10)[a]	
	OR (95% CI)	*p*	OR (95% CI)	*p*	OR (95% CI)	*p*	OR (95% CI)	*p*	OR (95% CI)	*p*	OR (95% CI)	*p*	OR (95% CI)	*p*
Without S-COVID-19-S														
Model 1	1.02 (0.99, 1.05)	0.226	1.02 (0.98, 1.06)	0.287	1.02 (1.00, 1.05)	0.108	1.07 (1.03, 1.11)	<0.001	1.00 (0.97, 1.04)	0.870	1.03 (1.00, 1.05)	0.032	0.96 (0.92, 1.00)	0.066
Model 2	1.01 (0.98, 1.04)	0.590	1.00 (0.96, 1.04)	0.975	0.99 (0.95, 1.02)	0.390	1.04 (0.99, 1.08)	0.103	0.99 (0.95, 1.03)	0.639	0.99 (0.97, 1.02)	0.721	1.02 (0.96, 1.09)	0.461
With S-COVID-19-S														
Model 1	1.03 (0.99, 1.08)	0.191	1.01 (0.98, 1.05)	0.474	1.03 (1.00, 1.07)	0.044	1.11 (1.07, 1.15)	<0.001	1.02 (0.99, 1.05)	0.255	1.08 (1.04, 1.11)	<0.001	0.91 (0.88, 0.94)	<0.001
Model 2	1.01 (0.96, 1.06)	0.806	1.00 (0.96, 1.04)	0.948	0.98 (0.94, 1.03)	0.378	1.08 (1.04, 1.13)	<0.001	1.00 (0.96, 1.04)	0.952	1.04 (1.01, 1.08)	0.023	0.91 (0.87, 0.94)	<0.001

OR, odd ratio; CI, confidence interval; BMI, body mass index; PHQ, patient health questionnaire; S-COVID-19-S, suspected COVID-19 symptoms.

[a] Reference groups were normal weight (BMI < 25.0 kg/m^2), not smoking, not drinking, less healthy diet or unchanged, physical activity (Tertile-1), non-depression, respectively.

Model 1: The unadjusted logistic regression model.

Model 2: The adjusted logistic regression model.

*For BMI, the model was adjusted for education (for with S-COVID-19-S group only), occupation (for with S-COVID-19-S group only), and social status (for both groups) (**Supplementary Table 3**), full model is presented in **Supplementary Table 9**.*

*For smoking status, the model was adjusted for gender (for both groups) (**Supplementary Table 4**), full model is presented in **Supplementary Table 10**.*

*For drinking status, the model was adjusted for age (for without S-COVID-19-S group only), gender (for both groups), education (for both groups), occupation (for without S-COVID-19-S group only), and social status (for with S-COVID-19-S group only) (**Supplementary Table 5**), full model is presented in **Supplementary Table 11**.*

*For eating behavior, the model was adjusted for age (for with S-COVID-19-S group only), gender (for with S-COVID-19-S group only), education (for both groups), occupation (for both groups), comorbidity (for with S-COVID-19-S group only), and social status (for both groups) (**Supplementary Table 6**), full model is presented in **Supplementary Table 12**.*

*For physical activity, the model was adjusted for age (for both groups), education (for both groups), occupation (for with S-COVID-19-S group only), comorbidity (for with S-COVID-19-S group only), ability to pay for medication (for without S-COVID-19-S group only), and social status (for with S-COVID-19-S group only) (**Supplementary Table 7**), full model is presented in **Supplementary Table 13**.*

*For depression, the model was adjusted for age (for both groups), marital status (for without S-COVID-19-S group only), education (for both groups), and social status (for both groups) (**Supplementary Table 8**), full model is presented in **Supplementary Table 14**.*

0.001). Similar results were found with those who reported more physical activity in the S-COVID-19-S group (OR, 1.04; 95% CI, 1.01, 1.08; $p = 0.023$ for tertile-3). People with higher HL scores had a lower likelihood of depression (OR, 0.91; 95% CI, 0.87, 0.94; $p < 0.001$; **Table 3**).

DISCUSSION

Our study shows men had higher health literacy scores compared to women for both with and without S-COVID-19-S groups. Previous studies showed men facing higher risks of worse health outcomes and death from COVID-19 disease, especially among older adults (32–35). Similarly, older people (ages 71–85 years) had lower health literacy compared to the younger group (ages 60–70 years) in both with and without S-COVID-19-S groups. The findings were consistent with other studies finding health literacy levels lower among elders in various nations and periods (36, 37). Likewise, higher levels of education and social status were associated with higher health literacy scores in older people, which is in line with previous studies (38, 39). Therefore, improving health literacy might be a strategic approach to prevent COVID-19 and minimize its consequences, especially in men and the older people. In addition, active engagement of the elderly is encouraged to contain the pandemic (40, 41). Governments must provide detailed, timely and accurate information regarding the epidemic, particularly about prevention efforts and self-protective behaviors that minimize new infections (42–44). Vietnam's Ministry of Health has led all health institutions and related sectors to collaborate with the public against the COVID-19 epidemic (45). The government has encouraged people to enhance behaviors such as washing hands, wearing masks, and following updated health-related information to prevent the disease and improve health literacy (46).

The COVID-19 pandemic has devastated economies and labor markets, especially reducing jobs and workers' earnings (47). Vietnam's GDP is $2,740, lower than many industrializing nations, so its people particularly fear the pandemics' impacts on household income, such as not able to cover daily living costs or health care expenses (48). Our study shows elders with better ability to pay medication had higher health literacy scores in both with and without S-COVID-19-S groups. This evidence calls for a quick response from governments in terms of stimulus packages to cover food, water, essential goods, basic health services, and medical costs during the crisis (46).

In the current study, we found health literacy significantly associated with healthier diet and physical activity only in older people with S-COVID-19-S. This can be explained by those participants facing higher projected risks of coronavirus infection and severe outcomes. They arguably have the most to gain from practicing healthy lifestyles (e.g., healthy dietary intake and more physical activity) to protect and improve their health-related quality of life (46, 49).

One important finding was that higher health literacy scores were associated with lower likelihood of depression in older people with S-COVID-19-S. This finding is similar to previous studies (50, 51). In our previous study, higher health literacy scores also were associated with lower fear of COVID-19 and lower likelihood of depression (15). We observed that nearly 13% of elders had depressive symptoms with 22.5 and 4.8% of participants with and without S-COVID-19-S, respectively. This might indicate that the uncertain progression of the COVID-19 epidemic affects mental health possibly leading to hypochondriasis, worry about being infected, and fear of the uncontrollable epidemic's consequences (52).

The study has several limitations. First, causality cannot be generated on the basis of a cross-sectional design. The findings could be considered for further studies regarding the pandemic, especially in elderly participants. Second, the study was conducted during the sensitive time period of the global COVID-19 pandemic, when all participants and interviewers might have been at risk of infection. Researchers and leaders of hospitals and health centers made great efforts to protect the safety of study participants, and fortunately there were no new cases during the data collection period. In addition, have selected 9 hospitals and health centers in three parts of Vietnam, yet the sample may not fully-represent the general Vietnamese population. Finally, while we cannot follow-up with the participants to assess long-term associations, future longitudinal studies with larger samples are suggested to confirm these findings.

CONCLUSIONS

In groups with and without S-COVID-19-S, the factors of age, gender, education, ability to pay for medication, and social status were significantly associated with health literacy. Elders with higher health literacy had greater likelihood of healthier behavior (e.g., healthy eating, physical exercise) and lower likelihood of depression, especially in the S-COVID-19-S group. Because improved health literacy protects elders, our findings should be helpful for policy-makers worldwide.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available on reasonable request to the corresponding author.

ETHICS STATEMENT

The study was reviewed and approved the Institutional Ethical Review Committee of Hanoi University of Public Health, Vietnam (IRB No. 029/2020/YTCC-HD3).

AUTHOR CONTRIBUTIONS

BD, P-AN, and TD analyzed the data and drafted the manuscript. BD, P-AN, KP, HN, MN, CT, TN, TT, LP, KT, TTD, THD, KN, TP, M-HH, and TD contributed to conceptualization, investigation, methodology, validation, and

writing review and editing. BD, P-AN, KP, HN, MN, CT, TN, TT, LP, KT, TTD, THD, KN, TP, and TD conducted data curation.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpubh.2020.581746/full#supplementary-material

REFERENCES

1. Koh J, Shah SU, Chua PEY, Gui H, Pang J. Epidemiological and clinical characteristics of cases during the early phase of covid-19 pandemic: a systematic review and meta-analysis. *Front Med*. (2020) 7:295. doi: 10.3389/fmed.2020.00295
2. Keni R, Alexander A, Nayak PG, Mudgal J, Nandakumar K. COVID-19: emergence, spread, possible treatments, and global burden. *Front Public Health*. (2020) 8:216. doi: 10.3389/fpubh.2020.00216
3. World Health Organization. *COVID-19 Strategy Update*. (2020). Available online at: https://www.who.int/docs/default-source/coronaviruse/covid-strategy-update-14april2020.pdf?sfvrsn=29da3ba0_19 (accessed May 28, 2020).
4. World Health Organization. *Coronavirus Disease (COVID-19) Technical Guidance: Infection Prevention and Control/Wash*. (2020). Available online at: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/infection-prevention-and-control (accessed May 20, 2020).
5. Alhazzani W, Møller MH, Arabi YM, Loeb M, Gong MN, Fan E, et al. Surviving sepsis campaign: guidelines on the management of critically ill adults with Coronavirus disease 2019 (COVID-19). *Intensive Care Med*. (2020) 46:854–87. doi: 10.1097/CCM.0000000000004363
6. CDC COVID-19 Response Team. Severe outcomes among patients with Coronavirus disease 2019 (COVID-19) - United States, February 12-March 16, 2020. *MMWR Morb Mortal Wkly Rep*. (2020) 69:343–6. doi: 10.15585/mmwr.mm6912e2
7. Armitage R, Nellums LB. COVID-19 and the consequences of isolating the elderly. *Lancet Public Health*. (2020) 5:e256. doi: 10.1016/S2468-2667(20)30061-X
8. CDC COVID-19 Response Team. Preliminary estimates of the prevalence of selected underlying health conditions among patients with Coronavirus disease 2019 - United States, February 12-March 28, 2020. *MMWR Morb Mortal Wkly Rep*. (2020) 69:382–6. doi: 10.15585/mmwr.mm6913e2
9. Hiremath P, Suhas Kowshik CS, Manjunath M, Shettar M. COVID 19: impact of lock-down on mental health and tips to overcome. *Asian J Psychiatr*. (2020) 51:102088. doi: 10.1016/j.ajp.2020.102088
10. Gunawan J, Juthamanee S, Aungsuroch Y. Current mental health issues in the era of Covid-19. *Asian J Psychiatr*. (2020) 51:102103. doi: 10.1016/j.ajp.2020.102103
11. Rajkumar RP. COVID-19 and mental health: a review of the existing literature. *Asian J Psychiatr*. (2020) 52:102066. doi: 10.1016/j.ajp.2020.102066
12. Roy D, Tripathy S, Kar SK, Sharma N, Verma SK, Kaushal V. Study of knowledge, attitude, anxiety & perceived mental healthcare need in Indian population during COVID-19 pandemic. *Asian J Psychiatr*. (2020) 51:102083. doi: 10.1016/j.ajp.2020.102083
13. Yao H, Chen JH, Xu YF. Rethinking online mental health services in China during the COVID-19 epidemic. *Asian J Psychiatr*. (2020) 50:102015. doi: 10.1016/j.ajp.2020.102015
14. Castro-Sánchez E, Chang PWS, Vila-Candel R, Escobedo AA, Holmes AH. Health literacy and Infectious Diseases: why does it matter? *Int J Infect Dis*. (2016) 43:103–10. doi: 10.1016/j.ijid.2015.12.019
15. Nguyen HC, Nguyen MH, Do BN, Tran CQ, Nguyen TTP, Pham KM, et al. People with suspected COVID-19 symptoms were more likely depressed and had lower health-related quality of life: the potential benefit of health literacy. *J Clin Med*. (2020) 9:965. doi: 10.3390/jcm9040965
16. Berkman ND, Sheridan SL, Donahue KE, Halpern DJ, Crotty K. Low health literacy and health outcomes: an updated systematic review. *Ann Intern Med*. (2011) 155:97–107. doi: 10.7326/0003-4819-155-2-201107190-00005
17. Sørensen K, Van den Broucke S, Fullam J, Doyle G, Pelikan J, Slonska Z, et al. Health literacy and public health: a systematic review and integration of definitions and models. *BMC Public Health*. (2012) 12:80. doi: 10.1186/1471-2458-12-80
18. Sentell T, Vamos S, Okan O. Interdisciplinary perspectives on health literacy research around the world: more important than ever in a time of COVID-19. *Int J Environ Res Public Health*. (2020) 17:3010. doi: 10.3390/ijerph17093010
19. Paakkari L, Okan O. COVID-19: health literacy is an underestimated problem. *Lancet Public Health*. (2020) 5:e249–50. doi: 10.1016/S2468-2667(20)30086-4
20. Carmona RH. Health literacy: a national priority. *J Gen Intern Med*. (2006) 21:803. doi: 10.1111/j.1525-1497.2006.00569.x
21. BMJ Best Practice. *Coronavirus Disease 2019 (COVID-19), History and Exam*. (2020). Available online at: https://bestpractice.bmj.com/topics/en-gb/3000168/history-exam (accessed May 15, 2020).
22. Craig CL, Marshall AL, Sjöström M, Bauman AE, Booth ML, Ainsworth BE, et al. International physical activity questionnaire: 12-country reliability and validity. *Med Sci Sports Exerc*. (2003) 35:1381–95. doi: 10.1249/01.MSS.0000078924.61453.FB
23. Lachat CK, Verstraeten R, Hagströmer M, Khan NC, Van NDA, Dung NQ, et al. Validity of two physical activity questionnaires (IPAQ and PAQA) for Vietnamese adolescents in rural and urban areas. *Int J Behav Nutr Phys Act*. (2008) 5:37. doi: 10.1186/1479-5868-5-37
24. Lee PH, Macfarlane DJ, Lam TH, Stewart SM. Validity of the international physical activity questionnaire short form (IPAQ-SF): a systematic review. *Int J Behav Nutr Phys Act*. (2011) 8:115. doi: 10.1186/1479-5868-8-115
25. Duong TV, Aringazina A, Kayupova G, Pham TV, Pham KM, Truong TQ, et al. Development and validation of a new short-form health literacy instrument (HLS-SF12) for the general public in six Asian countries. *Health Lit Res Pract*. (2019) 3:e91–102. doi: 10.3928/24748307-20190225-01
26. Duong TV, Nguyen TTP, Pham KM, Nguyen KT, Giap MH, Tran TDX, et al. Validation of the short-form health literacy questionnaire (HLS-SF12) and its determinants among people living in rural areas in Vietnam. *Int J Environ Res Public Health*. (2019) 16:3346. doi: 10.3390/ijerph16183346
27. Sørensen K, Van den Broucke S, Pelikan JM, Fullam J, Doyle G, Slonska Z, et al. Measuring health literacy in populations: illuminating the design and development process of the European Health Literacy Survey Questionnaire (HLS-EU-Q). *BMC Public Health*. (2013) 13:948. doi: 10.1186/1471-2458-13-948
28. Löwe B, Kroenke K, Herzog W, Gräfe K. Measuring depression outcome with a brief self-report instrument: sensitivity to change of the Patient Health Questionnaire (PHQ-9). *J Affect Disord*. (2004) 81:61–6. doi: 10.1016/S0165-0327(03)00198-8
29. Pham T, Bui L, Nguyen A, Nguyen B, Tran P, Vu P, et al. The prevalence of depression and associated risk factors among medical students: an untold story in Vietnam. *PLoS ONE*. (2019) 14:e0221432. doi: 10.1371/journal.pone.0221432
30. Nguyen TQ, Bandeen-Roche K, Bass JK, German D, Nguyen NTT, Knowlton AR. A tool for sexual minority mental health research: the Patient Health

Questionnaire (PHQ-9) as a depressive symptom severity measure for sexual minority women in Viet Nam. *J Gay Lesbian Ment Health*. (2016) 20:173–91. doi: 10.1080/19359705.2015.1080204
31. Kocalevent R-D, Hinz A, Brähler E. Standardization of the depression screener patient health questionnaire (PHQ-9) in the general population. *Gen Hosp Psychiatry*. (2013) 35:551–5. doi: 10.1016/j.genhosppsych.2013.04.006
32. Tang N, Bai H, Chen X, Gong J, Li D, Sun Z. Anticoagulant treatment is associated with decreased mortality in severe coronavirus disease 2019 patients with coagulopathy. *J Thromb Haemost*. (2020) 18:1094–9. doi: 10.1111/jth.14817
33. Shi S, Qin M, Shen B, Cai Y, Liu T, Yang F, et al. Association of cardiac injury with mortality in hospitalized patients with COVID-19 in Wuhan, China. *JAMA Cardiol*. (2020) 5:802–10. doi: 10.1001/jamacardio.2020.0950
34. Baud D, Qi X, Nielsen-Saines K, Musso D, Pomar L, Favre G. Real estimates of mortality following COVID-19 infection. *Lancet Infect Dis*. (2020) 20:773. doi: 10.1016/S1473-3099(20)30195-X
35. Jin JM, Bai P, He W, Wu F, Liu XF, Han DM, et al. Gender differences in patients With COVID-19: focus on severity and mortality. *Front Public Health*. (2020) 8:152. doi: 10.3389/fpubh.2020.00152
36. Baker DW, Wolf MS, Feinglass J, Thompson JA, Gazmararian JA, Huang J. Health literacy and mortality among elderly persons. *Arch Intern Med*. (2007) 167:1503–9. doi: 10.1001/archinte.167.14.1503
37. Van Hoa H, Giang HT, Vu PT, Van Tuyen D, Khue PM. Factors associated with health literacy among the elderly people in Vietnam. *Biomed Res Int*. (2020) 2020:3490635. doi: 10.1155/2020/3490635
38. Wolf MS, Gazmararian JA, Baker DW. Health literacy and functional health status among older adults. *Arch Intern Med*. (2005) 165:1946–52. doi: 10.1001/archinte.165.17.1946
39. Bains SS, Egede LE. Associations between health literacy, diabetes knowledge, self-care behaviors, and glycemic control in a low income population with type 2 diabetes. *Diabetes Technol Ther*. (2011) 13:335–41. doi: 10.1089/dia.2010.0160
40. Kayupova G, Turdaliyeva B, Tulerayev K, Duong TV, Chang PW, Zagulova D. Health literacy among visitors of district polyclinics in Almaty, Kazakhstan. *Iran J Public Health*. (2017) 46:1062–70.
41. Pham VT, Chen Y-M, Duong TV, Nguyen TPT, Chie WC. Adaptation and validation of active aging index among older Vietnamese adults. *J Aging Health*. (2019). doi: 10.1177/0898264319841524. [Epub ahead of print].
42. del Rio C, Malani PN. 2019 novel Coronavirus—important information for clinicians. *JAMA*. (2020) 323:1039–40. doi: 10.1001/jama.2020.1490
43. Gostin LO, Hodge JG. US emergency legal responses to novel Coronavirus: balancing public health and civil liberties. *JAMA*. (2020) 323:1131–2. doi: 10.1001/jama.2020.2025
44. Wang CJ, Ng CY, Brook RH. Response to COVID-19 in Taiwan: big data analytics, new technology, and proactive testing. *JAMA*. (2020) 323:1341–2. doi: 10.1001/jama.2020.3151
45. The Government of the Socialist Republic of Vietnam. *Government in Action*. (2020). Available online at: http://news.chinhphu.vn/Home/Government-in-action.vgp (accessed March 15, 2020).
46. Smith N, Fraser M. Straining the system: novel coronavirus (COVID-19) and preparedness for concomitant disasters. *Am J Public Health*. (2020) 110:648–9. doi: 10.2105/AJPH.2020.305618
47. McKee M, Stuckler D. If the world fails to protect the economy, COVID-19 will damage health not just now but also in the future. *Nat Med*. (2020) 26:640–2. doi: 10.1038/s41591-020-0863-y
48. Hai HT, Quang ND, Thang NT, Nam NH. Circular economy in Vietnam. In: Ghosh S, editor. *Circular Economy: Global Perspective*. Singapore: Springer (2020). p. 423–52. doi: 10.1007/978-981-15-1052-6_22
49. Opie RS, Itsiopoulos C, Parletta N, Sanchez-Villegas A, Akbaraly TN, Ruusunen A, et al. Dietary recommendations for the prevention of depression. *Nutr Neurosci*. (2017) 20:161–71. doi: 10.1179/1476830515Y.0000000043
50. Wang C, Pan R, Wan X, Tan Y, Xu L, Ho CS, et al. Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease (COVID-19) epidemic among the general population in China. *Int J Environ Res Public Health*. (2020) 17:1729. doi: 10.3390/ijerph17051729
51. Lai J, Ma S, Wang Y, Cai Z, Hu J, Wei N, et al. Factors associated with mental health outcomes among health care workers exposed to Coronavirus disease 2019. *JAMA Netw Open*. (2020) 3:e203976. doi: 10.1001/jamanetworkopen.2020.3976
52. Huang Y, Zhao N. Generalized anxiety disorder, depressive symptoms and sleep quality during COVID-19 outbreak in China: a web-based cross-sectional survey. *Psychiatry Res*. (2020) 288:112954. doi: 10.1016/j.psychres.2020.112954

Conflict of Interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Research Article

Clinical Epidemiology Features and Risk Factors for Acute Diarrhea Caused by Rotavirus A in Vietnamese Children

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Introduction. Acute diarrhea caused by group A rotavirus (RVA) is a leading cause of morbidity and mortality globally in children less than 5 years old. Acute diarrhea caused by RVA is often manifested by loose/watery stool leading to different degrees of dehydration. The detection of risk factors, diagnosis, and prompt treatment of acute diarrhea caused by RVA is critical. We aimed to describe clinical epidemiological features of acute diarrhea caused by RVA and its associated risk factors. *Subjects and Method*. We conducted a cross-sectional study that included 321 children under 5 years old with acute diarrhea at Haiphong Children's Hospital, Vietnam, from 1 August 2019 to 31 July 2020. *Results*. Among the 321 children included in our analysis, 221 (68.8%) children were positive for RVA. Males represented 61.1% of cases, 41.2% of children were in the 12-<24-month age group, and the majority of cases were among children in suburban areas (71.5%). Clinical manifestations included loose and watery stool (100%), vomiting-fever-loose/watery stool (57.9%), vomiting-loose/watery stool (83.2%), fever-loose/watery stool (58.8%), dehydration (30%), hyponatremia (22.1%), hypernatremia (1.4%), and hypokalemia (15%). Risk factors for acute diarrhea caused by RVA included history of diarrhea, not exclusive breastfeeding in the first 6 months, living area, maternal education, and income. *Conclusions*. Acute diarrhea due to RVA was very prevalent in children under 5 years old. Clinical manifestations included a high prevalence of loose/watery stools/day and dehydration with electrolyte disorder. Mothers should exclusively breastfeed their children for the first 6 months to avoid the risk of acute diarrhea caused by RVA.

1. Introduction

Acute diarrhea is defined as loose/watery stool at least 3 times within 24 hours and typically lasting from 5 to 14 days [1–4]. Clinical symptoms and signs of acute diarrhea caused by group A rotavirus (RVA) include vomiting, fever, loose/watery stool, and dehydration [5–8].

To date, seven groups of rotavirus (group A-G) have been isolated and characterized. Group A rotavirus, the most common rotavirus, causes more than 90% of all infections in humans [9]. Rotavirus is transmitted primarily and directly from person to person by the fecal-oral route [10].

Group A rotavirus is the leading cause of acute diarrhea and hospitalization in children under 5 years of age [11–16]. The incidence of acute diarrhea due to RVA fluctuates from 12.7% to 55.0% [5, 8, 11–17] depending on different geographic regions and the possibility of detecting RVA; for example, in Eastern Mediterranean regions, acute diarrhea ranges from 19% to 78.2% [18]. Acute diarrhea caused by RVA affects children's physical development, causes economic burden for the family and society, and is a leading cause of mortality in children under 5 years of age [18–23].

There are several known risk factors for RVA which include number of vomiting episodes a day, not being exclusively breastfed in the first 6 months of life, a history of recent acute diarrhea, sex, malnutrition, living area, maternal education, maternal income, maternal age, and maternal profession. Understanding clinical symptoms and signs, including subclinical signs of acute diarrhea due to RVA, and its risk factors from children and from their mother is

very important for doctors in order to provide appropriate treatment to reduce severe complications and reduce overall morbidity and mortality.

In order to more efficiently detect RVA, quick test for detecting the antigen of RVA in acute diarrhea in children under 5 years old has been implemented in routine practice recently in Haiphong Children's Hospital. This study is aimed at describing clinical epidemiologic features of acute diarrhea caused by RVA and its risk factors in children under 5 years old. We hope that the results will help pediatricians promptly diagnose and treat acute diarrhea caused by rotavirus and advise mothers based on risk factors to reduce the likelihood of having this disease in their children.

2. Materials and Methods

The cross-sectional study was done from August 1, 2019, to July 31, 2020. The study site was Haiphong Children's Hospital, Vietnam.

2.1. Study Population. The study was carried out on 321 children with acute diarrhea of which 221 children had quick test for detecting the antigen for RVA.

2.2. Inclusion Criteria. Patients who were enrolled in the study had to meet the following criteria [1–4]:

(i) Loose/watery stool at least 3 times within 24 hours, lasting no longer than 14 days

(ii) A positive fecal sample for RVA on admission

2.3. Exclusion Criteria. Exclusion criteria are as follows: acute diarrhea with blood in the stool lasting longer than 14 days, or not providing informed consent for participation in the study.

2.4. Patient Assessment. On admission, patient had a standardized collection which included a fecal sample to test for RVA, an electrolyte test, assessment of clinical signs and symptoms, and associated and risk factors. Group A rotavirus was detected by using Onsite® Rotavirus Ag Rapid Test of CTK Biotech, Inc., USA. Patients who were RVA-positive (case) were used to study clinical epidemiologic features, and patients who were RVA-negative (control) were used to evaluate risk factors.

2.5. Data Analysis. SPSS software version 22.0 (SPSS Inc., Chicago, IL, USA) was used to enter and analyze data. Chi-square test was performed to compare 2 percentages; statistical significance was defined with a p value less than 0.05.

Odds ratios (OR) with 95% CI were calculated to assess the relationship of acute diarrhea due to RVA and different risk factors.

2.6. Ethical Approval. Approval for the study was obtained from the Medical Ethic Council of Haiphong University of Medicine and Pharmacy, and informed consent was obtained according to the Declaration of Helsinki.

Table 1: Epidemiological features of children with acute diarrhea caused by group A rotavirus.

Variables	Number of patients	Percentage (%)
Group A rotavirus		
Positive	221	68.8
Negative	100	31.2
Sex ($n = 221$)		
Boy	135	61.1
Girl	86	38.9
Age (month) ($n = 221$)		
<12	61	27.6
12-<24	91	41.2
24-<36	43	19.4
36-<48	13	5.9
48-<60	13	5.9
Areas ($n = 221$)		
Urban	59	26.7
Suburban	158	71.5
Island	4	1.8

3. Results

Table 1 shows that among the 321 patients with acute diarrhea, 221 (68.8%) patients had a positive RVA rapid test and 100 patients (31.2%) had a negative RVA rapid test. Those who were RVA-positive were 61.1% male, 27.6% were less than 12 months of age, 41.2% were 12-<24 months of age, 19.4% were 24-<36 months of age, and 5.9% were 36-<48 months of age and 48-<60 months of age, respectively. 71.5% of the patients were from suburban areas, while 26.7% were from urban, and 1.8% were from the island.

Figure 1 shows that the majority of the patients were surveyed between August and December 2019 with large decreases in patients from January to July 2020. The number of patients seen in November 2019 was 59 (26.7%), and in December 2019, the number increased to 111 (50.2%). From January to July 2020, the number of patients ranged from approximately 1 to 5 cases a month.

Table 2 shows different symptoms; on admission, the majority presented with loose/watery stool with 195 (88.2%) reporting this symptom; 35 (15.8%) had vomiting, and 9 (0.9%) had abdominal pain.

Table 3 shows different clinical feature of the patients; 100% had loose/water stool; 83.2% of the patients had vomiting and watery/loose stool; 58.8% of the patients had fever-loose/watery stool; 57.9% had vomiting-fever-loose/watery stool; and 30% had mild dehydration. We did not note any case of severe dehydration.

Other symptoms included hyponatremia in 49 (22.1%) of the patients, 3 (1.4%) had hypernatremia, 33 (15.0%) had hypokalemia, 13 (5.9%) had hyperkalemia, 19 (8.6%) had a reduction of blood chlorine, and 49 (22.2%) had an increase in blood chlorine (see Table 4).

Table 5 shows that among the 7 reported risk factors, 4 risk factors were statistically associated with acute diarrhea

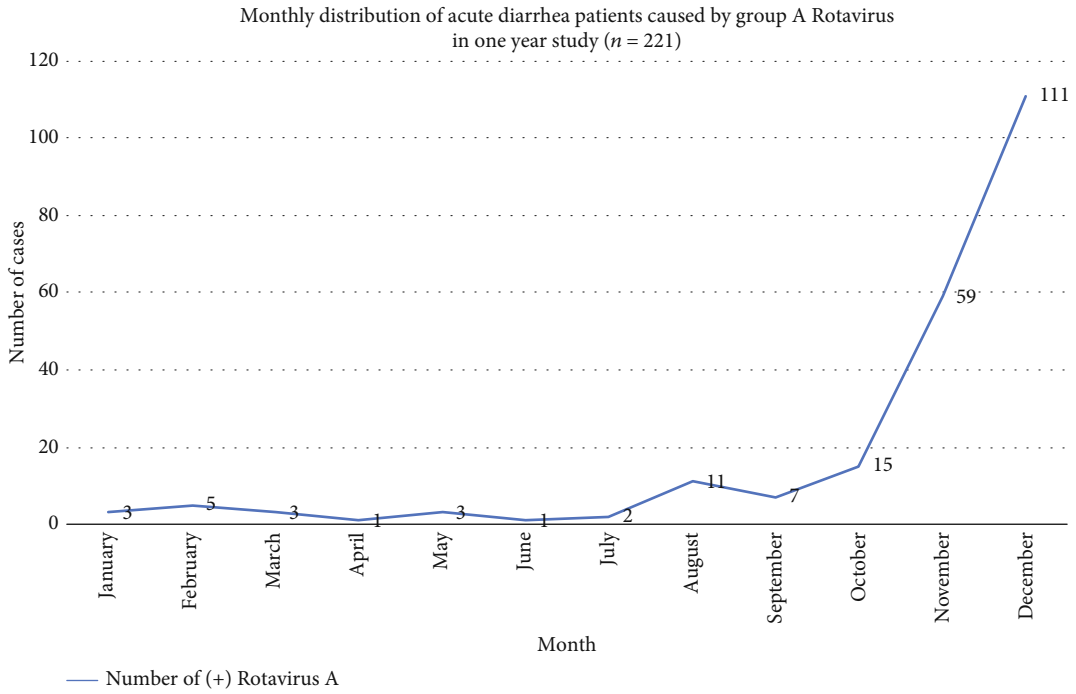

Figure 1: Monthly distribution of acute diarrhea patients caused by group A rotavirus in a one-year study ($n = 221$).

Table 2: The admission reason of children with acute diarrhea caused by rotavirus ($n = 221$).

Admission reasons	Number of patients	Percentage (%)
Abdominal pain	8	0.9
Loose and watery stool	195	88.2
Vomiting	35	15.8

Table 3: The clinical features of children with acute diarrhea caused by rotavirus ($n = 221$).

Symptoms and signs	Number of patients	Percentage (%)
Loose/watery stool	221	100
Vomiting, fever, and loose/watery stool	128	57.9
Vomiting and loose/watery stool	184	83.2
Fever and loose/watery stool	130	58.8
No dehydration	154	69.7
Some moderate dehydration	67	30.03
Severe dehydration	0	0.0

due to RVA. These included the number of times vomiting each day, breastfeeding exclusively in the first 6 months, seasonality, and having a history of diarrhea in the last 2 weeks. Among the 5 maternal risk factors, 3 risk factors were statistically associated with acute diarrhea due to RVA and included living area, maternal education level, and maternal income (see Table 6).

4. Discussion

4.1. Clinical Epidemiologic Features. Viral infections are the leading cause of acute diarrhea in children under 5 years old globally, and RVA is the most common cause and reason for hospitalization in this age group [24]. Our study showed that 68.8% patients with acute diarrhea were diagnosed with RVA. This incidence was higher than that of Thompson et al. [25] in Ho Chi Minh City (46.8%), Prasetyo et al. [26] in Bandung Indonesia (44.8%), and Nakawesi et al. [27] in Uganda (45.4%). The reason for our high incidence was likely due to patients being hospitalized predominately from August to December 2019 which coincided with cold and dry months in Vietnam. During this period, it is more likely that acute diarrhea in patients was a result of RVA.

In contrast, from January to July 2020, a period which coincided with hot months in Vietnam, acute diarrhea was more likely caused by infections not related to RVA, and we saw a significant reduction in patients hospitalized during this period (Figure 1). In our sample, acute diarrhea due to RVA was more concentrated among males (61.1%), those in suburban area (71.5%), and patients who were 12-<24 months of age (41.2%). These results were consistent with the results of a study from Nguyen et al. [28] that documented approximately 49.6% males and 57.6% in the 12-<24-month age group.

Acute diarrhea due to RVA being more common in males and children in suburban areas is likely a result of gender imbalance and larger suburban populations in Vietnam. According to Mosisa et al. [21], the likely explanation for the high risk among those in the 12-<24-month age group might be that this age group is undergoing complementary feeding, which may cause them to be more vulnerable to diarrheal

Table 4: Electrolyte ($n = 221$).

Indices		Number of patients	Percentage (%)	Normal range
Na^+ (mmol/L)	<135	49	22.1	135-145 mmol/L
	135-145	169	76.5	
	>145	3	1.4	
K^+ (mmol/L)	<3.5	33	15.0	3.5-4.5 mmol/L
	3.5-4.5	175	79.1	
	>4.5	13	5.9	
Cl^- (mmol/L)	<100	19	8.6	90-110 mmol/L
	100-110	153	69.2	
	>110	49	22.2	

Table 5: The risk factors of acute diarrhea caused by rotavirus from children ($n = 321$).

Risk factor	Rotavirus (A) (+)		Rotavirus (A) (-)		Total	OR 95% CI p
	n	%	n	%		
Sex						
Boy	135	68.5	62	31.5	197	0.96
Girl	86	69.4	38	30.6	124	0.59-1.56 >0.05
Age group						
<24 (months)	152	65.2	81	34.8	233	0.52
≥24 (months)	69	78.4	19	21.6	88	0.29-0.92 <0.05
Season						
Winter-spring	195	74.4	67	25.6	262	3.69
Summer-fall	26	44.1	33	55.9	59	2.06-6.62 <0.05
Number of vomiting a day						
≥5	86	70.2	16	31.8	102	3.34
<5	135	61.6	84	38.4	219	1.84-6.09 <0.05
Exclusive breastfeeding in the first six months						
No	115	76.7	35	32.3	150	3.89
Yes	88	69.8	38	30.2	126	2.02-7.48 <0.05
Malnutrition						
Yes	20	64.5	11	35.5	31	0.81
No	201	69.3	89	30.7	290	0.37-1.75 >0.05
History of diarrhea in the last two weeks						
Yes	38	17.2	8	8.0	46	2.39
No	183	82.8	92	92.0	275	1.07-5.33 <0.05

disease-causing infectious agents due to their underdeveloped immunity. Moreover, children at these ages are starting to crawl and walk and may pick up dirty or contaminated objects and put them in their mouth. The 2016 EDHS report revealed that diarrhea prevalence was high among those in the 12-<24-month age group due to weaning and walking that often occur during these ages, contributing to increased risk of contamination from the environment [29]. In our patients, acute diarrhea due to RVA occurred all year but increased significantly in cold and dry months (from 11 cases in August 2019 to 111 cases in December 2020).

From January to July 2020, Haiphong, Vietnam, suffered from the COVID-19 epidemic, and as a result, people had to isolate at home, so the number of patients coming to the hospital was sporadic. This significantly impacted the monthly distribution of acute diarrhea due to RVA in 2020. In China,

Table 6: The maternal risk factors of acute diarrhea caused by rotavirus ($n = 321$).

Risk factors		Rotavirus (A) (+)		Rotavirus (A) (-)		Total	OR 95% CI p
		n	%	n	%		
Area	Urban	61	80.3	15	19.7	76	2.16
	Suburban/island	160	65.3	85	34.7	245	1.56-4.03 <0.05
Maternal age (year)	<30	144	67.3	70	32.7	214	0.27 0.03-2.3 >0.05
	30-<40	71	71.0	29	29.0	100	0.4 0.04-3.5 >0.05
	≥40	6	85.7	1	14.3	7	1
Maternal profession	Farmers	7	53.8	6	46.2	13	1
	Workers	6	85.7	1	14.3	7	5.14 0.47-55.64 >0.05
	Civil officials	77	70.6	32	29.4	109	2.06 0.64-6.62 >0.05
	Housewives	21	75.0	7	25.0	28	2.57 0.64-10.28 >0.05
	Small business/freelance	97	65.5	51	34.5	148	1.63 0.52-5.1 >0.05
Maternal education level	≤ high school	44	89.8	5	10.2	49	4.72
	College and higher	177	65.1	95	34.9	272	1.8-12.3 <0.05
Maternal income	Low	25	92.6	2	7.4	27	6.25
	≥ average	196	66.7	98	33.3	294	1.45-26.9 <0.05

according to Zhao et al. [8], the highest number of patients were seen in October (54.8%) and the lowest number of patients were seen in July (5%). August to October are cold and dry months creating conditions for RVA to multiply and cause acute diarrhea.

Approximately 90% of our patients were admitted to the hospital because of loose/watery stool. However, some patients also reported abdominal pain, and nearly 16% of the patients reported vomiting. These were common manifestations seen in acute diarrhea due to RVA (see Table 2). We also found that 100% of the patients had loose/watery stool, 83.2% had loose/watery stool combined with vomiting, 58.8% had loose/watery stool combined with fever, and 57.9% had loose/watery stool combined with vomiting and fever (see Table 3). These results were consistent with that of Nguyen et al. [28]. We did not have any cases of severe dehydration, while only 30% of the patients were moderately dehydrated, and the remainder were not dehydrated. These results may be explained by mothers giving their children low osmotic oral rehydration solution before admitting the hospital.

We noted that among our patients, 100% were tested for electrolytes, mainly due to dehydration. Having all patients undergo electrolyte testing done may be considered to be a waste of testing costs. We also note that nearly 6% of the patients had mild hyperkalemia which could be explained by the patient's acute diarrhea with acidosis or/and by the rupture of red blood cell during the blood test (see Table 4).

4.2. Some Risk Factors of Acute Diarrhea due to RVA. Among the 7 risk factors assessed, 4 risk factors were associated with acute diarrhea due to RVA. These risk factors were cold and dry season, number of vomiting ≥5 times a day, not exclusive breastfeeding in the first 6 months, and history of acute diarrhea (see Table 5). The cold and dry season risk factor finding was consistent with the other study done in Vietnam [28], Mozambique (June-July: coldest and drier months) [30], China [31], Thailand [32], Korea [33], and Japan [34]. Our findings of patients vomiting ≥5 times a day were similar to Li et al. [35] who found that patients with acute diarrhea due to RVA reported vomiting ≥3 times a day (OR = 8.788). Breast milk especially colostrum contains many factors against the infections of digestive tract due to both bacteria and RVA such as IgA, white blood cell, and antibacterial peptides, so breastfed child can reduce the risk of acute diarrhea in general

and acute diarrhea due to RVA in particular. This comment was consistent with the comment of Black and Armstrong [36] and D Tino De Franco et al. [37]. Our results showed that children who were not fully breastfed during the first 6 months had an AOR of 3.98 and 95% CI from 2.02 to 7.48 and a p value less than 0.05.

Rotavirus infection could happen several times in one's life from neonate to elderly [38] due to the weak and unstable immunity following rotavirus infections. This study indicated that a child having history of acute diarrhea had 2.39 times increased risk of recurrence compared with a child without this history. Similarly, Gladstone et al. [39] found that the protective efficacy of previous *rotavirus infection* against the next moderate and severe infection was 3 times lower than that of other infections.

Among the 5 maternal factors, 3 factors were statistically associated with acute diarrhea caused by RVA. These included patients living in suburban area (OR = 2.16), low maternal education level (OR = 4.72), and low maternal income (OR = 6.25). Our results were consistent with that Nakawesi et al. [27], Xuan [40], Thiam et al. [41], and Claudine et al. [17].

5. Conclusions

Acute diarrhea caused by RVA was common in pediatric practices with manifestation such as loose/watery stool and dehydration, often seen in cold and dry season. In this study, associated factors such as seasonality, vomiting ≥5 times a day, not exclusive breastfeeding in the first 6 months, history of acute diarrhea, living area, low maternal education level, and low maternal income were risk factors of acute diarrhea caused by group A rotavirus.

6. Limitations

Because most of the study period of 2020 coincided with the outbreak of COVID-19 in the city, it partly affected the number of patients who came to the hospital for acute diarrhea and may also affect some conclusions drawn from the statistics particularly risk factors.

Abbreviations

RVA: Group A rotavirus.

Data Availability

Data and material used and/or analyzed during the current research are available from the corresponding authors on reasonable request.

Conflicts of Interest

The authors declare that they have no competing interests.

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References

[1] B. Amit, "Guideline for the management of diarrhoea in children. Ministry of Health, Male' Republic of Maldives," https://health.gov.mv/storage/uploads/Bxope4wv/hgbg4afz.pdf.

[2] A. Guarino, A. Lo Vecchio, J. A. Dias et al., "Universal recommendations for the management of acute diarrhea in nonmalnourished children," *Journal of Pediatric Gastroenterology and Nutrition*, vol. 67, no. 5, pp. 586–593, 2018.

[3] WHO, "Diarrhoeal disease," https://www.who.int/news-room/fact-sheets/detail/diarrhoeal-disease.

[4] B. Jason and M. P. Harris, "Approach to the child with acute diarrhea in resource-limited countries," https://www.update.com/contents/approach-to-the-child-with-acute-diarrhea-in-resource-limited-countries.

[5] T. W. Myat, H. M. Thu, J. E. Tate et al., "Rotavirus infection among children under five years of age hospitalized with acute gastroenteritis in Myanmar during 2018-2020 - Multicentre surveillance before rotavirus vaccine introduction," *Vaccine*, vol. 39, no. 47, pp. 6907–6912, 2021.

[6] T. W. Myat, H. M. Thu, Y. M. Kyaw et al., "Sentinel surveillance for rotavirus in children <5 years of age admitted for diarrheal illness to Yangon Children's Hospital, Myanmar, 2009–2014," *Vaccine*, vol. 36, no. 51, pp. 7832–7835, 2018.

[7] S. Dong, D. Huang, Z. Wang, G. Zhang, F. Zhang, and L. Sai, "Clinical and molecular epidemiological characterization of rotavirus infections in children under five years old in Shandong province, China," *Archives of Virology*, vol. 166, no. 9, pp. 2479–2486, 2021.

[8] J. Zhao, X. J. Shen, S. L. Xia et al., "Infection status, clinical symptoms and gene type transition of group A rotavirus in children, less than five years-of-age, with diarrhea in sentinel hospitals of Henan Province, China," *Zhonghua yu Fang yi xue za zhi [Chinese Journal of Preventive Medicine]*, vol. 51, no. 1, pp. 82–86, 2017.

[9] C. D. Kirkwood, "Genetic and antigenic diversity of human rotaviruses: potential impact on vaccination programs," *Journal of Infectious Diseases*, vol. 202, no. S1, pp. S43–S48, 2010.

[10] E. Mk, "Rotaviruses," *Fields Virology*, vol. 1, pp. 1917–1974, 2007.

[11] D. T. T. Huyen, D. T. Hong, N. T. Trung et al., "Epidemiology of acute diarrhea caused by rotavirus in sentinel surveillance sites of Vietnam, 2012-2015," *Vaccine*, vol. 36, no. 51, pp. 7894–7900, 2018.

[12] D. SoukAloun, V. Douangbouphaa, R. Phetsouvanh et al., "Rotavirus diarrhea in hospitalized children under 5 years of age in Vientiane, Lao PDR, 2009-2015," *Vaccine*, vol. 36, no. 51, pp. 7878–7882, 2018.

[13] A. B. Nazurdinov, Z. A. Azizov, F. Tishkova, S. M. Turkov, D. S. Daniels, and E. Leshem, "Rotavirus hospitalizations among children<5 years of age—Tajikistan, 2013–2014," *Vaccine*, vol. 36, no. 51, pp. 7794–7797, 2018.

[14] L. I. Chernyshova, N. M. Radionova, I. V. Demchyshyna et al., "Observations on the epidemiology of rotavirus infection among hospitalized children younger than 5 years in 2 Ukrainian hospitals, 2007-2015," *Vaccine*, vol. 36, no. 51, pp. 7798–7804, 2018.

[15] J. Sharma, S. Chaudhary, M. Bajaj, N. P. Nair, and V. Thiyagarajan, "Rotavirus gastroenteritis hospitalizations among under-5 children in northern India," *The Indian Journal of Pediatrics*, vol. 88, no. S1, pp. 28–34, 2021.

[16] B. Tagbo, J. M. Mwenda, C. B. Eke et al., "Rotavirus diarrhoea hospitalizations among children under 5 years of age in Nigeria, 2011-2016," *Vaccine*, vol. 36, no. 51, pp. 7759–7764, 2018.

[17] U. Claudine, J. Y. Kim, E. M. Kim, and T. S. Yong, "Association between sociodemographic factors and diarrhea in children under 5 years in Rwanda," *The Korean Journal of Parasitology*, vol. 59, no. 1, pp. 61–65, 2021.

[18] M. N. F. Shaheen, "Rotavirus gastroenteritis among hospitalized children under 5 years of age in the Eastern Mediterranean region: a review," *Eastern Mediterranean Health Journal*, vol. 25, no. 6, pp. 422–430, 2019.

[19] R. M. Hartman, A. L. Cohen, S. Antoni et al., "Risk factors for mortality among children under 5 years of age with severe diarrhea in low-and middle-income countries: findings from the WHO-coordinated global rotavirus and pediatric diarrhea surveillance networks," *Clinical Infectious Diseases*, vol. 76, no. 3, pp. e1047–e1053, 2023.

[20] Y. Negesse, A. A. Taddese, A. Negesse, and T. A. Ayele, "Trends and determinants of diarrhea among under-five children in Ethiopia: cross-sectional study: multivariate decomposition and multilevel analysis based on Bayesian approach evidenced by EDHS 2000–2016 data," *BMC Public Health*, vol. 21, no. 1, pp. 1–16, 2021.

[21] D. Mosisa, M. Aboma, T. Girma, and A. Shibru, "Determinants of diarrheal diseases among under five children in Jimma Geneti district, Oromia region, Ethiopia, 2020: a case-control study," *BMC Pediatrics*, vol. 21, no. 1, pp. 1–13, 2021.

[22] O. Rochanathimoke, A. Riewpaiboon, P. Tharmaphornpilas, S. Jiamsiri, M. Thavorncharoensap, and M. J. Postma, "Economic burden of rotavirus diarrhea in Thailand: report from a pilot study on rotavirus vaccination," *Vaccine*, vol. 37, no. 4, pp. 587–594, 2019.

[23] P. Ehrenkranz, C. F. Lanata, M. E. Penny, E. Salazar-Lindo, and R. I. Glass, "Rotavirus diarrhea disease burden in Peru: the need for a rotavirus vaccine and its potential cost savings," *Revista panamericana de salud publica*, vol. 10, no. 4, pp. 240–248, 2001.

[24] J. E. Tate, A. H. Burton, C. Boschi-Pinto, U. D. Parashar, and World Health Organization–Coordinated Global Rotavirus Surveillance Network, "Global, regional, and national estimates of rotavirus mortality in children <5 years of age, 2000–2013," *Clinical Infectious Diseases*, vol. 62, Supplement 2, pp. S96–S105, 2016.

[25] C. N. Thompson, P. Van Minh, H. Le Phuc et al., "A prospective multi-center observational study of children hospitalized with diarrhea in Ho Chi Minh City, Vietnam," *The American Journal of Tropical Medicine and Hygiene*, vol. 92, no. 5, pp. 1045–1052, 2015.

[26] D. Prasetyo, I. M. Sabaroedin, Y. S. Ermaya, and Y. Soenarto, "Association between severe dehydration in rotavirus diarrhea and exclusive breastfeeding among infants at Dr. Hasan Sadikin General Hospital, Bandung, Indonesia," *Journal of Tropical Medicine*, vol. 2015, Article ID 862578, 4 pages, 2015.

[27] J. S. Nakawesi, E. Wobudeya, G. Ndeezi, E. A. Mworozi, and J. K. Tumwine, "Prevalence and factors associated with rotavirus infection among children admitted with acute diarrhea in Uganda," *BMC Pediatrics*, vol. 10, no. 1, pp. 1–5, 2010.

[28] T. V. Nguyen, P. le van, C. le Huy, and A. Weintraub, "Diarrhea caused by rotavirus in children less than 5 years of age in Hanoi, Vietnam," *Journal of Clinical Microbiology*, vol. 42, no. 12, pp. 5745–5750, 2004.

[29] T. Zerfu, *Ethiopian Demographic and Health Survey, 2016*, Addis Ababa, Ethiopia, and Rockville, Maryland, USA, 2017.

[30] J. S. Langa, R. Thompson, P. Arnaldo et al., "Epidemiology of rotavirus A diarrhea in Chókwè, southern Mozambique, from February to September, 2011," *Journal of Medical Virology*, vol. 88, no. 10, pp. 1751–1758, 2016.

[31] Z. Y. Fang, H. Yang, J. Zhang et al., "Child rotavirus infection in association with acute gastroenteritis in two Chinese sentinel hospitals," *Pediatrics International*, vol. 42, no. 4, pp. 401–405, 2000.

[32] N. Maneekarn and H. Ushijima, "Epidemiology of rotavirus infection in Thailand," *Pediatrics International*, vol. 42, no. 4, pp. 415–421, 2000.

[33] J. K. Seo and J. G. Sim, "Overview of rotavirus infections in Korea," *Pediatrics International*, vol. 42, no. 4, pp. 406–410, 2000.

[34] Y. Zhou, L. Li, B. Kim et al., "Rotavirus infection in children in Japan," *Pediatrics International*, vol. 42, no. 4, pp. 428–439, 2000.

[35] J. Li, Y. Yang, Z. C. Liang et al., "Analysis of pathogenic composition and clinical characteristics of viral acute gastroenteritis in children under five years old in Beijing," *Zhonghua yu Fang yi xue za zhi [Chinese Journal of Preventive Medicine]*, vol. 54, no. 10, pp. 1104–1110, 2020.

[36] M. E. Black and D. J. T. L. Armstrong, "Human-milk lactadherin in protection against rotavirus," vol. 351, no. 9118, pp. 1815-1816, 1998.

[37] M. Tino De Franco et al., "Neutralizing activity and secretory IgA antibodies reactive with rotavirus SA-11 (serotype G3) in colostrum and milk from Brazilian women," vol. 33, no. 2, pp. 102–107, 2013.

[38] O. Lundgren and L. Svensson, "Pathogenesis of rotavirus diarrhea," *Microbes and Infection*, vol. 3, no. 13, pp. 1145–1156, 2001.

[39] B. P. Gladstone, S. Ramani, I. Mukhopadhya et al., "Protective effect of natural rotavirus infection in an Indian birth cohort," *The New England Journal of Medicine*, vol. 365, no. 4, pp. 337–346, 2011.

[40] L. T. T. Xuan, "Some risk factors related to knowledge, attitude, and practice about acute diarrhea among people in 2 communes of Ham Thuan Bac, Binh Thuan in 2013," *Journal of Medicine Research*, vol. 6, pp. 77–84, 2016.

[41] S. Thiam, A. N. Diène, S. Fuhrimann et al., "Prevalence of diarrhoea and risk factors among children under five years old in Mbour, Senegal: a cross-sectional study," *Infectious Diseases of Poverty*, vol. 6, no. 1, pp. 43–54, 2017.

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8. Cơ quan công tác: Tên cơ quan: Trường Đại học Y Dược Hải Phòng Khoa/Phòng, Bộ môn, Trung tâm: Bộ môn Sinh lý bệnh – Dị ứng – Miễn dịch, Khoa Y Địa chỉ cơ quan: 72A Nguyễn Bỉnh Khiêm, Đằng Giang, Ngô Quyền, Hải Phòng. Điện thoại: 0225 3751 907 Fax: 0225.733.315 Email: contact@hpmu.edu.vn

9. Quá trình đào tạo

Bậc đào tạo	Nơi đào tạo	Chuyên ngành/Tên khóa luận, luận văn, luận án	Năm tốt nghiệp
Đại học	Đại học Y Hà Nội	Bác sĩ Đa khoa	1982
BS nội trú	Đại học Y Hà Nội	Dị ứng miễn dịch lâm sàng	1985
Tiến sĩ	Học viện Quân Y	Dị ứng miễn dịch lâm sàng	1993
TSKH			

10. Các khoá đào tạo khác (nếu có)

Văn bằng	Tên khoá đào tạo	Nơi đào tạo	Thời gian đào tạo
	Quản lý Nhà nước	Trường Chính trị Tô Hiệu Hải Phòng	2003
	Lý luận chính trị	Trường Chính trị Tô Hiệu Hải Phòng	2006 - 2008

	Chương trình đào tạo ứng dụng tin học, Dự án 112 Chính phủ	Trung tâm quang điện tử - Viện ứng dụng công nghệ - Bộ Khoa học công nghệ	2006

11. Trình độ ngoại ngữ

Tên ngoại ngữ	Văn bằng/Chứng chỉ	Năm

12. Quá trình công tác *(trước khi sẽ Trưởng và sau khi sẽ Trưởng)*

Thời gian (Từ năm ... đến năm...)	Vị trí công tác	Cơ quan công tác	Địa chỉ cơ quan
1982 - 1983	Bác sĩ hội trú khoá 9 - Chuyên ngành Dị ứng - Miễn dịch - Đại học Y Hà Nội	Đại học Y Hà Nội	1 P. Tôn Thất Tùng, Kim Liên, Đống Đa, Hà Nội
1988 - 1992	Giảng viên, Giảng dạy môn Dị ứng - Miễn dịch	Trường Đại học Y Hải Phòng	72A Nguyễn Bỉnh Khiêm, Đằng Giang, Ngô Quyền, Hải Phòng
1993 -1999	Phụ trách bộ môn Sinh lý bệnh - Dị ứng - Miễn dịch	Trường Đại học Y Hải Phòng	72A Nguyễn Bỉnh Khiêm, Đằng Giang, Ngô Quyền, Hải Phòng
2000 - 2004	Giảng viên chính, Trưởng bộ môn Sinh lý bệnh - Dị ứng - Miễn dịch	Trường Đại học Y Hải Phòng	72A Nguyễn Bỉnh Khiêm, Đằng Giang, Ngô Quyền, Hải Phòng
2004 - 2005	Phó Viện trưởng, Viện Y học biển kiêm Trưởng bộ môn Sinh lý bệnh - Dị ứng - Miễn dịch	Viện Y học Biển	Võ Nguyên Giáp, Kênh Dương, Lê Chân, Hải Phòng
2005 - 2006	Phó viện trưởng Viện Y học Biển kiêm Phó Hiệu trưởng trường Đại học Y Hải Phòng, Phó Bí thư Đảng uỷ Nhà trường	Trường Đại học Y Hải Phòng	72A Nguyễn Bỉnh Khiêm, Đằng Giang, Ngô Quyền, Hải Phòng
2006 - 2007	Quyền Hiệu trưởng - Trường Đại học Y Hải Phòng, Phó Bí thư Đảng uỷ	Trường Đại học Y Hải Phòng	72A Nguyễn Bỉnh Khiêm, Đằng Giang, Ngô Quyền, Hải Phòng
2007 - 2010	Hiệu trưởng, Phó Bí thư Đảng uỷ, Giám đốc Bệnh viện Đại học Y Hải Phòng, Phó Giám đốc Bệnh viện Hữu Nghị Việt Tiệp - Hải Phòng	Trường Đại học Y Hải Phòng	72A Nguyễn Bỉnh Khiêm, Đằng Giang, Ngô Quyền, Hải Phòng

2010 - 6/2018	- Thành uỷ viên, Đại biểu Hội đồng Nhân dân thành phố Hải Phòng, Bí thư Đảng uỷ, Hiệu trưởng, Phó Giám đốc Bệnh viện Hữu Nghị Việt Tiệp - Hải Phòng - Năm 2013: Được phong tặ Giáo sư danh dự của trường Đại học Kanazawa, Nhật Bản - Năm 2015: Được phong tă Giáo sư danh dự của trường Đại học Y Brest, Pháp - Năm 2016: Viện sỹ Viện hàn lâm Y học Pháp - 12/2018: QĐ Chủ tịch Hội đồng trường DHYD Hải phòng	Trường Đại học Y Hải Phòng	72A Nguyễn Bỉnh Khiêm, Đằng Giang, Ngô Quyền, Hải Phòng
2018 – 2019	- 2019: QĐ Chủ tịch Hội đồng khoa học trường DHYD Hải phòng - Đại biểu Hội đồng Nhân dân thành phố Hải Phòng. - Giảng viên cao cấp bộ môn Sinh lý bệnh - Dị ứng - Miễn dịch I trường DHYDHP - Thành viên Ban bảo vệ sức khoẻ Trung ương	Trường Đại học Y Hải Phòng	72A Nguyễn Bỉnh Khiêm, Đằng Giang, Ngô Quyền, Hải Phòng
Từ 2018 đến nay	- Giảng viên cao cấp bộ môn Sinh lý bệnh - Dị ứng - Miễn dịch I trường DHYDHP - Thành viên Ban bảo vệ sức khoẻ Trung ương	Trường Đại học Y Hải Phòng	72A Nguyễn Bỉnh Khiêm, Đằng Giang, Ngô Quyền, Hải Phòng

13. Các công trình khoa học đã công bố

13.1. Bài báo khoa học:

- *Tên tác giả: tên các tác giả của bài báo*
- *Tác giả chính: là Tác giả thứ nhất (first author) hoặc Tác giả liên hệ (corresponding author)*
- *Danh mục: ISI/Scopus hoặc Tạp chí trong nước được HDGSNN tính điểm*

TT	Tên bài báo	Tên tác giả	Tác giả chính	Tạp chí	Ngày XB	Tập, trang	Danh mục	ISSN (DOI)
1	Development and Validation of a New Short-Form Health	Tuyen V. Duong, BN, MNSc, PhD;		Health Literacy Researc	2019	e91-e102		

	Literacy Instrument (HLS-SF12) for the General Public in Six Asian Countries	Ahyn Aringazina, ScD, PhD; Gaukhar Kayupova, PhD; Thuc V. Pham, MD, PhD; Khue M. Pham, MD, PhD; Tien Q. Truong, MD, MSc; Kien T. Nguyen, MSc; Wie Myint Oo, MD, PhD; Tin Tin Su, PhD; Hazreen Abdul Majid, PhD; Kristine Sorensen, PhD; I-Feng Lin, PhD; Yewen Chang, PhD; Shwu-Huey Yang, PhD; Peter W. S. Chang, MD, MPH, ScD, FRCP		h and Practice				
2	Chromium,Cadmium,Lead,and Arsenic concentrations in Water,Vegetables, and seafood consumed in a coastal Area in	Nguyen Thi Minh Ngoc,Nguyen Van Chuyen,Nguyen Thi Thu Thao,Nguyen Quang Duc,Nguyen Thi		Environmental Health Insight	2020			10.1177/11786302209810

	Northern Vietnam	Thu Trang,Nguyen Thi Thanh Binh,Hoang Cao Sa,Nguyen Bac Tran,Nguyen Van Ba,Nguyen Van Khai,Ho Anh Son,Pham Van Han,Elizabeth V Wattenberg, Hiroyuki Nakamura and Pham Van Thuc						
3	Quality of life among HIV-infected persons in Vietnam: a multicenter cross-sectional study	PHAM Thi Van Anh MD, MPH, BUI Thanh Huyen MD, MSc*, LE Dai Duong MD, MS , TRAN Ha Ngoc Tho MD, PhD , Ping GUO BN, MSc, PhD , PHAM Van Thuc MD , LUONG Ngoc Khoa MD, MPH, Richard HARDING, Eric L. KRAKAUER MD		AIDS	2023			
4	Thực trạng tai biến sản khoa tại Bệnh viện Sản Nhi Nghệ An giai đoạn2019-2020	Hoàng Thị Thuận,Lưu Văn Dũng,Phạm Văn Thôn, Cấp Minh Đức, Phạm Kỳ Hùng		Tạp chí Y học dự phòng	2022			
5	Kiến thức, thái độ thực hành về giáo tiếp	Trịnh Văn Khương,Nguyễn		Tạp chí Y học	2022			

	với người bệnh của điều dưỡng, kỹ thuật viên các khoa lâm sàng tại Bệnh viện trẻ em Hải Phòng	Thế Dũng,Trịnh Thanh Xuân, Chu Minh Đức,Vũ Quang Hưng, Phạm Văn Thời		dự phòng				
6	Kết quả một số test chẩn đoán Hen phế quản ở ứng dụ một loại nhà tại Việt Y học biển Việt Nam năm 2021-2022	Bạch Thị Như Quỳnh, Nguyễn Dương Tuyền, Phạm Bích Ngọc, Đinh Dương Tùng Anh, Phạm Văn Thời		Tạp chí Y học Việt Nam	2023			
7	Intestinal obstruction due to ligament arising from the distal end of Meckel's diverticulum: A case report	Van Chuc Dung, Phan Ninh Tran, Minh Canh Tran, Van Thai Pham,Thi Tuyet Nga Nguyen		Clinical Case Report First published	2023			https://doi.org/10.1002/ccr3.7498

13.2. Sách chuyên khảo, giáo trình – tài liệu dịch thuật:

- *Tên tài liệu: Sách/ Chương sách*
- *Loại hình: Chuyên khảo/ Tham khảo/ Giáo trình/ Tài liệu hướng dẫn*

TT	Tên tài liệu	Tên tác giả	Chủ biên/Đồng chủ biên	Nhà xuất bản	Năm xuất bản	Loại hình	ISBN
1	Bài giảng Dị ứng - Miễn dịch lâm sàng		Chủ biên	NXB Y học	2011		
2	Miễn dịch dịch bệnh bằng đi nguyên (Tập 1)		Chủ biên	NXB Y học	2011		
3	Miễn dịch dịch bệnh bằng đi nguyên (Tập 2)		Chủ biên	NXB Y học	2011		
4	Hen phế quản (Tập 1)		Chủ biên	NXB Y học	2011		
5	Hen phế quản (Tập 2)		Chủ biên	NXB Y học	2011		
6	Dị ứng thuốc		Chủ biên	NXB Y học	2011		
7	Y học gia đình		Tham gia	NXB Y học	2012		
8	Phương pháp dạy - học lâm sàng		Chủ biên	NXB Y	2012		

				học			
9	Phương pháp nghiên cứu lâm sàng - dịch tễ học		Chủ biên	NXB Y học	2012		
10	Phương pháp dạy - học lâm sàng cho Điều dưỡng		Chủ biên	NXB Y học	2012		
11	Dị nguyên và điều trị miễn dịch bằng dị nguyên		Tham gia	NXB Y học	2019		

14. Bài báo Hội nghị - hội thảo khoa học

Kỷ yếu: Tóm tắt/ Toàn văn

TT	Tên bài báo	Tên tác giả	Tác giả chính	Tên hội nghị	Thời gian bài báo	Kỷ yếu	ISSN
1	HbsAg seropositive prevalence in laborers in Sea and Coastal areas of Haiphong	**Nguyen Luong, Nguyen Truong Sao, Pham Van Thoi**	x	The 4th International Conference of Maritime Medicine, 1997 (Oslo, Norway)	1997		
2	Health Literacy Questionnaire Validation in Vietnamese at Haiphong Medical University	**Pham Van Thoi, Pham Minh Khue**	x	Hội thảo/tại International Conference on Health Literacy and Better Healthcare: EU and Asia 20-22/11/2013	20-22 /11/2013		

15. Bằng sở hữu trí tuệ đã được cấp

Liệt kê các văn bằng bảo hộ: đối tượng sáng chế, giải pháp hữu ích, kiểu dáng công nghiệp, thiết kế bố trí, giống cây trồng...

TT	Tên và nội dung văn bằng	Số, Mã, Ký hiệu	Nơi cấp	Năm cấp
1	Phương pháp sử lý nước sinh hoạt bị nhiễm Asen sinh sử dụng than hoạt tính từ cây thầu dầu tía.	Bằng độc quyền giải pháp hữu, số 2203 Quyết định số 7110A/QĐ-SHTT, ngày 12/06/2020.		2020

16. Công trình KH&CN được ứng dụng, chuyển giao

TT	Tên công trình		Hình thức	Quy mô	Địa chỉ áp dụng	Giá trị	Thời gian
1							

...							

17. Nhiệm vụ KH&CN các cấp

- *Loại hình: Đề tài/ Dự án / Đề án*
- *Tình trạng nhiệm vụ: Đã nghiệm thu/ Chưa nghiệm thu/ Không hoàn thành*

17.1. Nhiệm vụ KH&CN đã và đang chủ trì

Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình *(nếu có)*	Tình trạng nhiệm vụ	Ngày			Kinh phí
					Phê duyệt	Đăng ký kết quả *(nếu có)*	Công nhận kết quả	

17.2. Nhiệm vụ KH&CN đã và đang tham gia

Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình *(nếu có)*	Tình trạng nhiệm vụ	Ngày			Kinh phí
					Nghiệm thu	*Công nhận kết quả*	*Đăng ký kết quả*	

18. Giải thưởng về KH&CN trong và ngoài nước

TT	Tên giải thưởng	Hình thức khen thưởng	Cấp khen thưởng	Năm tặng thưởng
1				
2				
...				

19. Đào tạo sau đại học

+ *Vai trò hướng dẫn: hướng dẫn 1/ hướng dẫn 2*
+ *Bậc đào tạo: Tiến sĩ/Thạc sĩ/BS NT/ TrHCKII...*

TT	Họ tên học viên	Vai trò	Bậc đào tạo	Chuyên ngành	Nơi đào tạo	Năm cấp bằng
1	Phạm Bộ Bông	Hướng dẫn 2	BSCK2		Đại học Y Dược Hải Phòng	2020
2	Lâm Nguyên Thanh	Hướng dẫn 2	BSCK2		Đại học Y Dược Hải Phòng	2020
3	Phan Thị Hoài Thu	Hướng dẫn 1	BSCK2		Đại học Y Dược Hải Phòng	2021
4	Vũ Thị Mai	Hướng dẫn 2	BSCK2		Đại học Y Dược Hải Phòng	2022

5	Nguyễn Phú Nhuận	Hướng dẫn 2	BSCK2		Đại học Y Dược Hải Phòng	2022
6	Tần Ngọn	Hướng dẫn 1	Thạc sĩ		Đại học Y Dược Hải Phòng	2022
7	Nguyễn Thị Thủy	Hướng dẫn 1	BSCK2		Đại học Y Dược Hải Phòng	2023
8	Bùi Thị Thao	Hướng dẫn 1	BSCK2		Đại học Y Dược Hải Phòng	2023
9	Ngô Thị Thu Thuỷ	Hướng dẫn 2	Tiến sĩ		Học viện Quân Y	2024

NHỮNG THÔNG TIN KHÁC VỀ CÁC HOẠT ĐỘNG KHOA HỌC VÀ CÔNG NGHỆ

STT	Tên tổ chức	Vai trò tham gia
1	Hội Hem DU - MD - LS Hải Phòng	Chủ tịch
2	Hội Hem DU - MD - LS Việt Nam	Thành viên Ban chấp hành
3	Hội Y học biển Việt Nam	Phó chủ tịch
4	Hội DU - MD - LS Pháp	Thành viên
5	Hội Liên hiệp Khoa học kỹ thuật Hải Phòng	Thành viên Ban chấp hành
6	Hội đồng ngành Y tế Hải Phòng	Thành viên
7	Hội Y Dược học Hải Phòng	Phó chủ tịch
8	Hội đồng Hiệu trưởng các trường Đại học Y toàn thế giới nói tiếng Pháp (CIMEF)	Thành viên
9	Hiệp hội các trường Đại học, Cao đẳng Việt Nam	Thành viên Ban chấp hành
10	Liên hiệp các tổ chức hữu nghị thành phố Hải Phòng	Thành viên Ban chấp hành
11	Hội Việt Mỹ Hải Phòng	Chủ tịch
12	Hội Việt Pháp Hải Phòng	Thành viên Ban chấp hành
13	Hội Khoa học Tâm lý giáo dục Hải Phòng	Phó chủ tịch

Hải Phòng, ngày 21 tháng 5 năm 2025

XÁC NHẬN CỦA ĐƠN VỊ

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

PHÓ HIỆU TRƯỞNG

PGS.TS. Trần Thị Thanh Hải

NGƯỜI KHAI

(Ký tên và ghi rõ họ)

BS.TS. Phạm Văn Đức

SOCIALIST REPUBLIC OF VIET NAM
Independence - Freedom - Happiness

THE CHAIRMAN
OF THE STATE COUNCIL FOR PROFESSOR TITLE

- Pursuant to Decision N° 174/2008/QĐ-TTg dated 31 Dec 2008 by the Prime Minister of the Socialist Republic of Vietnam;
- Pursuant to Resolution N°01/NQ-HDCDGSNN dated 23 Oct 2014 by the State Council for Professor Title,

CONFERS
THE CERTIFICATE OF RECOGNITION

Upon: Mr. Pham Van Thuc
Born on: October 06th, 1959
In: Thuy Nguyen, Hai Phong City
for having met the standards of professor title
in: Medicine

Given under the Seal
of the State Council for Professor Title

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

CHỦ TỊCH
HỘI ĐỒNG CHỨC DANH GIÁO SƯ NHÀ NƯỚC

- Căn cứ Quyết định số 174/2008/QĐ-TTg ngày 31/12/2008 của Thủ tướng Chính phủ;
- Căn cứ Nghị quyết số 01/NQ-HDCDGSNN ngày 23/10/2014 của Hội đồng Chức danh giáo sư nhà nước,

CÔNG NHẬN
ĐẠT TIÊU CHUẨN CHỨC DANH GIÁO SƯ

Y học

Cho: Ông Phạm Văn Thúc
Sinh ngày 06 tháng 10 năm 1959
Quê quán: Thủy Nguyên, T.p Hải Phòng

Hải Phòng, ngày 10 tháng 11 năm 2017
TM. HỘI ĐỒNG
CHỦ TỊCH

GS.TS. Phạm Võ Luận

Số: 81/GS/CH

BỘ TRƯỞNG BỘ GIÁO DỤC VÀ ĐÀO TẠO

Căn cứ đề nghị của Hội đồng đánh giá luận án Khoa học chuyên ngành cấp Nhà nước
số 0283/QĐ-HĐH ngày 21/10/2014
Hợp ngày 21/10/2014 tại

Học viện Quân y

CÔNG NHẬN HỌC VỊ

PHÓ TIẾN SĨ KHOA HỌC

Cho Phạm Văn Khuê

Sinh ngày 06/09/1979

tại Thuỷ Nguyên, Hải Phòng

BỘ TRƯỞNG
BỘ GIÁO DỤC VÀ ĐÀO TẠO

MINISTRY OF EDUCATION AND TRAINING

Recognition of Degree

DOCTOR OF PHILOSOPHY

in Medicine Pharmacy

To Pham Van Thuc

Born 06/10/1959 in Thai Phong

MINISTER OF EDUCATION
AND TRAINING
(Signed)

Scanned with CamScanner

Scanned with CamScanner

BỘ Y TẾ
Số: 001260/BYT-CCHN

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

CHỨNG CHỈ HÀNH NGHỀ KHÁM BỆNH, CHỮA BỆNH

BỘ TRƯỞNG BỘ Y TẾ

Căn cứ Luật khám bệnh, chữa bệnh ngày 23/11/2009;
Căn cứ Nghị định số 87/2011/NĐ-CP ngày 27/9/2011 của Chính phủ quy định chi tiết và hướng dẫn thi hành một số điều của Luật khám bệnh, chữa bệnh;
Căn cứ Thông tư số 41/2011/TT-BYT ngày 14/11/2011 của Bộ trưởng Bộ Y tế hướng dẫn cấp chứng chỉ hành nghề đối với người hành nghề và cấp giấy phép hoạt động đối với cơ sở khám bệnh, chữa bệnh;
Xét đề nghị của Cục trưởng Cục Quản lý khám, chữa bệnh - Bộ Y tế;

CẤP CHỨNG CHỈ HÀNH NGHỀ KHÁM BỆNH, CHỮA BỆNH

Họ và tên: **PHẠM VĂN THỨC**
Ngày tháng năm sinh: 06/10/1959
Giấy chứng minh nhân dân số: 030851444
Ngày cấp: 15/5/2008 Nơi cấp: công an Hải Phòng
Chỗ ở hiện nay: Số 2 Tổ 5 Ngõ 109 phường Đằng Giang, quận Ngô Quyền, thành phố Hải Phòng
Văn bằng chuyên môn: Bác sỹ
Phạm vi hoạt động chuyên môn: Khám bệnh, chữa bệnh chuyên khoa Dị ứng - Miễn dịch lâm sàng

Hà Nội, ngày 26 tháng 11 năm 2013
KT. BỘ TRƯỞNG
THỨ TRƯỞNG

Nguyễn Thị Xuyên

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

Số: 66 /QĐ-YDHP

Hải Phòng, ngày 07 tháng 01 năm 2022

QUYẾT ĐỊNH

Về việc công nhận tên đề tài và cán bộ hướng dẫn khoa học Bác sĩ chuyên khoa cấp 2 khoá 14 (2020-2022)

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Căn cứ quyết định số 86/1999/QĐ-TTg ngày 23/01/1999 của Thủ tướng chính phủ về việc thành lập Trường Đại học Y Hải Phòng; quyết định số 2153/QĐ-TTg ngày 11 tháng 11 năm 2013 của Thủ tướng Chính phủ về việc đổi tên Trường Đại học Y Hải Phòng thành Trường Đại học Y Dược Hải Phòng.

Căn cứ quyết định số 5447/QĐ-BYT ngày 29/12/2005 của Bộ trưởng Bộ Y tế về việc giao nhiệm vụ đào tạo bác sĩ chuyên khoa cấp I và cấp II cho Trường Đại học Y Hải Phòng.

Căn cứ quyết định số 1517/2001/QĐ-BYT ngày 23 tháng 5 năm 2001 của Bộ trưởng Bộ Y tế về việc ban hành quy chế đào tạo chuyên khoa cấp II sau đại học.

Theo đề nghị của Hội đồng thông qua đề cương và ông Trưởng phòng Đào tạo sau đại học.

QUYẾT ĐỊNH

Điều 1. Công nhận Bs. Võ Thị Mai là học viên Bác sĩ chuyên khoa cấp 2 khoá 14 (2020-2022) của Trường Đại học Y Dược Hải Phòng với đề tài: *"Thực trạng chất lượng bệnh viện và sự hài lòng của người bệnh điều trị nội trú tại Bệnh viện Đa khoa tỉnh Quảng Ninh, năm 2022"*

Chuyên ngành: Quản lý y tế Mã số: 62 72 76 01 CK

Thời gian đào tạo: 02 năm

Cán bộ hướng dẫn:

1. TS. Nguyễn Thế Anh BVĐK Việt Xô CN: Hồi sức HSTC Hướng dẫn chính
2. GS.TS. Phạm Văn Thọ ĐH Y Dược HP CN: DƯỢCLS Hướng dẫn phụ

Điều 2. Học viên Bác sĩ chuyên khoa cấp 2 và cán bộ hướng dẫn được hưởng các quyền lợi theo quy chế đào tạo Sau đại học hiện hành của Bộ Giáo dục & Đào tạo.

Điều 3. Các ông (bà) Trưởng phòng Đào tạo Sau đại học, tài chính kế toán, các cán bộ hướng dẫn và học viên Võ Thị Mai căn cứ quyết định thi hành./.

Nơi nhận:
- Hiệu trưởng (để báo cáo)
- Như điều 3
- Lưu ĐTSĐH
- Lưu VT

HIỆU TRƯỞNG

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

PHÓ HIỆU TRƯỞNG

TS. Phạm Văn Linh

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

Số: 86 /QĐ-YDHP

Hải Phòng, ngày 07 tháng 01 năm 2022

QUYẾT ĐỊNH
Về việc công nhận tên đề tài và cán bộ hướng dẫn khoa học Bác sĩ chuyên khoa cấp 2 khoá 14 (2020-2022)

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Căn cứ quyết định số 86/TTG ngày 23/01/1969 của Thủ tướng chính phủ về việc thành lập Trường Đại học Y Hải Phòng; quyết định số 2153/QĐ-TTg ngày 11 tháng 11 năm 2013 của Thủ tướng Chính phủ về việc đổi tên Trường Đại học Y Hải Phòng thành Trường Đại học Y Dược Hải Phòng.

Căn cứ quyết định số 5447/QĐ-BYT ngày 20/12/2006 của Bộ trưởng Bộ Y tế về việc giao nhiệm vụ đào tạo bác sĩ chuyên khoa cấp I và cấp II cho Trường Đại học Y Hải Phòng.

Căn cứ quyết định số 1631/2001/QĐ-BYT, ngày 23 tháng 5 năm 2001 của Bộ trưởng Bộ Y tế về việc ban hành quy chế đào tạo chuyên khoa cấp II sau đại học.

Theo đề nghị của Hội đồng thông qua đề cương và ông Trưởng phòng Đào tạo sau đại học.

QUYẾT ĐỊNH

Điều 1. Công nhận Bs. Vũ Thị Mai là học viên Bác sĩ chuyên khoa cấp 2 khoá 14 (2020-2022) của Trường Đại học Y Dược Hải Phòng với đề tài: *"Thực trạng chất lượng bệnh viện và sự hài lòng của người bệnh điều trị nội trú tại Bệnh viện Đa khoa tỉnh Quảng Ninh, năm 2022"*

Chuyên ngành: Quản lý y tế **Mã số: 62 72 76 05 CK**

Thời gian đào tạo: 02 năm

Cán bộ hướng dẫn:
1. TS. Nguyễn Thế Anh BVĐH Việt Xô CN: Hồi sức III Hướng dẫn chính
2. GS.TS. Phạm Văn Thức ĐH Y Dược HP CN: DUMDLS Hướng dẫn phụ

Điều 2. Học viên Bác sĩ chuyên khoa cấp 2 và cán bộ hướng dẫn được hưởng các quyền lợi theo quy chế đào tạo Sau đại học hiện hành của Bộ Giáo dục & Đào tạo.

Điều 3. Các ông (bà) Trưởng phòng Đào tạo Sau đại học, tài chính kế toán, cán bộ hướng dẫn và học viên Vũ Thị Mai căn cứ quyết định thi hành./.

Nơi nhận:
- Hiệu trưởng (để báo cáo)
- Như điều 3
- Lưu ĐTSĐH
- Lưu VT

HIỆU TRƯỞNG

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

PHÓ HIỆU TRƯỞNG

PGS.TS. Phạm Văn Linh

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

Số: 95 /QĐ-YDHP

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

Hải Phòng, ngày 07 tháng 01 năm 2022

QUYẾT ĐỊNH

Về việc công nhận tốt nghiệp và cán bộ hướng dẫn khoa học Bác sĩ chuyên khoa cấp 2 khoá 14 (2020-2022)

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Căn cứ quyết định số 88/1999/QĐ-TTg ngày 23/03/1999 của Thủ tướng chính phủ về việc thành lập Trường Đại học Y Hải Phòng; quyết định số 2133/QĐ-TTg ngày 11 tháng 11 năm 2013 của Thủ tướng Chính phủ về việc đổi tên Trường Đại học Y Hải Phòng thành Trường Đại học Y Dược Hải Phòng.

Căn cứ quyết định số 1447/QĐ-BYT ngày 26/12/2006 của Bộ trưởng Bộ Y tế về việc giao nhiệm vụ đào tạo bác sĩ chuyên khoa cấp I và cấp II cho Trường Đại học Y Hải Phòng

Căn cứ quyết định số 1613/2001/QĐ-BYT, ngày 25 tháng 5 năm 2001 của Bộ trưởng Bộ Y tế về việc ban hành quy chế đào tạo chuyên khoa cấp II sau đại học.

Theo đề nghị của Hội đồng thông qua đề cương và ông Trưởng phòng Đào tạo sau đại học

QUYẾT ĐỊNH

Điều 1. Công nhận BS. Trịnh Văn Mạnh là học viên Bác sĩ chuyên khoa cấp 2 khoá 14 (2020-2022) của Trường Đại học Y Dược Hải Phòng với đề tài: *"Thực trạng quản lý và điều trị bệnh nhân mắc hội chứng mạch vành cấp tại Bệnh viện Đa khoa tỉnh Quảng Ninh năm 2021-2022"*

Chuyên ngành : Quản lý y tế Mã số: 62 72 76 03 CK

Thời gian đào tạo: 02 năm

Cán bộ hướng dẫn

1. PGS.TS. Phạm Văn Linh	Đơn vị: Y Dược HP	CN: SLB	Hướng dẫn chính
2. TS. Nguyễn Thị Thu Thảo	Đơn vị: Y Dược HP	CN: YTCC	Hướng dẫn phụ

Điều 2. Học viên Bác sĩ chuyên khoa cấp 2 và cán bộ hướng dẫn được hưởng các quyền lợi theo quy chế đào tạo Sau đại học hiện hành của Bộ Giáo dục & Đào tạo.

Điều 3. Các ông (bà) Trưởng phòng Đào tạo Sau đại học, tài chính kế toán, các cán bộ hướng dẫn và học viên Trịnh Văn Mạnh căn cứ quyết định thi hành./.

Nơi nhận:
- Như điều 3
- Lưu ĐTSĐH
- Lưu VT

KT. HIỆU TRƯỞNG
PHÓ HIỆU TRƯỞNG

TS. Phạm Văn Linh

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

Số: 76/QĐ-YDHP

Hải Phòng, ngày 07 tháng 01 năm 2022

QUYẾT ĐỊNH

Về việc công nhận tên đề tài và cán bộ hướng dẫn khoa học Bác sĩ chuyên khoa cấp 2 khoá 14 (2020-2022)

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Căn cứ quyết định số 06Y/99/QĐ-TTg ngày 23/01/1999 của Thủ tướng chính phủ về việc thành lập Trường Đại học Y Hải Phòng; quyết định số 2153/QĐ-TTg ngày 11 tháng 11 năm 2013 của Thủ tướng Chính phủ về việc đổi tên Trường Đại học Y Hải Phòng thành Trường Đại học Y Dược Hải Phòng.

Căn cứ quyết định số 1447/QĐ-BYT ngày 20/12/2006 của Bộ trưởng Bộ Y tế về việc giao nhiệm vụ đào tạo bác sĩ chuyên khoa cấp I và cấp II cho Trường Đại học Y Hải Phòng

Căn cứ quyết định số 1617/2001/QĐ-BYT, ngày 23 tháng 5 năm 2001 của Bộ trưởng Bộ Y tế về việc ban hành quy chế đào tạo chuyên khoa cấp II sau đại học.

Theo đề nghị của Hội đồng thông qua đề cương và ông Trưởng phòng Đào tạo sau đại học.

QUYẾT ĐỊNH

Điều 1. Công nhận BS. Bùi Mạnh Hùng là học viên Bác sĩ chuyên khoa cấp 2 khoá 14 (2020-2022) của Trường Đại học Y Dược Hải Phòng với đề tài: *"Thực trạng quản lý và kiến thức, thái độ, thực hành về phòng chống COVID-19 của người nhiễm trên địa bàn huyện Hải Hà năm 2022"*

Chuyên ngành : Quản lý y tế **Mã số: 62 72 76 85 CK**

Thời gian đào tạo: 02 năm

Cán bộ hướng dẫn:

1. PGS.TS. Phạm Văn Linh	ĐH Y Dược HP	CH: QLB	Hướng dẫn chính
2. TS. Trần Thị Thúy Hà	ĐH Y Dược HP	CH: YTCC	Hướng dẫn phụ

Điều 2. Học viên Bác sĩ chuyên khoa cấp 2 và cán bộ hướng dẫn được hưởng các quyền lợi theo quy chế đào tạo Sau đại học hiện hành của Bộ Giáo dục & Đào tạo.

Điều 3. Các ông (bà) Trưởng phòng Đào tạo Sau đại học, tài chính kế toán, các cán bộ hướng dẫn và học viên Bùi Mạnh Hùng căn cứ quyết định thi hành./.

Nơi nhận:
- Hiệu trưởng (để báo cáo)
- Như điều 3
- Lưu ĐTSĐH
- Lưu VT

HIỆU TRƯỞNG

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

PHÓ HIỆU TRƯỞNG

Kết Phạm Văn Linh

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

Số: 57 /QĐ-YDHP

Hải Phòng, ngày 07 tháng 01 năm 2021

QUYẾT ĐỊNH

**Về việc công nhận tên đề tài và cán bộ hướng dẫn khoa học
Bác sĩ chuyên khoa cấp 2 khoá 14 (2020-2022)**

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Căn cứ quyết định số 06/1999/QĐ-TTg ngày 25/01/1999 của Thủ tướng chính phủ về việc thành lập Trường Đại học Y Hải Phòng; quyết định số 2153/QĐ-TTg ngày 11 tháng 11 năm 2015 của Thủ tướng Chính phủ về việc đổi tên Trường Đại học Y Hải Phòng thành Trường Đại học Y Dược Hải Phòng.

Căn cứ quyết định số 1447/QĐ-BYT ngày 30/12/2006 của Bộ trưởng Bộ Y tế về việc giao nhiệm vụ đào tạo bác sĩ chuyên khoa cấp I và cấp II cho Trường Đại học Y Hải Phòng.

Căn cứ quyết định số 1837/2001/QĐ-BYT, ngày 23 tháng 5 năm 2001 của Bộ trưởng Bộ Y tế về việc ban hành quy chế đào tạo chuyên khoa cấp II sau đại học.

Theo đề nghị của Hội đồng thông qua đề cương và ông Trưởng phòng Đào tạo sau đại học.

QUYẾT ĐỊNH

Điều 1. Công nhận BS. Nguyễn Phú Nhuận là học viên Bác sĩ chuyên khoa cấp 2 khoá 14 (2020-2022) của Trường Đại học Y Dược Hải Phòng với đề tài: *"Thực trạng bệnh răng hàm mặt tại xã Kiến Thuỵ - thực hành về bệnh răng hàm mặt của người ≥ 40 tuổi tại huyện Cô Tô, Quảng Ninh năm 2022"*

Chuyên ngành : Quản lý y tế **Mã số: 62 72 76 05 CK**

Thời gian đào tạo: 02 năm

Cán bộ hướng dẫn:

1. TS. Nguyễn Thị Thảo — DH Y Dược HP — CN: YTCC — Hướng dẫn chính
2. GS.TS. Phạm Văn Thắc — DH Y Dược HP — CN: DUMDLS Hướng dẫn phụ

Điều 2. Học viên Bác sĩ chuyên khoa cấp 2 và cán bộ hướng dẫn được hưởng các quyền lợi theo quy chế đào tạo Sau đại học hiện hành của Bộ Giáo dục & Đào tạo.

Điều 3. Các ông (bà) Trưởng phòng Đào tạo Sau đại học, Tài chính kế toán, các cán bộ hướng dẫn và học viên Nguyễn Phú Nhuận căn cứ quyết định thi hành./.

Nơi nhận:
- Hiệu trưởng (để báo cáo)
- Như điều 3
- Lưu ĐTSDH
- Lưu VT

HIỆU TRƯỞNG

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

PHÓ HIỆU TRƯỞNG

Phạm Văn Linh

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

Số: 57 /QĐ-YDHP

Hải Phòng, ngày 07 tháng 01 năm 2022

QUYẾT ĐỊNH

Về việc công nhận tên đề tài và cán bộ hướng dẫn khoa học Bác sĩ chuyên khoa cấp 2 khoá 14 (2020-2022)

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Căn cứ quyết định số 86/1999/QĐ-TTg ngày 23/8/1999 của Thủ tướng chính phủ về việc thành lập Trường Đại học Y Hải Phòng; quyết định số 2153/QĐ-TTg ngày 11 tháng 11 năm 2013 của Thủ tướng Chính phủ về việc đổi tên Trường Đại học Y Hải Phòng thành Trường Đại học Y Dược Hải Phòng

Căn cứ quyết định số 5447/QĐ-BYT ngày 26/12/2006 của Bộ trưởng Bộ Y tế về việc giao nhiệm vụ đào tạo bác sĩ chuyên khoa cấp I và cấp II cho Trường Đại học Y Hải Phòng

Căn cứ quyết định số 1615/2001/QĐ-BYT, ngày 23 tháng 5 năm 2001 của Bộ trưởng Bộ Y tế về việc ban hành quy chế đào tạo chuyên khoa cấp II sau đại học.

Theo đề nghị của Hội đồng thông qua đề cương và ông Trưởng phòng Đào tạo sau đại học.

QUYẾT ĐỊNH

Điều 1. Công nhận BS. Nguyễn Phú Nhuận là học viên Bác sĩ chuyên khoa cấp 2 khoá 14 (2020-2022) của Trường Đại học Y Dược Hải Phòng với đề tài: *"Thực trạng bệnh răng huyết áp và kiến thức - thực hành về bệnh răng huyết áp của người ≥ 40 tuổi tại huyện Cô Tô, Quảng Ninh năm 2022"*

Chuyên ngành : Quản lý y tế **Mã số: 62 72 76 05 CK**

Thời gian đào tạo: 02 năm

Cán bộ hướng dẫn:
1. TS. Nguyễn Thị Thắm — Đơn vị: Y Dược HP — CN: YTCC — Hướng dẫn chính
2. GS.TS. Phạm Văn Thâm — Đơn vị: Y Dược HP — CN: DLTMDLS — Hướng dẫn phụ

Điều 2. Học viên Bác sĩ chuyên khoa cấp 2 và cán bộ hướng dẫn được hưởng các quyền lợi theo quy chế đào tạo Sau đại học hiện hành của Bộ Giáo dục & Đào tạo.

Điều 3. Các ông (bà) Trưởng phòng Đào tạo Sau đại học, tài chính kế toán, các cán bộ hướng dẫn và học viên Nguyễn Phú Nhuận căn cứ quyết định thi hành./.

Nơi nhận:
- Hiệu trưởng (để báo cáo)
- Như điều 3
- Lưu ĐTSDH
- Lưu VT

HIỆU TRƯỞNG

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

KT. HIỆU TRƯỞNG
PHÓ HIỆU TRƯỞNG

Phạm Văn Linh

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

Số: 57 /QĐ-YDHP

Hải Phòng, ngày 07 tháng 01 năm 2022

QUYẾT ĐỊNH

Về việc công nhận tên đề tài và cán bộ hướng dẫn khoa học Bác sĩ chuyên khoa cấp 2 khoá 14 (2020-2022)

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Căn cứ quyết định số 00179/TTg ngày 23/01/1999 của Thủ tướng chính phủ về việc thành lập Trường Đại học Y Hải Phòng, quyết định số 2133/QĐ-TTg ngày 13 tháng 11 năm 2013 của Thủ tướng Chính phủ về việc đổi tên Trường Đại học Y Hải Phòng thành Trường Đại học Y Dược Hải Phòng.

Căn cứ quyết định số 1447/QĐ-BYT ngày 26/12/2008 của Bộ trưởng Bộ Y tế về việc giao nhiệm vụ đào tạo bác sĩ chuyên khoa cấp I và cấp II cho Trường Đại học Y Hải Phòng

Căn cứ quyết định số 1837/2001/QĐ-BYT, ngày 23 tháng 5 năm 2001 của Bộ trưởng Bộ Y tế về việc ban hành quy chế đào tạo chuyên khoa cấp II sau đại học.

Theo đề nghị của Hội đồng thông qua đề cương và ông Trưởng phòng Đào tạo sau đại học

QUYẾT ĐỊNH

Điều 1. Công nhận BS. Nguyễn Phá Nhuận là học viên Bác sĩ chuyên khoa cấp 2 khoá 14 (2020-2022) của Trường Đại học Y Dược Hải Phòng với đề tài: *"Thực trạng kiến thức thực hành về bệnh tăng huyết áp của người ≥ 40 tuổi tại huyện Cô Tô, Quảng Ninh năm 2022"*

Chuyên ngành : Quản lý y tế Mã số: 62 72 76 05 CK.

Thời gian đào tạo: 02 năm

Cán bộ hướng dẫn:

1. TS. Nguyễn Thị Thắm — Đơn vị: Y Dược HP — Chức danh: YTCC — Hướng dẫn chính
2. GS.TS. Phạm Văn Thèn — Đơn vị: Y Dược HP — Chức danh: DUMELS — Hướng dẫn phụ

Điều 2. Học viên Bác sĩ chuyên khoa cấp 2 và cán bộ hướng dẫn được hưởng các quyền lợi theo quy chế đào tạo Sau đại học hiện hành của Bộ Giáo dục & Đào tạo.

Điều 3. Các ông (bà) Trưởng phòng Đào tạo Sau đại học, tài chính kế toán, các cán bộ hướng dẫn và học viên Nguyễn Phá Nhuận chịu trách nhiệm thi hành quyết định này./.

Nơi nhận:
- Hiệu trưởng (để báo cáo)
- Như điều 3
- Lưu ĐTSĐH
- Lưu VT

HIỆU TRƯỞNG

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

PHÓ HIỆU TRƯỞNG

Phạm Văn Linh

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

Số: 36 /QĐ-YDHP

Hải Phòng, ngày 06 tháng 01 năm 2023

QUYẾT ĐỊNH

Về việc công nhận tên đề tài và cán bộ hướng dẫn khoa học Bác sĩ chuyên khoa cấp 2 khoá 15 (2021-2023)

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Căn cứ quyết định số 06/1999/QĐ-TTg ngày 25/01/1999 của Thủ tướng chính phủ về việc thành lập Trường Đại học Y Hải Phòng;

Căn cứ quyết định số 1153/QĐ-TTg ngày 11 tháng 11 năm 2013 của Thủ tướng Chính phủ về việc đổi tên Trường Đại học Y Hải Phòng thành Trường Đại học Y Dược Hải Phòng;

Căn cứ quyết định số 1447/QĐ-BYT ngày 16/12/2006 của Bộ trưởng Bộ Y tế về việc giao nhiệm vụ đào tạo bác sĩ chuyên khoa cấp I và cấp II sau đại học cho Trường Đại học Y Hải Phòng;

Căn cứ quyết định số 1613/2001/QĐ-BYT, ngày 23 tháng 5 năm 2001 của Bộ trưởng Bộ Y tế về việc ban hành quy chế đào tạo chuyên khoa cấp II sau đại học;

Theo đề nghị của Hội đồng thông qua đề cương và ông Trưởng phòng Quản lý Đào tạo sau đại học;

QUYẾT ĐỊNH

Điều 1. Công nhận BS. Bùi Thị Thao là học viên Bác sĩ chuyên khoa cấp 2 khoá 15 (2021-2023) của Trường Đại học Y Dược Hải Phòng với đề tài: *"Đặc điểm tổn thương cận lâm sàng và một số yếu tố liên quan đến quản lý điều trị ngoại trú bệnh phổi tắc nghẽn mạn tính tại Bệnh viện Việt Nam Thụy Điển Uông Bí".*

Chuyên ngành : Nội khoa Mã số: 62 72 20 40 CK

Thời gian đào tạo: 02 năm

Cán bộ hướng dẫn:

GS. TS. Phạm Văn Thày Đơn vị: Đơn vị: DUMEDLS

Điều 2. Học viên Bác sĩ chuyên khoa cấp 2 và cán bộ hướng dẫn được hưởng các quyền lợi theo quy chế đào tạo Sau đại học hiện hành của Bộ Giáo dục & Đào tạo.

Điều 3. Các ông (bà) Trưởng phòng Quản lý Đào tạo sau đại học, Tài chính kế toán, cán bộ hướng dẫn và học viên Bùi Thị Thao chịu có quyết định thi hành.

Nơi nhận:
- Hiệu trưởng (để báo cáo);
- Như điều 3;
- Lưu: VT; QLĐTSĐH.

HIỆU TRƯỞNG

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

PGS.TS. Phạm Văn Linh

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

Số: 27 /QĐ-YDHP

Hải Phòng, ngày 05 tháng 01 năm 2023

QUYẾT ĐỊNH

Về việc công nhận tên đề tài và cán bộ hướng dẫn khoa học Bác sĩ chuyên khoa cấp 2 khoá 15 (2021-2023)

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Căn cứ quyết định số 36/TTG/QĐ-TTg ngày 23/01/1999 của Thủ tướng chính phủ về việc thành lập Trường Đại học Y Hải Phòng.

Căn cứ quyết định số 2133/QĐ-TTg ngày 11 tháng 11 năm 2013 của Thủ tướng Chính phủ về việc đổi tên Trường Đại học Y Hải Phòng thành Trường Đại học Y Dược Hải Phòng.

Căn cứ quyết định số 1441/QĐ-BYT ngày 20/12/2006 của Bộ trưởng Bộ Y tế về việc giao nhiệm vụ đào tạo bác sĩ chuyên khoa cấp 1 và cấp II Sau đại học cho Trường Đại học Y Hải Phòng

Căn cứ quyết định số 1517/2001/QĐ-BYT, ngày 23 tháng 3 năm 2001 của Bộ trưởng Bộ Y tế về việc ban hành quy chế đào tạo chuyên khoa cấp II sau đại học.

Theo đề nghị của Hội đồng thông qua đề cương và ông Trưởng phòng Quản lý Đào tạo sau đại học.

QUYẾT ĐỊNH

Điều 1. Công nhận BS. Nguyễn Thị Thúy là học viên Bác sĩ chuyên khoa cấp 2 khoá 15 (2021-2023) của Trường Đại học Y Dược Hải Phòng với đề tài: *"Nghiên cứu đặc điểm lâm sàng, cận lâm sàng và một số yếu tố liên quan đến hen phế quản điều trị ngoại trú tại Hiệu Y học Biển Việt Nam"*.

Chuyên ngành : Nội khoa Mã số: 62 72 20 40 CK

Thời gian đào tạo: 02 năm

Cán bộ hướng dẫn:

GS. TS. Phạm Văn Thêm ĐH Y Dược HP CK: DUMED2.2

Điều 2. Học viên Bác sĩ chuyên khoa cấp 2 và cán bộ hướng dẫn được hưởng các quyền lợi theo quy chế đào tạo Sau đại học hiện hành của Bộ Giáo dục & Đào tạo.

Điều 3. Các ông (bà) Trưởng phòng Quản lý Đào tạo sau đại học, Tài chính kế toán, cán bộ hướng dẫn và học viên Nguyễn Thị Thúy căn cứ quyết định thi hành./.

Nơi nhận:
- Hiệu trưởng (để báo cáo);
- Như điều 3;
- Lưu: VT, QLĐTSDH.

HIỆU TRƯỞNG

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

PGS.TS. Phạm Văn Linh

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

Số: 59 /QĐ-YDHP

Hải Phòng, ngày 06 tháng 01 năm 2023

QUYẾT ĐỊNH
Về việc công nhận tên đề tài và cán bộ hướng dẫn khoa học Bác sĩ chuyên khoa cấp 2 khoá 15 (2021-2023)

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Căn cứ quyết định số 06/1999/QĐ-TTg ngày 23/01/1999 của Thủ tướng chính phủ về việc thành lập Trường Đại học Y Hải Phòng.

Căn cứ quyết định số 213/QĐ-TTg ngày 11 tháng 11 năm 2013 của Thủ tướng Chính phủ về việc đổi tên Trường Đại học Y Hải Phòng thành Trường Đại học Y Dược Hải Phòng.

Căn cứ quyết định số 3417/QĐ-BYT ngày 25/7/2000 của Bộ trưởng Bộ Y tế về việc giao nhiệm vụ đào tạo bác sĩ chuyên khoa cấp 1 và cấp II Sau đại học cho Trường Đại học Y Hải Phòng.

Căn cứ quyết định số 1837/2001/QĐ-BYT ngày 25 tháng 5 năm 2001 của Bộ trưởng Bộ Y tế về việc ban hành quy chế đào tạo chuyên khoa cấp II sau đại học.

Theo đề nghị của Hội đồng thông qua đề cương và ông Trưởng phòng Quản lý Đào tạo sau đại học.

QUYẾT ĐỊNH

Điều 1. Công nhận **Vũ Thị Nguyệt** là học viên Bác sĩ chuyên khoa cấp 2 khoá 15 (2021-2023) của Trường Đại học Y Dược Hải Phòng với đề tài: *"Thực trạng và một số yếu tố liên quan đến thiếu máu ở sản phụ sinh con tại bệnh viện Sản Nhi Hưng Yên năm 2022"*.

Chuyên ngành: Quản lý y tế Mã số: 62 72 76 05 CK

Thời gian đào tạo: 02 năm

Cán bộ hướng dẫn:

1. GS. TS. Phạm Văn Thức Đơn vị: Đại học Y Dược HP CN: SLB MD Hướng dẫn chính
2. BSCKII. Nguyễn Bá Dụng Đơn vị: Đại học Y Dược HP CN: YTCC Hướng dẫn phụ

Điều 2. Học viên Bác sĩ chuyên khoa cấp 2 và cán bộ hướng dẫn được hưởng các quyền lợi theo quy chế đào tạo Sau đại học hiện hành của Bộ Giáo dục & Đào tạo.

Điều 3. Các ông (bà) Trưởng phòng Quản lý Đào tạo sau đại học, Tài chính kế toán, cán bộ hướng dẫn và học viên Vũ Thị Nguyệt căn cứ quyết định thi hành./.

Nơi nhận:
- Hiệu trưởng (để báo cáo);
- Như điều 3;
- Lưu: VT; QLĐTSĐH.

HIỆU TRƯỞNG

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

PHÓ HIỆU TRƯỞNG

KT. Phạm Văn Linh

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TẠP CHÍ

Y HỌC VIỆT NAM

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CÔNG TRÌNH NGHIÊN CỨU KHOA HỌC TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

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MỤC LỤC

TẠP CHÍ Y HỌC VIỆT NAM TẬP 539 - THÁNG 8 - SỐ ĐẶC BIỆT - 2024

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TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

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HIỆU QUẢ PHỤC HỒI CHỨC NĂNG VẬN ĐỘNG TRÊN BỆNH NHÂN LIỆT NỬA NGƯỜI DO NHỒI MÁU NÃO GIAI ĐOẠN CẤP BẰNG PHƯƠNG PHÁP ĐIỆN CHÂM KẾT HỢP XOA BÓP BẤM HUYỆT TẠI BỆNH VIỆN KIẾN AN

Phạm Văn Thức[1], Nguyễn Mạnh Việt[1], Phạm Thị Huyền[2], Võ Thị Thanh Huyền[1], Nguyễn Bá Phước[1]

TÓM TẮT

Mục tiêu: Đánh giá hiệu quả phục hồi chức năng vận động trên bệnh nhân liệt nửa người do nhồi máu não giai đoạn cấp bằng phương pháp điện châm kết hợp xoa bóp bấm huyệt. **Đối tượng và phương pháp:** Nghiên cứu trên 33 bệnh nhân được chẩn đoán liệt nửa người do nhồi máu não giai đoạn cấp, tại Bệnh viện Kiến An, Hải Phòng năm 2022-2023. Đánh giá thay đổi mức độ liệt sau điều trị theo chỉ số Barthel, thang điểm Orgogozo, và thang điểm FIM. **Kết quả:** Tuổi trung bình của bệnh nhân là 71,18 ± 9,45 tuổi. Tỷ lệ nữ giới cao hơn nam giới (54,5% so với 45,5%). Thời gian mắc bệnh trung bình từ 1 - 3 ngày chiếm tỷ lệ cao nhất (75,8%). Thời gian nằm bệnh trung bình là 2,85 ± 1,21 ngày. Tỷ lệ bệnh nhân liệt bên phải và bên trái lần lượt là 42,4% và 57,6%. Điểm đột quỵ NIHSS trung bình của bệnh nhân là 8,21 ± 4,95 điểm. Sau 14 ngày điều trị, điểm Orgogozo trung bình của bệnh nhân tăng từ 44,69 ± 21,3 lên 78,45 ± 19,17 điểm; điểm Barthel trung bình tăng từ 36,06 ± 21,33 lên 60,09 ± 22,8 điểm; điểm FIM tăng từ 68,33 ± 19,83 lên 89,36 ± 21,27 điểm. **Kết luận:** Điện châm kết hợp xoa bóp bấm huyệt có tác dụng điều trị phục hồi chức năng vận động trên bệnh nhân liệt nửa người do nhồi máu não giai đoạn cấp.

Từ khóa: Điện châm, xoa bóp bấm huyệt, nhồi máu não, Bệnh viện Kiến An.

SUMMARY

EFFECTIVE REHABILITATION OF MOTOR FUNCTION IN PATIENTS WITH ACUTE ISCHEMIC STROKE HEMIPARESIS USING ELECTROACUPUNCTURE COMBINED WITH ACUPRESSURE MASSAGE AT KIEN AN HOSPITAL

Objective: Describe the effectiveness of electroacupuncture combined with acupressure massage in motor function recovery for acute ischemic stroke hemiplegic patients at Kien An Hospital. **Subjects and Methods:** A study was conducted on 33 patients diagnosed with hemiplegia due to acute ischemic stroke at Kien An Hospital, Hai Phong, in 2022-2023. The assessment of changes in the degree of hemiplegia after treatment was done using the Barthel index, Orgogozo score, and FIM score. **Results:** The mean age of the patients was 71.18 ± 9.45 years. The percentage of females was higher than males (54.5% compared to 45.5%). Most patients had a disease duration of 1-3 days (75.8%). The average disease duration was 2.85 ± 1.21 days. The proportion of patients with right

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and left hemiplegia was 42.6% and 57.6%, respectively. The average NIHSS score of the patients was 8.21 ± 4.01. After 14 days of treatment, the average Orgogozo score increased from 44.09 ± 21.3 to 70.45 ± 19.17; the average Barthel score increased from 36.86 ± 21.13 to 68.89 ± 21.8; the average FIM score increased from 88.35 ± 19.83 to 89.36 ± 21.27. Conclusion: Combined electrical stimulation and acupuncture have a therapeutic effect on motor function recovery for acute ischemic stroke hemiplegic patients.

Keywords: Electroacupuncture; acupressure massage; ischemic stroke hemiparesis; Kien An hospital.

I. ĐẶT VẤN ĐỀ

Tai biến mạch máu não là nguyên nhân gây tử vong và tàn tật phổ biến chiếm vị trí hàng đầu trong các bệnh lý của hệ thần kinh trung ương, tỷ lệ này ra ngày càng tăng ở các nước đang phát triển [1]. Tai biến mạch máu não hay đột quỵ là nguyên nhân chính gây tử vong ở Việt Nam với tỷ lệ mắc và tỷ lệ hiện mắc được báo cáo lần lượt là 141 và 413 trên 100.000 người [2].

Đột quỵ gây ra những khuyết tật phức tạp trong các hoạt động sinh hoạt hàng ngày và chất lượng cuộc sống liên quan đến sức khỏe, đồng thời làm tăng đáng kể gánh nặng kinh tế xã hội cho những người sống sót sau đột quỵ, gia đình và hệ thống chăm sóc sức khỏe [3-4]. Vì vậy, việc điều trị phục hồi chức năng vận động là vô cùng quan trọng bên cạnh việc dự phòng tái phát. Bên cạnh đóng góp của y học hiện đại trong phục hồi chức năng cho bệnh nhân, y học cổ truyền cũng có đóng góp tích cực trong điều trị đi chứng tai biến mạch máu não nói chung, nhồi máu não nói riêng bằng các phương pháp dùng thuốc và không dùng thuốc (châm cứu, xoa bóp bấm huyệt, dưỡng sinh...). Điều trị bằng phương pháp châm cứu đã cho thấy tác dụng tốt trong việc phục hồi chức năng vận động, phục hồi rối loạn ngôn ngữ và một vài rối loạn khác trên bệnh nhân tai biến mạch máu não nói chung và nhồi máu não nói riêng. Ngoài ra phương pháp xoa bóp bấm huyệt có tác dụng lưu thông tái huyết, thông kinh hoạt lạc cũng góp phần nâng cao hiệu quả trong việc phục hồi chức năng vận động. Chính vì vậy, để có những cơ sở khoa học khách quan và chính xác hơn về kết quả điều trị này, chúng tôi đã tiến hành đề tài nghiên cứu nhằm mục tiêu: mô tả hiệu quả phục hồi chức năng vận động trên bệnh nhân liệt nửa người do nhồi máu não giai đoạn cấp bằng phương pháp điện châm kết hợp xoa bóp bấm huyệt tại Bệnh viện Kiến An.

II. ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU

2.1. Đối tượng nghiên cứu

Bệnh nhân từ 18 tuổi trở lên, được chẩn đoán xác định nhồi máu não giai đoạn cấp, được khám và điều trị tại khoa Tim Mạch của Bệnh viện Kiến An từ năm 2022 - 2023.

2.1.1. Tiêu chuẩn lựa chọn

Bệnh nhân được chẩn đoán xác định là liệt nửa người do nhồi máu não giai đoạn cấp, có thời gian mắc bệnh dưới một tuần, có hình ảnh tổn thương trên phim CT, bệnh nhân nhồi máu não lần đầu và tự nguyện tham gia nghiên cứu.

2.1.2. Tiêu chuẩn loại trừ

Bệnh nhân hôn mê, co giật, kích thích, hoang loạn, rối loạn ý thức nặng, đột quỵ tái phát. Bệnh nhân liệt nửa người do nhồi máu não giai đoạn cấp có kèm các bệnh: Ung thư, HIV/AIDS, lao, rối loạn tâm thần, nằm trong chống chỉ định của thuốc. Bệnh nhân không muốn tiếp điều trị sau bổ điều trị từ 2 ngày trở

lớn, tự ý sử dụng các phương pháp khác không theo chỉ định.

2.2. Phương pháp nghiên cứu

2.2.1. Thiết kế nghiên cứu: Nghiên cứu can thiệp lâm sàng, so sánh trước và sau điều trị, không có nhóm đối chứng.

2.2.2. Cỡ mẫu và kỹ thuật chọn mẫu

Chọn mẫu thuận tiện. Chúng tôi chọn được tổng số 33 bệnh nhân tại khoa Tim Mạch các Bệnh viện Kiến An thỏa mãn tiêu chí lựa chọn trong thời gian nghiên cứu.

2.2.3. Nội dung nghiên cứu

Phương tiện nghiên cứu: Kim châm cứu loại GT-103 xuất xứ từ Trung Quốc, máy điện châm Đông Á SDZ II (6 núm, 12 kênh). Bông cồn y tế, panh, khay quả đậu, bộp chống shock, máy đo huyết áp.

Công thức huyệt: Huyệt ở tay bao gồm: Bát tà, Kiên ngung, Tỳ nhu, Kiên tỉnh, Hợp cốc, Khúc trì, Nội quan. Huyệt ở chân gồm các: Hoàn khiêu, Phong thị, Dương lăng tuyền, Âm lăng tuyền, Túc tam lý, Huyết hải, Phong long, Giải khê, Tam âm giao, Thái xung, Hành gian, Bát phong. Huyệt ở vùng đầu mặt cổ bao gồm: Giáp xa, Bách hội, Hợp cốc, Địa thương, Thượng liêm tuyền, Thiên đột.

Chỉ số theo dõi và đánh giá: Thông tin chung của bệnh nhân (tuổi, giới, cân nặng (kg), chiều cao (cm), thời gian mắc bệnh, hoàn cảnh xuất hiện bệnh, vị trí bên liệt), thang điểm đột quỵ NIHSS, đánh giá mức độ độc lập trong sinh hoạt hàng ngày qua chỉ số Barthel, đánh giá mức độ liệt của bệnh nhân theo thang điểm Orgogozo, đánh giá mức độ độc lập qua thang điểm FIM. Bệnh nhân được đánh giá kết quả điều trị sau 14 ngày điều trị liên tục.

2.3. Xử lý số liệu

Số liệu được nhập bằng phần mềm Excel, xử lý bằng phần mềm SPSS 27.0. Các biến số định lượng, tính giá trị trung bình, độ lệch chuẩn. Các biến số định tính, tính tần số, tỷ lệ %. Sử dụng Paired-Samples T-Test để so sánh giá trị trung bình của kiểm định lượng trước và sau điều trị. Các số liệu được trình bày dưới dạng bảng.

2.4. Đạo đức nghiên cứu

Nghiên cứu được sự đồng ý của lãnh đạo bệnh viện và khoa Tim mạch Bệnh viện Kiến An. Bệnh nhân hoàn toàn tự nguyện tham gia nghiên cứu sau khi được cung cấp đầy đủ thông tin về nghiên cứu. Mọi thông tin của bệnh nhân được đảm bảo giữ bí mật.

III. KẾT QUẢ NGHIÊN CỨU

Bảng 1. Thông tin chung của bệnh nhân (n = 33)

Thông tin		Số lượng	Tỷ lệ (%)
Nhóm tuổi	50 – 59 tuổi	4	12,1
	60 – 69 tuổi	9	27,3
	≥ 70 tuổi	20	60,6
	Mean ± SD	71,18 ± 9,45 tuổi	
Giới tính	Nam	15	45,5
	Nữ	18	54,5
BMI (kg/m²)	< 18,5	5	15,2
	18,5 - 22,9	17	51,5
	23,0 - 24,9	7	21,2
	≥ 25	4	12,1

Thời gian mắc bệnh	1 – 3 ngày	23	75,8
	4 – 5 ngày	7	21,2
	6 – 7 ngày	1	3
	Mean ± SD (ngày)	2,85 ± 1,23	
Hoàn cảnh xuất hiện bệnh	Đột ngột	27	81,8
	Từ từ	6	18,2
Vị trí bên liệt	Bên phải	14	42,4
	Bên trái	19	57,6
Phân loại liệt (liệt mềm)		33	100

Nhận xét: Bệnh nhân ≥ 70 tuổi chiếm tỷ lệ cao nhất (60,6%). Tuổi trung bình của bệnh nhân là 71,18 ± 9,45 tuổi. Tỷ lệ nữ giới cao hơn nam giới (54,5% so với 45,5%). Thời gian mắc bệnh trung bình từ 1 – 3 ngày chiếm tỷ lệ cao nhất (75,8%). Thời gian mắc bệnh trung bình là 2,85 ± 1,23 ngày. 81,8% bệnh xuất hiện đột ngột. Tỷ lệ bệnh nhân liệt bên phải và bên trái lần lượt là 42,4% và 57,6%. 100% bệnh nhân liệt mềm.

Bảng 2. Phân bố bệnh nhân theo thang điểm đột quỵ NIHSS (n = 33)

Điểm NIHSS	Số lượng	Tỷ lệ (%)
1 – 4 điểm	10	30,4
5 – 15 điểm	21	63,6
16 – 20 điểm	1	3,0
21 – 42 điểm	1	3,0
Mean ± SD	8,21 ± 4,95	
Tổng	33	100

Nhận xét: Bệnh nhân có điểm NIHSS từ 5 – 15 điểm chiếm đa số (63,6%). Điểm đột quỵ NIHSS trung bình của bệnh nhân là 8,21 ± 4,95 điểm.

Bảng 3. Sự thay đổi bậc cơ lực sau điều trị (n = 33)

Bậc cơ lực	Trước điều trị (D0)		Sau điều trị (D14)	
	n	%	n	%
Bậc 0	0	0	0	0
Bậc 1	6	18,2	0	0
Bậc 2	8	24,2	1	3
Bậc 3	9	27,3	9	27,3
Bậc 4	10	30,3	12	36,4
Bậc 5	0	0	11	33,3

Nhận xét: Sau 14 ngày điều trị đã có sự thay đổi bậc cơ lực. Trước điều trị, không có bệnh nhân nào có cơ lực bậc 5, sau điều trị 33,3% bệnh nhân có cơ lực bậc 5, bệnh nhân đã có thể co cơ bình thường, thắng được lực cản mạnh từ bên ngoài.

Bảng 4. Sự thay đổi thang điểm Barthel, Orgogozo và FIM sau điều trị (n = 33)

Thang điểm	Điểm trung bình (Mean ± SD)			p
	D0	D14	Mức chênh	
Thang điểm Barthel	36,06 ± 21,13	60,09 ± 21,8	24,03 ± 1,67	< 0,05
Thang điểm FIM	68,55 ± 19,83	89,36 ± 21,27	20,81 ± 1,44	< 0,05
Thang điểm Orgogozo	44,89 ± 21,3	70,45 ± 19,17	26,36 ± 2,13	< 0,05

Nhận xét: Sau 14 ngày điều trị, điểm trung bình thang điểm Barthel, Orgogozo và FIM đều tăng. Sự thay đổi điểm trung bình của các thang điểm này sau điều trị có ý nghĩa thống kê (p < 0,05).

Bảng 5. Mức chuyển độ lột thang điểm Barthel, Orgogozo và FIM sau điều trị (n = 33)

Thang điểm	Chuyển ≥ 2 độ	Chuyển 1 độ	Không thay đổi
Thang điểm Barthel (n,%)	5 (15,2)	26 (78,8)	2 (6,1)
Thang điểm FIM (n,%)	7 (21,2)	15 (45,5)	11 (33,3)
Thang điểm Orgogozo (n,%)	6 (18,1)	22 (66,7)	5 (15,2)

Nhận xét: Theo thang điểm Barthel, về mức chuyển độ độc lập có 15,2% bệnh nhân chuyển 2 độ hoặc về độ 1, 78,8% bệnh nhân chuyển 1 độ, mức không chuyển độ là 6,1%. Thang điểm FIM, có 21,2% chuyển 2 độ hoặc về độ 1, 45,5% chuyển 1 độ, còn 33,3% không chuyển độ. Thang điểm Orgogozo, 18,1% bệnh nhân chuyển biến 2 độ hoặc về độ 1, 66,7% bệnh nhân chuyển biến 1 độ và 15,2% không có chuyển biến.

IV. BÀN LUẬN

Nghiên cứu trên 33 bệnh nhân được chẩn đoán là liệt nửa người do nhồi máu não trong giai đoạn cấp, bệnh nhân được điều chỉnh kết hợp xoa bóp bấm huyệt cùng với phục hồi chức năng tại khoa Tim mạch tại Bệnh viện Kiến An. Kết quả nghiên cứu của chúng tôi cho thấy tuổi trung bình của bệnh nhân là 71,18 ± 9,45 tuổi. Độ tuổi trung bình của bệnh nhân trong nhóm nghiên cứu của chúng tôi cao hơn so với kết quả nghiên cứu của tác giả Chu Văn Vinh trên 42 bệnh nhân nhồi máu não cấp tại Khoa Nội - Hồi sức Thần Kinh - Bệnh viện Hữu Nghị Việt Đức, độ tuổi trung bình là 61,76 ± 12,89 [1]; và nghiên cứu của tác giả Phạm Phước Sung trên 99 bệnh nhân nhồi máu não cấp tại Bệnh viện Bạch Mai, tuổi trung bình của bệnh nhân là 64,39 ± 8,75 tuổi. Nghiên cứu của chúng tôi cho thấy tỷ lệ nữ giới cao hơn nam giới (54,5% so với 45,5%), trong khi đó kết quả nghiên cứu của tác giả Nguyễn Đức Minh tại Bệnh viện Chấn cứu Trung Ương lại cho thấy tỷ lệ nam giới cao hơn nữ giới [6], theo nghiên cứu của tác giả Phùng Đức Lâm tỷ lệ nam cao hơn nữ, nam/nữ =2,45/1 [7]. Trong nghiên cứu của chúng tôi, hoàn cảnh xuất hiện bệnh đột ngột chiếm 81,8%. Tương đồng với kết quả nghiên cứu của tác giả Huỳnh Thị Phương Minh tỷ lệ xuất hiện đột ngột chiếm 89,3%, tỷ lệ này ra tỏ tỷ lệ 10,7% [8].

Sau 14 ngày điều trị, có 3% bệnh nhân tăng 3 bậc, 27,3% bệnh nhân tăng 2 bậc, 66,7% bệnh nhân tăng 1 bậc và 3% bệnh nhân không tăng bậc. Khi bệnh nhân được điều trị kết hợp điện châm và xoa bóp bấm huyệt sẽ kích thích và điều khiển sự vận hành của khí huyết trong cơ thể, sự hoạt động các cơ, các dây thần kinh, các tổ chức làm tăng sự dinh dưỡng của các tổ chức. Như vậy sẽ làm tăng sự phục hồi cơ lực cũng như

thần kinh. So với nghiên cứu tác giả Nguyễn Đức Minh, nghiên cứu của chúng tôi có tỷ lệ tăng 2 bậc trở lên thấp hơn. Sự khác nhau này có thể do thời gian đánh giá kết quả của chúng tôi ngắn hơn so với nghiên cứu trên và nhóm nghiên cứu chúng tôi có mức độ tổn thương cao hơn [6].

Thang điểm Orgogozo với mười tiêu chí đánh giá trạng thái chức năng thần kinh của BN đột quỵ não trên cơ sở lượng giá điểm của từng triệu chứng. Điểm Orgogozo trung bình trước điều trị là 44,89 ± 21,3, sau điều trị là 70,45 ± 19,17 điểm, chênh lệch trước sau điều trị là 26,56 ± 2,13 điểm. Sự khác biệt này có ý nghĩa thống kê với p < 0,05. Về mức độ chuyển biến độ liệt theo thang điểm Orgogozo chu thấy có 18,1% bệnh nhân chuyển biến 2 độ hoặc về độ 1, 66,7% bệnh nhân chuyển biến 1 độ và 15,2% không có chuyển biến. Qua đây có thể cho thấy rằng, sau 14 ngày bệnh nhân đều có sự chuyển biến rõ về mức độ liệt. Sự tiến triển mức độ liệt có thể giải thích rằng khi kết hợp điện châm cùng với xoa bóp bấm huyệt ngay sau khi bệnh nhân ổn định sẽ kích thích vào các khối cơ, dây thần kinh trong cơ thể đồng thời tăng sự nuôi dưỡng đến các mô, cơ quan bị tổn thương. Điều này sẽ giúp cho các cơ và dây thần kinh phục hồi nhanh hơn làm tăng hiệu cơ lực.

Thang điểm Barthel nhằm đánh giá mức độ độc lập về mặt chức năng trong sinh hoạt hàng ngày của bệnh nhân đột quỵ não. Sau quá trình 14 ngày điều trị, điểm trung bình và mức chuyển độ liệt đều tăng lên. Điểm Barthel trung bình trước điều trị là 36,06 ± 21,13 điểm, sau điều trị là 80,09 ± 22,8 điểm. Sự thay đổi điểm trung bình có ý nghĩa thống kê với p < 0,05. Độ độc lập trước điều trị ở độ I, độ II và độ III với tỷ lệ 0%, 15,1% và 36,4%, sau điều trị tăng lên độ I là 12,1%, độ II là 39,4%, độ III là 45,45%, còn độ IV giảm từ 48,5% xuống còn 3%. Về mức chuyển độ độc lập có 15,2% bệnh nhân chuyển 2 độ hoặc về độ I, 78,8% bệnh nhân chuyển 1 độ, mức không chuyển độ là 6,1%. Tương đồng với kết quả nghiên cứu của tác giả Nguyễn Đức Minh, điểm Barthel trung bình đã tăng từ 39,30 ± 9,22 trước điều trị lên 72,70 ± 7,27 sau điều trị, số bệnh nhân chuyển được 2 độ liệt chiếm tỷ lệ 33,33% [6].

Sự thay đổi thang điểm FIM sau khi điều trị, điểm trung bình trước điều trị là 68,55 ± 19,83 điểm, sau điều trị là 89,36 ± 21,27 điểm, mức tăng điểm trước sau điều trị có ý nghĩa thống kê với p < 0,05. Độ độc lập trước điều trị ở độ I, độ II với tỷ lệ 0%, 39,4%, sau điều trị tăng lên độ I là 21,2%, độ II là 63,6%, còn độ III là 54,5%, độ IV là 6,1% giảm xuống lần lượt là 12,1% và 3%. Độ độc lập trước và sau điều trị, có 21,2% chuyển 2 độ hoặc về độ 1, 45,5% chuyển 1 độ, còn 33,3% không chuyển độ và không có bệnh nhân nặng lên.

V. KẾT LUẬN

Nghiên cứu trên 33 bệnh nhân được chẩn đoán liệt nửa người do nhồi máu não sau giai đoạn cấp, tại Bệnh viện Kiến An, Hải Phòng năm 2022-2023. Kết quả cho thấy sau 14 ngày điều trị, điểm Orgogozo, điểm Barthel và điểm FIM trung bình đều tăng. Điện châm kết hợp xoa bóp bấm huyệt có tác dụng điều trị phục hồi chức năng vận động trên bệnh nhân liệt nửa người giai đoạn cấp do nhồi máu não.

TÀI LIỆU THAM KHẢO

1. **Campbell BCV, De Silva DA, Macleod MR, et al.** Ischaemic stroke. Nat Rev Dis Primer (2019);5(1): p70.
2. **Huy Tuu Mai, Xuan Cu Bao, Ngoc Khue Luong, et al.** Current State of Stroke Care in Vietnam. Stroke Vasc Interv Neurol (2022);2. https://doi.org/10.1161/SVIN.121.000231.
3. **Donkor ES.** Stroke in the 21(st) century: a snapshot of the burden, epidemiology, and quality of life. Stroke Res Treat (2018); 2018: p3238165.
4. **GBD 2017 Disease and Injury Incidence and Prevalence Collaborators.** Global, regional, and national incidence, prevalence, and years lived with disability for 354 diseases and injuries for 195 countries and territories, 1990-2017: a systematic analysis for the Global Burden of Disease Study 2017. Lancet (2018);392: p1789-1858.
5. **Chu Văn Vinh, Nguyễn Anh Tuấn.** Nghiên cứu đặc điểm lâm sàng, cận lâm sàng và đánh giá áp dụng các thang điểm tiên lượng về nặng nề và tử vong sớm ở bệnh nhân đột quỵ não cấp tại Bệnh viện Việt Đức. Hội Thần Kinh Học Việt Nam.
6. **Nguyễn Đức Minh, Nguyễn Vinh Quốc.** Đánh giá hiệu quả điều trị phục hồi chức năng vận động của bệnh nhân đột quỵ nhồi máu não bằng điện châm kết hợp phương pháp Bobath. Tạp chí Y học Việt Nam (2021);499: p5-10.
7. **Phùng Diệu Lâm.** Nghiên cứu đặc điểm lâm sàng, hình ảnh tổn thương tủy động mạch cảnh trong ở bệnh nhân đột quỵ nhồi máu não. Luận án Tiến sĩ. Học viện Quân Y. 2017.
8. **Hoàng Thị Phương Minh, Ngô Văn Truyền.** Đặc điểm lâm sàng, cận lâm sàng nhồi máu não cấp tại Bệnh viện đa khoa trung tâm Tiền Giang. Hội Thần kinh học Việt Nam, Hội thần Khoa học. 2015.

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KẾT QUẢ MỘT SỐ TEST CHẨN ĐOÁN HEN PHẾ QUẢN DỊ ỨNG DO MẠT BỤI NHÀ TẠI VIỆN Y HỌC BIỂN VIỆT NAM NĂM 2021- 2022

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TÓM TẮT

Nghiên cứu mô tả một loạt ca bệnh trên các bệnh nhân ≥ 16 tuổi được chẩn đoán sơ định hen phế quản, được khám và điều trị tại phòng khám Dị ứng miễn dịch lâm sàng - Viện Y học biển Việt Nam trong thời gian từ tháng 1/2021 đến tháng 4/2022. Nghiên cứu này có mục đích phân tích kết quả test da và test IgE đặc hiệu huyết thanh trong chẩn đoán mạt bụi nhà gây hen phế quản ở các bệnh nhân nói trên. Qua nghiên cứu 65 bệnh nhân hen phế quản, chúng tôi phát hiện được tỉ lệ người bệnh dị ứng với 2 loại mạt bụi nhà (Der f và Der p) thông qua test lấy da lần lượt là 76,92% và 75,38%. Tỉ lệ phát hiện mẫn cảm với 2 loại mạt bụi nhà này thông qua xét nghiệm IgE đặc hiệu huyết thanh với Der f và Der p lần lượt là 53,85% và 52,30%. Việc kết hợp hai loại xét nghiệm này giúp tăng tỉ lệ phát hiện mẫn cảm với hai loại dị nguyên trên một cách có ý nghĩa thống kê so với xét nghiệm IgE đặc hiệu huyết thanh đơn độc, đồng thời có thể giúp khắc phục hạn chế của test lấy da trên những bệnh nhân hen phế quản dị ứng có sử dụng thuốc kháng Histamine ngay trước khi tiến hành xét nghiệm.

Từ khóa: hen phế quản, test lấy da, xét nghiệm IgE đặc hiệu, Dermatophagoides pteronyssinus, Dermatophagoides farinae

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SUMMARY

RESULTS OF SOME DIAGNOSTIC TESTS FOR ALLERGIC ASTHMA CAUSED BY DERMATOPHAGOIDES AT THE VIETNAM INSTITUTE OF MARINE MEDICINE IN 2021-2022

The study describes a series of cases on patients ≥16 years old with a confirmed diagnosis of bronchial asthma, examined and treated at the Clinical Allergy and Immunology Clinic of Vietnam National Institute of Maritime Medicine from January 2021 to April 2022. The aim of this study was to analyze the results of skin prick test and allergen-specific Immunoglobulin E (sIgE) test in diagnosing Dermatophagoides causing asthma in the above patients. Through the study of 65 patients with asthma, we found that the rate of patients allergic to these 2 types of house dust mites (Der f and Der p) through skin prick test was 76.92% and 75.38, respectively. The detection rate of susceptibility to these two types of house dust mites through sIgE test with Der f and Der p was 53.85% and 52.30%, respectively. The combination of these two tests significantly increased the detection rate of sensitization to these two allergens compared with the unspecific IgE test alone, and can help overcome the limitation of the skin prick test in allergic asthma patients who received antihistamines just prior to testing.

Keywords: asthma, skin prick test, allergen-specific immunoglobulin E, Dermatophagoides pteronyssinus, Dermatophagoides farinae

I. ĐẶT VẤN ĐỀ

Hen là vấn đề sức khoẻ cộng đồng trên toàn thế giới. Hen phế quản không được kiểm soát sẽgây suy giảm chất lượng cuộc sống người bệnh, trở thành một trong những gánh nặng bệnh tật đối với gia đình, y tế và xã hội [1]. Việc xác định được các tác nhân gây dị ứng của người bệnh hen phế quản có ý nghĩa quan trọng trong việc phòng tránh khởi phát các cơn hen do các yếu tố kích thích này, cũng như trong việc điều trị giải mẫn cảm đặc hiệu cho người bệnh. Trong số đó, mạt bụi nhà (*Dermatophagoides pteronyssinus, Dermatophagoides farinae*) là một trong những nguyên nhân thường gặp nhất [2].

Phòng khám Dị ứng miễn dịch lâm sàng - Viện Y học biển Việt Nam là một trung những trung tâm quản lý bệnh nhân hen phế quản tại thành phố Hải Phòng. Tại Hải Phòng, hiện chưa có nhiều nghiên cứu về các test trong chẩn đoán dị nguyên gây hen phế quản, đặc biệt là do Dermatophagoides. Vậy trên thực tế giá trị của các phương pháp xét nghiệm chẩn đoán dị nguyên mạt bụi nhà trên các bệnh nhân hen phế quản là như thế nào? Do vậy, chúng tôi thực hiện đề tài này với mục tiêu nghiên cứu: *Phân tích kết quả test da và test IgE đặc hiệu huyết thanh trong chẩn đoán nguyên nhân mạt bụi nhà gây hen phế quản ở các bệnh nhân tại viện Y học biển Việt Nam năm 2021 - 2022.*

II. ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU

2.1. Đối tượng, địa điểm và thời gian nghiên cứu

Nghiên cứu được tiến hành trên các bệnh nhân được chẩn đoán xác định hen phế quản, khám và được làm xét nghiệm xác định dị nguyên gây bệnh tại phòng khám Dị ứng miễn dịch lâm sàng - Viện Y học biển Việt Nam từ tháng 1/2021 đến tháng 4/2022.

** Tiêu chuẩn lựa chọn:*

- Các bệnh nhân ≥ 16 tuổi được chẩn đoán xác định hen phế quản, được khám và điều trị tại phòng khám Dị ứng miễn dịch lâm sàng - Viện Y học biển Việt Nam trong thời gian nghiên cứu. Tiêu chuẩn chẩn đoán bệnh nhân hen phế quản theo GINA 2014:

Bệnh nhân có đợt ho, khò khè, khó thở, nặng ngực tái đi tái lại

Triệu chứng xuất hiện nặng hơn về đêm và sáng sớm làm bệnh nhân thức giấc

Triệu chứng xuất hiện hoặc xấu đi khi tiếp xúc với dị nguyên hoặc các yếu tố nguy cơ: lông chó, mạt bụi nhà, khói thuốc, nhiễm trùng.... Các triệu chứng được cải thiện khi sử dụng thuốc giãn phế quản.

Bệnh nhân có tiền sử các nhân và/hoặc tiền sử gia đình có mắc hen phế quản hoặc các bệnh dị ứng khác.

Dung tích sống hô hấp giây đầu tiên (thường khi thực nghiệm FEV1 ≤ 80% giá trị dự đoán, FEV1/VC ≤ 80%.

- Bệnh nhân được làm Prick test với dị nguyên mạt bụi nhà *Dermatophagoides pteronyssinus (Der p)* và *Dermatophagoides farinae (Der f)*.

- Bệnh nhân được làm xét nghiệm định lượng IgE đặc hiệu trong huyết thanh bệnh nhân hen phế quản với 2 loại dị nguyên mạt bụi nhà *Dermatophagoides pteronyssinus (Der p)* và *Dermatophagoides farinae (Der f)*.

** Tiêu chuẩn loại trừ:* các trường hợp bệnh nhân đã được sử dụng thuốc kháng Histamin, thuốc ức chế miễn dịch trong khoảng thời gian 02 tuần trước khi được làm test dị nguyên.

2.2. Phương pháp nghiên cứu

Nghiên cứu mô tả một loạt ca bệnh.

2.3. Phương pháp chọn mẫu

Chọn mẫu thuận tiện, cỡ mẫu toàn bộ.

2.4. Các chỉ tiêu nghiên cứu

Đặc điểm chung của đối tượng nghiên cứu: tuổi, giới tính.

Các chỉ tiêu về cận lâm sàng: tỉ lệ dương tính của test IgE đặc hiệu với nọc hại nhà, Der p và Der f, tỉ lệ dương tính của test lẩy da với nọc hại nhà, Der p và Der f, mức độ biểu hiện của test lẩy da.

2.5. Quy trình nghiên cứu và phương pháp thu thập số liệu

- Chọn bệnh nhân theo tiêu chuẩn chẩn đoán qua khám lâm sàng, cận lâm sàng, khai thác tiền sử dị ứng.

– Thu thập số liệu trực tiếp và qua hồ sơ bệnh án.

2.6. Xử lý số liệu

Các số liệu nghiên cứu được xử lý và phân tích theo thuật toán thống kê y học trên máy tính bằng phần mềm SPSS 23.0. So sánh 2 tỉ lệ bằng Chi-square test (χ^2). Giá trị $p < 0,05$ trong các phép kiểm định được coi là có ý nghĩa thống kê.

2.7. Đạo đức nghiên cứu

Nghiên cứu có mục đích nhằm phục vụ lợi ích chăm sóc sức khỏe của người bệnh và không gây bất cứ tác hại nào cho bệnh nhân tham gia nghiên cứu. Nghiên cứu tuân thủ đúng với đề cương đã được phê duyệt bởi Hội đồng đánh giá đề cương Trường Đại Học Y Dược Hải Phòng và được sự đồng ý của Ban lãnh đạo Viện Y học biển Việt Nam. Đảm bảo giữ bí mật thông tin của bệnh nhân.

III. KẾT QUẢ NGHIÊN CỨU

Qua khảo sát 65 trường hợp được chẩn đoán mắc lưu phổ quản trong thời gian nghiên cứu, chúng tôi thu được một số kết quả như sau.

Bảng 1. Đặc điểm chung của bệnh nhân lưu phổ quản

Đặc điểm		Số ca bệnh (n= 65)	Tỉ lệ (%)
Nhóm tuổi (X ± SD: 41,8 ± 21,2 tuổi, max: 81 tuổi, min: 16 tuổi)	16-35 tuổi	28	43,1
	36-60 tuổi	23	35,4
	>60 tuổi	14	21,5
Giới	Nữ	37	56,9
	Nam	28	43,1

Nhận xét: số ca bệnh lưu phổ quản chủ yếu tập trung ở nhóm tuổi: 16-19 tuổi và 40-69 tuổi. Tỉ lệ nam/nữ là 1/1,32.

Hình 1. Mức độ biểu hiện của test lẩy da (n=65)

Nhận xét: Mức độ biểu hiện của test lẩy da mức độ vừa và mạnh chiếm đa số

Bảng 2. Tỉ lệ test lấy da dương tính với các dị nguyên (n=45)

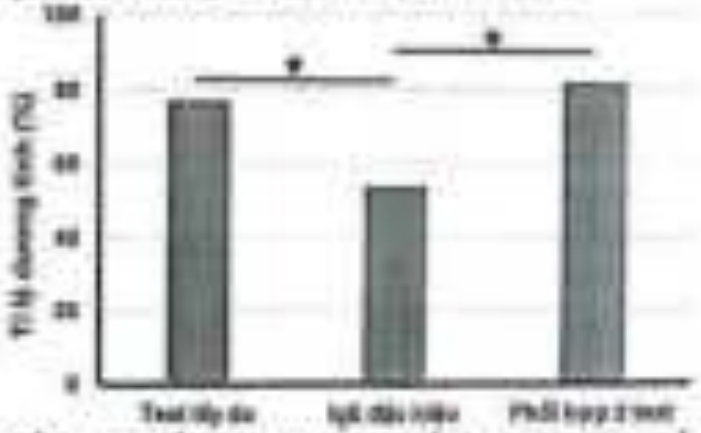
Test dị nguyên	n	Tỷ lệ (%)
Der f	33	73,33
Der p	33	73,33

Nhận xét: Nhóm bệnh nhân hen phế quản có test lấy da dương tính với hai dị nguyên Der p và Der f đều chiếm tỉ lệ cao trên 70%.

Bảng 3. Kết quả test IgE huyết thanh đặc hiệu với các dị nguyên

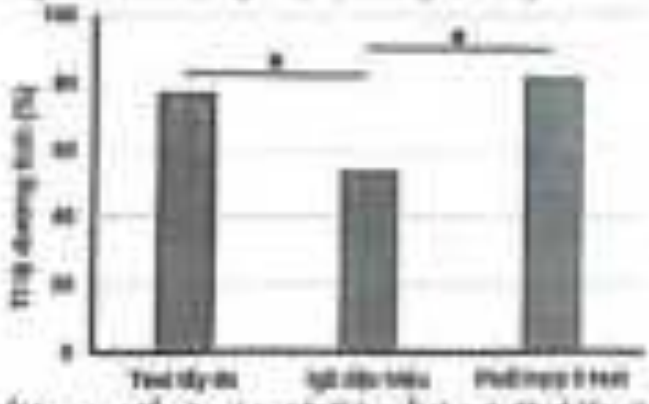
Dị nguyên	n	Tỷ lệ (%)
Der f	35	77,77
Der p	34	75,55

Nhận xét: Nhóm bệnh nhân hen phế quản có kết quả test IgE huyết thanh đặc hiệu với các dị nguyên Der p và Der f dương tính chiếm tỉ lệ cao trên 70%.



Hình 2. Kết quả phối hợp test lấy da và test IgE huyết thanh đặc hiệu chẩn đoán dị nguyên Der f (n = 45)

Nhận xét: Biện pháp test lấy da và phối hợp test lấy da cùng xét nghiệm IgE đặc hiệu dị nguyên cho tỉ lệ xác định người bệnh hen phế quản có mẫn cảm với dị nguyên Der f cao hơn một cách có ý nghĩa thống kê so với xét nghiệm IgE đặc hiệu với dị nguyên này đơn độc (lần lượt: p = 0.0035686 và p = 0.0007261; *: p < 0.05, Chi-square test)



Hình 3. Kết quả phối hợp test lấy da và test IgE huyết thanh đặc hiệu chẩn đoán dị nguyên Der p (n=45)

Nhận xét: Điện pháp test lấy da và phối hợp test lấy da cùng xét nghiệm IgE đặc hiệu cho tỉ lệ xác định mẫn cảm với dị nguyên Der p cao hơn một cách có ý nghĩa thống kê so với xét nghiệm IgE đặc hiệu đơn độc (lần lượt: $p = 0.806176$ và $p = 0.000849$; *: $p < 0,01$, Chi-square test).

IV. BÀN LUẬN

Nghiên cứu của chúng tôi cho thấy tỷ lệ phân bố giữa hai giới có sự khác biệt, tỷ lệ nam/nữ ≈ 0,76. Kết quả này có sự tương đồng với các nghiên cứu trước đây đã cho thấy tỷ lệ nữ giới chiếm ưu thế so với nam giới trong số các bệnh nhân hen phế quản [3]. Nghiên cứu của Lê Quốc Gia và cộng sự trên 359 trường hợp hen phế quản tại bệnh viện Bạch Mai cho thấy tỉ lệ nam/nữ là 43/64 (0,7) [4]. Một số nghiên cứu đã chỉ ra vai trò của estrogen trong những bệnh lý dị ứng và trong hen phế quản. Tế bào mast đã được thấy rằng có sự biểu hiện thụ thể α-estrogen, và estrogen có thể kích hoạt quá trình thoái hóa tế bào mast và tăng phản ứng miễn dịch IgE [3]. Điều này phần nào giải thích được tỉ lệ bệnh nhân nữ giới mắc hen phế quản dị ứng với mạt bụi nhà cao hơn bệnh nhân nam giới trong các nghiên cứu.

Nghiên cứu của chúng tôi về độ tuổi của nhóm bệnh nhân hen phế quản cho thấy đa số các ca bệnh thuộc nhóm 16-35 tuổi (45,1%) nhiều hơn nhóm 36-60 tuổi (35,4%), với độ tuổi trung bình là 41 tuổi. Điều này có sự khác biệt đáng kể so với một nghiên cứu trên 322 bệnh nhân hen phế quản tại thành phố Hồ Chí Minh cho thấy đa số bệnh nhân thuộc nhóm 36-60 tuổi (49,7%) và độ tuổi trung bình là 47 tuổi [3]. Cũng cần lưu ý rằng cỡ mẫu đạt được trong nghiên cứu của chúng tôi còn tương đối thấp, do vậy có thể góp phần dẫn tới sự khác biệt này. Những nghiên cứu tiếp theo với cỡ mẫu đủ lớn là cần thiết để giúp phản ánh rõ hơn đặc điểm về độ tuổi của nhóm bệnh nhân hen phế quản.

Việt Nam với khí hậu của vùng nhiệt đới nóng ẩm, mưa nhiều, là điều kiện lý tưởng cho mạt bụi nhà phát triển và là một trong những dị nguyên thường gặp nhất ở các bệnh nhân dị ứng, trong đó có các bệnh nhân hen phế quản [6]. Kết quả nghiên cứu của chúng tôi cho kết quả tương đồng với nhiều nghiên cứu trước đây cho rằng mạt bụi nhà là dị nguyên thường gặp, trong đó, tỉ lệ bệnh nhân hen phế quản có dị ứng với mạt bụi nhà Der f là 76,92% và với mạt bụi nhà Der p là 75,38%. Nghiên cứu của tác giả Đào Thị Hồng Diên cho thấy tỷ lệ dương tính với mạt bụi nhà Der p và mạt bụi nhà Der f, lần lượt là 67% và 65,9% [7]. So sánh với một nghiên cứu ở Trung Quốc (nghiên cứu CARRIAD), nó cho thấy mạt bụi nhà phổ biến nhất là Der p và Der f, tuy nhiên phát hiện ở mức tỉ lệ tương đối thấp hơn so với kết quả nghiên cứu của chúng tôi (lần lượt là 59% và 57,6%) [8].

Việc chẩn đoán dị ứng đòi hỏi phải có tiền sử bệnh thích hợp và khám thực thể. Quá mẫn loại I (ngay lập tức) bị nghi ngờ khi các phản ứng xảy ra trong vòng 30–120 phút sau khi tiếp xúc. Nếu thông tin lâm sàng gợi ý dị ứng loại I (loại tức thời), thì test lấy da

được chỉ định để phát hiện sự hiện diện của IgE cụ thể đối với các chất gây dị ứng có liên quan: chất lót, thức ăn, thuốc và trong một số trường hợp là chất gây dị ứng nghề nghiệp. Test lấy da là một phương pháp chẩn đoán an toàn, tuy nhiên vẫn có một số phản ứng bất lợi được báo cáo và có chống chỉ định bệnh nhân có tiền sử điều trị bằng thuốc kháng histamine hoặc corticosteroid, bệnh nhân bị bệnh da liễu. Định lượng IgE huyết thanh đặc hiệu dị nguyên nhằm mục đích phát hiện sự mẫn cảm của cơ thể người bệnh dị ứng đối với một loại dị nguyên xác định. Giá thành của xét nghiệm IgE huyết thanh đặc hiệu cao hơn test lấy da. Tuy nhiên, nó có ưu điểm là không bị ảnh hưởng bởi thuốc kháng histamine, bệnh nguời da hoặc phản ứng bất lợi trên da [1]. Trong nghiên cứu này, tỷ lệ phát hiện mẫn cảm với hai loại mạt bụi nhà, Der f và Der p, bằng test lấy da là cao hơn một cách có ý nghĩa thống kê so với tỉ lệ phát hiện mẫn cảm bằng test IgE đặc hiệu dị nguyên (bảng 2 và hình 3). Kết quả này cũng có sự tương đồng với các kết quả trong các nghiên cứu trước đây đã chỉ ra rằng độ nhạy của test lấy da là cao hơn so với test IgE đặc hiệu [1, 2]. Ngoài ra, kết quả nghiên cứu này của chúng tôi đã cho thấy việc thực hiện kết hợp thêm test IgE đặc hiệu dị nguyên sẽ giúp gia tăng độ nhạy trong phát hiện tác nhân dị ứng so với khi chỉ thực hiện test lấy da đơn độc hoặc test IgE đặc hiệu dị nguyên.

Sự kết hợp 2 test lấy da và định lượng IgE đặc hiệu trong máu bệnh nhân hen phế quản cho tỉ lệ dương tính với mạt bụi nhà (Der f và Der p) cao hơn khi chỉ dùng 1 test đơn độc bởi vì người sự phát hiện được IgE đặc hiệu dị nguyên khi sinh ra đã gắn vào tế bào mastocyte ở dưới da thì sẽ phát hiện được lượng IgE đang tồn tại trong máu. Do vậy, sự kết hợp 2 test này trong chẩn đoán có ý nghĩa cao trong việc xác định dị nguyên để mẫn cảm ở các bệnh nhân hen phế quản. Điều này vừa giúp cho chẩn đoán đặc hiệu nhưng cũng là cơ sở để điều trị giải mẫn cảm sau này [3].

V. KẾT LUẬN

Qua nghiên cứu 65 bệnh nhân hen phế quản, chúng tôi phát hiện được tỉ lệ người bệnh dị ứng với 2 loại mạt bụi nhà (Der f và Der p) thông qua test lấy da lần lượt là 76,92% và 71,38%. Tỉ lệ phát hiện mẫn cảm với 2 loại mạt bụi nhà này thông qua xét nghiệm IgE đặc hiệu huyết thanh với Der f và Der p lần lượt là 53,85% và 52,30%. Việc kết hợp hai loại xét nghiệm này giúp tăng tỉ lệ phát hiện mẫn cảm với hai loại dị nguyên trên một cách có ý nghĩa thống kê so với xét nghiệm IgE đặc hiệu huyết thanh đơn độc, đồng thời có thể giúp khắc phục hạn chế của test lấy da trên những bệnh nhân hen phế quản dị ứng có sử dụng thuốc kháng Histamine ngay trước khi tiến hành xét nghiệm.

VI. LỜI CẢM ƠN

Một phần kinh phí thực hiện nghiên cứu này được tài trợ bởi Trường Đại học Y Dược Hải Phòng, với số đề tài: HPMU.DT.22.103.

TÀI LIỆU THAM KHẢO

1. Annesi-Maesano, I., et al., IgE allergy diagnostics and other relevant tests in allergy, a World Allergy Organization position paper. World Allergy Organ J, 2018. 13(2): p. 100080.
2. Calderón, M.A., et al., Respiratory allergy caused by house dust mites: What do we really know? Journal of Allergy and Clinical Immunology, 2015. 136(1): p. 38-48.
3. Yang, J.A., B. Pawlak, and B.C. Nowicki, Hormones, sex, and asthma. Ann Allergy Asthma Immunol, 2018. 120(3): p. 481-494.
4. **Lê Quốc Cầu và Phan Thu Phương.** Tương quan giữa mức bệnh nhân trong khí thở và với một vài đặc điểm lâm sàng, cận lâm sàng và các mức độ kiểm soát hen ở bệnh nhân hen phế quản người lớn. Tạp chí Y học Việt Nam, 2022. 520(2): p. 229-232.
5. **Nguyen Nhu Vinh, Huynh Thi Hoai Thuong, and Nich H. Chavasse,** Knowledge on self-management and levels of asthma control among adult patients in Ho Chi Minh City, Vietnam. Int J Gen Med, 2018. 11: p. 81-89.
6. Trinh, T.H.K., et al., Profile of aeroallergen sensitization in allergic patients living in southern Vietnam. Frontiers in Allergy, 2022. 3.
7. **Đào Thị Hằng Diu, Lê Thị Minh Hương và Nguyễn Thị Diệu Thúy.** Nghiên cứu kết quả test lẩy da với các dị nguyên hô hấp trong nhà của bệnh nhi hen phế quản. Tạp chí Y học thực hành, 2013. 2: p. 47-50.
8. Li, J., et al., Influence of degree of specific allergic sensitivity on severity of rhinitis and asthma in Chinese allergic patients. Respir Res, 2011. 12(1): p. 95.

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

BIÊN BẢN
NGHIỆM THU ĐỀ TÀI KHCN CẤP CƠ SỞ NĂM 2023

Tên đề tài: Nghiên cứu đặc điểm lâm sàng, cận lâm sàng và một số yếu tố liên quan điều trị ngoại trú tại Viện Y học biển Việt Nam

Chủ nhiệm đề tài: GS.TS. Phạm Văn Thức

Thành viên tham gia: Nguyễn Dương Tuyến, Phạm Đình Ngọc, Nguyễn Thị Thủy

Giáng viên hướng dẫn (nếu có):

Đơn vị: Sinh lý bệnh - Dị ứng - Miễn dịch

Căn cứ Quyết định số: 2550/QĐ - YDHP ngày 08 tháng 12 năm 2023 của Hiệu trưởng trường Đại học Y Dược Hải Phòng về việc thành lập Tiểu ban Khoa học công nghệ nghiệm thu đề tài nghiên cứu khoa học cấp cơ sở năm 2023, Tiểu ban đã tiến hành họp để đánh giá, nghiệm thu đề tài vào hồi 14h ngày 21 tháng 12 năm 2023 tại trường Đại học Y Dược Hải Phòng.

Các thành viên có mặt:

1. TS. Nguyễn Thị Thắm - Phó trưởng tiểu ban
2. TS. Nguyễn Thị Thu Hiền - Ủy viên
3. TS. Nguyễn Văn Tâm - Ủy viên
4. TS. Bùi Ngọc Tân - Ủy viên thư ký

Thư ký hành chính: ThS. Bùi Thị Hương

Các thành viên vắng mặt:

Không

NỘI DUNG NGHIỆM THU:

1. Đọc quyết định thành lập Tiểu ban: *TS. Bùi Ngọc Tân*
2. Trưởng Tiểu ban điều khiển buổi nghiệm thu.
3. Chủ nhiệm đề tài trình bày tóm tắt báo cáo tổng kết đề tài (có Báo cáo tóm tắt kèm theo).
4. Các thành viên Tiểu ban nhận xét, góp ý (có ý kiến nhận xét kèm theo)

5. Các thành viên trong Tiểu ban và những người tham dự buổi nghiệm thu trao đổi về nội dung, phương pháp, kết quả nghiên cứu của đề tài; và thống nhất nêu ý kiến sau:

.....

.....

.....

.....

.....

6. Đánh giá kết quả:

6.1. Ban kiểm phiếu gồm:

- TS. Bùi Ngọc Tân
- Ths. Bùi Thị Hương

6.2. Tiểu ban đã bỏ phiếu đánh giá kết quả như sau:

Tổng số phiếu phát ra : 4 phiếu
Tổng số phiếu thu vào : 4 phiếu
Số phiếu hợp lệ : 4 phiếu
Số phiếu không hợp lệ : 0 phiếu

6.3. Kết quả đánh giá:

Xuất sắc : 4 phiếu
Khá : 0 phiếu
Đạt : 0 phiếu
Không đạt : 0 phiếu

Kết quả đề tài đạt loại: Xuất sắc

7. Kết luận:

Nghiệm thu đề tài

.....

Hải Phòng, ngày 27 tháng 12 năm 2023

Trưởng Tiểu ban	Thư ký
(Ký và ghi rõ họ tên)	*(Ký và ghi rõ họ tên)*
TS. Nguyễn Thị Thắm	TS. Bùi Ngọc Tân

LÝ LỊCH KHOA HỌC

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

I. Họ và tên: ĐINH THỊ THANH MAI

2. Năm sinh: 10/02/1971 **3. Giới tính:** Nữ

4. Nơi sinh: Cẩm Phả - Quảng Ninh

5. Nguyên Quán: Xã Tân Việt – Huyện Yên Mỹ, Tỉnh Hưng Yên

6. Địa chỉ liên hệ: Số nhà 26 Ngõ 333A, đường Văn Cao, Hải An, Hải Phòng -
Điện thoại: NR: ..... Mobile: 0904318373 Fax: .....
Email: dtthanhmai@hpmu.edu.vn

7. Học hàm, học vị:
Năm được công nhận TS: 2013 ..Nơi cấp bằng: Học viện Quân Y
Năm được phong GS/PGS: PGS năm 2027 Nơi phong: Hội đồng chức danh Giáo sư Nhà nước

8. Cơ quan công tác:
Tên cơ quan: Trường Đại học Y Dược Hải Phòng
Phòng TN, Bộ môn, Trung tâm, Khoa, Viện: Bộ môn Ký sinh trùng -Khoa Y
Địa chỉ cơ quan: Số 72A Đường Nguyễn Bỉnh Khiêm - Ngô Quyền - Hải Phòng .
Điện thoại: 0225/3511907 . Fax: .....
Email: .....

9. Quá trình đào tạo

Bậc đào tạo	Nơi đào tạo	Chuyên ngành	Năm tốt nghiệp
Đại học	Trường Đại học Y Hải Phòng	BSYK	1994
Thạc sĩ	Học viện Quân Y	Thạc sĩ Y học	2001
Tiến sĩ	Học viện Quân Y	Tiến sĩ Y học	2013
TSKH			

10. Các khoá đào tạo khác (nếu có)

Văn bằng	Tên khoá đào tạo	Nơi đào tạo	Thời gian đào tạo
Cử nhân Anh văn	Đã không tập trung	Đại học Hải Phòng	3 năm

11. Trình độ ngoại ngữ

Tên ngoại ngữ	Trình độ sử dụng	Chứng chỉ

	(trung bình, khá, tốt)	(ghi rõ tên chứng chỉ)
Tiếng Anh	Tốt	Có nhận bằng Anh

12. Quá trình công tác

Thời gian (Từ năm ... đến năm ...)	Vị trí công tác	Cơ quan công tác	Địa chỉ Cơ quan
1993 -1999	Giảng viên	Trường Đại học Y Hải Phòng	Số 72A Đường Nguyễn Bỉnh Khiêm - Ngô Quyền - Hải Phòng .
1999 -2001	Học viên sau học	Học viện Quân Y	Số 69 Đường Phùng Hưng – Hà Đông – Hà Nội
2001-2008	Giảng viên	Trường Đại học Y Hải Phòng	Số 72A Đường Nguyễn Bỉnh Khiêm - Ngô Quyền - Hải Phòng .
2008-2012	Nghiên cứu sinh	Học viện Quân Y	Số 69 Đường Phùng Hưng – Hà Đông – Hà Nội
2007 2008 2012 4/2021 5/2022 đến nay	Bổ nhiệm Phó trưởng (phụ trách) bộ môn Ký sinh trùng, trường Đại học Y Dược Hải Phòng Công tác kiêm nhiệm tại phòng Đào tạo sau Đại học Bổ nhiệm Trưởng Bộ môn Ký sinh trùng Đại học Y Dược Hải Phòng Bổ nhiệm Phó phòng Đào tạo Sau đại học Bổ nhiệm Phó Hiệu trưởng Kiêm Trưởng Khoa Y		

13. Sách, sách chuyên khảo, giáo trình (Tên tác giả; Tên sách/giáo trình; NXB; Năm xuất bản)

[1] Thực hành ký sinh trùng: Giáo trình, Chủ biên , xuất bản năm 2015, Nhà xuất bản Y học

2]Ô nhiễm ký sinh trùng trên rau, củ, quả : Chủ biên, sách chuyên khảo, năm 2017, Nhà xuất bản Y học

[3]Ký sinh trùng và côn trùng y học : tham gia, giáo trình , xuất bản năm 2017, Nhà xuất bản Quân đội nhân dân

[4] Ký sinh trùng Y học -Giáo trình. Chủ biên, xuất bản năm 2021, Nhà xuất bản Y học

14. Các công trình khoa học đã công bố

14.1. Số bài đăng trên các tạp chí quốc tế ISI/SCOPUS:

14.2. Số bài báo đăng trên các tạp chí quốc tế không thuộc ISI/SCOPUS:01

14.3. Số bài báo đăng trên các tạp chí chuyên ngành trong nước: 102

14.4. Số báo cáo tham gia các Hội nghị khoa học Quốc tế:

14.5. Số báo cáo tham gia các Hội nghị khoa học trong nước: 05

14.6. Liệt kê đầy đủ các công bố nêu trên từ trước đến nay (theo thứ tự thời gian, ưu tiên các công đầu cho 5 công trình tiêu biểu, xuất sắc nhất (tên tác giả, năm xuất bản, tên công trình, tên tạp chí, volume, trang số):

[1] Đinh Thị Thanh Mai, Nguyễn Đức Thành, Đỗ Thị Yến, "Đánh giá mức độ ô nhiễm trứng giun trên một số loại rau xanh sạch và chưa sạch ở thành phố Hải Phòng". Để tài đạt giải nhì Hội nghị khoa học tuổi trẻ toàn quốc lần thứ 13, năm 2006 tổ chức tại Trung tâm Đào tạo bồi dưỡng Cán bộ y tế Thành phố Hồ Chí Minh (nay là Trường Đại học Y khoa Phạm Ngọc Thạch). Đăng tạp chí Y học thực hành số 543, tr. 79-81.

[2] Đinh Thị Thanh Mai, Nguyễn Hữu Chính, Vũ Thị Hạnh, Thái Lan Anh, "Thực trạng nhiễm giun đường ruột và hiệu quả điều trị bằng Albendazole 400mg liều duy nhất tại trường tiểu học xã Đông Tiến, huyện Vĩnh Bảo, Hải Phòng". Đăng tạp chí Y học thực hành số 543, tr. 82-86.

[3]. Đinh Thị Thanh Mai, Vũ Đức Long, Lê Bá Khánh, "Thực trạng và một số yếu tố liên quan đến nhiễm sán lá gan nhỏ ở người dân 3 xã huyện Nga Sơn, Thanh Hóa - 2011". Đăng tạp chí Phòng chống bệnh sốt rét và các bệnh ký sinh trùng, số 1, năm 2014, tr. 59-54.

[4]. Đinh Thị Thanh Mai và cộng sự, "Thực trạng nhiễm giun móc/mỏ ở người dân xã Tú Sơn, Kiến Thụy, Hải Phòng, năm 2015". Đăng tạp chí Y học thực hành số 1004, năm 2016, tr. 217-221.

[5]. Đinh Thị Thanh Mai và cộng sự, "Thực trạng ô nhiễm mầm bệnh ký sinh trùng đường ruột trên rau, củ, quả ăn sống và hiệu quả của biện pháp rửa rau quả dưới vòi nước chảy". Đăng tạp chí Y học Việt Nam số 2, tập 451, năm 2017, tr. 8-12.

15. Bằng sở hữu trí tuệ đã được cấp:

TT	Tên và nội dung văn bằng	Số, Ký mã hiệu	Nơi cấp	Năm cấp
1	Không			

2				
...				

16. Sản phẩm được ứng dụng, chuyển giao:

16.1 Số lượng sản phẩm KH&CN ứng dụng ở nước ngoài:

16.2 Số lượng sản phẩm KH&CN ứng dụng trong nước:

16.3 Liệt kê chi tiết các sản phẩm vào bảng sau:

TT	Tên sản phẩm	Thời gian, tỉnh thức, quy mô, địa chỉ áp dụng	Công dụng
1			
2			
...			

17. Các đề tài KH&CN các cấp đã chủ trì hoặc tham gia

17.1 Nhiệm vụ KH&CN đã và đang chủ trì

Tên nhiệm vụ/ Mã số	Thời gian (bắt đầu - kết thúc)	Cơ quan quản lý nhiệm vụ, thuộc Chương trình (nếu có)	Tình trạng nhiệm vụ (đã nghiệm thu/ chưa nghiệm thu/ không hoàn thành)
Ô nhiễm trùng giun đũa chó, mèo, đất và kiến thức, thái độ, thực hành của người dân về bệnh giun đường ruột tại hai xã huyện Nam sách, Hải Dương	Năm 2009	Cấp cơ sở	Ngày nghiệm thu 30/12/2009 Đạt loại xuất sắc
Đánh giá mức độ ô nhiễm ký sinh trùng trên một số loại rau quả ăn sống tại Hải Phòng	Năm 2009	Cấp cơ sở	Ngày nghiệm thu 30/12/2009 Đạt loại xuất sắc
Thực trạng và một số yếu tố nguy cơ đến nhiễm trùng roi *Trichomonas vaginalis*, nấm *Candida sp* ở phụ nữ từ 15-49 tuổi có chồng tại quận Hải An, Hải Phòng, năm 2008	Năm 2009	Cấp cơ sở	Ngày nghiệm thu 30/12/2009 Đạt loại xuất sắc
Thực trạng nhiễm giun kim ở trẻ em dưới 6 tuổi	Năm 2010	Cấp cơ sở	Nghiệm thu 11/6/2011

tại quận Hải An, Hải Phòng			Đạt loại khá
Thực trạng và một số yếu tố liên quan nhiễm giun đường ruột ở trẻ em dưới 6 tuổi tại quận Hải An, Hải Phòng.	Năm 2011	Cấp cơ sở	Nghiệm thu ngày 06/12/2011 Đạt loại khá
Thực trạng nhiễm sán lá gan nhỏ ở người dân xã Hữu bằng, Kiến Thụy, Hải Phòng	Năm 2012	Cấp cơ sở	Nghiệm thu ngày 20/01/2013 Đạt loại xuất sắc
Kiến thức, thực hành và một số yếu tố liên quan đến bệnh giun đường ruột của phụ huynh học sinh có con học tiểu học tại hai trường tiểu học ở Hải Phòng	Năm 2013	Cấp cơ sở	Nghiệm thu ngày 30/12/2013 Đạt loại khá
Hiệu quả một số biện pháp giáo thiển nhiễm bệnh ký sinh trùng đường ruột trên rau quả ăn sống	Năm 2013	Cấp cơ sở	Nghiệm thu ngày 30/12/2013 Đạt loại xuất sắc
Kiến thức, thái độ, thực hành và một số yếu tố liên quan đến nhiễm trùng roi *Trichomonas vaginalis* năm *Candida sp.* ở phụ nữ có chồng tuổi từ 18-49 tại xã Tú Sơn, Kiến Thụy, Hải Phòng	Năm 2014	Cấp cơ sở	Nghiệm thu ngày 24/11/2015 Đạt loại khá
Thực trạng nhiễm trùng roi *Trichomonas vaginalis*, nấm *Candida sp.* ở phụ nữ có chồng tuổi từ 18-49 tại xã Tú Sơn, Kiến Thụy, Hải Phòng, năm 2015	Năm 2015	Cấp cơ sở	Nghiệm thu ngày 19/12/2015 Đạt loại xuất sắc
Thực trạng và một số yếu tố liên quan đến nhiễm khuẩn âm đạo ở phụ nữ có chồng tuổi từ 18-49 tại hai xã, huyện	Năm 2016	Cấp cơ sở	Nghiệm thu ngày 06/01/2017 Đạt loại khá

Kiến Thụy, Hải Phòng, năm 2018			
Thực trạng công tác chăm sóc sức khoẻ sinh sản, kế hoạch hoá gia đình địa bàn tỉnh Lâm Đồng	Năm 2016	Đề tài nhánh cấp Nhà nước	Nghiệm thu ngày 25/02/2016 Đạt
Thực trạng sử dụng, hiệu quả và một số yếu tố liên quan nhà tiêu hộ gia đình tại huyện Thanh Hà, Hải Dương, năm 2016	Năm 2017	Cấp cơ sở	Nghiệm thu ngày 13/01/2018 Đạt loại khá
Kiến thức, thái độ, thực hành của người dân về bệnh sốt xuất huyết và một số yếu tố liên quan tại hai xã huyện Kiến Thụy, Hải Phòng, năm 2017	Năm 2018	Cấp cơ sở	Nghiệm thu ngày 13/12/2018 Đạt loại khá
Thực trạng và một số yếu tố liên quan đến nhiễm giun đường ruột của học sinh hai trường tiểu học tại Quảng Ninh, năm 2019	Năm 2019	Cấp cơ sở	Nghiệm thu ngày 04/10/2019 Đạt loại khá
Nghiên cứu ảnh hưởng của các tác nhân hóa học và sinh học tới sức khỏe cộng đồng khu vực lưu đào miền Bắc	Năm 2018	Đề tài nhánh cấp Nhà nước	Nghiệm thu ngày 23/11/2018 Đạt
Thực trạng và một số yếu tố liên quan đến nhiễm nấm roi, nấm, vi khuẩn ở phụ nữ có chồng từ 18-49 tuổi tại thị xã Quảng Yên, Quảng Ninh, năm 2019-2020	Năm 2020	Cấp cơ sở	Nghiệm thu ngày 30/12/2020 Đạt loại Xuất sắc
Nghiên cứu phân lập và định danh một số chủng vi nấm biển ở khu vực phía Bắc có hoạt tính kháng vi sinh vật kiểm định	Năm 2019	Đề tài nhánh cấp nhà nước	Nghiệm thu ngày 31/12/2020 Đạt

Thực trạng và một số yếu tố liên quan đến nhiễm sán lá gan nhỏ ở người dân xã Doãn Xá, huyện Kiến Thụy Hải Phòng, năm 2021	Năm 2021	Cấp cơ sở	Nghiệm thu ngày 18/12/2021 Đạt loại Xuất sắc
Thực trạng và một số yếu tố liên quan đến nhiễm giun đường ruột ở người dân xã Doãn Xá, huyện Kiến Thụy Hải Phòng, năm 2021	Năm 2022	Cấp cơ sở	Nghiệm thu ngày 18/12/2022 Đạt loại Xuất sắc
Thực trạng và một số yếu tố liên quan đến nhiễm nấm Candida sp. ở phụ nữ viêm đường sinh dục dưới đến khám tại bệnh viện Phụ sản Hải Phòng, năm 2023	Năm 2023	Cấp cơ sở	Nghiệm thu ngày 18/12/2023 Đạt loại Xuất sắc
17.2 Nhiệm vụ KH&CN đã và đang tham gia với tư cách thành viên			
Tên nhiệm vụ/ Mã số	**Thời gian** (năm bắt đầu - kết thúc)	**Cơ quan quản lý nhiệm vụ, thuộc Chương trình** (nếu có)	**Tình trạng nhiệm vụ** (đã nghiệm thu/ chưa nghiệm thu/ không hoàn thành)
Kiến thức, thái độ, thực hành của người dân đối với bệnh sốt rét tại xã Lập Lễ, Thuỷ Nguyên, Hải Phòng	Năm 2009	Cấp cơ sở	Nghiệm thu ngày 30/12/2009 Đạt loại khá
Nghiên cứu tình hình bệnh sán lá gan trên cá nước ngọt tại xã Hữu Bằng, huyện Kiến Thụy, Hải Phòng	Năm 2012	Cấp cơ sở	Nghiệm thu ngày 11/03/2013 Đạt loại khá
Kiến thức, thái độ, thực hành và một số yếu tố liên quan đến ký sinh trùng đường ruột của học sinh ở hai trường tiểu học tại Hải phòng	Năm 2013	Cấp cơ sở	Nghiệm thu ngày 30/12/2013 Đạt loại khá

Thực trạng nhiễm giun đường ruột của học sinh ở hai trường tiểu học tại Hải Phòng	Năm 2013	Cấp cơ sở	Nghiệm thu ngày 30/12/2013 Đạt loại khá
Kiến thức, thực hành và một số yếu tố liên quan đến nhiễm giun kim ở trẻ em của người chăm sóc trẻ tại trường mầm non xã Tà Sơn, Kiến Thụy, Hải Phòng	Năm 2014	Cấp cơ sở	Nghiệm thu ngày 24/01/2015 Đạt loại xuất sắc

18. Giải thưởng về KH&CN trong và ngoài nước

TT	Hình thức và nội dung giải thưởng	Tổ chức, năm tặng thưởng
1	Giải nhì về khoa học nuôi trẻ toàn quốc lần 13 tổ chức tại Trường Đại học Y khoa Phạm Ngọc Thạch.	Quyết định số 351/QĐ-ĐHYHP, ngày 13/12/2005
2	Giải khuyến khích về sáng tạo khoa học (giải VIFOTEC), hướng dẫn sinh viên nghiên cứu khoa học.	Quyết định số 8114/QĐ-BGDĐT, ngày 25/12/2007
3	Giải nhì về nghiên cứu khoa học khối các trường thi đua Cao đẳng, Đại học tại Hải Phòng.	Quyết định số 418/QĐ-ĐHYHP, ngày 17/5/2013
4	Trong nghiên cứu về nấm, tôi cộng đồng nghiệp đã xác định và đăng ký trên ngân hàng gen thế giới về nấm *Malassezia furfur* tại ngân hàng gen, mã số MF595845.1, MF595846.1, MF595847.1	Năm 2016

19. Quá trình tham gia đào tạo SĐH

- Số lượng học viên sau đại học đã và đang hướng dẫn: _____
  - Số lượng nghiên cứu sinh: .Chưa
  - Số lượng học viên cao học: 9
  - Số lượng học viên bác sĩ chuyên khoa cấp 1: 04
  - Số lượng học viên bác sĩ chuyên khoa cấp 2: 05
- Thông tin chi tiết:

TT	Họ tên học viên	Tên luận văn/ luận án (Đề tài bảo vệ bước đang làm)	Vai trò hướng dẫn (HD 1 hay 2)	Thời gian đào tạo	Đơn vị công tác / địa chỉ liên hệ của học viên

1	Vũ Thị Hinh	nghiên cứu thực trạng và kiến thức, thái độ, thực hành của người dân về bệnh giun đường ruột tại hai xã huyện Kiến Thụy, Hải Phòng, năm 2012	Hướng dẫn thứ nhất	2011-2013	Trường Cao đẳng Y tế Hải Phòng
2	Bùi Huy Phương	Thực trạng và một số yếu tố liên quan nhà tiêu hộ gia đình tại huyện Tứ Kỳ tỉnh Hải Dương, năm 2012	Hướng dẫn thứ nhất	2013-2013	Sở Y tế Hải Dương
3	Vũ Thị Như Hoa	Thực trạng nhiễm sán lá gan nhỏ ở người và một số yếu tố liên quan tới bệnh tại xã Hữu Bằng, Kiến Thụy, Hải Phòng	Hướng dẫn thứ nhất	2012-2014	Bệnh viện Phụ sản Hải Phòng
4	Lương Thành Trung	Thực trạng kiến thức – thái độ - thực hành và một số yếu tố liên quan đến nhiễm giun móc/mỡ của người dân tại xã Tú Sơn - Kiến Thụy - Hải Phòng năm 2013"	Hướng dẫn thứ nhất	2013-2015	Trung tâm kiểm dịch Quốc tế Hải Phòng
5	Nguyễn Thị Bích Hường	Thực trạng chất lượng nước nguồn và nước sau xử lý tại các nhà máy nước thuộc công ty cổ phần nước sạch Quảng Ninh, năm 2014-2015	Hướng dẫn thứ nhất	2014-2016	CDC tỉnh Quảng Ninh
6	Nguyễn Văn Trọng	Thực trạng và một số yếu tố liên quan đến nhà tiêu hộ gia đình tại huyện Thanh Hà tỉnh Hải Dương năm 2016	Hướng dẫn thứ nhất	2014-2016	Trung tâm Y tế Thanh Miện Hải Dương
7	Trịnh Văn Khương	Thực trạng nhiễm nấm Aflatoxin spp. gây bệnh lang ben ở học sinh hai trường	Hướng dẫn thứ nhất	2017-2019	Đại học Y Dược Hải Phòng

		trung học cơ sở tại Hải Phòng			
8	Hồ Ngọc Thái	*Thực trạng và một số yếu tố liên quan đến sự hài lòng của người bệnh điều trị nội trú tại Bệnh viện đa khoa Diễn Châu, Nghệ An, năm 2020*	Hướng dẫn thứ nhất	2018-2020	Bệnh viện Diễn Châu , Nghệ An
9	Thái Văn Chương	*Thực trạng và chất lượng cuộc sống ở phụ nữ lưỡng cương đến khám tại Bệnh viện Nhi nghệ An năm 2020*	Hướng dẫn thứ nhất	2018-2020	BV Đa khoa Hữu nghị Nghệ An
10	Hoàng Thu Hằng	*Nghiên cứu tỉ lệ và một số yếu tố liên quan tới nhiễm sán lá gan nhỏ ở người dân xã Doãn Hà, huyện Kiến Thụy, Hải Phòng, năm 2021*	Hướng dẫn thứ nhất	2019-2021	Trường Cao đẳng y tế Hải Phòng
11	Nguyễn Văn Hải	Thực trạng nhiễm virus viêm gan C và một số yếu tố liên quan đến tiếp cận điều trị của người bệnh tại Bệnh viện Bệnh nhiệt đới tỉnh Hải Dương, năm 2021	Hướng dẫn thứ nhất	2019-2021	BV Nhiệt đới tỉnh Hải Dương
12	Nguyễn Xuân Tình	Thực trạng và một số yếu tố liên quan đến sự hài lòng của người bệnh điều trị nội trú tại Bệnh viện Bãi Cháy, Quảng Ninh năm 2022	Hướng dẫn thứ nhất	2020-2022	Sở Y tế Quảng Ninh
13	Đinh Thị Minh Thư	Tỷ lệ nhiễm, thành phần loài và một số yếu tố liên quan đến nhiễm sán *Camallanus spp.* ở phụ nữ đến khám viêm đường sinh dục dưới tại	Hướng dẫn thứ nhất	2021-2023	TT Y tế Vũ Thư Thái Bình

		bệnh viện Phụ sản Hải Phòng năm 2023			
14	Phạm Khả Sáng	Thực trạng và một số yếu tố liên quan đến suy dinh dưỡng thấp còi ở trẻ dưới 5 tuổi tại 3 xã huyện Kim Động, Hưng Yên, năm 2023	Hướng dẫn thứ nhất	2021-2023	

NHỮNG THÔNG TIN KHÁC VỀ CÁC HOẠT ĐỘNG KHOA HỌC VÀ CÔNG NGHỆ

(Tham gia các tổ chức hiệp hội ngành nghề; thành viên Ban biên tập các Tạp chí khoa học trong và ngoài nước; Thành viên các hội đồng quốc gia, quốc tế: ...)

Tham gia Hội ký sinh trùng Việt Nam

Hải Phòng, ngày 18 tháng 04 năm 2023

XÁC NHẬN
CỦA THỦ TRƯỞNG ĐƠN VỊ

THỦ TRƯỞNG

TS. Phạm Văn Linh

NGƯỜI KHAI

PGS.TS. Đinh Thị Thanh Mai

BỘ Y TẾ

Số: 027113/BYT-CCHN

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM

Độc lập - Tự do - Hạnh phúc

CHỨNG CHỈ HÀNH NGHỀ KHÁM BỆNH, CHỮA BỆNH

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Hà Nội, ngày 19 tháng 1 năm 2023

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Ngày: 28-11-2023

Số: 01 Quyển số: 01

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Nguyễn Thị Ánh Ngân

THE SOCIALIST REPUBLIC OF VIETNAM

THE MILITARY MEDICAL UNIVERSITY

confers

THE DEGREE OF DOCTOR OF PHILOSOPHY

IN MEDICINE

PARASITOLOGY AND ENTOMOLOGY

Upon: Ms. Dinh Thi Thanh Mai

Born on: February 10, 1972 in Quang Ninh

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CONFERS
THE CERTIFICATE OF RECOGNITION

Upon: Ms. Đinh Thi Thanh Mai

Born on: February 10, 1971

In: Yen My, Hung Yen

Has having met the standards of associate professor

In: Medicine

Given under the Seal
of the State Council for Professor Title

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Epidemiological characterization of pityriasis versicolor and distribution of *Malassezia* species among students in Hai Phong city, Vietnam

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ABSTRACT

Background and Purpose: Pityriasis versicolor (PV) is a common fungal skin infection caused by *Malassezia* species. Previous studies have shown that the prevalence of PV is influenced by geographic factors. The aim of the current study was to find the epidemiological characteristics of PV and distribution of *Malassezia* species in the secondary school students living in Hai Phong city, Vietnam.

Materials and Methods: This study was conducted on 1,337 students within the age range of 10 – 18 years attended from five secondary schools in Hai Phong city. The students were screened for PV skin lesions from August 2019 to December 2017. The isolation of *Malassezia* from PV patients was analyzed by performing direct microscopy and culturing on modified Dixon's agar plates containing ganaseticin, at 32°C for 3 days. In the next stage, the fungal species obtained from patients with positive fungal cultures were identified using the CHROMagar™ *Malassezia* medium, polymerase chain reaction-restriction fragment length polymorphism techniques, and D1/D2 26S/rRNA gene sequencing.

Results: Pityriasis versicolor was diagnosed in 385 (28.80%) students and confirmed by clinical appearance and Wood's examination. A total of 293 (76.10%) isolates grew on modified Dixon's agar. With regard to demographic characteristics, 58.9% of the PV cases were female, and 21.03% of cases occurred in urban areas. Furthermore, 88.83% of the subjects had the illness duration of more than 6 months. Hypopigmented and erythematous skin lesions were also observed in the research participants, with hypopigmentation being the most frequent condition (97.03%). Most of the *Malassezia* fungal strains were isolated from the back (29.36%), face (23.99%), and chest (16.72%). *Malassezia furfur* and *M. japonica* accounted for PV in 56.33% and 5.73% of the cases, respectively. Furthermore, *Malassezia furfur* was distributed in both rural and urban areas, while *M. japonica* was found only in the urban areas.

Conclusion: The findings of the present study were indicative of the high prevalence of *Malassezia* yeasts, mainly *M. furfur*, among the students in Hai Phong city, Vietnam.

Keywords: Hai Phong city, Malassezia, Pityriasis versicolor, Students, Vietnam

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Introduction

The lipophilic yeasts of genus *Malassezia* are the members of the resident skin microflora in humans and other warm-blooded animals [1, 2]. These yeasts are associated with some skin diseases, such as pityriasis versicolor (PV), seborrheic dermatitis, acute dandruff, atopic dermatitis, and folliculitis [3, 4]. To date, 14 species have been identified in *Malassezia* genus [5-7], 10 cases of which have been isolated from humans. These species include *M. dermatis*, *M. furfur*, *M. globosa*, *M. japonica*, *M. obtusa*, *M. pachydermatis*, *M. restricta*, *M. slooffiae*, *M. sympodialis* and *M. yamatoensis* [8, 9].

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Malassezia species are a normal part of human commensal skin flora; however, they could be responsible for numerous diseases, mainly PV [6]. The risk factors for PV are high temperature, high relative humidity, fatty skin, corticosteroid treatment, immunodeficiency diseases, and overcrowded households [9]. [10]. In addition, some studies have shown that *Malassezia* may be associated with pachydermatis furfures, cephalic pustulosis and atopic hypersensitive reactions, especially in neonates [6, 11, 12].

Malassezia species can be identified by phenotypic, biochemical, and physiological techniques [7]. However, the differentiation of these species based on these methods is difficult because some species have very similar characteristics, especially for the newly identified species [6, 7]. Because of the limitations of morphological and biochemical methods, several molecular approaches, using different targets, have been successfully used for the species identification of *Malassezia*. Some of these approaches include polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP) based on ITS-rDNA regions and 26S genes [6, 9, 13], nested PCR [7], multiplex PCR [14], real-time PCR [7], and sequence analysis [15].

The secondary school students in Vietnam (10-18 years old) begin to go through puberty; therefore, they have highly active sebaceous glands. These students are at a playful age with excessive sweating. Based on the literature, *Malassezia* exists in different countries, including Vietnam [1, 16, 17]. Nevertheless, there are limited data on distribution of *Malassezia* species in the secondary students in Viet Phong city, Vietnam. Viet Phong is located in the south of Vietnam with the all-year overlapping temperature of 21-36°C and humid to 60-82%. With this background in mind, the present study was conducted to determine the epidemiological characteristics of PV and distribution of *Malassezia* species in the secondary school students in city in Viet Phong city, Vietnam.

Materials and Methods

Study population

A total of 1,257 students within the age range of 10-15 years were selected from four secondary schools, namely Viet Hoa (La Chan district), Le Viet (Hai Binh district), Quang Hung (Le Loi district), and Hoan Ha (Hoan Thap district), in Viet Phong city, Vietnam, from August 2016 to December 2017. All these students were assessed for PV. A questionnaire was used to record the information about the epidemiology of each person.

Sampling

The specimens were taken by scraping the lesions with a sterile blade. In case of the presence of normal subjects or asymptomatic scales, the samples were taken by means of pathways. In patients with PV having more than two lesion sites, the most symptomatic and a record was made regarding the affected body site.

Direct microscopy and culture

The diagnosis of PV was based on clinical appearance and direct microscopic examination in 20% potassium hydroxide (KOH) and staining with methylene blue. To this end, the skin specimens obtained from patients with clinically suspected PV were used for direct microscopic examination with 20% KOH (HuaXian Co. Ltd, Vietnam) and staining with methylene (Merk, Germany). The PV was established based on the characteristic clusters of spores with short hyphae. Skin scale sampling was continued in the patients who had positive direct microscopy, and the samples were immediately cultured on modified Dixon agar plates, containing gentamicin (as a final concentration of 25 µg/ml).

The inoculated plates were incubated at 33°C and observed every day for a maximum of 7 days before negative results were noted. The colonies were sub-cultured on CHROMagar™ *Malassezia* medium (CHROMagar, France) to determine the co-existence rate of *Malassezia* species and distinguish between *M. furfur* and other *Malassezia* species according to the manufacturer's instructions. If *Malassezia* species were the same in different body sites, it was considered to be a single isolate.

Molecular identification of the isolated species of *Malassezia*

DNA isolation

The pure cultures of all *Malassezia* isolates were homogenized in 100 µl of sterile water (Corning, USA) and incubated with lysis buffer (1M sorbitol, 100 mM sodium EDTA, 14 mM β-mercaptoethanol) and 200 U lyticase enzyme units (L2524, Sigma-Aldrich Co. Ltd., Perth, WA) at 30°C for 60 min to destroy fungal cell membranes. In the next steps, the DNA of each individual isolate was extracted using the Invitrogen QIAamp DNA Mini Kit (Qia, 51304, Qiagen, Hilden, Germany), according to the manufacturer's guidelines. The purified DNA was preserved with distilled water at -20°C until the implementation of the PCR reaction.

Polymerase chain reaction amplification

The PCR products (600-650 bp) of *Malassezia* containing ITS1 rDNA, were amplified by ITS1 (5'-TCC GTA GGT GAA CCT GCG G-3') and ITS4 (5'-TCC TCC GCT TAT TGA TAT GC-3') primers (Integrated DNA Technologies, USA) as described previously [6]. The total PCR reaction volume of 20 µl contained of 1 µl of the DNA solution of *Malassezia*, 23 µl Master Mix 2X (Thermo Fisher Scientific, USA), 1 µl of each primer (0.2 µM), and 18.0 µl of distilled water. The PCR reaction was performed on the Thermo Hybaid/Px gradient cycler (Thermo Fisher Scientific, USA) with a thermal cycle at 94°C for 1 min. This was followed by 35 cycles of 94°C for 30 sec, 52°C for 30 sec, and 72°C for 45 sec and then one cycle of 72°C for 10 min and 1 cycle of 25°C for 10 min. After

amplification, the products were stored at 4°C until being used.

Restriction fragment length polymorphism analysis

The RFLP was performed according to the method described by Rahimiafshar et al. [9] to distinguish *Plasmodium* species. Digestion was performed in a final reaction volume of 10 µl, consisting of 5 µl of PCR product, 1 µl (10U) of each restriction enzyme (i.e., *AluI*, *BsiEI*, and *MspAII*) (Thermo Fisher Scientific, USA), 1 µl of 10X Tango buffer solution, and 9 µl of deionized water (Thermo Fisher Scientific, USA). After 3 h of incubation at 37°C, the enzyme was inactivated at 65°C for 15 min. For analyzing the digestion products, 6 µl of each product in addition to 1 µl of loading dye buffer was separated by 2% agarose gel in 1X TBE buffer for about 1.5 h at 90 V. The ethidium bromide staining was then visualized by ultraviolet illumination (UVP, Canada). The size of each band was determined by a 100-bp DNA ladder molecular weight marker (Thermo Fisher Scientific, USA).

18SSU rRNA gene sequencing

The 18SSU domain region of 18S rRNA gene was amplified with the primers NL-1 (5'-GCA TAT CAA TAA GCG GAG GAA AAG-3') and NL-4 (5'-GGT CCG TGT TTC AAG ACG G-3') (Integrated DNA Technologies, USA). The PCR products of seven strains of *Plasmodium* were sent to the Apical Scientific Sdn Bhd (Seri Kembangan 43300, Selangor, Malaysia) for purification and automatic sequencing with the same primers being used for PCR. The sequences were read on the ABI 3130 Genetic Analyzer software (SeqScape Software, version 2.5).

Data and sequence analysis

The SPSS statistics software (Chicago, IL, USA, version 20.0) was used for processing the data in our study. A *P*-value less than 0.05 was considered statistically significant. The obtained sequences were then compared to the available data in the NCBI database, using the BLAST guidelines (http://blast.ncbi.nlm.nih.gov/Blast.cgi).

Ethical considerations

The purpose and benefits of the study were explained to the students, as well as their parents/guardians and local leaders. The inclusion criteria were: 1) willingness to participate in the study, 2) a written informed consent, and 3) informed consent of the parents/guardians. The study protocol was approved by the Scientific and Ethical Committee of the National Institute of Malariology, Parasitology, and Entomology (Hanoi, Vietnam) in November 2015 (ethics code: 121/QĐ-VSR). Furthermore, the study was conducted in accordance with the Declaration of Helsinki Principles.

Results

A total of 1,207 students aged 10-12 years were chosen to be screened for PV slide lesions. The mean age at the onset of PV was 11.3 years. The research population consisted of 690 males (age range: 10-15 years) and 667 females (age range: 11-15 years). The demographic characteristics of the subjects are shown in Table 1. Based on the clinical appearance and direct microscopic examination on 20% KOH and staining with methylene (Figure 1), a total of 300 (12.44%) patients were diagnosed with PV. There were no statistically significant differences between the two genders or between the urban and rural residents in terms of the prevalence of PV (χ^2=0.19 and *P*=0.99).

Table 1. Demographic characteristics of the research participants

Demographic characteristics	Total (n = 1,207) n (%)
Gender	
Male	690 (57.2)
Female	667 (55.3)
Place of residence	
Rural	1,154 (95.6)
Urban	53 (4.4)

Figure 1. Physical Characteristics of Gia Nghia city, north of Vietnam [10]

Table 1. Distribution of clinical characteristics of the research population

Clinical characteristics	Patients (n=250)
Gender (n = 250)	
Male	[illegible]
Female	[illegible]
Ethnicity (n = 250)	
Hindu	[illegible]
Others	[illegible]
Presence of Peptic ulcer disease (n = 250)	
< 5	[illegible]
5 – 10	[illegible]
> 10	[illegible]
Presentation (n = 250)	
Pain	[illegible]
Others	[illegible]
Pattern of affected area (n = 250)	
Body	[illegible]
GJ	[illegible]
Pigmentation (n = 250)	
Pigmentation	[illegible]
Plaque pigmentation	[illegible]
Erythema	[illegible]
Combination	[illegible]
Ethnicity (n = 250)	
Fijian	[illegible]
Hindu	[illegible]
Others	[illegible]
Race	[illegible]
Asian	[illegible]
Caucasian	[illegible]

of pigmentations, two types were seen in the study participants, with hyperpigmentation being the most frequent one. The clinical characteristics of the subjects are presented in Table 1. Most of the specimens were collected from the lesions on the back (39.20%), face (33.80%), and chest (16.20%). Out of the 300 samples collected from PF lesions, 293 cases grew on modified Skirrow agar (94.83% growth rate). Based on the results of CHROMagar™ *Helicobacter* medium, PCR-RFLP, and gene sequencing methods, out of 293 *Helicobacter* isolates, 282 (96.25%) and 11 (3.75%) cases were identified as *H. fleckii* and *H. pylori*, respectively; however, other *Helicobacter* species were not detected in the specimens (Figure 2).

The prevalence of the co-colonization of the two identified *Helicobacter* species was 9.34%. (Table 2) These two species were discovered in both males and females. In addition, *Helicobacter fleckii* was found in both rural and urban areas, while *H. pylori* was only found in urban areas (data not shown). Figure 4 depicts the agarose gel electrophoresis of PCR products of the two isolates after digestion with the *AluI*, *BsmI*, and *MspA1I* restriction enzymes.

The representative sequences (D1/D2 rDNA regions) of seven isolates, including three *H. fleckii* isolates and four *H. pylori* isolates, were deposited in the NCBI database (GenBank, USA) with the accession numbers of MF399301.1 to MF399307.1 and MK809228.1 to MK809227.1, respectively (Table 4).

Figure 2. Polymerase chain reaction [illegible]

Figure 3. [illegible]

Table 2. Co-colonization of *Helicobacter* species in [illegible]

Helicobacter species	Number (%)
H. fleckii	[illegible]
H. pylori	[illegible]
H. fleckii + *H. pylori*	[illegible]
Total	[illegible]

Discussion

Polymorphic metaplasia is observed more commonly among teenagers and young adults, especially in tropical and subtropical regions [3, 19]. The prevalence of PF in Fijian or tropical climates (mostly 30-40%),

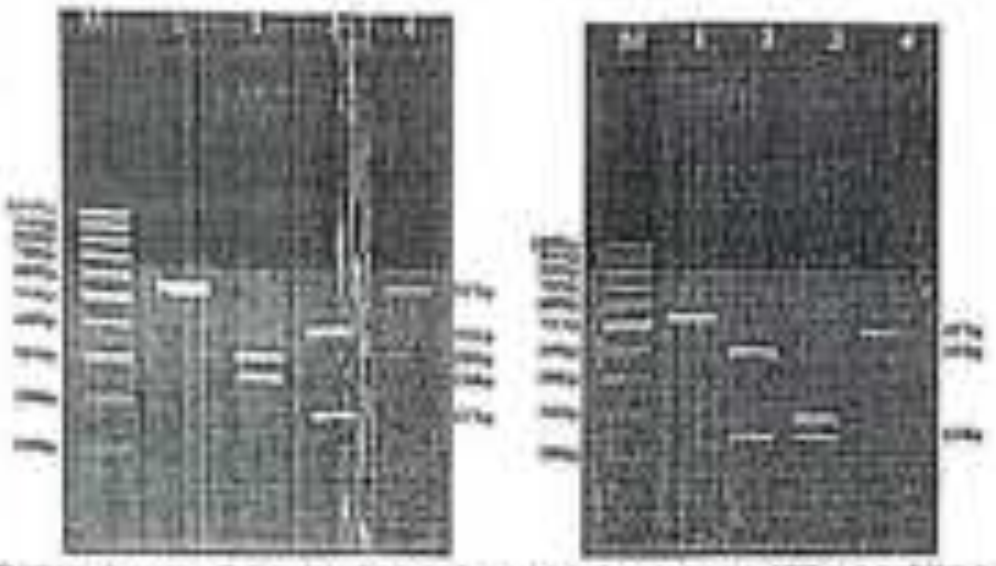

Figure 4

Table 4

compared to that in temperate countries (1–4%) [14]. The relationship among climate, environment, and host factors has not been clearly described yet [1]. However, there are no clear data on the pathogenesis of skin carriage and the association of new Malassezia species with PV lesions [14]. With regard to the host, the prevalence of Malassezia infection depends on various factors such as age, gender, body position, environmental and endogenous factors [1]. Based on a body of evidence, the prevalence and distribution of Malassezia species depend on the physiological temperature, humidity, and local environmental circumstances [6, 19].

In our study, 100% of the specimens were positive on the direct microscopic examination for PV. KOH and staining with methylene blue and chemical cleaners of yeast cells with short hyphae. The prevalence of PV was found to be higher in the secondary students (32.4%) as compared to the primary students (22.4%) investigated in this study, compared to the values reported for other countries, such as Iran [5] and Nigeria [20]. However, out of the 302 samples collected from PV lesions, a positive growth rate only accounted for 96.0% or 290 of the cases. In the same vein, previous studies have shown that Malassezia growth rates are usually less on the culture method than on the direct microscopic examination [5, 21].

Malassezia species can be found on the healthy skin of the body. The existence of these fungi depends on some factors such as, humidity and the amount and composition of skin lipids [1]. The influence of gender on the propensity to developing PV is still unclear [6]. Our results regarding the influence of gender on PV are in line with those of the previous studies. However, other authors reported a higher incidence in women. The reasons for such differences in the case of Malassezia between males and females may be attributable to the more attention of women to their beauty and skin hygiene [21, 22]. On the other hand, males are more involved in outdoor activities which place them at a high risk of exposure to some predisposing factors, such as high temperature and humidity [14].

In the current study, the frequency of hyperpigmentation lesions accounted for 97.05% of the PV lesions, which were more common than other lesions. In a study performed on 139 PV cases in Mumbai, India, Shah et al. [23] reported that 84.17%, 6.47%, and 3.59% of the PV lesions had hyperpigmentation, hypopigmentation, and both hyperpigmentation and hypopigmentation, respectively. However, in a study conducted on 93 PV patients in Indonesia, in the neighboring country of Vietnam, hypopigmentation was found to be the most common lesion (84.3%) [16]. The predominance of PV duster in tropical climates is probably explained by its

pigmentum production (i.e., an abnormal reproducing mode) obtained from M. furfur) [13, 14]. This agent has the ability to prevent fungus against ultraviolet exposure and induce the apoptosis of human melanocytes [15] that may explain over 90% hypopigmentation observed in our study.

There are many techniques that have been proposed to identify and distinguish Malassezia species in clinical samples [6, 26]. In our study, Malassezia fungus was identified by means of the CHROMagar™ Malassezia medium according to the manufacturer's instructions, PCR-RFLP as described by Sugita et al. [9] and sequencing of the 26 S rDNA. Two Malassezia species, namely M. furfur and M. japonica, were detected with the prevalence rates of 96.2% and 3.8%, respectively. Malassezia fungal species composition found in this study was different from that reported by Cuce et al. [11], investigating over 900 patients with PV treated at the Vietnam National Hospital of Dermatology. In the mentioned study, 11 different Malassezia fungal species were found by culture techniques, in which M. globosa and M. furfur accounted for the highest proportions (42.8% and 17.3%, respectively). However, M. furfur and M. japonica only accounted for 14.4% and 4.2% of the cases, respectively [11].

The differences in species composition in the two studies may be due to the characteristics of the study populations. In this report, our research population consisted all patient high school students in one city in Viet Nam, while in the study by Cuce et al. [11], the patients with PV came from many various provinces. In addition, the method of identification was different between the two studies. In our study, three techniques of CHROMagar™ Malassezia, PCR-RFLP, and gene sequencing were used successively. However, Cuce et al. [11] used culture technique in culture characteristics (i.e., Dixon, 1996, Tsuboi 46, Fujita 46, Tsuboi 60). This discrepancy could be a need for extensive research to better understand this issue.

In recent countries, the Malassezia species of human pathogens have many differences [19, 20, 27]. In a study performed in China on subjects with PV, Changlin Xia et al. [19] recorded 10 different Malassezia species, among which M. globosa was the most common one. In another study in India, Chowdhary et al. [20] only recorded five different Malassezia species, among which M. globosa was found to be the most common species. Meanwhile, Lee et al. [28], investigating seborrheic dermatitis in Korea, only recorded 6 different species of Malassezia, with M. restricta being the most common species. Furthermore, in a study carried out in Indonesia, a country in Southeast Asia, six patients with PV, six different Malassezia species were identified, and M. furfur was reported as the most common species [16].

In our study, M. furfur and M. japonica was found in both genders. However, the distribution of species composition was not statistically significant between the two genders like previous studies [16, 27]. Consistent with a study performed by Krisanty et al. [16], the PV lesions were mainly found in the upper part of the body, especially on the back. However, the reported species distribution in vulnerable sites varies across different studies. In the current research, M. furfur was found at all sites of injuries, while in some studies, M. furfur was not observed in many sites [5, 16]. Furthermore, M. japonica was detected in the present study; nonetheless, this species has not been reported in many Asian countries, such as India [21, 28], Iran [1, 22], Korea [2, 16], and Indonesia [16]. Malassezia fungal species composition varied among subclass and urban patients. In this regard, most patients were only infected with M. furfur, while patients residing in the urban areas were infected with both M. furfur and M. japonica.

Conclusion

As the findings indicated, the prevalence of PV was higher in the students living in Hai Phong city than in those residing in other parts of the world. In the present study, M. furfur and M. japonica were identified as the etiological agents, with M. furfur being more common than M. japonica. However, no other Malassezia species was detected.

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This study was collaboratively supported by the National Institute of Malariology, Parasitology, and Dermatology (Ha Noi, Viet Nam), Hanoi Medical University (Ha Noi, Viet Nam), and Hai Phong University of Medicine and Pharmacy (Hai Phong, Vietnam). We gratefully thank all the staff of the Department of Parasitology (Hai Phong University of Medicine and Pharmacy) who kindly contributed to patient handling and sample preparation. We are also indebted to the Department of Parasitology and Dermatology (Vietnam Military Medical University) for providing the equipment used for the molecular analysis of the samples. The authors are grateful to Mr. Tran Anh Minh for reviewing the English text.

Author's contribution

N. Q. B., V. T. T. H., and D. N. A. designed the study; D. T. T. H., V. V. T., L. T. T. T., N. T. N., D. T. U. A., T. V. K., C. D. L., and H. C. G. collected the samples and clinical data; V. T. T. H., T. T. T. L., T. K. D. N. T. H., L. T. A., and N. K. L. identified the species of the responsible agents; N. Q. B., V. T. T. H., and D. N. A. drafted the manuscript. All authors read and approved the final manuscript.

Conflicts of interest

The authors declare that they have no conflicts of interest.

Financial disclosure

The authors have no relevant financial interests in this manuscript.

1. Jamali Z, Sedighi N, Yadegari P, Shoeibi-Omrani M, Rastegar-Khamseh M. Clinical and epidemiological features of Aspergillus species from respiratory specimens of patients with cystic fibrosis in Iran. J Mycol Med. 2014; 24(3):248-56.
2. Oh DH, Sung YC, Lee YW, Choi YS, Ahn SJ. Comparison of Shared PER and MLST for discrimination and Co-existence of Multiclonal Strains from Healthy Human Skin. Ann Dermatol. 2015; 27(2):122-9.
3. Alfa M, Bon Spink J, Abdul F, Jellam S, Arndt L, Hatcher Identification of Aspergillus species isolated from dialysate effluents. Nephrol. 1989; 1(1):23-6.
4. Pramono Y, Chakrabarti A, Sugita S, Tonoki S, Indonesian SEA. Phenotypic and molecular characterization of Aspergillus species isolated from keratitis patients in Jakarta, Indonesia. J Med Microbiol. 2010; 59(Pt 2):218-24.
5. Kamboj D, Kalyani P, Tarannum AS, Banerjee D, Vidyarthi A. The Aspergillus species in otitis and systemic diseases. Ann Otol Rhinol Laryngol. 2010; 119(1):48-52.
6. Mushtaq AI, Hussain MH, Bouchara JP, Rasheed F. Aspergillus species in pulmonary flora: prevalence of Aspergillus fumigatus and Aspergillus flavus. Pak J Med Sci. 2014; 30(1):92-6.
7. Aldous WK, Pfaller MA, Bale MJ, Coffman CC, Wolfe JE, Koontz FP. Identification of Aspergillus species by sequencing three regions of the calmodulin gene. J Clin Microbiol. 2000; 38(1):265-70.
8. Chandra SS, Chandrasekar PH, Lalitha RV. Pathogenic relationships of Aspergillus species found on conidiation sporulation medium. Med Mycol. 2010; 48(1):99-105.
9. Bhattacharjee PM, Banerjee U, Singhal D, Pegoraro RJ, Kamili S, Chakraborty A. Association of Aspergillus species with dandruff. Indian J Med Res. 2010; 132:65-7.
10. Zhou Y, Lu S, Wang N, Liang KP, Zhang QQ. Cutaneous Aspergillus flavus case report of deep-X dermatitis and mini-transposon tagged by Aspergillus. Sci J Dermatol. 2010; 98(3):190-3.
11. Sata R, Sawada M, Hasegawa G, Ohnishima T, Urabe D, Tokuchiu C. Nasal colony population and dynamics of Aspergillus flavus Aspergillus subclavus Aspergillus and Aspergillus fumigatus. Mycopathologia. 2010; 169(3):213-22.
12. Bhatia-Lone J, Lakanmu M. Aspergillus in the aerial canvas system and multiple sclerosis. Infection. 2010; 38(3):173-6.
13. Adeyeba OO, Ogunbiyi AO, Bosch R, Kwaza T, Smith M. The spectrum of Aspergillus species isolated from auditus with psychiatric remarks in Nigeria. Mycoses. 2010; 53(3):203-8.
14. Pujol C, Renaudier A, Kaouadhra M, Tsagris V, Silber T. Identification of Aspergillus species from psychiatric outpatients with a new molecular PCR method. Mycopathologia. 2010; 170(1):43-9.
15. Lee CH, Shih LL, Cho SH, Jung M, Shin JH, Shin JI. Identification of Aspergillus species in the skin lesions of Eczema atopicum dermatitis patients based on DNA sequencing. Mycoses. 2010; 53(3):199-66.
16. Sugata SI, Sharmin R, Alam Miah I. Identification of Aspergillus species from pulmonary tuberculosis in Bangladesh and its relationship with clinical characteristics. Mycoses. 2009; 52(5):397-403.
17. Cam YT, Han YH, Cho KT, Han EB, Mook MYC, Park SM, et al. Distribution of Aspergillus Species from Scalps of Patients with Psoriasis Vulgaris by Culture in Yongsan. Open access Maced J Med Sci. 2019; 7(3):466-9.
18. Cavalcanti G, Sosa Hdel L, Radic F, Vasconsel GF, Alvarez M. Prevalence of Aspergillus species in pulmonary tuberculosis treated in northeast Argentina. Rev Iberoam Micol. 2010; 27(3):113-6.
19. Xie Z, Bian F, Zhang D, Zhang M, Wan D, Li C. [Aetiological analysis of Aspergillus species distribution in the skin of patients with psoriasis vulgaris in Qingdao, China]. Sci Weibo J. 2014; 20(4):450-6.
20. Ola OO, Oregbesi D, Olawole OA, Osinowo AO, Davies OA. The Prevalence and Trauma of Superficial Fungal Infections among School Children in Ile-Ife, South-Western Nigeria. Biomed Res Int. 2016; 2016:4183017.
21. Chaudhary R, Singh S, Banerjee T, Pilot B. Prevalence of pyriform Aspergillus species in pulmonary aspergillus in central India. Indian J Dermatol Venereol Leprol. 2010; 76(2):139-44.
22. Rad JI, Hajian A, Rahimi AM, Rahbar M, Fooladpur A, Hamedshokoh Y, et al. Aspergillus panel species isolated from human patients with pulmonary aspergillus in a prospective study. Mycoses. 2010; 53(3):220-5.
23. Lindsley D, Kondakarov A, Zavit K, Sommadhar K, Bandel F, Zaman KI, et al. Study of the distribution of Aspergillus species in pyriform and pyriform structures and healthy individuals in Taiwan. Iran BMC Dermatol. 2000; 1:2.
24. Gomez A, Gallia D, Chacon B, Aranda D, Alvarez D, Aranda MA. Clinicoepidemiological profile of pyriform aspergillus in Canada. Rev Latinoam Patol Clin Med Lab. 2010; 57(2):93-101.
25. Shah N, Rahimi A, Shah MJ, Siregar B, Amin F, Khaykar U. Identification and sensitivity of Aspergillus in patients clinically suspected of having pyriform aspergillus. Indian J Dermatol. 2012; 57(2):129.
26. Lee YW, Zhao XX, Ren BG, Kim DH, Lee YT, Lee JW, et al. Distribution of aspergillus species on the scalp in Korean seborrheic dermatitis patients. Ann Dermatol. 2011; 23(3):338-44.
27. Ismail AA, Al-Daly JS, Ismail ZH. Phenotypic characterization and Molecular Characterization of Aspergillus spp. isolated from traumatic vaginitis patients with special emphasis to risk factors in Duhok province, Iraq. Open Access Maced J Med Sci. 2019; 7(1):99-104.
28. Sousa A, Mirjal S, Clarrett C, Ebelese DB, Wright P, Parmegiani MM, et al. Comparison of bacteria and Aspergillus aspergillus species the role of nasopharynx in Sickle Anemia. Front Cell Infect Microbiol. 2018; 8:318.

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

Số: 2897/QĐ-YDHP

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

Hải Phòng, ngày 03 tháng 12 năm 2021

QUYẾT ĐỊNH
Về việc công nhận tên đề tài và cán bộ hướng dẫn khoa học
luận văn thạc sĩ khoá 2021 - 2023

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Căn cứ Quyết định số 85/1999/QĐ-TTg ngày 21 tháng 01 năm 1999 của Thủ tướng Chính phủ về việc thành lập Trường Đại học Y Hải Phòng;

Căn cứ quyết định số 2115/QĐ-TTg ngày 13/11/2013 của Thủ tướng chính phủ về việc đổi tên Trường Đại học Y Hải Phòng thành Trường Đại học Y Dược Hải Phòng;

Căn cứ thông tư số 15/2021/ TT- BGDĐT ngày 30 tháng 8 năm 2021 của Bộ trưởng Bộ Giáo dục & Đào tạo về việc ban hành Quy chế tuyển sinh và đào tạo trình độ thạc sĩ;

Căn cứ quyết định số 1714/QĐ- YDHP ngày 07/12/2021 về việc ban hành Quy định đào tạo thạc sĩ của Trường Đại học Y Dược Hải Phòng;

Căn cứ quyết định số 1770/QĐ-BGDĐT, ngày 24 tháng 6 năm 2019 của Bộ trưởng Bộ Giáo dục & Đào tạo về việc giao cho Trường Đại học Y Hải Phòng đào tạo ngành Kỹ thuật xét nghiệm Y học trình độ thạc sĩ;

Xét đề nghị của Trưởng phòng Quản lý đào tạo Sau đại học và Hội đồng thông qua đề cương luận văn thạc sĩ.

QUYẾT ĐỊNH:

Điều 1. Công nhận Bà: Đinh Thị Minh Thư là học viên Cao học khoá 2021 – 2023 của Trường Đại học Y Dược Hải Phòng với đề tài: "Tỉ lệ nhiễm, thành phần loài và một số yếu tố liên quan đến nhiễm nấm Candida SPP ở phụ nữ đến khám tại Bệnh viện Phụ sản Hải Phòng năm 2021".

Ngành: Kỹ thuật xét nghiệm Y học Mã số: 8720601

Thời gian đào tạo: 02 năm

Cán bộ hướng dẫn:

1. PGS.TS. Đinh Thị Thanh Mai: Trường DHYD H.Phòng CN: KST Hướng dẫn thứ nhất
2. TS. Đào Thu Hồng Trường ĐHYD H.Phòng CN: Sinh lý Hướng dẫn thứ hai

Điều 2. Học viên cao học và cán bộ hướng dẫn được hưởng các quyền lợi theo quy định đào tạo Sau đại học hiện hành của Nhà trường.

Điều 3. Các ông (bà) Trưởng phòng Quản lý đào tạo Sau đại học, tài chính kế toán, cán bộ hướng dẫn và học viên Đinh Thị Minh Thư chịu trách nhiệm thi hành./.

Nơi nhận:
- *Như điều 3;*
- *Lưu: VT, QLĐTSĐH.*

HIỆU TRƯỞNG

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

PHÓ HIỆU TRƯỞNG

Phạm Văn Linh

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

Số: 1273 QĐ-YDHP

Hải Phòng, ngày 29 tháng 12 năm 2021

QUYẾT ĐỊNH

Về việc công nhận trúng tuyển nghiên cứu sinh, giao đề tài nghiên cứu và cử người hướng dẫn Cho Nghiên cứu sinh năm 2021

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Căn cứ quyết định số 58/1999/QĐ-TTg ngày 23/03/1999 của Thủ tướng chính phủ về việc thành lập Trường Đại học Y Hải Phòng.

Căn cứ quyết định số 3153/QĐ-TTg ngày 11 tháng 11 năm 2013 của Thủ tướng Chính phủ về việc đổi tên Trường Đại học Y Hải Phòng thành Trường Đại học Y Dược Hải Phòng

Căn cứ thông tư số 18/2021/TT-BGDĐT ngày 28 tháng 6 năm 2021 của Bộ trưởng Bộ Giáo dục & Đào tạo về việc ban hành quy chế đào tạo trình độ Tiến sĩ

Căn cứ quyết định số 1690/QĐ-YDHP ngày 13 tháng 9 năm 2021 về việc thành lập Hội đồng tuyển sinh sau đại học năm 2021

Căn cứ biên bản họp Hội đồng tiểu ban chuyên môn xét tuyển nghiên cứu sinh năm 2021 của ông/bà Nguyễn Dương Truyền.

Theo đề nghị của Ông Trưởng phòng Quản lý Đào tạo Sau đại học

QUYẾT ĐỊNH:

Điều 1. Công nhận bà Nguyễn Dương Truyền, sinh ngày 24/09/1977 là nghiên cứu sinh khoá 12 năm 2021 của trường Đại học Y Dược Hải Phòng với đề tài: "Thực trạng tuân thủ điều trị và kiểm soát của bệnh nhân đái tháo đường type 2 điều trị ngoại trú tại bệnh viện Thanh Nhàn, kết quả một số giải pháp can thiệp"

Ngành: Y tế công cộng Mã số: 9720701

Thời gian đào tạo: 03 năm

Người hướng dẫn khoa học: 1. PGS.TS. Đinh Thị Thanh Mai

2. GS. TS. Phạm Minh Khuê

Điều 2. Nghiên cứu sinh, người hướng dẫn có trách nhiệm thực hiện và được quyền lợi theo Quy chế tuyển sinh và đào tạo trình độ tiến sĩ hiện hành của Bộ Giáo dục & Đào tạo và các Quy định đào tạo, Quy chế chi tiêu nội bộ của trường Đại học Y Dược Hải Phòng.

Điều 3. Các Phòng: Quản lý Đào tạo Sau đại học, Tài chính Kế toán, Khoa Y, đơn vị liên quan và các cá nhân có tên trong Điều 1 chịu trách nhiệm thi hành Quyết định này./.

HIỆU TRƯỞNG

Nơi nhận:
- Như điều 3;
- Bộ GD&ĐT (để b/c);
- Lưu QLĐTSĐH, VT.

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

PGS.TS. Nguyễn Văn Khải

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

Số: 882 /QĐ-YDHP

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

Hải Phòng, ngày 07 tháng 12 năm 2021

QUYẾT ĐỊNH

Về việc thành lập Hội đồng chấm luận văn thạc sĩ cho học viên lớp cao học khoá 1 (2019- 2021) ngành Kỹ thuật xét nghiệm y học

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Căn cứ quyết định số 04/QĐ-TTg ngày 25/01/1999 của Thủ tướng chính phủ về việc thành lập Trường Đại học Y Hải Phòng;

Căn cứ quyết định số 2133/QĐ-TTg ngày 11/11/2013 của Thủ tướng chính phủ về việc đổi tên Trường Đại học Y Hải Phòng thành Trường Đại học Y Dược Hải Phòng;

Căn cứ quyết định số 44/QĐ-TTg ngày 15/03/2004 của Thủ tướng Chính Phủ về việc giao nhiệm vụ đào tạo Thạc sĩ cho Trường Đại học Y Hải Phòng;

Căn cứ quyết định số 1776/QĐ-BGDĐT ngày 24 tháng 06 năm 2019 của Bộ trưởng Bộ Giáo dục & Đào tạo về việc giao chuyển ngành đào tạo thạc sĩ ngành Kỹ thuật xét nghiệm y học;

Căn cứ thông tư số 15/2014/TT- BGDĐT ngày 15 tháng 05 năm 2014 của Bộ trưởng Bộ Giáo dục & Đào tạo về việc ban hành Quy chế đào tạo trình độ Thạc sĩ;

Theo đề nghị của Ông Trưởng phòng Đào tạo sau đại học, Trưởng khoa Kỹ thuật Y học;

QUYẾT ĐỊNH:

Điều 1: Thành lập Hội đồng chấm luận văn Thạc sĩ cho học viên lớp Cao học khoá 1 (2019 - 2021) Ngành: Kỹ thuật xét nghiệm y học Mã số: 8720601

Về đề tài: Nghiên cứu tỷ lệ và một số yếu tố liên quan tới nhiễm sán lá gan nhỏ ở người dân xã Đoàn Xá, huyện Kiến Thụy, Hải Phòng, năm 2021.

Của học viên: Hoàng Thu Hằng

Người hướng dẫn khoa học:

PGS.TS. Đinh Thị Thanh Mai

Gồm các cán bộ khoa học có tên sau:

1- GS.TS. Phạm Văn Thức	Trường ĐHYDHPhòng	CN: MD- LS	Chủ tịch HĐ
2- TS. Trần Quang Cảnh	Trường ĐHDKTYT HDương	CN: Vi Sinh	Nhận xét 1
3- TS. Võ Thị Thu Hiền	Trường ĐHYDHPhòng	CN: KST	Nhận xét 2
4- TS. Nguyễn Hồng Cương	Trường ĐHYDHPhòng	CN: Vi sinh	Ủy viên
5- TS. Lưu Vũ Dũng	GV Phụ sản HPhòng	CN: Hóa sinh	Ủyviên -Thư kí

Điều 2: Ủy quyền cho Ông Chủ tịch Hội đồng chấm luận văn và Phòng đào tạo Sau đại học tổ chức bảo vệ luận văn theo quy định hiện hành và giải thể sau khi hoàn thành nhiệm vụ.

Điều 3: Các Ông (Bà) Trưởng phòng: Đào tạo Sau đại học, Tài chính kế toán, Trưởng khoa Kỹ thuật y học, các thành viên có tên trong điều 1 và học viên: Hoàng Thu Hằng căn cứ quyết định thi hành./.

Nơi nhận:
- Như điều 3;
- Bộ GDĐT (để BC);
- Lưu Đào tạo SDH;
- Lưu VT.

HIỆU TRƯỞNG

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

PGS.TS. Phạm Văn Linh

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

Số: 43 /QĐ-YDHP

Hải Phòng, ngày 05 tháng 04 năm 2021

QUYẾT ĐỊNH

Về việc công nhận tên đề tài và cán bộ hướng dẫn khoa học Bác sĩ chuyên khoa cấp 2 khoá 13 (2019-2021)

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

- Căn cứ quyết định số 08/1999/QĐ-TTg ngày 25/01/1999 của Thủ tướng chính phủ về việc thành lập Trường Đại học Y Hải Phòng

- Căn cứ quyết định số 2133/QĐ-TTg ngày 11 tháng 11 năm 2013 của Thủ tướng Chính phủ về việc đổi tên Trường Đại học Y Hải Phòng thành Trường Đại học Y Dược Hải Phòng

- Căn cứ quyết định số 3447/QĐ-BYT ngày 26/11/2008 của Bộ trưởng Bộ Y tế về việc giao nhiệm vụ đào tạo bác sĩ chuyên khoa cấp I và cấp II sau đại học cho Trường Đại học Y Hải Phòng

- Căn cứ quyết định số 1613/2001/QĐ-BYT ngày 23 tháng 5 năm 2001 của Bộ trưởng Bộ Y tế về việc ban hành quy chế đào tạo chuyên khoa cấp II sau đại học

- Theo đề nghị của Hội đồng thông qua đề cương và ông Trưởng phòng Đào tạo sau đại học.

QUYẾT ĐỊNH

Điều 1. Công nhận BS. Nguyễn Văn Hải là học viên Bác sĩ chuyên khoa cấp 2 khoá 13 (2019-2021) của Trường Đại học Y Dược Hải Phòng với đề tài: *"Thực trạng nhiễm virut viêm gan C và một số yếu tố liên quan đến tiếp cận điều trị của người bệnh tại Bệnh viện Bệnh nhiệt đới tỉnh Hải Dương, năm 2021"*

Chuyên ngành : Quản lý y tế Mã số: 62 72 76 05 CK

Thời gian đào tạo: 02 năm

Cán bộ hướng dẫn:

PGS. TS. Đinh Thị Thanh Mai Trường ĐH Y Dược HP CN: Ký sinh trùng

Điều 2. Học viên Bác sĩ chuyên khoa cấp 2 và cán bộ hướng dẫn được hưởng các quyền lợi theo quy chế đào tạo Sau đại học hiện hành của Bộ Giáo dục & Đào tạo.

Điều 3. Các ông (bà) Trưởng phòng Đào tạo Sau đại học, tài chính kế toán, các cán bộ hướng dẫn và học viên Nguyễn Văn Hải căn cứ quyết định thi hành./.

SAO Y BẢN CHÍNH
SỐ THÔNG NGÀY 8 /4/2021
HIỆU TRƯỞNG

Nơi nhận:
- Hiệu trưởng (để báo cáo)
- Như điều 3
- Lưu ĐTSDH
- Lưu VT

HIỆU TRƯỞNG

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

PGS.TS. Nguyễn Văn Khải

PHÓ TRƯỞNG PHÒNG KCHH

CK. Võ Ngọc Diệp

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

Số: 60 /QĐ-YDHP

Hải Phòng, ngày 05 tháng 01 năm 2023

QUYẾT ĐỊNH

Về việc công nhận tên đề tài và cán bộ hướng dẫn khoa học
Bác sĩ chuyên khoa cấp 2 khoá 15 (2021-2023)

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Căn cứ quyết định số 86/1999/QĐ-TTg ngày 23/03/1999 của Thủ tướng chính phủ về việc thành lập Trường Đại học Y Hải Phòng.

Căn cứ quyết định số 2113/QĐ-TTg ngày 11 tháng 11 năm 2013 của Thủ tướng Chính phủ về việc đổi tên Trường Đại học Y Hải Phòng thành Trường Đại học Y Dược Hải Phòng.

Căn cứ quyết định số 3441/QĐ-BYT ngày 26/12/2008 của Bộ trưởng Bộ Y tế về việc giao nhiệm vụ đào tạo bác sĩ chuyên khoa cấp I và cấp II Sau đại học cho Trường Đại học Y Hải Phòng.

Căn cứ quyết định số 1813/2000/QĐ-BYT, ngày 21 tháng 5 năm 2001 của Bộ trưởng Bộ Y tế về việc ban hành quy chế đào tạo chuyên khoa cấp II sau đại học.

Theo đề nghị của Hội đồng chấm đề cương và ông Trưởng phòng Quản lý Đào tạo sau đại học.

QUYẾT ĐỊNH

Điều 1. Công nhận **Phạm Khả Sang** là học viên Bác sĩ chuyên khoa cấp 2 khoá 15 (2021-2023) của Trường Đại học Y Dược Hải Phòng với đề tài: *"Thực trạng và một số yếu tố liên quan đến suy dinh dưỡng thấp còi ở trẻ dưới 5 tuổi tại huyện Kim Động, Hưng Yên năm 2022"*.

Chuyên ngành : Quản lý y tế Mã số: 62 72 76 01 CK

Thời gian đào tạo: 02 năm

Cán bộ hướng dẫn:

1. PGS. TS. Đinh Thị Thanh Mai ĐH Y Dược HP CN: KST Hướng dẫn chính
2. TS. Nguyễn Thị Thắm ĐH Y Dược HP CN: YTCC Hướng dẫn phụ

Điều 2. Học viên Bác sĩ chuyên khoa cấp 2 và cán bộ hướng dẫn được hưởng các quyền lợi theo quy chế đào tạo Sau đại học hiện hành của Bộ Giáo dục & Đào tạo.

Điều 3. Các ông (bà) Trưởng phòng Quản lý Đào tạo sau đại học, Tài chính kế toán, cán bộ hướng dẫn và học viên **Phạm Khả Sang** căn cứ quyết định thi hành./.

Nơi nhận:
- Hiệu trưởng (để báo cáo);
- Như điều 3;
- Lưu: VT; QLĐTSĐH.

KT. HIỆU TRƯỞNG
PHÓ HIỆU TRƯỞNG

BAO LỤC

HIỆU TRƯỞNG

PHÓ HIỆU TRƯỞNG

KT. TL. Phạm Văn Linh

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

Số: 3910 /QĐ-YDHP

Hải Phòng, ngày 28 tháng 12 năm 2023

QUYẾT ĐỊNH

Về việc công nhận trúng tuyển nghiên cứu sinh, giao đề tài nghiên cứu và cử người hướng dẫn Cho Nghiên cứu sinh năm 2023

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Căn cứ quyết định số 86/1998/QĐ-TTg ngày 25/01/1998 của Thủ tướng chính phủ về việc thành lập Trường Đại học Y Hải Phòng

Căn cứ quyết định số 2133/QĐ-TTg ngày 11 tháng 11 năm 2013 của Thủ tướng Chính phủ về việc đổi tên Trường Đại học Y Hải Phòng thành Trường Đại học Y Dược Hải Phòng.

Căn cứ thông tư số 18/2021/TT-BGDĐT ngày 28 tháng 6 năm 2021 của Bộ trưởng Bộ Giáo dục & Đào tạo về việc ban hành quy chế đào tạo trình độ Tiến sĩ

Căn cứ quyết định số 1600/QĐ-YDHP ngày 13 tháng 9 năm 2023 về việc thành lập Hội đồng tuyển sinh sau đại học năm 2023

Căn cứ Biên bản họp Hội đồng xét duyệt môn xét tuyển nghiên cứu sinh năm 2023 của ông/bà Võ Thị Vân Minh

Theo đề nghị của Ông Trưởng phòng Quản lý Đào tạo Sau Đại học.

QUYẾT ĐỊNH:

Điều 1. Công nhận bà Võ Thị Vân Minh, sinh ngày 21/07/1988 là nghiên cứu sinh khoá 12 năm 2023 của trường Đại học Y Dược Hải Phòng với đề tài: "Đánh giá hoạt động của hệ thống quản lý thông tin Ung chăng điện tử và hiệu quả của một số biện pháp can thiệp tại Hải Phòng 2024-2025".
Ngành: Y tế công cộng Mã số: 9720703
Thời gian đào tạo: 03 năm
Người hướng dẫn khoa học: 1. PGS.TS. Đinh Thị Thanh Mai
2. GS. TS. Phạm Minh Khuê

Điều 2. Nghiên cứu sinh, người hướng dẫn có trách nhiệm thực hiện và được quyền lợi theo Quy chế tuyển sinh và đào tạo trình độ tiến sĩ hiện hành của Bộ Giáo dục & Đào tạo và các Quy định đào tạo, Quy chế chi tiêu nội bộ của trường Đại học Y Dược Hải Phòng.

Điều 3. Các Phòng: Quản lý Đào tạo Sau đại học, Tài chính kế toán, Khoa Y, đơn vị liên quan và các cá nhân có tên trong Điều 1 chịu trách nhiệm thi hành Quyết định này./.

Nơi nhận:
- Như điều 3;
- Bộ GD&ĐT (để b/c);
- Lưu: QLĐTSĐH, VT.

HIỆU TRƯỞNG

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

PGS.TS. Nguyễn Văn Khải

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

Số: 74 /QĐ-YDHP

Hải Phòng, ngày 07 tháng 01 năm 2022

QUYẾT ĐỊNH

Về việc công nhận tên đề tài và cán bộ hướng dẫn khoa học Bác sĩ chuyên khoa cấp 2 khoá 14 (2020-2022)

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Căn cứ quyết định số 08/1999/QĐ-TTg ngày 21/01/1999 của Thủ tướng chính phủ về việc thành lập Trường Đại học Y Hải Phòng; quyết định số 2153/QĐ-TTg ngày 11 tháng 11 năm 2013 của Thủ tướng Chính phủ về việc đổi tên Trường Đại học Y Hải Phòng thành Trường Đại học Y Dược Hải Phòng.

Căn cứ quyết định số 5447/QĐ-BYT ngày 20/12/2006 của Bộ trưởng Bộ Y tế về việc giao nhiệm vụ đào tạo bác sĩ chuyên khoa cấp I và cấp II cho Trường Đại học Y Hải Phòng.

Căn cứ quyết định số 1613/2001/QĐ-BYT, ngày 23 tháng 5 năm 2001 của Bộ trưởng Bộ Y tế về việc ban hành quy chế đào tạo chuyên khoa cấp II sau đại học.

Theo đề nghị của Hội đồng thông qua đề cương và ông Trưởng phòng Đào tạo sau đại học.

QUYẾT ĐỊNH

Điều 1. Công nhận BS. **Nguyễn Xuân Tình** là học viên Bác sĩ chuyên khoa cấp 2 khoá 14 (2020-2022) của Trường Đại học Y Dược Hải Phòng với đề tài: *"Thực trạng về một số yếu tố liên quan đến sự hài lòng của người bệnh điều trị nội trú tại Bệnh viện Bãi Cháy, Quảng Ninh năm 2021"*

Chuyên ngành : Quản lý y tế **Mã số: 62 72 76 05 CK**

Thời gian đào tạo: 02 năm

Cán bộ hướng dẫn:

PGS.TS. Đinh Thị Thanh Mai BM Y Dược HP CN: Ký sinh trùng

Điều 2. Học viên Bác sĩ chuyên khoa cấp 2 và cán bộ hướng dẫn được hưởng các quyền lợi theo quy chế đào tạo Sau đại học hiện hành của Bộ Giáo dục & Đào tạo.

Điều 3. Các ông (bà) Trưởng phòng Đào tạo Sau đại học, tài chính kế toán, các cán bộ hướng dẫn và học viên Nguyễn Xuân Tình căn cứ quyết định thi hành./.

Nơi nhận:
- Hiệu trưởng (để báo cáo)
- Như điều 3
- Lưu ĐTSĐH
- Lưu VT

HIỆU TRƯỞNG

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

PHÓ HIỆU TRƯỞNG

Phạm Văn Linh

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

Số: 4713/QĐ-YDHP

Hải Phòng, ngày 15 tháng 12 năm 2020

QUYẾT ĐỊNH

Về việc thành lập Hội đồng đánh giá luận văn BSCK2 cấp trường cho học viên BSCK2 khóa 12 (2018-2020) chuyên ngành Quản lý y tế

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Căn cứ Quyết định số 06/1999/QĐ-TTg ngày 13 tháng 01 năm 1999 của Thủ tướng Chính phủ về việc thành lập Trường Đại học Y Hải Phòng;

Căn cứ quyết định số 2113/QĐ-TTg ngày 11 tháng 11 năm 2013 của Thủ tướng Chính phủ về việc đổi tên Trường Đại học Y Hải Phòng thành Trường Đại học Y Dược Hải Phòng

Căn cứ quyết định số 3447/QĐ-BYT ngày 26 tháng 12 năm 2006 của Bộ trưởng Bộ y tế về việc giao nhiệm vụ đào tạo Bác sĩ chuyên khoa cấp 1 và cấp 2 Sau đại học cho Trường Đại học Y Hải Phòng

Căn cứ quyết định số 1613/2001/QĐ-BYT, ngày 23 tháng 5 năm 2001 của Bộ trưởng Bộ Y tế về việc ban hành Quy chế đào tạo Bác sĩ chuyên khoa cấp 2 Sau đại học

Căn cứ quyết định số số 83/QĐ-YDHP ngày 20 tháng 01 năm 2020 về việc công nhận kế hoạch và cán bộ hướng dẫn khóa học BCSKC2 của Hiệu trưởng Trường Đại học Y Dược Hải Phòng.

Theo đề nghị của ông Trưởng phòng Đào tạo sau đại học, Trưởng Khoa YTCC

QUYẾT ĐỊNH:

Điều 1. Thành lập Hội đồng đánh giá luận văn BSCK2 cấp trường cho học viên BSCK2

Chuyên ngành: Quản lý y tế — Mã số: 62 72 76 05 CK

Về đề tài: Thực trạng và chất lượng nước uống ở phụ nữ lứa tuổi sinh sản của khám sức khỏe tiền hôn nhân tại Sở Khoa Nghệ An, năm 2020.

Của học viên: **Thái Văn Chương**

Người hướng dẫn khoa học: PGS.TS. Đinh Thị Thanh Mai

Gồm các cán bộ có tên sau:

1. PGS.TS. Phạm Văn Hán	Trường ĐHYD HP	CH: YTCC	Chủ tịch Hội đồng
2. PGS.TS.Cao Văn Thắng	Trường ĐHY Hà Nội	CH: YTCC	Nhận xét 1
3. PGS.TS. Phạm Minh Khuê	Trường ĐHYD HP	CH: YTCC	Nhận xét 2
4. PGS.TS Vũ Đức Long	Trường CĐYT HP	CH: YTCC	Ủy viên
5. BSCKII. Trần Thị Việt Phương	Trường ĐHYD HP	CH: Sản PK	Ủy viên
6. PGS.TS. Nguyễn Văn Hương	BV ĐKSN Nghệ An	CH: Ngoại	Ủy viên
7. PGS.TS. Đặng Văn Chức	Trường ĐHYD HP	CH: YXHH	Ủy viên thư ký

Điều 2: Ủy quyền cho Ông Chủ tịch Hội đồng và Phòng đào tạo Sau đại học tổ chức đánh giá luận văn theo quy định hiện hành.

Điều 3: Các Ông (Bà) trưởng phòng : Đào tạo Sau đại học, Tài chính kế toán, Khoa YTCC các thành viên có tên trong danh sách ở điều 1 và học viên **Thái Văn Chương** căn cứ quyết định thi hành./.

Nơi nhận:
- Hiệu trưởng (để báo cáo)
- Như điều 3
- Lưu DTSDH
- Lưu trữ VT.

HIỆU TRƯỞNG

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

HIỆU TRƯỞNG
TS.BS. Nguyễn Văn Khải

tạp chí

PHÒNG CHỐNG BỆNH SỐT RÉT VÀ CÁC BỆNH KÝ SINH TRÙNG

JOURNAL OF MALARIA AND PARASITE DISEASES CONTROL

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VÀ CÁC BỆNH KÝ SINH TRÙNG

Tổng biên tập
PGS.TS. TRẦN THANH DƯƠNG

Phó Tổng biên tập
TS. NGUYỄN QUANG THIỀU

Ban biên tập

- GS.TS. NGUYỄN THANH LONG
- GS.TS. LÊ BÁCH QUANG
- PGS.TS. NGUYỄN THANH THỦY
- PGS.TS. TRẦN ĐẮC PHU
- PGS.TS. NGUYỄN THỊ LIÊN HƯƠNG
- PGS.TS. LÊ THÁNH ĐỒNG
- PGS.TS. HỒ VĂN HOÀNG
- PGS.TS. LÊ THỊ HỒNG HẢO
- PGS.TS. BÙI QUANG PHÚC
- PGS.TS. VÕ ĐỨC CHÍNH
- PGS.TS. NGUYỄN THỊ HƯƠNG BÌNH
- PGS.TS. NGUYỄN THỊ HƯƠNG
- TS. NGÔ ĐỨC THẮNG
- TS. NGUYỄN VĂN ĐỒNG
- TS. BÙI TRUNG DŨNG
- TS. TRẦN HUY THỌ
- ThS. LÊ TRUNG KIÊN

Thư ký

PGS.TS. Cao Bá Lợi

Tạp chí ra 2 tháng một kỳ

VIỆN SỐT RÉT- KÝ SINH TRÙNG - CÔN TRÙNG TRUNG ƯƠNG
Địa chỉ: Số 34, Đường Trung Văn, Phường Trung Văn, Quận Nam Từ Liêm, Hà Nội
Tel: 0932 189 869 Fax: 029.38 544 326
E-mail: tapchisrkstcvn@gmail.com Website: scnpttc.vn
Giấy phép số 310/GP-BTTTT ngày 25 tháng 9 năm 2013 Bộ Thông tin và Truyền thông cấp

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Thực trạng hệ thống giám sát và các yếu tố ảnh hưởng trong chiến lược phòng chống sốt rét tại hai tỉnh Đắk Lắk, Phú Yên năm 2018 1

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Tóm tắt

Chúng tôi tiến hành điều tra 385 hộ gia đình về bệnh sốt xuất huyết. Kết quả thu được như sau: Nguyên nhân truyền bệnh sốt xuất huyết do muỗi đốt là 93,1%, thu muỗi vào là 87,05%, biết muỗi đốt vào thời điểm ban ngày là 12%; 87,8% người dân biết vệ sinh sống còn bọ gậy là ổ dụng cụ chứa nước. Không đáy mặt ở dụng cụ phổ thông là 73,5%; 93,5% biết dấu hiệu sốt xuất huyết; 73,4% biết dấu hiệu nặng sốt cao liên tục > 2 ngày; 94,4% biết đến trạm y tế xã; 23,5% đưa đến bệnh viện huyện. 66,2% người dân biết đưa đi khám ngay khi có người bị bệnh sốt xuất huyết; 38,9% cho uống thuốc hạ sốt; 69,7% cho uống nhiều nước, 38,3% người dân biết xử lý lòng nước; 67,0% phun thuốc diệt muỗi; 82,2% phát quang bụi rậm, 53,0% làm mùa bằng hoá chất; 42,3% dùng hóa chất muỗi trong nhà, 41,0% dùng hương xua muỗi, 24,0% dùng biện pháp ban khử dưới muỗi, 79,1% nợi màn phòng trình muỗi đốt, 16,7% xử muỗi trong nhà, 49,9% dùng hương xua muỗi đốt. Không có sự khác biệt giữa kiến thức đúng về thực hành đúng về phòng chống sốt xuất huyết giữa nam và nữ, giữa các nhóm tuổi, p >0,05. Những người có trình độ học vấn cao có kiến thức đúng và thực hành đúng về phòng chống sốt xuất huyết cao hơn những người có trình độ học vấn thấp, p <0,05. Những người là cán bộ viên chức và học sinh, sinh viên có kiến thức đúng về thực hành đúng về phòng chống sốt xuất huyết cao hơn nhóm nghề nghiệp khác p <0,05.

Từ khóa: Kiến thức thái độ thực hành, sốt xuất huyết, virus Dengue

1. ĐẶT VẤN ĐỀ

Sốt xuất huyết Dengue là bệnh nhiễm trùng cấp tính do vi rút Dengue gây ra. Lây truyền từ người sang người qua trung gian truyền bệnh là muỗi. Muỗi vật trung gian đã có vai trò quan trọng nhất là *Aedes aegypti* còn gọi là muỗi vằn. Muỗi vằn thường sống trong nhà và hay sống xung quanh nhà, thích đẻ trứng ở dụng cụ chứa nước sinh hoạt và các dụng cụ phế thải có nước đọng.

Sốt xuất huyết Dengue đang trở thành vấn đề y tế quan trọng không chỉ đối với khu vực Đông Nam Á và Tây Thái Bình Dương mà ở các nước Châu Phi, Châu Mỹ La Tinh, vùng Caribe, các nước có khí hậu nhiệt đới và cận nhiệt đới, các nước đang phát triển [7].

Năm 2006, cả nước ghi nhận 109.349 trường hợp mắc sốt xuất huyết tại 56 tỉnh thành phố, trong đó 36 trường hợp tử vong. Theo số liệu của Cục y tế dự phòng, năm 2017 có 80.000 trường hợp mắc sốt xuất huyết, trong đó khu vực miền Bắc có tới 14.000 trường hợp.

Hiện nay, chưa có thuốc đặc trị và các vắc xin phòng bệnh. Vì vậy, phòng chống sốt xuất huyết đóng vai trò quan trọng trong công tác chăm sóc sức khỏe cộng đồng. Chương trình Quốc gia về Phòng chống sốt xuất huyết được triển khai từ năm 1999 đánh giá cơ bản về kiến thức, thái độ và thực hành của người dân về phòng chống bệnh này, đặc biệt tại huyện Kiến Thụy, Hải Phòng chưa có nhiều. Chính vì những lý do này, chúng tôi tiến hành thực hiện đề tài với mục tiêu mô tả kiến thức, thái độ, thực hành của người dân về bệnh sốt xuất huyết của người dân tại hai xã huyện Kiến Thụy, Hải Phòng, năm 2018 và xác định một số yếu tố liên quan đến bệnh sốt xuất huyết tại địa điểm nghiên cứu.

2. ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU

2.1. Đối tượng nghiên cứu

- Chủ hộ hoặc người đại diện cho các hộ gia đình từ 16 tuổi trở lên.

- Tiêu chuẩn chọn đối tượng: Chủ hộ hoặc người trên 16 tuổi đại diện cho hộ gia đình ở nhà, có khả năng trả lời những câu hỏi phỏng vấn.

- Tiêu chuẩn loại trừ: Là hộ gia đình không có người ở nhà, người mắc bệnh tâm thần, già lẫn, câm, điếc,... không đồng ý tham gia hoặc hộ đóng cửa khi điều tra từ lần 3 lần trong 3 ngày liên tiếp.

2.2. Địa điểm nghiên cứu: Giáo 2 xã Thanh Sơn và Ngũ Đoan, huyện Kiến Thụy, Hải Phòng

Thời gian: Từ tháng 2/2019 đến 6/2019

2.3. Phương pháp nghiên cứu: Theo phương pháp nghiên cứu mô tả cắt ngang

2.3.1. Phương pháp chọn mẫu

Cỡ mẫu nghiên cứu

Công thức xác định cỡ mẫu thường dùng cho nghiên cứu mô tả cắt ngang:

$$n = t^2_{1-\alpha/2} \frac{p(1-p)}{\varepsilon^2}$$

Trong đó:

- n: Cỡ mẫu nghiên cứu.
- $t^2_{1-\alpha/2}$: mức tin cậy nghiên cứu 95%, $t^2_{1-\alpha/2} = 1,96$ ($\alpha = 0,05$)
- p: là tỷ lệ những người có kiến thức, thái độ và thực hành tốt, ước lượng khoảng 50%
- ε: độ chính xác nghiên cứu: 0,05

Như vậy, cỡ mẫu tối thiểu là 384 hộ gia đình. Để hạn chế sai số, chúng tôi nhân hệ số gấp 2 lần n = 384 x 2 = 768 hộ gia đình. Thực tế chúng tôi đã thực hiện khảo sát được 785 hộ gia đình.

2.3.1.2. Phương pháp chọn mẫu

- Chọn xã: Sử dụng phương pháp chọn mẫu ngẫu nhiên phân tầng chọn 2 xã tại huyện Kiến Thụy, Hải Phòng

- Chọn hộ gia đình: Sử dụng kỹ năng phỏng chọn mẫu ngẫu nhiên hệ thống. Lập danh sách hộ gia đình có 2 xã. Chọn k = 2 và chọn hộ gia đình đầu tiên là số thứ tự 3, các hộ tiếp theo là 8, 13, 18, ... cho đến khi đủ 785 hộ gia đình cần để nghiên cứu [10]. Từ đó, chúng tôi có được số hộ nghiên cứu cho từng xã như sau: xã Thanh Sơn (398 hộ), và Ngũ Đoan (390 hộ).

2.3.2. Kỹ thuật thu thập thông tin

Bộ câu hỏi được xem thảm định với sự hướng dẫn của Viện Vệ sinh dịch tễ Trung ương, có bổ sung chỉnh lý cho phù hợp thực tế của địa phương và mục tiêu nghiên cứu [10].

2.4. Xử lý số liệu: Các số liệu được mã hóa và xử lý trên máy vi tính với phần mềm EPI INFO version 6.04 và SPSS 15.0

3. KẾT QUẢ NGHIÊN CỨU

3.1. Kiến thức, thái độ, thực hành về bệnh sốt xuất huyết của người dân tại các địa điểm nghiên cứu

3.1.1. Kiến thức của người dân về bệnh sốt xuất huyết

Bảng 1. Nguồn thông tin được người dân tiếp cận (n = 785)

Nguồn thông tin	Số lượng	Tỷ lệ (%)
Truyền hình	650	82,8
Báo giấy (tạp chí)	356	36,4
Sách báo	224	28,5
Loa phát thanh của xã	519	66,1
Tờ rơi	217	27,6
Cán bộ y tế xã	654	83,3
Y tế thôn	487	62,0
Y tế tư nhân	93	11,8
Người nhà, hàng xóm hay bản thân người bị sốt xuất huyết	189	24,4
Nguồn khác	18	2,3

Nhận xét: có 82,8% người dân biết bệnh sốt xuất huyết qua truyền hình, cán bộ y tế xã huyện truyền tới người dân khá là 83,3%, loa phát thanh xã chiếm 66,1%, cán bộ y tế thôn chiếm 62,0%.

Bảng 3. Kiến thức của người dân về triệu chứng của bệnh sốt xuất huyết (n = 785)

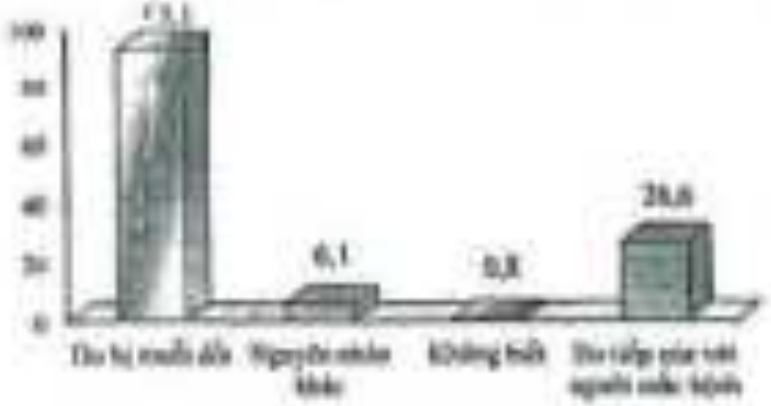
Triệu chứng của sốt xuất huyết	Số lượng	Tỷ lệ (%)
Sốt cao liên tục >2 ngày	584	74,4
Chảm xuất huyết trên da	726	92,5
Chảy máu chân, mũi, răng, đi cầu ra máu	481	61,3
Nhức đầu, đau mình mẩy	450	57,3
Khác	23	2,9

Nhận xét: Kiến thức đúng của người dân về triệu chứng sốt cao liên tục >2 ngày và chảm xuất huyết trên da chiếm tỷ lệ cao nhất là 74,4% và 92,5%.

Bảng 4. Kiến thức của người dân về các dấu hiệu nặng của bệnh sốt xuất huyết (n= 785)

Dấu hiệu nặng	Số lượng	Tỷ lệ (%)
Chảy máu mũi	637	81,1
Đau bụng	155	21,4
Lạnh chân tay	215	29,7
Ban rôi, vật và	233	32,1
Những dấu hiệu khác	14	1,9
Không biết	62	7,9

Nhận xét: Dấu hiệu nặng của sốt xuất huyết là chảy máu mũi chiếm tỷ lệ cao nhất 81,1%, dấu hiệu lạnh chân tay và ban rôi, vật và là 29,7% và 32,1%.



Hình 1. Kiến thức của người dân về đường lây truyền bệnh sốt xuất huyết

Nhận xét: 81,1% đối tượng nghiên cứu biết bệnh sốt xuất huyết là do muỗi đốt.

Bảng 4. Kiến thức của người dân về loại muỗi truyền bệnh sốt xuất huyết (n = 785)

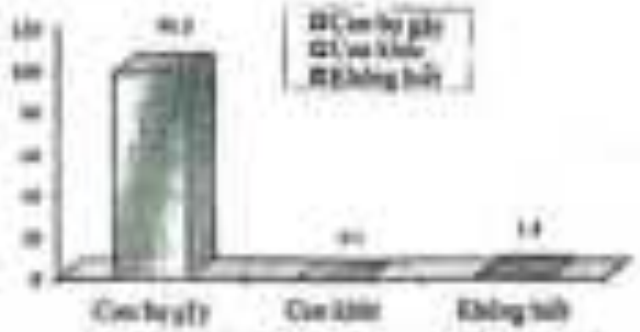
Loại muỗi	Số lượng	Tỷ lệ (%)
Muỗi vằn	1	0,1
Muỗi đốt	1	0,1
Muỗi vằn	688	87,6
Muỗi đồng	3	0,4
Không biết	92	11,7
Tổng	785	100,0

Nhận xét: Chỉ có 87,6% biết đúng muỗi gây sốt xuất huyết là muỗi vằn.

Bảng 5. Kiến thức của người dân về thời điểm loại dùng của muỗi truyền bệnh sốt xuất huyết (n = 785)

Thời gian	Số lượng	Tỷ lệ (%)
Ban ngày	94	12,0
Ban đêm	33	4,8
Cả ngày, đêm	614	78,2
Không biết	24	3,1
Tổng	785	100,0

Nhận xét: Chỉ có 12,0% đối tượng nghiên cứu biết đúng thời gian của muỗi truyền bệnh sốt xuất huyết đốt người là vào ban ngày.



Hình 2. Kiến thức của người dân về bọ gậy của muỗi truyền bệnh sốt xuất huyết

Nhận xét: Có 98,3% đối tượng nghiên cứu biết con bọ gậy sẽ nở thành muỗi.

Bảng 6. Kiến thức của người dân về nơi ở của bọ gậy muỗi truyền bệnh sốt xuất huyết (n = 785)

Nơi ở của bọ gậy	Số lượng	Tỷ lệ (%)
Ao, hồ, sông suối, mương rạch	521	66,4
Ruộng lúa	268	34,1
Cống, rãnh, bể phốt	518	65,9
Dụng cụ chứa nước không đậy nắp	689	87,8
Dụng cụ phế thải (lốp xe, gáo dừa, lon)	593	75,5
Chậu cây cảnh, bình hoa	338	54,6
Không biết	3	0,4

Nhận xét: Đa số đối tượng nghiên cứu biết nơi ở của bọ gậy muỗi truyền bệnh sốt xuất huyết. Dụng cụ chứa nước không đậy nắp là 87,8%, dụng cụ phế thải (lốp xe, gáo dừa, lon, ...) là 75,5%. Còn 65,7% biết sai là bọ gậy muỗi sốt xuất huyết sống ở ao, sông suối, mương rạch và cống, rãnh, bể phốt.

Bảng 7. Kiến thức của người dân về các biện pháp diệt bọ gậy muỗi truyền bệnh sốt xuất huyết (n = 785)

Các biện pháp diệt bọ gậy	Số lượng	Tỷ lệ (%)
Thả cá ăn bọ gậy vào dụng cụ chứa nước	618	78,7
Loại bỏ dụng cụ phế thải xung quanh nhà	384	54,6
Đậy nắp kín bể, khạp, lu	548	69,8
Cọ rửa thay nước bể, khạp, lũ, bình hoa	428	54,1
Dùng vợt vớt bọ gậy	230	29,3
Kho thông cống rãnh để diệt bọ gậy	599	76,3
Biện pháp khác	34	4,3
Không biết	3	0,4

Nhận xét: Có 98,6% người dân biết biện pháp diệt bọ gậy muỗi truyền bệnh sốt xuất huyết. Trong biện pháp thả cá ăn bọ gậy chiếm tỷ lệ cao nhất là 78,7%, khơi thông cống rãnh để

diệt bọ gậy là 76,3%, loại bỏ dụng cụ phế thải quanh nhà 74,4%, đậy nắp kín dụng cụ chứa nước 69,4%.

3.1.2. Thái độ của người dân về phòng chống bệnh sốt xuất huyết

Bảng 8. Thái độ xử trí ban đầu khi có người bị bệnh sốt xuất huyết (n = 785)

Thái độ xử trí	Người biết xử trí	Tỷ lệ (%)
Cho uống thuốc hạ sốt	462	58,9
Lau mát	285	36,3
Cho uống nhiều nước	390	49,7
Cạo gió, cắt lễ	16	2,0
Đưa đi khám ngay	661	84,2
Không làm gì, để theo dõi	43	5,4
Khác	7	0,8

Nhận xét: Có 84,2% người dân biết đưa người bệnh đi khám ngay.

3.1.3. Thực hành của người dân về phòng chống bệnh sốt xuất huyết

Bảng 9. Tỷ lệ người dân áp dụng các biện pháp diệt muỗi truyền bệnh sốt xuất huyết (n = 785)

Các biện pháp áp dụng	Số lượng	Tỷ lệ (%)
Phun thuốc diệt muỗi định kỳ	526	67,0
Dùng hình diệt muỗi trong nhà	332	42,3
Màn khói diệt muỗi	195	24,8
Dùng hương xua muỗi	322	41,0
Tẩm màn bằng hoá chất	432	55,0
Phát quang bụi rậm	488	62,2
Không áp dụng biện pháp nào	1	0,1

Nhận xét: Có 99,9% người áp dụng các biện pháp diệt muỗi. Phun thuốc diệt muỗi định kỳ chiếm tỷ lệ cao nhất 67,0%, 62,2% phát quang bụi rậm, 55,0% tẩm màn bằng hoá chất, 42,3% dùng hình diệt muỗi trong nhà, 41,0% dùng hương xua muỗi, 24,8% dùng biện pháp màn khói diệt muỗi.

Bảng 10. Tỷ lệ người dân hành thực áp dụng biện pháp phòng ngừa muỗi đốt

Cách xử trí	Người biết xử trí	Tỷ lệ (%)
Ngủ màn	621	79,1
Tẩm màn bằng hoá chất	431	55,0
Xử muỗi trong nhà	388	38,7
Diệt bọ gậy định kỳ	392	49,9

Nhận xét: Biện pháp ngủ màn phòng tránh muỗi đốt chiếm tỷ lệ cao nhất 79,1%, 55,0% tẩm màn bằng hóa chất.

3.2. Một số yếu tố liên quan đến bệnh sốt xuất huyết tại địa điểm nghiên cứu

Bảng 11. Mối liên quan giữa các yếu tố với kiến thức phòng chống SXH

Yếu tố		Kiến thức không đúng		Kiến thức đúng		Tổng	
		n	Tỷ lệ (%)	n	Tỷ lệ (%)		
Tuổi	≤ 40	150	56,1	104	43,9	342	OR = 2,11 χ^2 = 7,558 p < 0,01
	> 40	365	67,3	178	32,7	543	
Trình độ học vấn	THCS, THCS	337	60,8	132	23,2	569	OR = 2,39 χ^2 = 29,13 p < 0,01
	THPT, ĐH	106	49,1	110	50,9	216	
Nghề nghiệp	Khác	473	65,5	250	34,5	725	OR = 2,11 χ^2 = 8,33 p < 0,01
	CBCC, HSSV	28	53,2	32	46,8	43	

Nhận xét: Có mối liên quan giữa tuổi, trình độ học vấn, nghề nghiệp với kiến thức phòng chống bệnh sốt xuất huyết, sự khác biệt này có ý nghĩa thống kê với $p < 0,05$.

Bảng 11. Mối liên quan giữa các yếu tố với thái độ phòng chống SXH

Yếu tố		Kiến thức không đúng		Kiến thức đúng		Tổng	
		n	Tỷ lệ (%)	n	Tỷ lệ (%)		
Tuổi	≤ 40	214	88,4	28	11,6	242	OR = 1,69 χ^2 = 8,048 p = 0,05
	> 40	483	89,0	60	11,0	543	
Trình độ học vấn	TH, THCS	513	93,5	36	6,5	549	OR = 1,78 χ^2 = 6,14 p = 0,05
	THPT, HH	182	84,3	34	15,7	216	
Nghề nghiệp	Khác	619	88,5	79	11,3	699	OR = 2,18 χ^2 = 7,83 p < 0,01
	CBCC,HS, SV	68	78,3	19	21,9	87	

Nhận xét: Không tìm thấy mối liên quan giữa tuổi, trình độ học vấn và nghề nghiệp với kiến thức phòng chống bệnh sốt xuất huyết.

Bảng 12. Mối liên quan giữa các yếu tố với thực hành phòng chống SXH

Yếu tố		Thực hành không đúng		Thực hành đúng		Tổng	
		n	Tỷ lệ %	n	Tỷ lệ %		
Tuổi	≤ 40	162	66,9	80	33,1	242	OR=1,68 χ^2 = 0,816 p > 0,05
	> 40	381	70,2	162	29,8	543	
Trình độ học vấn	TH, THCS	398	72,5	151	27,5	549	OR=1,42 χ^2 = 4,48 p < 0,05
	THPT, HH	134	62,0	82	38,0	216	
Nghề nghiệp	Khác	502	69,2	223	30,8	725	OR = 1,84 χ^2 = 5,17 p < 0,05
	CBCC, HS, SV	33	55,0	27	45,0	60	

Nhận xét: Trình độ học vấn, nghề nghiệp và địa dư có mối liên quan với thực hành phòng chống bệnh sốt xuất huyết, sự khác biệt này có ý nghĩa thống kê, với $p < 0,05$.

4. BÀN LUẬN

Tỷ lệ đối tượng tham gia nghiên cứu hiểu biết đúng về triệu chứng của bệnh sốt xuất huyết khá cao trong đó cao nhất là hiểu biết về biểu hiện xuất huyết trên da (91,7%). Kết quả này phù hợp với nghiên cứu tại Hà Nội năm 2012 [11]. Các kết nghiên cứu tại Cà Mau năm 2011 (30,75%), Huế (70,4%).

Nhiều đối tượng nghiên cứu biết các dấu hiệu nặng của bệnh sốt xuất huyết, tuy nhiên vẫn còn 7,9% số người được hỏi không biết các triệu chứng nặng của bệnh. Kiến thức không đúng về tính nguy hiểm của bệnh sốt xuất huyết có thể ảnh hưởng rất lớn đến thực hành của người dân trong phòng chống sốt xuất huyết do đó người dân khó chủ động để thực hiện các biện pháp dự phòng cho gia đình và cộng đồng.

Phần lớn đối tượng nghiên cứu đều biết bệnh sốt xuất huyết là bệnh lây truyền do muỗi đốt (97,1%), tuy nhiên vẫn còn khá nhiều đối tượng không biết đường lây truyền bệnh đặc biệt là kiến thức đường lây truyền, cho rằng bệnh có thể lây do tiếp xúc với người mắc bệnh (25,8%). Kết quả nghiên cứu của chúng tôi phù hợp với nghiên cứu tại Cát Hải, Hải Phòng (91,75%).

Mặc dù là bệnh truyền nhiễm được đối tượng nghiên cứu biết đến khá cao (87,6%), tuy nhiên vẫn có 12,9% hiểu đúng thời gian hoạt động của chúng chỉ yếu vào ban ngày. Đa số đối tượng nghiên cứu biết đúng về nơi đẻ trứng của muỗi truyền bệnh sốt xuất huyết là các dụng cụ chứa nước

quanh nhà không có nắp đậy, lọ hoa, chậu cây cảnh, ... Tuy nhiên vẫn còn 66,4% đối tượng nghiên cứu hiểu sai về nơi đẻ trứng của muỗi. Kết quả nghiên cứu của chúng tôi cho thấy người dân hiểu nhiều các biện pháp diệt bọ gậy. Kiến thức về thời gian hoạt động của muỗi truyền bệnh, nơi muỗi đẻ trứng và các biện pháp phòng bệnh có ý nghĩa rất quan trọng vì vậy cần tuyên truyền để người dân hiểu rõ hơn. Nếu đối người dân sẽ phòng bệnh tốt hơn. Những người không có kiến thức hoặc có kiến thức sai dẫn rất nguy hiểm, sự việc không có kiến thức dẫn đến việc thực hành các biện pháp phòng bệnh không đúng, nguy cơ dịch bệnh tăng lên do đó cần có nhiều hơn nữa các hình thức truyền thông cung cấp kiến thức cho người dân.

Các phương pháp phòng chống muỗi đã được thực hiện khá tốt, đa số lựa chọn biện pháp ngủ màn tuy nhiên cần tuyên truyền để người dân thực hiện ngủ màn kể cả ban ngày do tập tính của muỗi truyền bệnh sốt xuất huyết hoạt động vào ban ngày. Các biện pháp diệt muỗi sử dụng hóa chất cũng được sử dụng nhưng ít hơn. Hiện nay, người dân tìm hiểu rất kỹ về tại lợi cũng như tác hại của các hóa chất diệt côn trùng gây ảnh hưởng đến môi trường đồng thời sự kháng thuốc cũng gây ra sự lo lắng về mặt kinh tế. Tuy nhiên, hóa chất cũng cho thấy lợi ích của nó đặc biệt khi dịch xảy ra nên thường được áp dụng khi có dịch.

Nghiên cứu của chúng tôi đã thấy mối liên quan giữa trình độ học vấn, nghề nghiệp của đối tượng nghiên cứu với kiến thức về bệnh SXH, thực hành phòng chống bệnh SXH. Từ đó cho thấy người có trình độ học vấn cao là khả năng nhận thức và tiếp thu công nghệ, càng tốt hơn và có điều kiện tiếp cận với nhiều luồng thông tin hơn do đó thực hành phòng chống bệnh tốt hơn. Một nghiên cứu về kiến thức, thực hành tại tỉnh Kamphaeng Phet. Thái Lan cho thấy kiến thức của người dân về bệnh SXH được đưa vào thực hành phòng bệnh là rất ít (12). Kết quả kiến thức và thực hành ký là nghiên cứu mức độ về truyền thông rất mạnh nhưng việc hướng dẫn thực hành cho người dân còn rất hạn chế. Điều này cho thấy việc tìm hợp lượng cách giữa kiến thức và thực hành sẽ vẫn còn là một thách thức lớn trong công tác phòng chống dịch bệnh.

5.KẾT LUẬN

1. Kiến thức, thái độ, thực hành của người dân về bệnh sốt xuất huyết

- Có kiến thức đúng về nguyên nhân truyền bệnh sốt xuất huyết là do muỗi chiếm 93,1%, do muỗi vằn là 87,6%, muỗi cắn vào thời điểm ban ngày là 12%. Có 87,8% người dân biết đặc trưng của bọ gậy là ở dụng cụ chứa nước không đậy nắp, ở dụng cụ phế thải là 75,5%; Có 93,7% biết dấu hiệu sốt huyết, 73,4% biết dấu hiệu sốt cao liên tục > 2 ngày và 90,4% biết dấu hiệu y tế xã, 33,5% đưa đến bệnh viện tuyến.

- Có 84,2% người dân biết đưa đi khám ngay khi có người bị bệnh sốt xuất huyết; 38,9% cho uống thuốc hạ sốt, 49,7% cho uống nhiều nước, 36,3% người dân biết xử lý lau mát.

- 67,8% phun thuốc diệt muỗi, 62,2% phát quang bụi rậm, 35,0% tẩm màn bằng hoá chất, 42,3% dùng hóa chất muỗi trong nhà, 41,0% dùng hương trừ muỗi, 24,6% dùng biện pháp lưu khói đuổi muỗi; 79,1% ngủ màn phòng tránh muỗi đốt; 55,8% tẩm màn bằng hóa chất; 38,3% xịt muỗi trong nhà, 49,9% dùng hương xua muỗi đốt.

2. Yếu tố liên quan

- Những người có trình độ học vấn cao có kiến thức đúng và thực hành đúng về phòng chống sốt xuất huyết cao hơn những người có trình độ học vấn thấp, $p < 0,05$.

- Những người là cán bộ công nhân và học sinh, sinh viên có kiến thức đúng và thực hành đúng về phòng chống sốt xuất huyết cao hơn nhóm nghề nghiệp khác, $p < 0,05$.

KIẾN NGHỊ

1. Cần tăng cường công tác truyền thông, giáo dục sức khoẻ trên phương tiện thông tin đại chúng. Chú yếu là tổ chức hệ thống loa truyền thanh của xã, phường, để mọi người dân hiểu và tự giác tham gia các hoạt động phòng chống dịch tại cộng đồng.

2. Nâng cao vai trò của các bộ y tế cơ sở và y tế thôn bản trong truyền thông và hướng dẫn cho người dân thực hiện hành vi phòng chống sốt xuất huyết.

3. Tổ chức các chiến dịch diệt bọ gậy, làm sạch môi trường định kỳ và đặc biệt các tháng cao điểm là 2 lần tháng đầu mùa bị gia đình tại các xã, phường trọng điểm, huy động tham gia của các ban ngành, đoàn thể.

TÀI LIỆU THAM KHẢO

1. Ban khoa học kỹ thuật tỉnh Cần Thơ (2008), "Chẩn đoán, điều trị và dự phòng sốt xuất huyết", tóm dịch của Tổ chức Y tế Thế giới, tr. 47-63.

2. Bộ Y tế (2014), *Hướng dẫn giám sát và phòng chống bệnh sốt xuất huyết Dengue*.

3. Bộ Y tế (2017), "Hiệu của tình hình dịch bệnh và các hoạt động sốt xuất huyết Dengue", tr.9-10, 21P.

4. Bộ môn Truyền nhiễm (2017), "Chăm sóc bệnh nhân sốt Dengue", *Bài giảng bệnh học truyền nhiễm*.

5. Nguyễn Nhật Cảm, Nguyễn Thị Mai Anh (2018), "Kiến thức và thực hành về phòng chống sốt xuất huyết Dengue của người dân xã Tân Triều và xã Đại Áng huyện Thanh Trì, Hà Nội", Tạp chí Y học dự phòng số 8-2017, tr 45-48.

6. Hải Dư (2008), *Dengue xuất huyết*, nhà xuất bản y học Hà Nội, 9- 61, tr. 387-39

7. Hoàng Vũ Hoàng, Trịnh Công Diễn, Đỗ Như Bình (2017), "Nghiên cứu mối liên quan giữ type virus với đặc điểm lâm sàng, cận lâm sàng bệnh nhân sốt xuất huyết Dengue", Tạp chí Y Dược học quân sự, tập 6, tr. 13-16.

8. Đinh Thanh Huề (2009), *Những bệnh các bệnh phổ biến*, Bài giảng sau Đại học Trường Đại học Y Hà Nội.

9. Trần Văn Hợi (2008), "Kiến thức, thái độ, thực hành về phòng chống sốt Dengue/Sốt xuất huyết Dengue của người dân xã Hưng Thịnh, huyện Thanh Bình, tỉnh Đồng Tháp, năm 2006", *Hội nghị khoa học toàn quốc - Một số vấn đề cấp bách của Việt Nam*, Hà Nội, tháng 12/2008, tr.152 - 165.

10. Võ Văn Thắng, Trần Thị Mai Lan (2010), "Kiến thức, thái độ, thực hành phòng chống các bệnh lây truyền rất đáng sợ của người và một số yếu tố liên quan ở người dân tại phường Hương Long, thành phố Huế", *Tạp chí Y học dự phòng 27, số 11-2017*, tr. 25-29.

11. Nguyễn Thị Quỳnh Trang (2012), Thực trạng kiến thức, thực hành của người dân về phòng bệnh sốt xuất huyết Dengue và một số yếu tố liên quan tại phường Trúc bạch, quận Ba Đình, Hà Nội năm 2012, Luận văn thạc sĩ y tế công cộng, Trường Đại học Y tế công cộng.

12. Chonticanonta SM. Kasetsuk and all (2006), Dengue knowledge and practices and their impact on *Aedes aegypti* populations in Kamphaeng Phet, Thailand, The American Society of Tropical Medicine and Hygiene, 74 (4), p. 692 - 700.

LÝ LỊCH KHOA HỌC

1. Họ và tên: Phạm Huy Quyền
2. Năm sinh: 25/10/1961 **3. Giới tính:** nam
4. Nơi sinh: Xã Nam Hưng, huyện Tiên Lãng, thành phố Hải Phòng.
5. Nguyên Quán: Xã Nam Hưng, huyện Tiên Lãng, thành phố Hải Phòng
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7. Học hàm, học vị: Năm được công nhận TS: 1997 Nơi cấp bằng: Trường Đại học Y Hà Nội- Việt Nam Năm được phong PGS: 2009 Nơi phong: Hội đồng giáo sư nhà nước
8. Cơ quan công tác: Tên cơ quan: Trường Đại học Y Dược Hải Phòng Khoa/Phòng, Bộ môn, Trung tâm: Bộ môn Sinh lý bệnh – Dị ứng – Miễn dịch, Khoa Y Địa chỉ cơ quan: 72A Nguyễn Bỉnh Khiêm, Đằng Giang, Ngô Quyền, Hải Phòng. Điện thoại: 0225 3731 997 Fax: 0225.733.315 Email: contact@hpmu.edu.vn

9. Quá trình đào tạo

Bậc đào tạo	Nơi đào tạo	Chuyên ngành/Tên khóa luận, luận văn, luận án	Năm tốt nghiệp
Đại học	Trường Đại học Y Hà Nội	Bác sĩ chính quy	1985
Thạc sĩ	Trường Đại học Y Hà Nội	Bác sĩ nội trú/ sau lý giảng dạy nghiên cứu	1988
Tiến sĩ	Trường Đại học Y Hà Nội	Khoa học Y Dược	1993

10. Các khoá đào tạo khác (nếu có)

Văn bằng	Tên khoá đào tạo	Nơi đào tạo	Thời gian đào tạo
Chứng chỉ	Miễn dịch học	Đại học Y Hà Nội	3/1991 -8/1991

Chứng chỉ	Lý luận dạy đại học	Trường Đại học khoa học tự nhiên	4/1995-12/1995
Chứng chỉ	Tin học	Đại học Hải Phòng	3/2007- 4/2007
Chứng chỉ	Lý luận chính trị-hành chính	Học viện Chính trị -Hành chính quốc gia Hồ Chí Minh	7/2008 - 12/2010

11. Trình độ ngoại ngữ

Tên ngoại ngữ	Văn bằng/Chứng chỉ	Năm
Ngoại ngữ Anh Văn	Đại học hải phòng	2003 - 2007

12. Quá trình công tác *(trước khi về Trường và sau khi về Trường)*

Thời gian	Vị trí công tác	Cơ quan công tác	Địa chỉ cơ quan
1984-1988	Tuy giảng – một trú bộ môn sinh lý bệnh – miễn dịch	Đại học y hà nội	Số 1 tôn thất tùng
1988- 1993	Giảng viên, Giáo vụ bộ môn Sinh lý bệnh-miễn dịch-dị ứng	Phân hiệu Đại học Y Hải Phòng	72 A Nguyễn Bỉnh Khiêm, Hải Phòng
1993-1997	Giảng viên và nghiên cứu sinh. Bộ môn Sinh lý bệnh-miễn dịch-dị ứng	Phân hiệu Đại học Y Hải Phòng	72 A Nguyễn Bỉnh Khiêm, Hải Phòng
1997-2002	Giảng viên, bác sĩ kiêm nhiệm với chức vụ Phó trưởng khoa nội tổng hợp, Bệnh viện Kiến An-Hải Phòng	Trường Đại học Y Hải Phòng	72 A Nguyễn Bỉnh Khiêm, Hải Phòng
2002-2011	Giảng viên chính, Phó trưởng Bộ môn Sinh lý bệnh-Miễn dịch-Dị ứng, kiêm nghiệm quyền trưởng khoa Tim mạch-lão khoa- Bệnh viện Kiến An, Hải Phòng	Trường Đại học Y Hải Phòng	72 A Nguyễn Bỉnh Khiêm, Hải Phòng
2011- 2021	PGS. Giảng viên cao cấp, Trưởng Bộ môn Sinh lý bệnh-MIễn dịch	Trường Đại học Y Dược Hải Phòng	72 A Nguyễn Bỉnh Khiêm, Hải Phòng
2021 - 2022	PGS. Giảng viên cao cấp, Trưởng Bộ môn Sinh lý bệnh-Dị ứng-Miễn dịch	Trường Đại học Y Dược Hải Phòng	72 A Nguyễn Bỉnh Khiêm, Hải Phòng
2022- nay	PGS. Giảng viên cao cấp, Bộ môn Sinh lý bệnh-Dị ứng-Miễn dịch	Trường Đại học Y Dược Hải Phòng	72 A Nguyễn Bỉnh Khiêm, Hải Phòng

13. Các công trình khoa học đã công bố

13.1. Bài báo khoa học:

- *Tên tác giả: tên của tác giả của bài báo*
- *Tác giả chính: là Tác giả thứ nhất (first author) hoặc Tác giả liên hệ (corresponding author)*
- *Danh mục: Web of Science hoặc Tạp chí trong nước được HĐGSNN tính điểm*

TT	Tên bài báo	Tên tác giả	Tác giả chính	Tạp chí	Ngày XB	Số, trang	Danh mục	ISSN (DOI)
	Compensation of cyclophosphamide-immunosuppression by a total extract of M. oleifera (root of Moringa oleifera L. Rubiaceae).			Revue pharmaceutique du Viet Nam	1988	43-49		
1.	Nghiên cứu khả năng đối chiết rễ chùa (Morinda citrifolia L.Rubiaceae) phục hồi tế chế miễn dịch do Cyclophosphamide			Tạp chí Dược học	1990	10-18		
2.	Tác dụng phục hồi một số chỉ tiêu miễn dịch trên chuột nhắt trắng đã xử lý với cyclosporphamide của dịch chiết toàn phần rễ cây Morinda citrifolia L.			Y học Việt Nam	1993	44-48		
3.	Bước đầu nghiên cứu tác dụng phục hồi miễn dịch ở chuột nhắt trắng bị chiếu tia gamma của dịch chiết toàn phần rễ cây Morinda citrifolia			Y học Việt Nam	1993	24-27		
4.	Nghiên cứu in vitro tác dụng kích thích miễn dịch của chất chiết toàn phần rễ cây Morinda citrifolia			Y học Việt Nam	1994	23-26		
5.	Biến đổi mô bệnh học của lách và tuyến ức ở chuột nhắt bị chiếu tia gamma được uống dịch chiết toàn phần rễ cây Morinda citrifolia			Nội khoa	1994	32-36		
6.	Đặc điểm mô bệnh học của lách, tuyến ức, tuỷ xương ở chuột nhắt bị ức chế miễn dịch bằng cyclosporphamide được điều trị bằng dịch chiết toàn phần rễ cây			Kỷ yếu công trình NCKH- Đại học Y Hà Nội	1994	210-212		

	Morinda citrifolia							
7.	Về mô hình gây suy giảm miễn dịch thực nghiệm			Kỷ yếu CTNCKH -Đại học Y Hà Nội	1994	16-22		
8.	Giới thiệu một dược liệu trong nước và tác dụng phục hồi các tổn thương hệ miễn dịch của nó			Y học Việt Nam	1995	06-10		
9.	Tác dụng kích thích miễn dịch của dịch chiết toàn phần nữ cây Morinda citrifolia ở trong nước cây sẽ bảo đơn nhân			Y học thực hành	1996	68-72		
10.	Ứng dụng test lẻ với tuberculin để nghiên cứu kết quả tiêm phòng bệnh lao và lao sơ nhiễm ở trẻ em tại một xã của huyện Tiên Lãng, Hải Phòng			Y học Thực hành	1998	15-19		
11.	Một số đặc điểm lâm sàng bệnh dị ứng miễn dịch hay gặp và một số yếu tố nguy cơ liên quan đến tình trạng dị ứng của nhân dân huyện đảo Cô Tô- Quảng Ninh			Y học Thực hành	2000			
12.	Tiếp cận phương thức điều trị mới đối với hen phế quản tại bệnh viện Kiến An và một số kết quả bước đầu			Y học Thực hành	2000			
13.	Nghiên cứu tình hình bệnh hen phế quản ở trẻ em tại xã Quang Phục-Tiên Lãng Hải Phòng			Y học Thực hành	2002			
14.	Nghiên cứu tình hình điều trị bệnh hen phế quản và viêm phế quản mạn tính tại cộng đồng xã An Hồng, An Hải- TP.Hải Phòng			Y học Thực hành	2002			
15.	Nghiên cứu sự thay đổi một số chỉ tiêu miễn dịch ở bệnh nhân viêm phế quản mạn tính			Y học Thực hành	2002	69-71		
16.	Nghiên cứu tỷ lệ mắc các bệnh Dị ứng-Miễn dịch tại cộng đồng của một xã thuộc huyện An Hải-Hải Phòng			Y học Thực hành	2002			

17.	Nhận xét về đặc điểm lâm sàng và điều trị lao phế quản tại bệnh viện Kiến An, Hải Phòng trong 5 năm (1995-1999)			Y học Thực hành	2002			
18.	Nhận xét cơ cấu bệnh tật và phương pháp điều trị bệnh tự miễn dịch tại bệnh viện Kiến An, Hải Phòng trong 5 năm (1996-2000)			Y học Thực hành	2002			
19.	Một số nhận xét về kinh tế xã hội-môi trường và bệnh tật của nhân dân xã Đồng Hải và An Hồng-huyện An Hải, Hải Phòng năm 2001			Y học Thực hành	2002			
20.	Một số chỉ tiêu nhân trắc của nữ dân trưởng thành xã Đồng Hải và Đồng Hải-huyện An Hải-Hải Phòng			Y học Thực hành	2002			
21.	Nghiên cứu sự mẫn cảm với vi khuẩn lao ở sinh viên Trường Đại học Y Hải Phòng trong 5 năm (1996-2000)			Y học Thực hành	2002			
22.	Nghiên cứu một số chỉ tiêu nhân trắc người trưởng thành xã Hoà Dũa và Liên Hoà-Kim Thành-Hải Dương			Y học Thực hành	2004			
23.	Nghiên cứu tỷ lệ mắc bệnh và xác định đị nguyên gây lao phế quản ở trẻ em nuôi học đường tại huyện đảo Cát Bà-Hải Phòng năm 2002			Y học Việt Nam	2004			
24.	Nghiên cứu tình hình bệnh lao phế quản tại quận Hồng Bàng-Hải Phòng			Y học Thực hành	2004			
25.	Nhận xét tình hình dị ứng thuốc gặp ở trung tâm y tế Vịnh Bảo-An Hải trong 3 năm 2001-2003			Y học Thực hành	2004			
26.	Mô hình bệnh tật của nhân dân xã Hoà Dũa và Liên Hoà huyện Kim Thành tỉnh Hải Dương			Y học Việt Nam	2004			
27.	Thực trạng kinh tế xã hội và vệ			Y học	2004			

	sinh môi trường của xã Liên Hoà và Bình Dân-huyện Kim Thành-Hải Dương năm 2003			Thực hành				
28.	Xét nghiệm sinh học chẩn đoán dị ứng thuốc			Tạp chí thông tin Y-Dược	2003			
29.	Mô hình bệnh của nhân dân xã Nam Sơn huyện An Dương-Hải Phòng năm 2003			Y học Thực hành	2006			
30.	Thực trạng kinh tế văn hoá xã hội và vệ sinh môi trường của xã Nam Sơn, Hồng Thái, Đặng Cương và Lê Lợi, huyện An Dương, Hải Phòng năm 2003			Y học Thực hành	2006			
31.	Nghiên cứu tình hình mắc bệnh hen phế quản ở trẻ mẫu giáo trường Sao Sáng 4 Ngô Quyền, Hải Phòng năm 2004			Y học Thực hành	2006			
32.	Thực trạng kinh tế xã hội và vệ sinh môi trường của xã Kim Tân và Ngũ Phúc-huyện Kim Thành-Hải Dương năm 2003			Y học Thực hành	2006			
33.	Nghiên cứu một số chỉ tiêu nhân trắc của người trưởng thành xã Nam Sơn, huyện An Dương, Hải Phòng năm 2005			Y học Thực hành	2006			
34.	Nghiên cứu tác dụng tăng cường miễn dịch và hiệu quả điều trị của Uphamorin ở bệnh nhân viêm gan vi rút B mạn tính			Y học Việt Nam	2006	76-83		
35.	Nghiên cứu tác dụng hạ huyết áp và điều chỉnh rối loạn lipid máu của Uphamorin trên bệnh nhân tăng huyết áp nguyên phát			Y học Thực hành	2006	98-102		
36.	Nghiên cứu đặc điểm kinh tế xã hội, vệ sinh môi trường và mô hình bệnh của nhân dân 3 xã huyện Kim Thành-Hải Dương năm 2008			Y học thực hành	2008			
37.	Nghiên cứu đặc điểm kinh tế xã			Y học thực	2010			

	bệnh, vệ sinh môi trường và một tình hình bệnh của nhân dân 4 xã huyện Nam Sách tỉnh Hải Dương năm 2009			hành				
38.	Đặc điểm dịch tễ học và các yếu tố liên quan bệnh lao phổi quản tại huyện Kim Thành-Hải Dương			Y học thực hành	2010			
39.	Đánh giá công tác điều trị lao phổi quản ở huyện Kim Thành Hải Dương			Y học thực hành	2010			
40.	Tình hình mắc các bệnh lây truyền qua đường tình dục ở phụ nữ thành viên câu lạc bộ Hoa Phượng Hải Phòng năm 2008			Y học thực hành	2010			
41.	Tình hình mắc bệnh và một số yếu tố liên quan đến bệnh lao phổi quản người lớn tại huyện Nam Sách, Hải Dương năm 2009			Y học thực hành	2010			
42.	Đáp ứng miễn dịch tế bào chống vi khuẩn lao ở sinh viên Đại học Y Hải Phòng			Y học thực hành	2010			
43.	Thực trạng về điều trị bệnh lao phổi quản tại bệnh viện huyện Tiên Lãng-Hải Phòng trong 5 năm(2006-2010)			Y học thực hành	2012			
44.	Nghiên cứu đặc điểm dị ứng thuốc tại bệnh viện huyện Tiên Lãng trong 5 năm(2006-2010)			Y học thực hành	2012			
45.	Nghiên cứu đặc điểm lâm sàng và điều trị tăng huyết áp đối tượng trên 60 tuổi điều trị ngoại trú tại phòng khám BHYT Bệnh viện Đại học Y Hải Phòng			Y học thực hành	2013			
46.	Nghiên cứu đặc điểm lâm sàng và điều trị tăng huyết áp trên đối tượng đái tháo đường kèm theo tăng huyết áp quản lý tại phòng khám bảo hiểm Bệnh viện Đại học Y Hải Phòng năm 2014			Y học thực hành	2013			
47.	Thực trạng viêm khớp dạng thấp			Y học thực	2016			

	điều trị tại bệnh viện Tiên Lãng Hải phòng trong 2 năm 2014-2015			hành				
48.	Xác định tỷ lệ thuốc thường gây dị ứng tại khoa dị ứng miễn dịch Bệnh viện Đại học Y Hải Phòng			Y học Thực hành	2018			
49.	*Clinical and Functional Characteristics of Subjects with Asthma, COPD, and Asthma-COPD Overlap: A Multicentre Study in Vietnam*			Canadian Respiratory Journal.	2018			
50.	Thực trạng và một số yếu tố liên quan đến kiến thức thái độ thực hành về bệnh hen phế quản của cán bộ y tế huyện An Dương, Hải Phòng năm 2014			Y học thực hành	2018			
51.	Thực trạng tăng huyết áp mới phát hiện của người dân tại 3 xã huyện Kim Thành Hải Dương năm 2017			Y học Thực hành	2018			
52.	Một số yếu tố liên quan đến bệnh hen phế quản của bệnh nhân xã Quốc Tuấn, huyện An Lão và xã Hồng Thái huyện Dương Hải Phòng năm 2014			Y học Thực hành	2018			
53.	Nghiên cứu hiệu quả can thiệp nâng kiến thức thái độ thực hành điều trị bệnh hen phế quản của cán bộ y tế tại Hải Phòng năm 2014			Y học Thực hành	2018			
54.	Thực trạng kiến thức thái độ thực hành của bệnh nhân hen phế quản tại xã Hồng Thái, huyện An Dương, Hải Phòng năm 2014			Y học Thực hành	2018			
55.	Nghiên cứu hội chứng chuyển hóa trên người mắc bệnh phổi tắc nghẽn mạn tính điều trị tại bệnh viện Đại học Y Hải Phòng			Y học Thực hành	2018			
56.	Đánh giá chất lượng nước bể bơi			Y học	2018			

	Hải Phòng năm 2017			Thực hành				
57.	Đánh giá việc cải thiện chất lượng nước hồ bơi Hải Phòng sau 1 năm kiểm tra hướng dẫn			Y học Thực hành	2018			
58.	Thực trạng hoạt động bảo đảm an toàn của hồ bơi Hải Phòng năm 2017			Y học Thực hành	2018			
59.	Nghiên cứu hội chứng chuyển hóa và thay đổi một số chỉ tiêu miễn dịch ở bệnh nhân thoái hóa khớp gối tại bệnh viện Đại học Y Hải Phòng năm 2019			Y học Thực hành	2018			
60.	Đặc điểm lâm sàng cận lâm sàng ở bệnh nhân tăng huyết áp điều trị tại khoa Hô hấp Tim mạch Bệnh viện Đại học Y Hải Phòng năm 2019			Y học Thực hành	2018			
61.	Đánh giá của người dân về chất lượng dịch vụ y tế tuyến xã tại Hải Phòng năm 2018			Y học Việt Nam	2019			
62.	Kết quả cung cấp dịch vụ y tế tại một số trạm y tế thành phố Hải Phòng năm 2018			Y học Việt Nam	2019			
63.	Mức độ hài lòng của người sử dụng dịch vụ y tế tại trạm y tế xã của thành phố Hải Phòng năm 2018			Y học Việt Nam	2019			
64.	Thực trạng sử dụng dịch vụ y tế tại trạm y tế cung cấp tại Hải Phòng năm 2018			Y học Việt Nam	2019			
65.	Đánh giá khả năng cung cấp dịch vụ y tế của một số trạm y tế tại Hải Phòng năm 2018			Y học Việt Nam	2019			
66.	Một số đặc điểm của người dân sử dụng dịch vụ y tế của trạm y tế tại Hải Phòng năm 2018			Y học Việt Nam	2019			
67.	Clinical and Functional Characteristics of Subjects with Asthma, COPD, and Asthma-COPD Overlap: A Multicentre Study in Vietnam			Canadian Respirator y Journal, vol. 2018, Article ID	2018			doi:10 .1155/ 2018/1 75294

				1732946, 11 pages. 2018.				0
68	Study of correlation between exhaled NO measured by portable device and bronchial hyperresponsiveness in subjects with chronic cough Etude de la corrélation entre NO exhalé, mesuré par l'appareil portable et l'hyperréactivité bronchique chez les sujets ayant la toux chronique			Journal of Functional Ventilation and Pulmonology© 2018 JFVP. www.jfvp.uhn.com Print: ISSN 2264-7899. Online: ISSN 2264-8734	2018			
69	The oral conditions and the number of factors related to asthmatic patients in Quoc Tuan commune-An Lao district and Hung Thai commune-An Duong district in Hai Phong city-Viet Nam			Journal of Functional Ventilation and Pulmonology	2018			
70	*Study of the Correlation between HRCT Semi-quantitative Scoring, Concentration of Alveolar Nitric Oxide, and Clinical-functional Parameters of Systemic Sclerosis-induced Interstitial Lung Disease*			Yakugaku Zasshi Med.2020 Dec; 93(3): 657-667. Focus: Allergic Diseases and Type II Immunity	2020			

I.1.2. Sách chuyên khảo, giáo trình – tài liệu dạy học:

- *Tên tài liệu: Sách/ Chương sách*
- *Loại hình: Chuyên khảo/ Tham khảo/ Giáo trình/ Tài liệu hướng dẫn*

TT	Tên tài liệu	Tên tác giả	Chủ biên/Đồng chủ biên	Nhà xuất bản	Năm xuất bản	Loại hình	ISBN
1							

14. Báo cáo Hội nghị - hội thảo khoa học

Kỹ yếu/ Tóm tắt/ Toàn văn

TT	Tên báo cáo	Tên tác giả	Tác giả chính	Tên hội nghị	Thời gian báo cáo (tháng/năm)	Kỷ yếu	ISBN

15. Bằng sở hữu trí tuệ đã được cấp

Liệt kê các văn bằng bảo hộ: Độc quyền sáng chế, giải pháp hữu ích, kiểu dáng công nghiệp, thiết kế bố trí, giống cây trồng...

TT	Tên và nội dung văn bằng	Số, Mã, Ký hiệu	Nơi cấp	Năm cấp
1				

16. Công trình KH&CN được ứng dụng, chuyển giao

TT	Tên công trình	Hình thức	Quy mô	Địa chỉ áp dụng	Giá trị	Thời gian

17. Nhiệm vụ KH&CN các cấp

- *Loại hình: Đề tài/ Dự án / Đề án*
- *Tình trạng nhiệm vụ: Đã nghiệm thu/ Chưa nghiệm thu/ Không hoàn thành*

17.1. Nhiệm vụ KH&CN đã và đang chủ trì

Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình *(nếu có)*	Tình trạng nhiệm vụ	Ngày			Kinh phí
					Phê duyệt	Đăng ký kết quả *(nếu có)*	Công nhận kết quả	
Nghiên cứu tỷ lệ người nhiễm virus viêm gan B tại xã Yên Sở- Thanh Trì- Hà Nội								
Nghiên cứu tình trạng suy giảm miễn dịch tế bào ở bệnh nhân ung thư vòm họng-Đề xuất một hình điều trị								
Nghiên cứu Xây dựng mô hình huy động cộng đồng tham gia vào chăm sóc sức khỏe ban đầu và làm cơ sở thực hành cho sinh viên y khoa tại xã Dặng Cương-An Dương-Hải Phòng								
Nghiên cứu tình hình bệnh ban phổ quát ở trẻ em tại xã Quang Phục-Tiên Lãng thành phố Hải Phòng								
Nghiên cứu sự miễn cảm với vi khuẩn lao ở sinh viên Trường Đại học Y Hải Phòng trong 5 năm (1996-2001)								
Nghiên cứu tỷ lệ mắc bệnh đi ứng-miễn dịch								

tại cộng đồng của một xã thuộc An Hải-Hải Phòng								
Nhận xét về các dấu và phương pháp điều trị bệnh tự miễn dịch tại bệnh viện Kiến An, Hải Phòng trong 5 năm(1996-2001)								
Nghiên cứu tỷ lệ mắc bệnh và tỷ nguyên gây hen phế quản ở trẻ em tuổi học đường huyện đảo Cát Hải-Hải Phòng năm 2002								
Nghiên cứu đặc điểm bệnh hen phế quản tại quận Hồng Bàng-Hải Phòng								
Nghiên cứu tác dụng hạ huyết áp và điều chỉnh rối loạn lipid máu của Uphasartan trên bệnh nhân tăng huyết áp nguyên phát								
Nghiên cứu tác dụng tăng cường miễn dịch và hiệu quả điều trị của Uphasartan ở bệnh nhân viêm gan virus B mạn tính								
Điều tra tình hình bệnh hen phế quản người lớn huyện An Dương -Hải Phòng								
Đặc điểm dịch tễ học và các yếu tố liên quan đến bệnh hen phế quản tại huyện Kim Thành-								

Hải Dương năm 2006-2007								
Xác định yếu tố dạng thấp trong huyết thanh bệnh nhân viêm khớp dạng thấp và giá trị chẩn đoán của nó								
Tình hình nhiễm các bệnh lây truyền qua đường tình dục ở phụ nữ thành viên Câu lạc bộ Hoa Phượng, Hải Phòng								
Tình hình mắc bệnh và một số yếu tố liên quan đến bệnh bơn phế quản người lớn tại huyện Nam Sách-Hải Dương								
Nghiên cứu thực trạng điều trị bệnh nhân bơn phế quản tại bệnh viện Tiên Lãng trong 5 năm 2006-2010								
Nghiên cứu thực trạng về nhu cầu chăm sóc sức khỏe tại gia đình-Đề xuất giải pháp phát triển mạng lưới y học gia đình								
Tình hình sử dụng thuốc tại các trạm y tế xã và bệnh viện Tiên Lãng trong 4 năm 2006-2010								
Thực trạng điều trị kiểm soát bệnh bơn phế quản tại cộng đồng huyện Tiên Lãng năm 2012								
Xác định chẩn đoán COPD ở những người								

có nguy cơ cao và triệu chứng lâm sàng gợi ý tại cộng đồng huyện Tiên Lãng năm 2013								
Thực trạng bệnh viêm khớp dạng thấp điều trị tại bệnh viện Tiên Lãng trong 2 năm 2014-2015								
Đánh giá mức độ kiểm soát hen phế quản ở bệnh nhân hen phế quản điều trị ngoại trú tại khoa Dị ứng miễn dịch lâm sàng Bệnh viện đại học Y Hải Phòng năm 2016								
Thực trạng tăng huyết áp mới được phát hiện của người dân huyện Kim Thành tỉnh Hải Dương năm 2017								
Mức kiểm soát huyết áp và các yếu tố liên quan kiểm soát huyết áp ở bệnh nhân tăng huyết áp điều trị ngoại trú tại bệnh viện đa khoa huyện Tiên Lãng năm 2018								
Nghiên cứu hội chứng chuyển hóa và thay đổi một số thông số miễn dịch ở bệnh nhân thoái hóa khớp gối tại Bệnh viện Đại học Y Hải Phòng năm 2019								
Nghiên cứu quy trình tổng hợp và tính chế nguyên liệu thuốc điều trị ung thư Exemestane qua mô phỏng thí nghiệm								
Nghiên cứu ảnh hưởng của tác nhân hóa học và sinh học tới sức khỏe cộng đồng khu vực								

sống thấy sản vựa biển miền Bắc								
Nghiên cứu thực trạng bệnh suy dạ dày điều trị tại Bệnh viện Đại học Y Hải Phòng năm 2020								
Thực trạng bệnh giun tóc nghiễm mạn tính điều trị tại trung tâm y tế Tiên Lãng Hải Phòng năm 2021								
Thực trạng điều trị kiểu xoài đường máu ở bệnh nhân đái tháo đường typ 2 có suy thận tại Bệnh viện Đại học Y Hải Phòng năm 2022								
Hoạt tính của tế bào diệt tự nhiên NK ở người bình thường								
Hoạt tính của tế bào diệt tự nhiên NK ở người trưởng thành bị rối loạn giấc ngủ								

17.2. Nhiệm vụ KH&CN đã và đang tham gia

Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình *(nếu có)*	Tình trạng nhiệm vụ	Ngày			Kinh phí
					Nghiệm thu	*Công nhận kết quả*	*Đăng ký kết quả*	

18. Giải thưởng về KH&CN trong và ngoài nước

TT	Tên giải thưởng	Hình thức khen thưởng	Cấp khen thưởng	Năm tặng thưởng
1				

19. Đào tạo sau đại học

- *Vai trò hướng dẫn: hướng dẫn 1/ hướng dẫn 2*
- *Bậc đào tạo: Tiến sĩ/Thạc sĩ/BS NỘI TRÚ/CKII...*

TT	Họ tên học viên	Vai trò	Bậc đào tạo	Chuyên ngành	Nơi đào tạo	Năm cấp bằng
1	Phạm Thị Khuyên	Hướng dẫn 1	Thạc sĩ	Nội khoa	Đại học Y Dược Hải Phòng	
2	Nguyễn Thị Kim Hương	Hướng dẫn 1	Tiến sĩ	Khoa học Y Sinh	Học viện Quân Y	2018
3	Nguyễn Quang Chính	Hướng dẫn 1	Thạc sĩ	Thạc sĩ	Đại học Y Dược Hải Phòng	
4	Nguyễn Quang Chính	Hướng dẫn 1	Tiến sĩ	Tiến sĩ Nội khoa	Đại học Y Dược Hải Phòng	2017

NHỮNG THÔNG TIN KHÁC VỀ CÁC HOẠT ĐỘNG KHOA HỌC VÀ CÔNG NGHỆ

Từ 1/1989 đến nay: Tham gia Hội tim mạch Hải Phòng và Hội tim mạch quốc gia Việt Nam là thành viên của Hội; tham gia Hội Sinh lý học Việt Nam làm thành viên của Hội, tham gia Hội lão và dị ứng miễn dịch lâm sàng Hải Phòng, làm trong Ban chấp hành hội; tháng 11 năm 2019 tham gia hội Y học giấc ngủ Việt Nam làm trong Ban chấp hành hội

..... ngày ... tháng ... năm ....

XÁC NHẬN CỦA ĐƠN VỊ

TRƯỞNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

PHÓ HIỆU TRƯỞNG

PGS.TS. Trần Thị Thanh Mai

NGƯỜI KHAI

(Họ tên và chữ ký)

Phạm Thị Khuyên

SOCIALIST REPUBLIC OF VIET NAM
Independence - Freedom - Happiness

THE CHAIRMAN OF THE STATE COUNCIL FOR PROFESSOR TITLE

Pursuant to Decision № 174/2008/QĐ-TTg, dated 31 Dec 2008, by the Prime Minister of the Socialist Republic of Vietnam;

Pursuant to Resolution № 02/2009/NQ-HDCDGSNN, dated 13 Nov 2009, by the State Council for Professor Title;

CONFERS
THE CERTIFICATE OF RECOGNITION

Upon: Mr. Pham Huy Luyen

Born on: October 25th, 1961

In: Tien Lang, Hai Phong

for having met the standards of associate professor title

in: Medicine

Given under the Seal
of the State Council for Professor Title

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

CHỦ TỊCH
HỘI ĐỒNG CHỨC DANH GIÁO SƯ NHÀ NƯỚC

- Căn cứ Quyết định số 174/2008/QĐ-TTg, ngày 31/12/2008, của Thủ tướng Chính phủ;
- Căn cứ Nghị quyết số 02/2009/NQ-HDCDGSNN, ngày 13/11/2009, của Hội đồng Chức danh giáo sư nhà nước;

CÔNG NHẬN
ĐẠT TIÊU CHUẨN CHỨC DANH PHÓ GIÁO SƯ
Y học

Cho: Ông Phạm Huy Luyến

Sinh ngày 25 tháng 10 năm 1961

Quê quán: Tiên Lãng, Hải Phòng

Hà Nội, ngày 18 tháng 11 năm 2009

CHỦ TỊCH HỘI ĐỒNG

Nguyễn Thiện Nhân

Số: 0573 PGS

BỘ TRƯỞNG BỘ GIÁO DỤC VÀ ĐÀO TẠO

Căn cứ đề nghị của Hội đồng đánh giá luận án Khoa học chuyên ngành cấp theo quyết định số 2444/ QĐ-TDH ngày 16 / 11 /1987 họp ngày 13 / 12 / 1987 và Thông báo Giáo sư Phó Tiến Sĩ

CÔNG NHẬN ĐỘC VỊ

PHÓ TIẾN SĨ KHOA HỌC

Ký Luật

Cho Ông Phạm Huy Thuần

Sinh ngày 04 - 10 - 1941

tại Hà Tĩnh

BỘ TRƯỞNG
BỘ GIÁO DỤC VÀ ĐÀO TẠO

Hoàng Minh Thảo

BỘ Y TẾ
Số: 0022767/BYT-CCHN

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

CHỨNG CHỈ HÀNH NGHỀ KHÁM BỆNH, CHỮA BỆNH

BỘ TRƯỞNG BỘ Y TẾ

Căn cứ Luật khám bệnh, chữa bệnh ngày 23/11/2009;
Căn cứ Nghị định số 87/2011/NĐ-CP ngày 27/9/2011 của Chính phủ quy định chi tiết và hướng dẫn thi hành một số điều của Luật khám bệnh, chữa bệnh;
Căn cứ Thông tư số 41/2011/TT-BYT ngày 14/11/2011 của Bộ trưởng Bộ Y tế hướng dẫn cấp chứng chỉ hành nghề đối với người hành nghề và cấp giấy phép hoạt động đối với cơ sở khám bệnh, chữa bệnh;
Xét đề nghị của Cục trưởng Cục Quản lý khám, chữa bệnh - Bộ Y tế,

CẤP CHỨNG CHỈ HÀNH NGHỀ KHÁM BỆNH, CHỮA BỆNH

Họ và tên: PHẠM HUY QUYỀN
Ngày tháng năm sinh: 25/10/1961,
Giấy chứng minh nhân dân số: 030706748,
Ngày cấp: 05/6/2008, Nơi cấp: Công an Hải Phòng,
Chỗ ở hiện nay: 135/29 khu đô thị Núi Sông Lạch Tray, phường Anh Dũng, quận Dương Kinh, thành phố Hải Phòng,
Văn bằng chuyên môn: Bác sỹ,
Phạm vi hoạt động chuyên môn: Khám bệnh, chữa bệnh chuyên khoa Nội tổng hợp.

Hà Nội, ngày 19 tháng 8 năm 2014
KT. BỘ TRƯỞNG
THỨ TRƯỞNG

Nguyễn Thị Xuyên

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

Số: 657/QĐ-YDHP

Hải Phòng, ngày 20 tháng 10 năm 2021

QUYẾT ĐỊNH

Về việc công nhận kết quả nghiệm thu nhiệm vụ NCKH cấp cơ sở năm 2020

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Căn cứ Quyết định số 86/1999/QĐ-TTg ngày 15 - 01 - 1999 của Thủ tướng Chính phủ về việc thành lập Trường Đại học Y Hải Phòng;

Căn cứ Quyết định số 2153/QĐ-TTg ngày 11-11-2013 của Thủ tướng Chính phủ về việc đổi tên Trường Đại học Y Hải Phòng thành Trường Đại học Y Dược Hải Phòng;

Căn cứ Quyết định số 10/QĐ-BYT ngày 06/01/2016 của Bộ trưởng Bộ Y tế về ban hành quy chế tổ chức và hoạt động của Trường Đại học Y Dược Hải Phòng;

Căn cứ Quyết định số 1721/QĐ-YDHP ngày 07 tháng 12 năm 2020 của Hiệu trưởng trường Đại học Y Dược Hải Phòng về việc thành lập Hội đồng Khoa học nghiệm thu đề tài cơ sở năm 2020;

Xét đề nghị của ông Trưởng phòng Quản lý Khoa học,

QUYẾT ĐỊNH:

Điều 1: Công nhận kết quả nghiệm thu nhiệm vụ nghiên cứu khoa học cấp cơ sở năm 2020 cho 180 đề tài *(có danh sách kèm theo)*

Điều 2: Chủ nhiệm nhiệm vụ có trách nhiệm nộp bản báo cáo nhiệm vụ đã hoàn thiện theo ý kiến Hội đồng về phòng QLKH.

Điều 3: Các Ông (Bà): Trưởng phòng Quản lý Khoa học, Tài chính Kế toán, Thường trực Hội đồng Khoa học Giáo dục và các Ông/ Bà có tên trong danh sách chủ nhiệm đề tài căn cứ Quyết định thi hành./.

Nơi nhận:
- Như điều 3;
- Lưu QLKH;
- Lưu VT.

HIỆU TRƯỞNG

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

HIỆU TRƯỞNG
PGS.TS. Nguyễn Văn Kính

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG
Phòng Quản lý Khoa học

Cộng hòa xã hội chủ nghĩa Việt Nam
Độc lập - Tự do - Hạnh phúc

KẾT QUẢ NGHIỆM THU NHIỆM VỤ NCKH CẤP CƠ SỞ NĂM 2020

(Kèm theo Quyết định số 459/QĐ - ĐHYP ngày 05 tháng 04 năm 2021)

TT	Tên đề tài	Chủ nhiệm đề tài	Đơn vị	Kết quả	Ghi chú
1	Nhận xét vai trò của chụp bơm nhũ dưới hướng dẫn của siêu âm trong bệnh lý tuyến giáp nhân tại Bệnh viện Đa khoa quốc tế Hải Phòng năm 2018-2019.	PGS.TS. Hoàng Đức Hạ	BM. Chẩn đoán hình ảnh	Xuất sắc	Tự túc
2	Đánh giá hiệu quả giảm đau của phương pháp tiêm thần phân lỗ liên hợp dưới hướng dẫn cắt lớp vi tính tại Bệnh viện Đa khoa Quốc tế Hải Phòng 2017 - 2019	PGS.TS. Hoàng Đức Hạ ThS. Vũ Xuân Tuyến	BM. Chẩn đoán hình ảnh	Xuất sắc	
3	Hiệu quả của Bevacizumab trong dự phòng dịch cấy bệnh phổi tắc nghẽn mạn tính tại Hải Phòng	GS.TS. Phạm Văn Thức	BM. DƯ - MDLS	Xuất sắc	
4	Nghiên cứu tăng huyết áp vô định (Nocturnal Hight BP) trên người bệnh đã được chẩn đoán tăng huyết áp và trên các đối tượng có nguy cơ	PGS.TS. Phạm Văn Linh	BM. DƯ - MDLS	Khá	
5	Tỷ lệ, triệu hiệu lâm sàng của hội chứng ngưng thở tắc nghẽn khi ngủ trên các đối tượng thừa cân, béo phì khám và điều trị tại Bệnh viện Đại học Y Hải Phòng	ThS. Nguyễn Thị Hồng Liên	BM. DƯ - MDLS	Khá	
6	Đánh giá thực trạng hài lòng của bệnh nhân tại tại Khoa Khám bệnh - Bệnh viện Đại học Y Hải Phòng	ThS. Vũ Thị Hồng	BM. DƯ - MDLS	Đạt	
7	Đánh giá hiệu quả giảm đau của Nefopam kết hợp Ketorolac sau mổ nội soi ổ bụng	BS. Lưu Hoàng Anh PGS.TS. Trần Thị Kiệm	BM. Gây mê hồi sức	Đạt	
8	Đánh giá hiệu quả điều chỉnh độ mở bằng máy corox trong mổ nội soi tiêu hóa tại bệnh viện đa khoa quốc tế Hải Phòng	PGS.TS. Trần Thị Kiệm	BM. Gây mê hồi sức	Đạt	

TT	Tên đề tài	Chủ nhiệm đề tài	Đơn vị	Kết quả	Ghi chú
9	Nghiên cứu ứng dụng một số bài tập nhằm phát triển sức bền trong chạy cự ly 1500m cho sinh viên nam trường Đại học Y Dược Hải Phòng	ThS. Phạm Tuấn Linh	BM. GDTC	Đạt	
10	Đánh giá thực trạng thể lực của sinh viên đái học nam chính quy hệ giá K41 trường Đại học Y Dược Hải Phòng năm học 2019 - 2020	ThS. Nguyễn Cẩm Vân	BM. GDTC	Đạt	
11	Nghiên cứu ứng dụng một số bài tập nhằm phát triển sức nhanh trong chạy cự ly 60m cho sinh viên trường Đại học Y Dược Hải Phòng khóa 42	ThS. Hoàng Thị Bích Thủy ThS. Vũ Đức Minh	BM. GDTC	Đạt	
12	Hiệu quả sử dụng một số bài tập bổ trợ nâng cao hiệu quả kỹ thuật một tay trên vai nâng tạ cho sinh viên K41 trường Đại học Y Dược Hải Phòng	ThS. Nguyễn Thị Phương Thảo ThS. Nguyễn Trần Quý	BM. GDTC	Đạt	
13	Nghiên cứu đặc điểm kinh thái vùng vú sức hồi trước trong tâm và sau trong tâm của người trưởng thành bình thường bằng MRI 3.0 Tesla	ThS. Phạm Thành Nguyên	BM. Giải phẫu	Khá	
14	Nghiên cứu một số chỉ số nhân trắc vùng đầu mặt của sinh viên Đại học Y Dược Hải Phòng độ tuổi từ 18-23 năm 2020	ThS. Lê Thị Yến	BM. Giải phẫu	Khá	
15	Nhận xét một số trường hợp tổ bào học, mô bệnh học sỏi tử cung bất thường tại Bệnh viện Phụ sản Hải Phòng	ThS. Trần Thị Phương	BM. Giải phẫu bệnh	Khá	
16	Nhận xét đặc điểm lâm sàng, cận lâm, tổ bào học và mô bệnh học của bệnh nhân ung thư vú tại Bệnh viện Hữu nghị Việt Tiệp	ThS. Bùi Cao Cường	BM. Giải phẫu bệnh	Khá	
17	Nghiên cứu khả năng kháng khuẩn Ecoli của hạt Nano Titandioxit	PGS.TS. Vũ Thị Kim Loan	BM. Hóa học	Xuất sắc	
18	Nghiên cứu chế tạo màng Nano Titandioxit bằng phương pháp thủy nhiệt	ThS. Phan Minh Châu	BM. Hóa học	Xuất sắc	

TT	Tên đề tài	Chủ nhiệm đề tài	Đơn vị	Kết quả	Ghi chú
19	Nghiên cứu khả năng hấp phụ Sắt và Mangan trong nước thải phòng thí nghiệm Hóa Học – Đại học Y Dược Hải Phòng bằng vật liệu hấp phụ than hoạt tính chế tạo từ vỏ trấu	TS. Nguyễn Văn Dương	BM. Hóa học	Khá	
20	Xây dựng quy trình tạo kem dưỡng da từ dịch chiết lá cây hoàn ngọc	TS. Bùi Ngọc Tân	BM. Hóa học	Khá	
21	Thẩm định phương pháp định lượng Cefuroxim Natri trong huyết tương người bằng phương pháp sắc ký lỏng hiệu năng cao đạt tiêu chuẩn của Cục quản lý thực phẩm và Dược phẩm Hoa Kỳ (US FDA)	ThS. Nguyễn Thị Cúc	BM. Hóa học	Khá	
22	Phát hiện đột biến GAA gây bệnh Pompe tại Việt Nam	ThS. Nguyễn Thị Phương Thảo	BM. Hóa sinh	Khá	
23	Nghiên cứu mối liên quan giữa nồng độ kali và ure, creatinin huyết tương ở bệnh nhân suy thận mạn lọc máu chu kỳ tại Bệnh viện hữu nghị Việt Tiệp	ThS. Dương Thị Minh Tâm	BM. Hóa sinh	Khá	
24	Khảo sát nồng độ gan, hoạt độ AST, ALT, GGT huyết thanh của một số bệnh nhân mắc sốt kéo dài tại Bệnh viện Đại học Y Hải Phòng năm 2018	ThS. Nguyễn Thị Phương Mai	BM. Hóa sinh	Khá	
25	Tham trang thiếu máu thiếu sắt ở trẻ từ 6 tháng đến 5 tuổi ở khoa Nhi Bệnh viện quốc tế Green	ThS. Bùi Thị Hương Giang	BM. Hóa sinh	Đạt	
26	Nghiên cứu chỉ số tế bào máu ngoại vi và tủy xương ở bệnh nhân u lympho non Hodgkin tại Bệnh viện Hữu nghị Việt Tiệp Hải Phòng	CN. Mai Thị Tình TS. Hoàng Văn Phòng	BM. Huyết học – Truyền máu	Khá	
27	Nghiên cứu thực trạng truyền máu khẩn cấp tại bệnh viện Hữu Nghị Việt Tiệp năm 2019-2020	TS. Hoàng Văn Phòng BS. Nguyễn Hải Anh	BM. Huyết học – Truyền máu	Khá	
28	Thực trạng và một số yếu tố liên quan đến stress trong sinh viên, và khoảng ở gia tốt cả chương từ 18-49 tuổi tại thị xã Quảng Yên, tỉnh Quảng Ninh năm 2019-2020	PGS.TS. Đinh Thị Thanh Mai	BM. Ký sinh trùng	Xuất sắc	

TT	Tên đề tài	Chủ nhiệm đề tài	Đơn vị	Kết quả	Ghi chú
29	Thực trạng và một số yếu tố liên quan đến nhiễm giun đường ruột ở học sinh trường tiểu học xã Liên Vị, Quảng Yên, tỉnh Quảng Ninh (2019-2020)	TS. Vũ Văn Thái	BM. Ký sinh trùng	Khá	
30	Hiệu quả điều trị bệnh lang beo bằng thuốc bôi ketoconazole cho học sinh hai trường trung học cơ sở tại Hải Phòng	TS. Võ Thị Thanh Hiền	BM. Ký sinh trùng	Khá	
31	So sánh nồng độ LDL-C đo bằng phương pháp đo trực tiếp với phương pháp sức lượng sử dụng công thức Friedewald tại khoa Xét nghiệm Đa khoa Bệnh viện Việt Tiệp	CN. Phạm Minh Khánh TS. Đỗ Ngọc Hải	BM. Kỹ thuật Hóa sinh	Khá	
32	Đặc điểm nồng độ Tg, Anti Tg và TSH, ferritin tuyến giáp ở bệnh nhân ung thư tuyến giáp thể biệt hoá tại Bệnh viện Hữu nghị Việt Tiệp (1-12/2018)	TS. Phạm Thị Thu Trang TS. Đào Văn Tùng	BM. Kỹ thuật Hóa sinh	Khá	
33	Khảo sát nồng độ Glycosanh trên bệnh nhân đái tháo đường type2 tại Bệnh viện hữu nghị Việt Tiệp	TS. Đào Văn Tùng TS. Phạm Thị Thu Trang	BM. Kỹ thuật Hóa sinh	Khá	Tự túc
34	Đánh giá hiệu quả sàng lọc và phát hiện sớm ung thư buồng trứng với xét nghiệm CA-125, HE4 ở bệnh nhân đến khám tại Bệnh viện Phụ Sản Hải Phòng (1-6/2019)	TS. Phạm Thị Thu Trang TS. Lưu Vũ Dũng	BM. Kỹ thuật Hóa sinh	Khá	Tự túc
35	Đặc điểm lâm sàng, cận lâm sàng lao phổi mới AFB(+) ở bệnh nhân lạm dụng rượu tại Bệnh viện Phổi Hải Phòng 2017- 2019	PGS.TS. Nguyễn Huy Diệu	BM. Lao và BP	Xuất sắc	
36	Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị bệnh nhân viêm phổi cộng đồng tại Bệnh viện Việt Tiệp, Hải Phòng 2019 - 2020	ThS. Trương Thành Kiên	BM. Lao và BP	Khá	
37	Đặc điểm dị ứng của bệnh nhân điều trị thuốc chống lao hàng 1 tại Bệnh viện Phổi Hải Phòng	TS. Nguyễn Đức Tín	BM. Lao và BP	Khá	
38	Nghiên cứu đặc điểm lâm sàng, cận lâm sàng lao phổi AFB(+) ở người cao tuổi tại bệnh viện Phổi Hải Phòng trong 2 năm 2018-2019	ThS. Nguyễn Thị Trang	BM. Lao và BP	Khá	

TT	Tên đề tài	Chủ nhiệm đề tài	Đơn vị	Kết quả	Ghi chú
39	Đặc điểm lâm sàng và một số yếu tố liên quan đến nhược thị do loạn thị ở trẻ em tại Bệnh viện Đại học Y Hải Phòng	ThS. Nguyễn Thị Thu Trang ThS. Bùi Thị Dịu	BM. Mắt	Khá	
40	Một số yếu tố liên quan đến suy dinh dưỡng nặng và thấp còi ở trẻ 2 tháng đến dưới 5 tuổi mắc viêm phổi tại Bệnh viện nhi Hải Phòng năm 2019.	PGS.TS Võ Sỹ Không	BM. Nhi	Xuất sắc	Tự túc
41	Thực trạng bảo quản lạnh sữa mẹ và vệ sinh vú mẹ tại Trung tâm Hỗ trợ sinh sản và Công nghệ mô ghép – Bệnh viện Đại học Y Hà Nội	ThS. Đỗ Đình Tiệp	BM. Mô	Khá	
42	Nghiên cứu mật độ xương bằng phương pháp DEXA và các yếu tố nguy cơ loãng xương ở phụ nữ sau mãn	ThS. Phạm Thị Thu Thủy	BM. Mô	Khá	
43	Nghiên cứu biến đổi cấu trúc và khả năng đàn nạp sau giảm đồng loại xương lạnh sâu trên chuột cống trắng thực nghiệm	ThS. Khổng Thị Vân Anh	BM. Mô	Khá	Tự túc
44	Đánh giá kết quả phẫu thuật nội soi điều trị thừng ổ bụng tại Bệnh viện Đại học Y Hải Phòng từ 2017 - 2019	PGS.TS. Phạm Văn Duyệt	BM. Ngoại - PTTH	Xuất sắc	
45	Kết quả ứng dụng phẫu thuật nội soi một lỗ cắt túi mật có dụng cụ giang tay (Glove-Port) điều trị sỏi túi mật tại Bệnh viện Việt Tiệp Hải Phòng	TS. Phạm Văn Thương	BM. Ngoại - PTTH	Xuất sắc	
46	Nghiên cứu đặc điểm lâm sàng và đánh giá kết quả điều trị gãy thân xương cánh tay ở người lớn bằng nẹp vít khóa tại Bệnh viện Hữu nghị Việt Tiệp Hải Phòng từ tháng 01/2016 - 01/2018	ThS. BSNT. Trịnh Đình Thanh	BM. Ngoại - PTTH	Khá	
47	Nhận xét kết quả phẫu thuật tạo hình thành bụng có chuyển vạt tại Bệnh viện Hữu nghị Việt Tiệp Hải Phòng	ThS. Nguyễn Hữu Tiến	BM. Ngoại - PTTH	Khá	
48	Mô tả đặc điểm lâm sàng, hình thái tổn thương và kết quả điều trị chấn thương động mạch chi dưới tại Bệnh viện Hữu nghị Việt Tiệp	BS. Hoàng Anh Công	BM. Ngoại - PTTH	Khá	

TT	Tên đề tài	Chủ nhiệm đề tài	Đơn vị	Kết quả	Ghi chú
49	Nhận xét kết quả điều trị nội nhãn quản bằng phương pháp nội soi tán sỏi ngược dòng bằng Laser Holmium tại Bệnh viện Đại học Y Hải Phòng	TSĐ. Phạm Quốc Hiếu	BM. Ngoại - PTTH	Khá	
50	Một số nhận xét về kết quả dạy tiếng Anh chuyên ngành theo chương trình HPET cho sinh viên Y đa khoa tại trường Đại học Y Dược Hải Phòng	ThS. Trần Thị Hòa	BM. Ngoại ngữ	Đạt	
51	Đặc điểm dịch tễ học lâm sàng, cận lâm sàng, hiểu chứng và kết quả điều trị của bệnh viêm mũi tại Bệnh viện Trẻ em Hải Phòng	PGS.TS. Nguyễn Ngọc Sinh BSNT. Vũ Thị Ánh Hồng	BM. Nhi	Xuất sắc	
52	Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị thiếu máu ở trẻ đẻ non tại Bệnh viện Trẻ em Hải Phòng 2018-2019	PGS.TS. Đinh Văn Thơm	BM. Nhi	Xuất sắc	
53	Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị viêm phổi do hợp bào hô hấp ở trẻ sơ sinh tại Bệnh viện Trẻ em Hải Phòng năm 2020	PGS.TS. Đặng Văn Chiến	BM. Nhi	Xuất sắc	
54	Đặc điểm dịch tễ lâm sàng, cận lâm sàng và nhận xét kết quả điều trị tiêu chảy do Rotavirus tại Bệnh viện Trẻ em Hải Phòng năm 2019 - 2020	ThS. Trần Đức Tâm BSNT. Hà Thị Thu Huyền	BM. Nhi	Khá	
55	Nghiên cứu đặc điểm lâm sàng, cận lâm sàng và hiệu quả điều trị bệnh Kawasaki tại Bệnh viện Trẻ em Hải Phòng năm 2018 - 2020	ThS. Trần Thị Hải Yến	BM. Nhi	Khá	
56	Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị ho gà ở trẻ em dưới 5 tuổi	ThS. Nguyễn Mai Phương ThS. Trần Hồng Hạnh	BM. Nhi	Khá	
57	Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị viêm da mủ trẻ sơ sinh	ThS. Chu Thị Hà ThS. Nguyễn Bùi Bình	BM. Nhi	Khá	
58	Tỉ lệ mắc đặc điểm của nhóm tiêu phế quản cấp có nhiễm RSV và không nhiễm RSV ở trẻ em Hải Phòng	TS. Đinh Dương Tùng Anh	BM. Nhi	Khá	

TT	Tên đề tài	Chủ nhiệm đề tài	Đơn vị	Kết quả	Ghi chú
59	Đặc điểm dịch tễ học lâm sàng, cận lâm sàng và nhận xét kết quả điều trị viêm tiểu phế quản có tiền viêm hợp bào hô hấp tại khoa Nhi, Bệnh viện quốc tế Green năm 2019-2020	PGS.TS. Vũ Văn Quang	BM. Nhi	Khá	
60	Nghiên cứu kết quả cắt polip đại tràng tại Bệnh viện Hữu nghị Việt Tiệp	PGS.TS. Phạm Văn Nhiều	BM. Nội	Xuất sắc	
61	Đặc điểm lâm sàng, cận lâm sàng và một số yếu tố liên quan đến rối loạn lipid ở bệnh nhân tăng huyết áp cấp cứu tại Bệnh viện Hữu nghị Việt Tiệp	TS. Vũ Mạnh Tân	BM. Nội	Xuất sắc	
62	Thực trạng tuân thủ sử dụng thuốc ngoại hô hấp ở bệnh nhân đợt cấp bệnh phổi tắc nghẽn mạn tính điều trị tại Bệnh viện Việt tiệp Hải Phòng năm 2019-2020	ThS. Trịnh Hồng Nhung	BM. Nội	Khá	
63	Nghiên cứu đặc điểm lâm sàng, cận lâm sàng và sequang trong bệnh phổi tắc nghẽn mạn tính tại khoa Nội hô hấp Bệnh viện Hữu nghị Việt Tiệp – Hải Phòng	ThS. Lê Thị Diệu Hiền	BM. Nội	Khá	
64	Nghiên cứu đặc điểm lâm sàng, cận lâm sàng biến chứng thần của bệnh nhân đái tháo đường typ 2 tại khoa Nội 3, Bệnh viện Hữu nghị Việt Tiệp – Hải Phòng	ThS. Kê Thị Lan Anh	BM. Nội	Khá	
65	Đặc điểm rối loạn về huyết học và áp dụng thang điểm SLEDAI trong đánh giá đợt tiến triển của bệnh nhân Lupus ban đỏ điều trị tại khoa Huyết học lâm sàng Bệnh viện Việt Tiệp năm 2020	ThS. Doãn Thị Út	BM. Nội	Khá	
66	Đặc điểm lâm sàng, cận lâm sàng nhiễm khuẩn huyết ở bệnh nhân xơ gan tại bệnh viện Hữu Nghị Việt Tiệp năm 2018-2020	ThS. Vũ Thị Thu Trang	BM. Nội	Khá	
67	Nhận xét đặc điểm lâm sàng, cận lâm sàng và một số yếu tố nguy cơ của hội chứng chuyển hóa ở bệnh nhân nam sau tuổi mắc bệnh gút điều trị tại khoa Nội 4 bệnh viện Hữu nghị Việt Tiệp Hải Phòng năm 2018	ThS. Đỗ Thị Thanh Loan	BM. Nội	Đạt	

TT	Tên đề tài	Chủ nhiệm đề tài	Đơn vị	Kết quả	Ghi chú
68	Đánh giá kết quả điều trị dự phòng sinh non trên thai phụ có chiều dài cổ tử cung ngắn tại Bệnh viện Phụ sản Hải Phòng	ThS. Nguyễn Thị Hoàng Trang	BM. Sản	Khá	
69	Đánh giá kết quả kiểm phát chuyển dạ ở thai phụ quá ngày sinh bằng progynlasolin E2 tại Bệnh viện Phụ sản Hải Phòng	ThS. Thái Thị Huyền	BM. Sản	Khá	
70	Nghiên cứu một số yếu tố nguy cơ và sỏi xơ miệng mảo tạo đẻ tại Bệnh viện Phụ sản Hải Phòng	BSNT. CKI. Lê Đắc Hiệp	BM. Sản	Khá	
71	Đánh giá kết quả dự phòng sinh non ở thai phụ mang thai tại Bệnh viện Phụ sản Hải Phòng	ThS. Bùi Văn Hiếu	BM. Sản	Khá	
72	Chiều người tử cung góc sống tại Bệnh viện Phụ sản Hải Phòng 2018 - 2019	ThS. Nguyễn Thị Mai Phương	BM. Sản	Khá	
73	Nhận xét chiều dài trung bình cổ tử cung ở thai phụ từ 16 – 24 tuần qua siêu âm đường âm đạo	ThS. Lê Anh Nam	BM. Sản	Khá	
74	Thực trạng nhiễm khuẩn hậu sản và một số yếu tố liên quan tại Bệnh viện Phụ sản Hải Phòng trong 5 năm 2015 – 2019	ThS. Đào Thị Hải Yến	BM. Sản	Khá	
75	Nghiên cứu đặc điểm hiểu dễ điện tim của các vận động viên bóng đá nam một số câu lạc bộ bóng đá Hải Phòng sau 12 tháng tập luyện	PGS.TS. Nguyễn Văn Mùi	BM. Sinh lý	Xuất sắc	
76	Đặc điểm nồng độ và thang điểm IPSS, QOL ở bệnh nhân 40-80 tuổi phì đại tuyến tiền liệt khám tại Bệnh viện Đại học Y Hải Phòng năm 2019	TS. Đào Thu Hồng	BM. Sinh lý	Xuất sắc	
77	Nghiên cứu đặc điểm sơ bộ đo glucose bằng máy Fobrosum trên nhóm bệnh nhân bị bệnh gan	ThS. Trần Thị Quỳnh Trang	BM. Sinh lý	Khá	
78	Kết quả nghiên cứu tạo kênh mở trên sỏi niệu ở bệnh nhân sỏi đa sỏi niệu từ tháng 01 đến tháng 10 năm 2020	ThS. Vũ Thành Đông	BM. Sinh lý	Khá	

TT	Tên đề tài	Chủ nhiệm đề tài	Đơn vị	Kết quả	Ghi chú
79	Nghiên cứu đặc điểm tổn thương, hình ảnh siêu âm màng phổi của bệnh nhân tràn dịch màng phổi điều trị tại bệnh viện Đại học Y Hải Phòng năm 2020	Ths. Phạm Thị Nguyên	BM. Sinh lý	Đạt	
80	Nghiên cứu đặc tính dược chất can it khó tiêu chuột	TS. Nguyễn Thị Kim Hương	BM. SLB -DƯ	Xuất sắc	
81	Nghiên cứu thực trạng bệnh suy dạ dày điều trị tại Bệnh viện Đại học Y Hải Phòng năm 2020	PGS.TS. Phạm Huy Quyền	BM. SLB -DƯ	Khá	
82	Nghiên cứu tỷ lệ loãng xương và các yếu tố nguy cơ gây loãng xương ở bệnh nhân bệnh phổi tắc nghẽn mạn tính điều trị tại khoa Hô hấp tim mạch – Bệnh viện Đại học Y Hải Phòng 2020	Ths. Phạm Thị Khuyên	BM. SLB -DƯ	Đạt	
83	Kết quả của dao Sgamun trong phẫu thuật cắt Amidan tại Bệnh viện Đa khoa Quốc tế Hải Phòng	Ths. Tạ Đăng Sơn	BM. Tai mũi họng	Xuất sắc	
84	Nghiên cứu đặc điểm lâm sàng và các yếu tố liên quan đến tiên lượng điều trị ở bệnh nhân điếc đột ngột tại Bệnh viện Đa khoa Quốc tế Hải Phòng	Ths. Trần Thị Thanh Thủy	BM. Tai mũi họng	Khá	
85	Nghiên cứu đặc điểm lâm sàng của rối loạn lo âu, trầm cảm trên bệnh nhân loạn thần do rượu điều trị tại Bệnh viện Tâm thần Hải Phòng	PGS.TS. Phạm Văn Minh Ths. Vương Thị Thủy	BM. Tâm thần	Xuất sắc	
86	Thực trạng nhận thức của bệnh nhân và người chăm sóc về bệnh Tâm thần phân liệt tại khoa Cấp cứu 365 Bệnh viện Tâm thần Hải Phòng từ tháng 1 đến tháng 3 năm 2020	Ths. Vương Thị Thủy	BM. Tâm thần	Khá	
87	Đánh giá sự thay đổi chất lượng cuộc sống của bệnh nhân loạn thần do rượu sau khi điều trị tại Bệnh viện Tâm thần Hải Phòng	Ths. Lê Sao Mai	BM. Tâm thần	Khá	
88	Tác động của liệu pháp nhận thức hành vi tới trầm cảm ở bệnh nhân nghiện ma túy điều trị nội trú tại Bệnh viện Tâm thần Hải Phòng	Ths. Đoàn Thị Như Yến	BM. Tâm thần	Khá	

TT	Tên đề tài	Chủ nhiệm đề tài	Đơn vị	Kết quả	Ghi chú
89	Đặc điểm lâm sàng, hình ảnh học và phân loại theo TOAST của nhồi máu não lần đầu tiên điều trị tại Khoa Thần kinh, Bệnh viện Việt Tiệp - Hải Phòng	ThS. Ngô Văn Dũng	BM. Thần kinh	Khá	
90	Nghiên cứu một số đặc điểm lâm sàng và điện sinh lý trong hội chứng ống cổ tay tại khoa Thần kinh Bệnh viện Hữu Nghị Việt Tiệp	ThS. Chu Thị Thuần	BM. Thần kinh	Khá	
91	Đặc điểm lâm sàng và điện sinh lý thần kinh của bệnh nhân viêm đa rễ và dây thần kinh cấp tính tại Bệnh viện Hữu nghị Việt Tiệp	ThS. Nguyễn Tuấn Lương	BM. Thần kinh	Khá	
92	Nghiên cứu một số mô hình đám mây an ninh cơ sở dữ liệu và đề xuất ứng dụng vào Website	ThS. Trần Thanh Vân	BM. Tin học	Đạt	
93	Khảo sát một số phần mềm xây dựng video ghể kiến hóa say	ThS. Trịnh Anh Tuấn	BM. Tin học	Đạt	
94	Xây dựng hệ thống Website quản lý rác rác và sự kiện của Bệnh viện hạng II	ThS. Vũ Ngọc Thanh	BM. Tin học	Đạt	
95	Xây dựng phần mềm quản lý đề tài và bài thi thực hành cấp bộ môn	ThS. Nguyễn Thị Chiên	BM. Tin học	Đạt	
96	Đánh giá độ thỏa thích của Website trường Đại học Y Dược Hải Phòng	ThS. Nguyễn Thị Hoà	BM. Toán học	Đạt	
97	Đặc điểm dịch tễ học, lâm sàng và xét nghiệm của các bệnh nhân ung thư có viêm gan vi rút B/C tại khoa Bệnh Nhiệt Đới BV Việt Tiệp năm 2019	ThS. Phạm Thị Yến Anh	BM. Truyền nhiễm	Khá	
98	Đặc điểm lâm sàng và kết quả điều trị bệnh nhân sốc nhiễm khuẩn tại khoa Hồi sức Nội, Bệnh viện Hữu nghị Việt Tiệp, Hải Phòng năm 2019	ThS. Trần Thị Liên	BM. Truyền nhiễm	Khá	
99	Đặc điểm dịch tễ, lâm sàng, cận lâm sàng của bệnh nhân Sốt xuất huyết Dengue điều trị tại Bệnh viện Hữu nghị Việt Tiệp năm 2019	ThS. Hoàng Thị Thìn ThS. Nguyễn Thị Phương	BM. Truyền nhiễm	Khá	
100	Đánh giá kết quả tăng lực sau thư vị phụ khoa tại 3 huyện An Lão, Tiên Lãng, Vĩnh Bảo thành phố Hải Phòng năm 2018	PGS.TS. Nguyễn Lam Hòa	BM. Ung thư	Khá	

TT	Tên đề tài	Chủ nhiệm đề tài	Đơn vị	Kết quả	Ghi chú
101	Đánh giá hiệu quả sử dụng thuốc phối hợp cố định liều trong điều trị viêm phổi không điển hình tại Trung tâm Ung Bướu Bệnh Viện Việt Tiệp 2018-2019	ThS. Nguyễn Đức Hưng	BM. Ung bướu	Khá	
102	Nghiên cứu đặc điểm nhiễm Aeromonas trên bệnh nhân điều trị tại Bệnh viện Hữu nghị Việt Tiệp năm 2016 – 2019	TS. Nguyễn Hùng Cường	BM. Vi sinh	Khá	
103	Xác định tỷ lệ nhiễm và một số đặc điểm kháng thuốc kháng sinh của các vi khuẩn họ Enterobacteriaceae tại Bệnh viện Đại học Y Hải Phòng 2019-2020	ThS. Phạm Thị Tâm	BM. Vi sinh	Khá	
104	Xác định đột biến liên quan đến kháng thuốc ở bệnh nhân viêm gan B mạn tính tại Bệnh viện Bệnh nhiệt đới Trung ương (1/2014 - 12/2017)	ThS. Trịnh Thị Hồng	BM. Vi sinh	Khá	Tạp chí
105	Nghiên cứu thực trạng sử dụng dung dịch truyền tĩnh mạch tại khoa Hồi sức Bệnh viện Đại học Y Hải Phòng	PGS.TS. Trịnh Thị Lý	BM. Y học gia đình	Xuất sắc	
106	Đặc điểm lâm sàng, cận lâm sàng của bệnh nhân tăng huyết áp có biến đổi thân đường quản lý tại Khoa khám bệnh, Bệnh viện Đại học Y Hải Phòng năm 2019 - 2020	ThS. Nguyễn Văn Thành	BM. Y học gia đình	Khá	
107	Khảo sát tình trạng lo âu, trầm cảm ở sinh viên y đa khoa y trường Đại học Y Dược Hải Phòng năm 2019-2020	ThS. Bùi Hồng Nhung	BM. Y học gia đình	Đạt	
108	Ứng dụng phương pháp giải trình tự gen thế hệ mới trong phát hiện sớm thai bị các bệnh Patau, Edwward qua ADN tự do của thai trong máu mẹ	ThS. Nguyễn Thị Hải ThS. Lê Thị Thu Huyền	BM. Y sinh học - DT	Khá	
109	Ảnh hưởng của sự biểu hiện miR – 125a đối với quá trình tăng sinh và di căn của tế bào ung thư vú	ThS. Lê Hữu Giang	BM. Y sinh học - DT	Khá	
110	Nhân một trường hợp bệnh nhân nữ vị mắc đoạn NST số 7	ThS. Nguyễn Thị Tươi	BM. Y sinh học - DT	Khá	
111	Tình trạng dinh dưỡng của bệnh nhân lọc máu chu kỳ tại khoa Thận nhân tạo Bệnh viện Đại học Y Hải Phòng năm 2020	PGS.TS. Thái Lan Anh	Khoa Điều dưỡng	Khá	

TT	Tên đề tài	Chủ nhiệm đề tài	Đơn vị	Kết quả	Ghi chú
112	Đánh giá sự thích nghi của sinh viên và nhân công thực hành sáng trong bối cảnh trọng lượng thấp	TS. Đỗ Thị Lan Anh	Khoa Điều dưỡng	Khá	
113	Thực trạng về trí tuệ cảm xúc của sinh viên điều dưỡng chính quy trường Đại học Y Dược Hải Phòng năm 2019	ThS. Đỗ Thị Tuyết Mai	Khoa Điều dưỡng	Khá	
114	Thực trạng kiến thức, thực hành tự chăm sóc phòng bệnh tăng huyết áp thai kỳ của thai phụ tại Bệnh viện Phụ sản Hải Phòng năm 2020	ThS. Hoàng Thị Oanh	Khoa Điều dưỡng	Khá	
115	Thực trạng chất lượng cuộc sống của người bệnh sau tai tại Bệnh viện Đa khoa Kiến An, Hải Phòng, năm 2020	ThS. Lương Thị Thu Giang	Khoa Điều dưỡng	Khá	
116	Khảo sát kết quả chăm sóc người bệnh gãy xương cẳng chân tại khoa Phẫu thuật theo yêu cầu bệnh viện Việt Tiệp Hải Phòng năm 2020	ThS. Nguyễn Thanh Xuân	Khoa Điều dưỡng	Khá	
117	Thực trạng về nhận cách của sinh viên với nhân điều dưỡng chính quy trường Đại học Y Dược Hải Phòng năm 2020	ThS. Nguyễn Thị Anh Thư	Khoa Điều dưỡng	Khá	
118	Kiến thức phòng và cấp cứu phản vệ của sinh viên Điều dưỡng hệ văn bằng hai tại trường Đại học Y Dược Hải Phòng năm 2020	ThS. Nguyễn Thị Phương	Khoa Điều dưỡng	Khá	
119	Chuẩn hóa bộ công cụ đo lường tình trạng kiệt sức phiên bản Việt Ngữ	TS. Nguyễn Thị Thu Hương	Khoa Điều dưỡng	Khá	
120	Thực trạng kiến thức, thực hành về dự phòng tổn thương do vật sắc nhọn của sinh viên điều dưỡng chính quy trường đại học Y Dược Hải Phòng năm 2020.	ThS. Phạm Thị Tuyết	Khoa Điều dưỡng	Khá	
121	Thực trạng mong muốn được làm việc tại nước ngoài của sinh viên với nhân Điều dưỡng chính quy trường Đại học Y Dược Hải Phòng	ThS. Vũ Thị Cẩm Doanh	Khoa Điều dưỡng	Khá	
122	Khảo sát sự hài lòng của người bệnh điều trị nội trú tại Khoa Nội tổng hợp Bệnh viện Đại học Y Hải Phòng năm 2020	ThS. Phạm Thị Thơ	Khoa Điều dưỡng	Khá	
123	Thực trạng trầm cảm sau sinh ở các bà mẹ có con đang điều trị tại khoa Sơ sinh, Bệnh viện Trẻ em Hải Phòng năm 2019	ThS. Lê Thị Thu Hằng	Khoa Điều dưỡng	Khá	
124	Thực trạng kiến thức về phòng vệ sinh cho người bệnh của sinh viên Điều dưỡng chính quy Trường Đại học Y Dược Hải Phòng năm 2020	ThS. Trần Thùy Dương	Khoa Điều dưỡng	Khá	

TT	Tên đề tài	Chủ nhiệm đề tài	Đơn vị	Kết quả	Ghi chú
125	Các yếu tố liên quan đến kiến thức, thực hành của điều dưỡng viên trong bệnh đông đặc cho bệnh nhân tại Bệnh viện Hữu nghị Việt Tiệp	ThS. Đỗ Thị Hạnh	Khoa Điều dưỡng	Khá	
126	Chất lượng cuộc sống và một số yếu tố liên quan ở phụ nữ tuổi mãn kinh tại huyện Kiến Thụy, Hải Phòng năm 2018	ThS. Nguyễn Thị Hòa	Khoa Điều dưỡng	Khá	
127	Sự hài lòng của điều dưỡng viên tại Bệnh viện Đại học Y Hải Phòng năm 2020	ThS. Bùi Thị Thanh Mai	Khoa Điều dưỡng	Khá	
128	Một số yếu tố liên quan tới stress nghề nghiệp của điều dưỡng viên hệ vừa làm vừa học tại Trường Đại học Y Dược Hải Phòng	ThS. Hoàng Tuấn Anh	Khoa Điều dưỡng	Đạt	
129	Thực trạng sử dụng kháng sinh ở bệnh nhân có mẫu bệnh phẩm cấy định danh vi khuẩn dương tính tại Bệnh viện Đa khoa Quốc tế Hải Phòng từ tháng 1/2019 đến tháng 12/2019	PGS.TS. Nguyễn Văn Hùng	Khoa Dược	Xuất sắc	
130	Kết quả theo dõi nồng độ thuốc vancomycin tại Bệnh viện Đa khoa Quốc tế Hải Phòng từ tháng 1/2019 đến tháng 06/2020	TS. Nguyễn Thị Thu Phương	Khoa Dược	Xuất sắc	
131	Nghiên cứu thành phần hóa học và bước đầu đánh giá tác dụng chống viêm in vitro của quả Bạch đàn (Eucalyptus globulus), Sử quân (Myrtaceae)	TS. Phạm Thị Anh	Khoa Dược	Xuất sắc	
132	Nghiên cứu thành phần hóa học của vỏ Hành tây (Allium cepa/ovicum)	TS. Ngô Thị Quỳnh Mai	Khoa Dược	Xuất sắc	
133	Nghiên cứu bào chế hệ phân tán rắn chứa fluoxetin	ThS. Vũ Thị Quỳnh	Khoa Dược	Xuất sắc	
134	Xây dựng danh mục tương tác thuốc cần chú ý trong thực hành lâm sàng tại Bệnh viện Trẻ em Hải Phòng	TS. Trần Thị Nghĩa	Khoa Dược	Khá	
135	Nghiên cứu ứng dụng sắc ký lỏng hiệu năng cao (HPLC) để xác định sơ bộ thành phần hoá học của vị nấm linh Hải Phòng	ThS. Cao Đức Tuấn	Khoa Dược	Khá	
136	Thực trạng hoạt động vòng ứng thuốc cho bệnh nhân lao tại Bệnh viện Phổi Hải Phòng năm 2019	ThS. Đỗ Thị Bích Diệp	Khoa Dược	Khá	

TT	Tên đề tài	Chủ nhiệm đề tài	Đơn vị	Kết quả	Ghi chú
137	Thực trạng sử dụng kháng sinh trong điều trị viêm màng não mủ tại Bệnh viện Trẻ em Hải Phòng năm 2019	ThS. Nguyễn Minh Thảo	Khoa Dược	Khá	
138	Thực trạng sử dụng thuốc điều trị đái tháo đường tại khoa Nội tổng hợp bệnh viện Kiến An Hải phòng, năm 2020	ThS. Phạm Thúy Hằng	Khoa Dược	Khá	
139	Đánh giá tương đương sinh học Lisinro 10mg (Viên nén lisinopril 10mg) so với thuốc đối chứng ZESTRIL 10mg trong tình trạng đói	ThS. Võ Thùy Dung	Khoa Dược	Khá	
140	Xây dựng danh mục tương tác thuốc đáng chú ý tại Bệnh viện Tâm thần Hải Phòng năm 2020	ThS. Lê Thị Thúy Linh	Khoa Dược	Khá	
141	Nghiên cứu bào chế hệ gel chứa Metronidazol	ThS. Vành Thị Kim Thi	Khoa Dược	Khá	
142	Xây dựng danh mục tương tác thuốc cần chú ý trong điều trị tại khoa Nội - Bệnh viện Kiến An Hải Phòng	DS. Nguyễn Thị Hạnh	Khoa Dược	Khá	
143	Mô tả chiến lược Marketing hỗn hợp của công ty TNHH Novapharm giai đoạn 2016 -2019.	TS. Phạm Văn Trường	Khoa Dược	Đạt	
144	Khảo sát hoạt tính kháng khuẩn của dược vật ngập mặn Bần chua (Sonneratia caseolaris, họ Lythraceae)	ThS. Vành Thị Quyên	Khoa Dược	Đạt	
145	Xây dựng phương pháp LC-MS/MS phân tích lisinopril trong huyết tương người	DS. Phạm Thị Phương Thảo	Khoa Dược	Đạt	
146	Đặc điểm lâm sàng, giải phẫu bệnh và kết quả điều trị PapilOma, tại Bệnh viện Đại học Y Hải Phòng 2019 - 2020	PGS.TS. Phạm Văn Liệu	Khoa RHM	Xuất sắc	
147	Đánh giá kết quả điều trị tủy chân răng hàm nhỏ bằng phương pháp hàn kín hệ thống ống tủy với Gutta Flow Bioseal	TS. Võ Quang Hưng	Khoa RHM	Xuất sắc	
148	Đánh giá kết quả điều trị nội nha lại có sử dụng hệ thống EQ-V trong trám bít ống tủy tại Bệnh viện Đại học Y Hải Phòng năm 2020	TS. Trần Thị An Huy	Khoa RHM	Xuất sắc	

TT	Tên đề tài	Chủ nhiệm đề tài	Đơn vị	Kết quả	Ghi chú
149	Nhận xét hiệu quả lành thương của ghép màng huyết tương giàu tiểu cầu sau nhổ răng 8 hàm dưới tại Bệnh viện Đại học Y Hải Phòng, 2020	TS. Phạm Thanh Hải	Khoa RHM	Khá	
150	Thực trạng bệnh sâu răng và một số yếu tố liên quan ở sinh viên điều dưỡng năm thứ nhất trường Đại học y dược Hải Phòng năm học 2019 - 2020	ThS. Lương Xuân Quỳnh	Khoa RHM	Khá	
151	Đo sinh hiệu quả tạo hình ống tủy răng khó cách viền nứu răng cửa và răng mnh giữa bằng Postpost mới và hàn tuy Dentsply	ThS. Nguyễn Thị Hành	Khoa RHM	Khá	
152	Đánh giá kết quả điều trị sâu cổ răng bằng GC Fuji II tại Khoa Răng hàm mặt, Bệnh viện Đại học Y Hải Phòng, 2020	ThS. Nguyễn Đức Tài	Khoa RHM	Khá	
153	Khảo sát vị trí răng hàm lớn thứ ba hàm dưới so với răng hàm lớn thứ hai hàm dưới trên phim Cosmeon CT tại Bệnh viện Đại học Y Hải Phòng	ThS. Nguyễn Thị Phương Anh	Khoa RHM	Khá	
154	Tình trạng mất răng, nhu cầu điều trị và yêu cầu điều trị phục hình ở người cao tuổi tại khoa răng hàm mặt bệnh viện Đại học Y Hải Phòng, 2019	ThS. Đặng Thị Mai Hương	Khoa RHM	Khá	
155	Nhận xét kết quả điều trị cấy ghép Implant tức thì sau nhổ răng	ThS. Đoàn Trung Hiếu	Khoa RHM	Khá	
156	Đặc điểm lâm sàng và hướng điều trị gãy xương gò má - cung tiếp tại khoa Răng Hàm Mặt Bệnh viện Hữu nghị Việt Tiệp Hải Phòng năm 2019	ThS. Nguyễn Minh Tuấn	Khoa RHM	Khá	
157	Nhận xét một số đặc điểm của xương khẩu cái trên phim CT Cone Beam tại Khoa Răng hàm mặt Bệnh viện Đại học Y Hải Phòng năm 2020	BS. Phạm Minh Thảo	Khoa RHM	Đạt	
158	Đánh giá hiệu quả điều trị Đau vai gáy bằng phương pháp tác động mặt phẳng kết hợp điện châm tại Bệnh viện Đại học Y Hải Phòng 2020	TS. Nguyễn Thị Thu Hiền	Khoa Y học cổ truyền	Xuất sắc	

TT	Tên đề tài	Chủ nhiệm đề tài	Đơn vị	Kết quả	Ghi chú
159	Đánh giá tác dụng của châm huyệt giáp tích và dùng bài thuốc điều hoà tạng kỳ sinh trong điều trị Đau thần kinh tọa tại Khoa Y học cổ truyền bệnh viện Đại học Y Hải Phòng năm 2020	BS. Nguyễn Thị Phượng	Khoa Y học cổ truyền	Khá	
160	Đánh giá tác dụng của phương pháp Điện châm kết hợp Siêu âm điều trị triệu bệnh nhân thoái hoá khớp gối, tại khoa Y học Cổ truyền - Bệnh viện Lê Chân năm 2020	BSCKII. Đoàn Mỹ Hạnh	Khoa Y học cổ truyền	Khá	
161	Đánh giá tác dụng phục hồi vận động của phương pháp Điện châm kết hợp Điện châm và Sài Thiêu sau sâu đang ấm trên bệnh nhân nhồi máu não giai đoạn cấp	BS. Phạm Tiến Dũng BSCKII. Đoàn Mỹ Hạnh	Khoa Y học cổ truyền	Khá	
162	Đánh giá tác dụng của phương pháp Nhiệt tam châm trong điều trị hầu tiểu sau Kiểm soát tại Bệnh viện Đại học Y Hải phòng năm 2020	ThS. Lê Ngọc Sơn	Khoa Y học cổ truyền	Khá	
163	Đánh giá tác dụng điều trị viêm quanh khớp vai thể đơn thuần bằng châm huyệt Điều khiển (YT38) thêm Thiên tỉnh (BT17) tại Khoa Y học cổ truyền Bệnh viện Đại học Y Hải Phòng năm 2020	BS. Nguyễn Hồng Thái	Khoa Y học cổ truyền	Khá	
164	Đánh giá tác dụng của Kiên tam châm trong điều trị viêm quanh khớp vai	ThS. Nguyễn Thị Thùy Dung	Khoa Y học cổ truyền	Khá	
165	Thực trạng cơ cấu bệnh tật và công tác điều trị của khoa Y học cổ truyền, Bệnh viện Đại học Y Hải Phòng năm 2018, 2019	BS. Phạm Thị Huế	Khoa Y học cổ truyền	Đạt	
166	Thực trạng dinh dưỡng và một số yếu tố liên quan tới học sinh trường Trung học cơ sở Lê Lợi, Hải Phòng năm 2019 - 2020	PGS.TS. Phạm Văn Hòa	Khoa Y tế công cộng	Xuất sắc	
167	Đặc điểm khủng phiền tim của bệnh nhân Đái tháo đường điều trị ngoại trú tại Bệnh viện Đại học Y Hải Phòng năm 2020	TS. Nguyễn Thị Thắm	Khoa Y tế công cộng	Xuất sắc	
168	Chăm sóc răng A bệnh nhân cao tuổi sau can thiệp nông răng giả tại một số phòng khám răng tư nhân	PGS.TS.Dương Thị Hương	Khoa Y tế công cộng	Xuất sắc	Giá hạn năm 2019

TT	Tên đề tài	Chủ nhiệm đề tài	Đơn vị	Kết quả	Ghi chú
169	Nghiên cứu thực trạng và một số yếu tố liên quan đến tai nạn thương tích của học sinh trung học cơ sở tại xã Thủy Sơn, huyện Thủy Nguyên, TP Hải Phòng năm 2019	TS. Hoàng Thị Giang	Khoa Y tế công cộng	Khá	
170	Thực trạng và một số yếu tố liên quan đến tuân thủ điều trị của bệnh nhân tăng huyết áp quản lý điều trị tại Bệnh viện Kiến An, Hải Phòng năm 2020	TS. Trần Thị Thúy Hà	Khoa Y tế công cộng	Khá	
171	Kiến thức, thái độ và hành vi về dự phòng ảnh hưởng của biến đổi khí hậu đến sức khoẻ và một số yếu tố liên quan của sinh viên trường Đại học Y Dược Hải Phòng	ThS. Nguyễn Thị Minh Ngọc	Khoa Y tế công cộng	Khá	
172	Thực trạng và một số yếu tố liên quan quản lý bệnh nhân lao sau sàng lọc phát hiện lao tại cộng đồng trên địa bàn 4 quận/huyện Hải Phòng năm 2018	ThS. Trần Thị Bích Hải	Khoa Y tế công cộng	Khá	
173	Kiến thức và thực hành theo dõi phản ứng sau tiêm chủng của bà mẹ và sau đượt 1 tuổi và một số yếu tố liên quan tại huyện Kiến Thụy, thành phố Hải Phòng năm 2020	ThS. Nguyễn Quang Đức	Khoa Y tế công cộng	Khá	
174	Thực trạng kiến thức, thực hành phòng chống bệnh sốt xuất huyết dengue và một số yếu tố liên quan của người dân phường Đồng Giang, Ngô Quyền, Hải Phòng năm 2019	ThS. Hoàng Hoa Lê	Khoa Y tế công cộng	Khá	
175	Thực trạng suy dinh dưỡng và một số yếu tố liên quan ở trẻ dưới 5 tuổi tại xã Quyết Tiến, huyện Tiên Lãng, Hải Phòng năm 2019	ThS. Cao Minh Đức	Khoa Y tế công cộng	Khá	
176	Thực trạng và một số yếu tố liên quan đến hiến máu tình nguyện của sinh viên Trường Đại học Y Dược Hải Phòng năm 2020	ThS. Nguyễn Thị Minh Ngọc	Khoa Y tế công cộng	Khá	Tự túc
177	Thực trạng và một số yếu tố liên quan đến trầm cảm ở sinh viên Y khoa năm thứ nhất và năm thứ hai trường Đại học Y Dược Hải Phòng năm 2020	ThS. Nguyễn Thị Thanh Bình	Khoa Y tế công cộng	Khá	Tự túc
178	Thực trạng và một số yếu tố liên quan đến nghiện Internet ở học sinh một trường THPT tại Hải Phòng 2020	TS. Nguyễn Thị Tâm Thảo	Khoa Y tế công cộng	Khá	Tự túc

TT	Tên đề tài	Chủ nhiệm đề tài	Đơn vị	Kết quả	Ghi chú
179	Thực trạng và một số yếu tố liên quan đến hành vi học tập không ổ môi trường trong học cư sở tại Hải Phòng năm 2019	ThS. Nguyễn Thị Thanh Bình	Khoa Y tế công cộng	Khá	Tự túc
180	Kiến thức, thái độ về sức khỏe sinh sản vị thành niên của học sinh môi trường Trung học phổ thông Hải Phòng năm 2018	ThS. Nguyễn Thị Thanh Bình	Khoa Y tế công cộng	Đạt	Tự túc

Tổng số: 180 đề tài

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

Số: 2687/QĐ-YDHP

CỘNG HOÀ XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

Hải Phòng, ngày 30 tháng 12 năm 2021

QUYẾT ĐỊNH

Công nhận kết quả đánh giá, nghiệm thu nhiệm vụ NCKH tại Hội nghị KHCN Trường Đại học Y Dược Hải Phòng năm 2021

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Căn cứ Quyết định số 06/1999/TTg ngày 21 - 01 - 1999 của Thủ tướng Chính phủ về việc thành lập Trường Đại học Y Hải Phòng;

Căn cứ Quyết định số 2113/QĐ-TTg ngày 11-11-2013 của Thủ tướng Chính phủ về việc đổi tên Trường Đại học Y Hải Phòng thành Trường Đại học Y Dược Hải Phòng;

Căn cứ Quyết định số 1787/QĐ - YDHP ngày 10 - 12 - 2021 của Hiệu trưởng Trường Đại học Y Dược Hải Phòng về việc thành lập Hội đồng khoa học đánh giá nghiệm thu đề tài cơ sở năm 2021 và các bảo cáo khoa học tại Hội nghị KHCN Trường Đại học Y Dược Hải Phòng lần thứ XII;

Căn cứ vào kết quả đánh giá của Hội đồng khoa học tại Hội nghị Khoa học Công nghệ trường Đại học Y Dược Hải Phòng lần thứ XII;

Xét đề nghị của Ông Trưởng phòng Quản lý Khoa học;

QUYẾT ĐỊNH:

Điều 1. Công nhận kết quả đánh giá, nghiệm thu 214 nhiệm vụ NCKH báo cáo tại Hội nghị KHCN Trường Đại học Y Dược Hải Phòng năm 2021.

(có danh sách kèm theo).

Điều 2. Chủ nhiệm nhiệm vụ có trách nhiệm nộp bản báo cáo đã hoàn thiện theo ý kiến Hội đồng về phòng Quản lý khoa học.

Điều 3. Các Ông/ Bà Trưởng phòng Quản lý khoa học và các Ông/Bà có tên trong danh sách chủ nhiệm đề tài căn cứ Quyết định thi hành./.

Nơi nhận:
- Như Điều 3;
- Lưu: QLKH, VT.

HIỆU TRƯỞNG

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

HIỆU TRƯỞNG

PGS.TS. Phạm Văn Linh

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

KẾT QUẢ HỘI ĐỒNG ĐÁNH GIÁ NGHIỆM THU BÁO CÁO NHIỆM VỤ NCKH TẠI HỘI NGHỊ KHOA HỌC TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG LẦN THỨ 21
(Kèm theo Quyết định số: 2042/QĐ - YDHP ngày 30 tháng 12 năm 2021)

Chú thích: Dấu * là bảo vệ viên

STT	Tên đề tài	Chủ nhiệm đề tài	Thành viên	Đơn vị	Kết quả	Ghi chú
1	Nghiên cứu mối liên quan giữa một số yếu tố nguy cơ trong chẩn đoán sớm tiền sản giật không có biểu hiện tại Bệnh viện Phụ sản Quốc tế Hải Phòng năm 2019 - 2021	Hoàng Thị Hạ*	Nguyễn Duy Hoàng	BM. CĐHA	Xuất sắc	
2	Đặc điểm hình ảnh cộng hưởng từ một số khối u tuyến mang tai tại khoa Da liễu Bệnh viện Hữu nghị Việt tiệp	Nguyễn Thị Liễu	Cao Việt Phương* Phạm Thị Thơ Trang Nguyễn Thị Thanh Thanh Huyền	BM. Da liễu	Khá	
3	Thực trạng của bệnh viêm da cơ địa và các yếu tố liên quan của bệnh ảnh chất lượng cuộc sống	Đào Minh Châu	Hoàng Thị Lâm*	BM. Da liễu	Khá	
4	Tăng huyết áp không có hạ áp ứng kém với điều trị thuốc trên người bệnh suy thận lọc máu chu kỳ bằng thận nhân tạo	Phạm Văn Thức Nguyễn Dương Tuyển	Phạm Văn Linh* Nguyễn Thị Hồng Liên Ngô Văn Tuấn Nguyễn Văn Khải	BM. Dị ứng - MDLS	Khá	
5	Nghiên cứu hội chứng ngưng thở tắc nghẽn khi ngủ trên các đối tượng sức cộng đồng có tăng lý số khối cơ	Nguyễn Thị Hồng Liên*		BM. Dị ứng - MDLS	Khá	
6	Xác định tỷ lệ rối loạn đường và tăng huyết áp trên đối tượng người lớn tuổi trong viêm (35- 69 tuổi) thừa cân khám ngoại trú tại Khoa Khám bệnh - Bệnh viện Đại học Y Hải Phòng	Vũ Thị Hồng*	Trần Thị Xen	BM. Dị ứng - MDLS	Đạt	
7	Nghiên cứu hội chứng ngưng thở tắc nghẽn khi ngủ trên đối tượng thừa cân béo phì và tỉ lệ quá tiước đến của các can thiệp điều trị	Phạm Văn Linh*	Nguyễn Thị Hồng Liên Phạm Thị Khuyên Phạm Thanh Huyền Nguyễn Văn Khải	BM. Dị ứng - MDLS	Xuất sắc	

STT	Tên đề tài	Chủ nhiệm đề tài	Thành viên	Đơn vị	Kết quả	Ghi chú
8	Nghiên cứu đặc điểm hình thái một số nhân năm thuộc bộ Gentes trên kính hiển MRI của bệnh nhân nghiện rượu	Lê Phi Đại*	Đặng Tiến Trường Nguyễn Thị Sinh	BM. Giải phẫu	Xuất sắc	
9	Nghiên cứu một số kích thước nhân trắc vùng gần mũi trên sinh viên năm I trường Đại học Y Dược Hải Phòng	Trần Thị Xoa*	Trần Xuân Bách	BM. Giải phẫu	Khá	
10	Nghiên cứu kết quả hình ảnh siêu âm và chụp cắt lớp vi tính trên bệnh nhân viêm tụy cấp tại Bệnh viện Đại học Y Hải Phòng	Lê Thị Yến*	Trần Xuân Bách Trần Thị Xoa	BM. Giải phẫu	Khá	
11	Đánh giá kiến thức thái độ thực hành môn học Điều khiển cho sinh viên năm thứ nhất trường Đại học Y Dược Hải Phòng năm học 2020-2021	Hoàng Văn Thuấn* Nguyễn Khánh Hưng		BM. GDTC	Đạt	
12	Đánh giá kiến thức thái độ thực hành khi ứng dụng bài tập phát triển thể lực cho nữ sinh viên lớp cử nhân Điều dưỡng và Kỹ thuật y học trường Đại học Y Dược Hải Phòng năm 2020	Nguyễn Cảnh Vấn* Phạm Văn Thường		BM. GDTC	Đạt	
13	Đánh giá kiến thức thái độ thực hành bài tập hỗ trợ nâng cao hiệu quả phát bóng cao tay cho nam sinh viên K42 trường Đại học Y Dược Hải Phòng	Nguyễn Thị Phương Thảo Phạm Tuấn Linh *		BM. GDTC	Đạt	
14	Ứng dụng một số bài tập phát triển sức bền 1000m cho nam sinh viên năm thứ nhất K42 trường Đại học Y Dược Hải Phòng	Nguyễn Trần Quý*	Nguyễn Văn Duy	BM. GDTC	Đạt	
15	Đánh giá kiến thức thái độ thực hành một số bài tập hỗ trợ cho kĩ thuật "Hai bước lên xỉ" cho sinh viên học môn bóng rổ Trường Đại học Y Dược Hải Phòng	Hoàng Thị Bích Thuỷ* Vũ Dậu Minh	Nguyễn Thị Thanh Loan	BM. GDTC	Khá	
16	So sánh khả năng kháng kháng sinh của loại mano học và loại mano Standard trên vi khuẩn E.Coli	Phan Minh Châu*	Vũ Thị Kim Loan Nguyễn Thị Hương	BM. Hoá học	Khá	
17	Xác định một số chỉ tiêu chất lượng trong nước cấp sinh hoạt tại quận Ngô Quyền, thành phố Hải Phòng năm 2021	Nguyễn Thị Cúc*		BM. Hoá học	Đạt	
18	Nghiên cứu tính kháng kháng sinh của loại mano loại đối với Tụ cầu vàng (Staphylococcus aureus) được phân lập tại Bệnh viện trường Đại học Y Hải Phòng	Nguyễn Quang Thành*	Nguyễn Thị Hương Phạm Thị Tâm	BM. Hoá học	Đạt	

STT	Tên đề tài	Chủ nhiệm đề tài	Thành viên	Đơn vị	Kết quả	Ghi chú
19	Nghiên cứu chế tạo Gel nano bạc và thử khả năng kháng khuẩn đối với vi khuẩn E.Coli	Vũ Thị Kim Loan	Phan Minh Châu* Nguyễn Thị Hương Mai Thị Lê Đồng Thị Mai	BM. Hoá học	Đạt	
20	Nghiên cứu chiết xuất và hoạt tính kháng vi sinh vật kiểm định của cây hàng chanh Pleiocarpa eurhizoides (Lour.) tại Vĩnh Giang, Hưng Yên	Bùi Ngọc Tân*		BM. Hoá học	Khá	
21	Nghiên cứu chế tạo vật liệu hấp phụ iron amoni (NH4+) và nitrat (NO3-) từ bã mía tại phòng thí nghiệm hội môi Hóa học, trường Đại học Y Dược Hải Phòng	Nguyễn Văn Dương*		BM. Hóa học	Khá	
22	Thực trạng điều trị điều trị ở trẻ từ 6 tháng tới 24 tháng tuổi mắc viêm phổi tại khoa Nhi Bệnh viện Quốc Tế Green năm 2021	Bùi Thị Hương Giang*	Dương Thị Minh Thoa	BM. Hoá sinh	Khá	
23	Bước đầu đánh giá tình trạng gan nhiễm mỡ ở bệnh nhân mắc đái tháo đường type 2 tại Bệnh viện Đại học Y Hải Phòng	Nguyễn Thị Phương Mai*	Nguyễn Thị Phương Thảo	BM. Hóa sinh	Xuất sắc	
24	Hồng độ beta2- microglobulin huyết tương ở bệnh nhân suy thận mạn lọc máu chu kỳ tại Bệnh viện Hữu nghị Việt tiệp	Dương Thị Minh Thoa *	Bùi Thị Hương Giang	BM. Hóa sinh	Đạt	
25	Xây dựng phả hệ gia đình bệnh nhân có đột biến gen GAA gây bệnh Pompe	Nguyễn Thị Phương Thảo*	Nguyễn Thị Phương Mai	BM. Hóa sinh	Khá	
26	Thực trạng và đặc điểm lâm sàng bệnh viêm da của bệnh nhân đến khám tại Bệnh viện Đa liễu Thái Bình.	Vũ Thị Thanh Hiền*	Đinh Thị Thanh Mai Vũ Văn Thái Nguyễn Thị Huyền Sương Trịnh Văn Khương Đỗ Thị Hạnh	BM. Ký sinh trùng	Khá	
27	Thực trạng nhiễm giun truyền qua đất của học sinh tại hai trường Tiểu học thành phố Hà Tĩnh, năm 2021	Vũ Văn Thắt*	Đinh Thị Thanh Mai Vũ Thị Thanh Hiền Nguyễn Thị Nguyệt Nguyễn Thị Huyền Sương Trịnh Văn Khương	BM. Ký sinh trùng	Khá	

STT	Tên đề tài	Chủ nhiệm đề tài	Thành viên	Đơn vị	Kết quả	Ghi chú
28	Thực trạng và một số yếu tố liên quan tới nhiễm sán lá gan nhỏ ở người dân xã Đoàn Xá, huyện Kiến Thụy, Hải Phòng, năm 2021	Đinh Thị Thanh Mai*	Võ Văn Thái Võ Thị Thanh Hiền Trịnh Văn Giang Nguyễn Thị Hằng	BM. Ký sinh trùng	Xuất sắc	
29	Nghiên cứu tỷ lệ nhiễm và một số yếu tố liên quan đến nhiễm sán ngực khe ở bệnh nhân đến khám và điều trị tại Bệnh viện Đa liễu tỉnh Thái Bình	Nguyễn Thị Huyền Sương*	Đinh Thị Thanh Mai Võ Thị Thanh Hiền Võ Văn Thái Đỗ Thị Huỳnh	BM. Ký sinh trùng	Đạt	
30	Đánh giá sai số xét nghiệm Glycomark trong theo dõi điều trị bệnh nhân đái tháo đường type 2	Phạm Thị Thu Trang*	Lưu Vũ Dũng Đỗ Ngọc Hải Đào Văn Tùng Nguyễn Hùng Cường Nguyễn Hải Anh	BM. Kỹ thuật Hóa sinh	Khá	
31	So sánh chỉ số FIB-4 với FibroScan trong chẩn đoán xơ hóa gan tại Hải Phòng năm 2021	Phạm Minh Khánh*	Đỗ Ngọc Hải Phạm Thị Thu Trang Nguyễn Hùng Cường Nguyễn Hải Anh Đặng Thị Hồng	BM. Kỹ thuật Hóa sinh	Khá	
32	Giá trị chỉ số βhCG trong chẩn đoán, theo dõi sau mổ chửa ngoài tử cung tại Bệnh viện Phụ sản Hải Phòng từ tháng 1 đến tháng 6/2021	Đặng Thị Hồng*	Lưu Vũ Dũng Phạm Thị Thu Trang Nguyễn Hùng Cường Võ Thị Trang Linh Nguyễn Hải Anh	BM. Kỹ thuật Hóa sinh	Đạt	
33	Khảo sát đặc điểm kiểu Lipid máu ở người sau tuổi mãn đới đến thường, tăng huyết áp và Gout khu vực nội thành Hải Phòng.	Lương Quỳnh Phương*	Đào Văn Tùng Phạm Thị Thu Trang Nguyễn Hùng Cường Nguyễn Anh Ngọc Nguyễn Hải Anh	BM. Kỹ thuật Hóa sinh	Đạt	
34	Nghiên cứu phát triển bộ Kit chẩn đoán SARS-CoV-2 (Covid 19)	Bạch Thị Như Quỳnh*	Lê Thuỳ Linh Lê Văn Phan Lê Trần Bảo Nguyễn Thị Trang Nguyễn Thị Ánh Tuyết	BM. Kỹ thuật DHPT	Khá	

STT	Tên đề tài	Chủ nhiệm đề tài	Thành viên	Đơn vị	Kết quả	Ghi chú
35	Đặc điểm lâm sàng, cận lâm sàng Lao phổi AFB âm tính tại Bệnh viện Phổi Hải Phòng trong 2 năm 2018-2019	Nguyễn Huy Diệu*		BM. Lao & Bệnh Phổi	Khá	
36	Thực trạng Hàng thuốc chống lao hàng 1 tại Bệnh viện Phổi Hải Phòng trong 2 năm 2018-2019	Trần Quang Phục*	Hồng Quang Sơn Mạc Huy Toàn Nguyễn Đức Thọ Nguyễn Thị Trang Phạm Văn Quang	BM. Lao & Bệnh phổi	Xuất sắc	
37	Áp dụng nội soi phế quản trong chẩn đoán lao phổi AFB âm tính tại Bệnh viện Phổi Hải Phòng năm 2020	Nguyễn Thị Trang*		BM. Lao & Bệnh Phổi	Khá	
38	Đặc điểm lâm sàng, cận lâm sàng bệnh nhân giãn phế quản điều trị tại Bệnh viện Phổi Hải Phòng năm 2019 - 2021	Trương Thành Kiên*	Khổng Thị Kim Nghĩa Phạm Trung Kiên Vũ Thị Hoa Đào Thanh Hoàn Trần Thị Thanh Loan	BM. Lao & Bệnh Phổi	Khá	
39	Kiến thức và thực hành của bệnh nhân mắc bệnh phổi tắc nghẽn mạn tính tại Bệnh viện Phổi Hải Phòng năm 2021	Nguyễn Đức Thọ*		BM. Lao và Bệnh phổi	Khá	
40	Nghiên cứu thị lực lập thể trong nhược thị do loạn thị ở trẻ em tại Bệnh viện Đại học Y Hải Phòng	Nguyễn Thị Thu Trang*		BM. Mắt	Khá	
41	Đặc điểm lâm sàng, cận lâm sàng của bệnh nhân glocôm góc mở nguyên phát có cận thị nặng	Đào Thị Dịu *		BM. Mắt	Xuất sắc	
42	Nghiên cứu một số đặc điểm siêu âm bụng ở các bệnh nhân sỏi tắc thường tính dịch tễ tại Bệnh viện Quốc tế sản nhi Hải Phòng năm 2021	Phạm Thị Thu Thủy*	Khổng Thị Vân Anh Đỗ Đình Tiệp Trần Thị Thanh Bình Phạm Hồng Minh	BM. Mổ phổi	Xuất sắc	
43	Đặc điểm tình dịch tễ của nam giới nói nghiệm tại Bệnh viện Quốc tế Green năm 2019 - 2020	Trần Thị Thanh Hoài*	Phạm Thị Thu Thuỷ Lê Tất Thanh Hương Đỗ Đình Tiệp Khổng Thị Vân Anh Phạm Hồng Minh	BM. Mổ phổi	Khá	

STT	Tên đề tài	Chủ nhiệm đề tài	Thành viên	Đơn vị	Kết quả	Ghi chú
40	Nghiên cứu giá trị phương pháp HCG test nhanh mẫu nước dịch dạ dày	Khổng Thị Vân Anh*	Phạm Thị Thu Thủy Trần Thị Thanh Bình Dỗ Danh Tiệp Phạm Hồng Minh Phạm Thị Thái	BM. Mô Phôi	Khá	
41	Khảo sát một số chỉ số siêu âm của thai những tuần cuối quý I	Đỗ Danh Tiệp*	Phạm Hồng Minh Phạm Thị Thu Thủy Khổng Thị Vân Anh Trần Thị Thanh Bình	BM. Mô Phôi	Đạt	
46	Đánh giá kết quả điều trị chấn thương một sống thời lưng mỏ vùng bằng lối sau tại Bệnh viện Hữu nghị Việt tiệp	Nguyễn Ngọc Hùng	Phan Văn Tuấn*	BM. Ngoại	Khá	
47	Đánh giá kết quả viêm phổi thuật điều trị xẹ bằng phương pháp Lungo tại Bệnh viện Đại học Y Hải Phòng	Phạm Văn Duyệt	Đào Thị Ngọc Anh*	BM. Ngoại	Khá	
48	Nhận ba trường hợp mổ cắt gan theo phương pháp kiểu toàn trường Gilsson (Takasaki) điều trị ung thư biểu mô tế bào gan tại Bệnh viện Hữu nghị Việt tiệp	Bùi Văn Dương*		BM. Ngoại	Khá	
49	Mổ cắt dịch chức lành sáng, bình thái tổn thương và kết quả điều trị chấn thương, vết thương động mạch vùng sống chậu tại Bệnh viện Hữu nghị Việt tiệp Hải Phòng	Hoàng Anh Công*		BM. Ngoại	Khá	
50	Nghiên cứu đặc điểm lâm sàng, cận lâm sàng kết quả điều trị của bệnh nhân phẫu thuật kết hợp xương đòn bằng nẹp vít khóa 3 tại Bệnh viện Đại học Y Hải Phòng từ 1/1/2019 – 31/12/2021	Nguyễn Trung Thành	Hoàng Đức Ngọc Cương*	BM. Ngoại	Khá	
51	Đánh giá kết quả điều trị gãy kín thân xương chày bằng đinh nội tuỷ có chốt trên màn tăng sáng tại Bệnh viện Việt tiệp	Trịnh Đình Thanh	Phạm Tiến Long*	BM. Ngoại	Khá	
52	Đánh giá kết quả phẫu thuật nối ống mật chủ tận với tá tràng nội soi đường mật trong mổ bằng ống nối soi mềm	Phạm Văn Thương	Đào Thị Ngọc Anh*	BM. Ngoại	Xuất sắc	
53	Nhận xét kết quả phẫu thuật nội soi thám sát mật tại Bệnh viện Đại học Y Hải Phòng	Nguyễn Đức Tiến*		BM. Ngoại	Khá	
54	Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị thủ thuật mạch máu giác tại Bệnh viện Đại học Y Hải Phòng	Phạm Quốc Hiệu*		BM. Ngoại	Khá	

STT	Tên đề tài	Chủ nhiệm đề tài	Thành viên	Đơn vị	Kết quả	Ghi chú
55	Thực trạng và một số giải pháp nhằm cải thiện tỉ lệ đạt chứng chỉ DELF A2 của sinh viên lớp tiếng Pháp trường Đại học Y Dược Hải Phòng	Cao Thị Phương Dung*	Trịnh Thị Thu Trang	BM. Ngoại ngữ	Đạt	
56	Thực trạng và một số yếu tố ảnh hưởng tới kỹ năng thuyết trình tiếng Pháp của sinh viên lớp Y2DK 4008 trường Đại học Y Dược Hải Phòng năm học 2020-2021	Trịnh Thị Thu Trang*	Cao Thị Phương Dung	BM. Ngoại Ngữ	Đạt	
57	Thực trạng và một số giải pháp nâng cao năng lực ngoại ngữ cho sinh viên năm thứ nhất K.02 năm học 2020 - 2021 Trường Đại học Y Dược Hải Phòng	Nguyễn Thị Hiền	Phạm Bích Ngọc Trần Thị Hà Giang*	BM. Ngoại ngữ	Đạt	
58	Đánh giá thực trạng và đề xuất giải pháp nâng cao hiệu quả đào tạo tiếng Pháp chuyên ngành cho sinh viên Y đa khoa K.01 Trường Đại học Y Dược Hải Phòng	Trần Thị Hà Giang*	Nguyễn Thị Hiền	BM. Ngoại ngữ	Đạt	
59	So sánh đặc điểm lâm sàng và cận lâm sàng ở trẻ giảm bạch cầu hạt trung tính tại Bệnh viện Trẻ em Hải Phòng và Bệnh viện nhi trung ương	Vũ Văn Quang*	Nguyễn Thị Trang	BM. Nhi	Xuất sắc	
60	Đặc điểm dịch tễ học lâm sàng và căn nguyên của viêm não cấp do virus tại Bệnh viện Trẻ em Hải Phòng	Vũ Thị Ánh Hồng*		BM. Nhi	Khá	
61	Thực trạng hạ Glucose máu ở trẻ sơ sinh và một số yếu tố liên quan đến hạ glucose máu sớm tại Khoa Sơ sinh, Bệnh viện Trẻ em Hải Phòng năm 2021	Đặng Văn Chiến*	Phạm Thị Vân Đồng Thị Phương Thuỷ	BM. Nhi	Khá	
62	Đặc điểm dịch tễ học lâm sàng và biến chứng của bệnh cúm mùa tại Bệnh viện Trẻ em Hải Phòng	Vũ Thị Ánh Hồng *	Nguyễn Ngọc Sáng Tô Thanh Hương	BM. Nhi	Khá	
63	Đặc điểm vi khuẩn, đề kháng kháng sinh ẩu vùng và kết quả điều trị trong viêm phổi ở trẻ sơ sinh tại Bệnh viện Trẻ em Hải Phòng 2020	Đinh Dương Tùng Anh *	Nguyễn Thị Trang Nguyễn Thanh Xuân	BM. Nhi	Khá	
64	Đặc điểm dịch tễ học lâm sàng, cận lâm sàng và một số nguyên nhân của bệnh máy đạy cấp tại Bệnh viện Trẻ em Hải Phòng	Nguyễn Ngọc Sáng*	Nguyễn Thị Kim Duyên Nguyễn Thị Chi	BM. Nhi	Khá	
65	Đặc điểm dịch tễ học lâm sàng, căn nguyên vi khuẩn và kết quả kháng sinh đồ của vi khuẩn gây bệnh viêm phổi ở trẻ từ 2 tháng đến 5 tuổi tại Bệnh viện Trẻ em Hải Phòng năm 2020-2021	Nguyễn Việt Hà*		BM. Nhi	Khá	

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66	Đặc điểm rối loạn nhịp tim trên Holter điện tâm đồ 24 giờ ở trẻ em tại Bệnh viện Trẻ em Hải Phòng năm 2020-2021	Trần Thị Hải Yến*	Dinh Dương Tăng Anh	BM. Nhi	Khá	
67	Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị sốc phản vệ tại Bệnh viện Trẻ em Hải Phòng năm 2019 - 2020	Đinh Yến Thảo	Dinh Dương Tăng Anh Nguyễn Mai Hương*	BM. Nhi	Khá	
68	Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị bệnh viêm phổi ở trẻ đẻ non tại Bệnh viện Trẻ em Hải Phòng năm 2018-2021	Phạm Thị Ngọc*		BM. Nhi	Khá	
69	Nhận xét kết quả nuôi cấy vi khuẩn dịch của phế quản trong Viêm phổi kèm đáp ứng điều trị trẻ em tại Bệnh viện Trẻ em Hải Phòng	Trần Huy Duy*		BM. Nhi	Khá	
70	Khảo sát một bệnh tật của bệnh nhi điều trị nội trú tại Bệnh viện Trẻ em Hải Phòng năm 2020	Hà Thị Thu Huyền*	Trần Đức Tâm	BM. Nhi	Khá	
71	Đặc điểm dịch tễ lâm sàng, cận lâm sàng và nhận xét kết quả điều trị Schoenlein Henoch tại Bệnh viện Trẻ em Hải Phòng	Nguyễn Hồng Xuân Quỳ*		BM. Nhi	Khá	
72	Nghiên cứu mối liên quan giữa albumin huyết thanh với tình trạng nhiễm khuẩn và tử vong ở trẻ sơ sinh đẻ non tại Bệnh viện Trẻ em Hải Phòng	Chu Thị Hà *	Nguyễn Thị Thuý Hường Đỗ Minh Tâm	BM. Nhi	Khá	
73	Đặc điểm lâm sàng, cận lâm sàng và mối liên quan giữa lactate máu với tình trạng nhiễm khuẩn và tử vong ở trẻ sơ sinh đẻ non tại Bệnh viện Trẻ em Hải Phòng	Nguyễn Bùi Bình*	Nguyễn Thị Thuý Hường	BM. Nhi	Khá	
74	Nhũ nhiễu đặc điểm lâm sàng với tổn thương thực quản qua nội soi ở bệnh nhân trào ngược dạ dày thực quản tại Bệnh viện Hữu nghị Việt tiệp năm 2021	Vũ Thị Thu Trang*		BM. Nội	Khá	
75	Kết quả fibroscan ở bệnh nhân viêm gan mạn do virus viêm gan B tại Bệnh viện Hữu nghị Việt tiệp	Phạm Văn Nhiệu*		BM. Nội	Xuất sắc	
76	Đặc điểm lâm sàng, cận lâm sàng và hiệu chứng suất ở bệnh nhân đái tháo đường tại khoa nội 3 - Bệnh viện Hữu nghị Việt tiệp Hải Phòng	Kiều Thị Lan Anh	DV. Đinh Thị Kim Anh* Nguyễn Thị Hiếu	BM. Nội	Khá	
77	Nhận xét đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị lao phổi quản ở bệnh nhân lao phổi quản điều trị tại khoa Nội 1 Bệnh viện Hữu nghị Việt tiệp Hải Phòng năm 2021	Lê Thị Quyên*	Lê Thị Diệu Hiền	BM. Nội	Khá	

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78	Đặc điểm hội chứng chuyển hóa ở bệnh nhân thoái hóa khớp gối tại khoa Nội 2 Bệnh viện Hữu nghị Việt tiệp Hải Phòng năm 2020-2021	Trịnh Hồng Nhung*	Lê Thị Diệu Hiền	BM. Nội	Khá	
79	Nhận xét đặc điểm lâm sàng, kết quả điều trị cuối huyết giảm tiểu cầu miễn dịch ở bệnh nhân even giới điều trị tại Khoa Huyết học lâm sàng Bệnh viện Hữu nghị Việt tiệp năm 2018 - 2021	Đoàn Thị Út*	Nguyễn Ngọc Ánh	BM. Nội	Khá	
80	Nhận xét đặc điểm lâm sàng, cận lâm sàng và một số yếu tố nguy cơ của hội chứng chuyển hóa ở bệnh nhân mắc sỏi thận tuyến kiểm tiết điều trị tại khoa Nội A Bệnh viện Hữu nghị Việt tiệp Hải Phòng năm 2021	Đỗ Thị Thanh Loan*		BM. Nội	Khá	
81	Nghiên cứu đặc điểm lâm sàng, cận lâm sàng và một số yếu tố liên quan tới bệnh lý cột sống ở người trẻ tuổi	Nguyễn Thị Ngọc Thúy*	Lê Thị Nhung SV. Trần Thị Tâm	BM. PHCH	Khá	
82	Đánh giá kết quả phục hồi chức năng vỡ nửa bằng phương pháp vận động cường bức cải biên ở bệnh nhân liệt nửa người do nhồi máu não	Nguyễn Thị Thanh Nga*	Bùi Thị Bình Ngọc	BM. PHCH	Xuất sắc	
83	Đặc điểm lâm sàng, cận lâm sàng của bệnh nhân rong kinh, rong huyết được nạo hút buồng tử cung tại khoa Khám bệnh Bệnh viện Phụ sản Hải Phòng và một số yếu tố liên quan năm 2021	Đào Thị Hải Yến*		BM. Phụ sản	Khá	
84	Nghiên cứu đặc điểm lâm sàng, cận lâm sàng và kết quả sử trí bệnh nhân thai lỉ rau cài răng lược tại Bệnh viện Phụ sản Hải Phòng từ năm 2013-2020	Thái Thị Huyền*	Đoàn Thị Phước	BM. Phụ sản	Khá	
85	Nghiên cứu giá trị chẩn đoán thai suy của biểu đồ nhịp tim thai và cơn co tử cung trong nhiễm thai nhiễm tăng trưởng trong tử cung ở bệnh nhân tiền sản giật trong 3 năm 2015-2018	Trần Văn Đức*		BM. Phụ sản	Đạt	
86	Giá trị của CA125, HE4 và chỉ số ROMA trong dự đoán ung thư buồng trứng tại Bệnh viện Phụ sản Hải Phòng 2015-2018	Nguyễn Thị Mai Phương*		BM. Phụ sản	Khá	
87	Giá trị tiên lượng cuộc đẻ của góc nhăm nằng trên siêu âm ở những thai phụ chuyển dạ đẻ thường tại Bệnh viện Phụ sản Hải Phòng năm 2021	Bùi Văn Hiếu	Phan Đức Cường* SV. Đoàn Thị Huế Lê Thị Nhung	BM. Phụ sản	Khá	

STT	Tên đề tài	Chủ nhiệm đề tài	Thành viên	Đơn vị	Kết quả	Ghi chú
88	Các chỉ định mổ lấy thai theo phân loại của Robson và các yếu tố liên quan tại Bệnh viện Phụ sản Hải Phòng tháng 6 năm 2018	Nguyễn Thị Lan Oanh*		BM. Phụ sản	Khá	
89	Kết cục thai kì ở sản phụ vị thành niên tuổi tại Bệnh viện Phụ sản Hải Phòng trong 3 năm từ 2018-2020	Phạm Thị Diệu* Đặt Thị Hải Yến		BM. Phụ sản	Khá	
90	Nghiên cứu ảnh hưởng của tạo mỏ lấy thai đến kết quả chuyển giới đông lạnh tại Bệnh viện Phụ sản Hải Phòng từ tháng 01/2019 đến tháng 06/2019	Nguyễn Thanh Huyền*		BM. Phụ sản	Xuất sắc	
91	Nghiên cứu chỉ định cắt tử cung âm đ o xơ tử cung trên bệnh nhân có xét nghiệm HPV và Thiopng tại Bệnh viện Phụ sản Hải Phòng từ năm 2017 đến 2019	Nguyễn Thị Hường*		BM. Phụ sản	Khá	
92	Tỷ lệ nhiễm Human Papilloma Virus (HPV) và tình trạng tổn thương cổ tử cung trên soi cổ tử cung của bệnh nhân được sàng lọc tại Bệnh viện Phụ sản Hải Phòng năm 2018 - 2019	Lê Anh Hare*		BM. Phụ sản	Khá	
93	Tỷ lệ sơ sinh suy sản so với tuổi thai theo biểu đồ Intergrowth-21st ở tuổi thai 32-40 tuần tại Bệnh viện Phụ sản Hải Phòng từ tháng 1 đến tháng 12 năm 2020	Phan Đức Cường*		BM. Phụ sản	Khá	
94	Đánh giá sơ bộ kết quả học tập môn Sinh học – Di truyền của 2 đối tượng tuyển sinh đầu vào khối A và khối B (K49, K41, K42) trường Đại học Y Dược Hải Phòng	Nguyễn Thị Hải*	Nguyễn Thị Tươi Lê Thị Thu Huyền	BM. Sinh học - Di truyền	Đạt	
95	Phát hiện năm một số đột biến di truyền liên đơn gen trong nhóm thai phụ sàng lọc trước sinh không xâm lấn NIPT	Nguyễn Thị Tươi*	Nguyễn Thị Hải Lê Thị Thu Huyền	BM. Sinh học - Di truyền	Khá	
96	Tầm soát nguy cơ thai nhi mắc rối loạn chức năng định lượng ATP trong huyết thanh mẹ qua bộ xét nghiệm Triple test	Lê Thị Thu Huyền*	Nguyễn Thị Tươi Nguyễn Thị Hải	BM. Sinh học - Di truyền	Đạt	
97	Đánh giá kết quả nâng mũi bằng sụn nhân tạo kết hợp sụn tự thân tại Bệnh viện Đại học Y Hải Phòng năm 2021	Vũ Thành Đông*	Hoàng Ngọc Bảo Cương Nguyễn Văn Mới	BM. Sinh lý	Khá	
98	Nghiên cứu đặc điểm nhịp sóng não khi giải của những người tập Yoga của một số câu lạc bộ Yoga tại Hải Phòng qua đ Đồng tuyến tập	Nguyễn Văn Mới*	Nguyễn Khánh Hưng Trần Thị Thương Nguyễn Thị Hồng Vũ Thành Đông	BM. Sinh lý	Khá	

STT	Tên đề tài	Chủ nhiệm đề tài	Thành viên	Đơn vị	Kết quả	Ghi chú
99	Nghiên cứu đặc điểm viêm âm của một bệnh nhân suy thận tại Bệnh viện Đại học Y Hải Phòng năm 2021	Đào Thu Hồng*	Phạm Thị Nguyên Trần Thị Quỳnh Trang Đào Thu Hồng	BM. Sinh lý	Khá	
100	Nghiên cứu đặc điểm lâm sàng, cận lâm sàng trong thoái hóa khớp gối tại Bệnh viện Đại học Y Hải Phòng năm 2021	Trần Thị Quỳnh Trang*	Đào Thu Hồng Phạm Thị Nguyên Phạm Thị Tim Lưu Văn Quý	BM. Sinh lý	Khá	
101	Nghiên cứu đặc điểm lâm sàng, cận lâm sàng nội sọi quản Bệnh viện Đại học Y Hải Phòng năm 2021	Phạm Thị Nguyên*	Đào Thu Hồng Trần Thị Quỳnh Trang	BM. Sinh lý	Khá	
102	Nghiên cứu kiến thức thái độ của nhân viên y tế với phòng vệ đo thuốc tại Bệnh viện Đại học Y Hải Phòng năm 2021	Phạm Thị Khuyên*	Phạm Huy Quyền	BM. Sinh lý bệnh - Miễn dịch	Khá	
103	Thực trạng đi ứng thuốc tại Khoa Dị ứng - miễn dịch lâm sàng, Bệnh viện Đại học Y Hải Phòng từ năm 2018-2021	Nguyễn Thị Kim Hương*	Lê Thị Nhung Phùng Chí Thiện	BM. Sinh lý bệnh - Miễn dịch	Khá	
104	Nghiên cứu chụp nang và điều trị bệnh phổi tắc nghẽn mạn tính tại Trung tâm y tế huyện Tiên Lãng năm 2021	Phạm Huy Quyền*	Phạm Thị Khuyên	BM. Sinh lý bệnh - Miễn dịch	Khá	
105	Đặc điểm lâm sàng, vi sinh và kết quả điều trị bệnh nhân áp xe quanh amidan tại Bệnh viện Đa khoa Quốc tế Hải Phòng	Trần Thị Thanh Thủy	Tạ Hồng Sơn*	BM. Tai mũi họng	Khá	
106	Nghiên cứu lâm sàng và kết quả điều trị và một số thuốc sử dụng mảnh PRP trên bệnh nhân viêm mi giữa mạn tại Bệnh viện Đa khoa Quốc tế Hải Phòng năm 2020-2021	Tạ Hồng Sơn *	Vũ Văn Sản	BM. Tai mũi họng	Xuất sắc	
107	Đặc điểm lâm sàng và vi khuẩn học của bệnh viêm tai giữa cấp mủ tại Bệnh viện Trẻ em Hải Phòng năm 2020	Trần Hồng Hạnh Nguyễn Thanh Hải*	SV. Nguyễn Thị Minh Cát	BM. Tai mũi họng	Xuất sắc	
108	Nghiên cứu đặc điểm lâm sàng và một số yếu tố liên quan đến suy giảm nhận thức của bệnh nhân tâm thần phân liệt thể Paranoid tại Bệnh viện Tâm thần Hải Phòng năm 2021	Vương Thị Thuỷ	Đoàn Thị Như Yến Lương Thị Mai Loan* SV. Lê Thị Hương Giang	BM. Tâm thần	Khá	
109	Nghiên cứu đặc điểm rối loạn trí nhớ ở bệnh nhân nghiện rượu tại Bệnh viện Tâm thần Hải phòng năm 2021	Lê Sao Mai*	Nguyễn Quang Thọ SV. Đoàn Thạch Thảo	BM. Tâm thần	Khá	
110	Nghiên cứu đặc điểm lâm sàng của hoang tưởng và ảo giác ở bệnh nhân Tâm thần phân liệt thể Paranoid điều trị tại Bệnh viện Tâm thần Hải Phòng năm 2021	Phạm Văn Mạnh,	Vương Thị Thuỷ*	BM. Tâm thần	Khá	

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111	Mô tả đặc điểm lâm sàng của suy giảm nhận thức và một số yếu tố liên quan ở bệnh nhân loạn thần do rượu tại Bệnh viện Tâm thần Hải Phòng năm 2021	Dương Thị Như Yến*	Vương Thị Thuý Lương Thị Mai Loan	BM. Tâm thần	Khá	
112	Nghiên cứu đặc điểm lâm sàng và chỉ số sóng F của dây thần kinh giữa ở bệnh nhân thoát vị đĩa đệm cột sống thắt lưng cùng tại Bệnh viện Hữu nghị Việt tiệp	Nguyễn Tuấn Lương*	Nguyễn Tuấn Anh	BM. Thần kinh	Khá	
113	Nghiên cứu đặc điểm lâm sàng và điện sinh lý ở bệnh nhân bệnh lý thần kinh ngoại biên do đái tháo đường type II tại Bệnh viện Hữu nghị Việt tiệp năm 2021	Chu Thị Thuận*		BM. Thần kinh	Khá	
114	Khảo sát đánh giá khả năng tìm kiếm dữ liệu trên mạng Internet phục vụ học tập của sinh viên Y đa khoa - Khối Trường Đại học Y Dược Hải Phòng	Trịnh Anh Tuấn*	Vũ Ngọc Thanh	BM. Tin học	Khá	
115	Nghiên cứu thực trạng sử dụng các test thống kê trong các đề tài nghiên cứu khoa học sinh viên trường Đại học Y Dược Hải Phòng năm 2019 - 2020	Doãn Văn Thành*	Vũ Ngọc Thanh Phạm Thị Vân	BM. Tin học	Khá	
116	Thực trạng ứng dụng phần mềm phân tích số liệu trong nghiên cứu khoa học của học viên sau Đại học, Trường Đại học Y Dược Hải Phòng	Trần Thanh Vân*	Trịnh Anh Tuấn Vũ Ngọc Thanh Tô Thị Hồng Nga Phạm Thị Vân	BM. Tin học	Khá	
117	Nghiên cứu mô hình cải tiến quản lý để nhận dạng thực thể có tên trong tài liệu văn bản y sinh	Nguyễn Thị Châu*	Nguyễn Thị Hoè Trần Văn Trọng	BM. Tin học	Khá	
118	Đặc điểm lâm sàng, cận lâm sàng nhiễm Khuẩn huyết ở bệnh nhân sơ sinh mắc tại điều trị tại Bệnh viện Hữu nghị Việt tiệp Hải Phòng năm 2019- 2020	Hoàng Thị Thúy*	DV. Vũ Thị Dinh	BM. Truyền nhiễm	Xuất sắc	
119	Nhận xét về đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị thuốc kháng vi rút ở bệnh nhân viêm gan B mạn tính tại khoa Bệnh nhiệt đới, Bệnh viện Việt tiệp năm 2019-2020	Trần Thị Liên*		BM. Truyền nhiễm	Khá	
120	Đánh giá kết quả sớm điều trị của phác đồ TC nửa liều nhắc lại trong ung thư phổi không tế bào nhỏ giai đoạn IIIB-IV tại Trung tâm Ung bướu - Bệnh viện Hữu nghị Việt tiệp năm 2020	Nguyễn Lưu Hòa	Hồ Thị Huyền Sương* Lương Thanh Hoa Nguyễn Đức Hưng Nguyễn Thị Phương Thảo Nguyễn Hồng Hà	BM. Ung bướu	Khá	

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121	Đánh giá bước đầu kết quả điều trị sỏi niệu phẫu trong nong tán sỏi ra nong tại trung tâm Ung bướu Bệnh viện Việt tiệp	Nguyễn Đức Hoàng*		BM. Ung bướu	Khá	
122	Nghiên cứu tỉ lệ và mức độ nhạy cảm với kháng sinh của tác nhân vi khuẩn gây nhiễm khuẩn huyết phân lập tại Bệnh viện đa khoa tỉnh Hà Tĩnh	Nguyễn Hùng Cường*	Nguyễn Thị Khánh Hòa Nguyễn Thị Thanh Phương Vũ Thị Hương Vũ Thùy Dương Vũ Thị Hồng	BM. Vi sinh	Khá	
123	Điều điểm các vi khuẩn gây nhiễm khuẩn tổ hợp tại Bệnh viện Hữu nghị Việt tiệp Hải Phòng năm 2018-2019	Phạm Thị Tâm*	Nguyễn Hùng Cường Trần Diên Lại Thị Quỳnh Vũ Thị Nữ Nguyễn Quang Huy	BM. Vi sinh	Khá	
124	Nghiên cứu tỷ lệ và một số đặc điểm kháng kháng sinh của Staphylococcus aureus phân lập từ bệnh phẩm lâm sàng tại Bệnh viện Hữu nghị Việt Tiệp (1/2015-12/2018).	Trịnh Thị Hằng*	Nguyễn Hùng Cường, Trần Diên Hoàng Thị Hải Yến Lại Thị Quỳnh Nguyễn Thị Thanh Phương	BM. Vi sinh	Khá	
125	Đặc điểm vùng nhà de S. aureus tại Bệnh viện Hữu nghị Việt tiệp Hải Phòng từ năm 2016 đến năm 2018	Vũ Thị Hợi*	Nguyễn Hùng Cường Lại Thị Quỳnh Trần Diên Nguyễn Ngọc Mỹ Trinh Trịnh Thị Hằng	BM. Vi sinh	Khá	
126	Ứng dụng kỹ thuật Real - time PCR và Sanger Dot Blot xác định tỷ lệ nhiễm và genotype của Human papillomavirus ở bệnh nhân khám tại Bệnh viện Đại học Y Hải Phòng	Hoàng Thị Hải Yến Trần Văn Khương*	Nguyễn Hùng Cường Phạm Thị Thanh Bình Phạm Thị Bình Vũ Thị Hồng Phạm Thị Minh Thương	BM. Vi sinh	Khá	
127	Đánh giá sự hài lòng của người bệnh khám về điều trị tại phòng khám Y học gia đình Bệnh viện Đại học Y Hải Phòng năm 2021	Nguyễn Thị Thuý Hiền*	Nguyễn Thị Thắm Cấp Minh Đức LV. Bùi Thị Dung	BM. Y học gia đình	Khá	
128	Kết quả khám sức khỏe định kỳ của công nhân công ty sứ năng Chinfon năm 2021	Phùng Văn Duyệt*		BM. Y học gia đình	Đạt	

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129	Kiến thức, thực hành phòng ngừa dài thảo đường thai kỳ và một số yếu tố liên quan ở thai phụ khám thai tại Bệnh viện Đại học Y Hải Phòng năm 2021	Nguyễn Văn Thành*	Đoàn Như Thắng SV. Vũ Thị Mến	BM. Y học gia đình	Khá	
130	Nghiên cứu đặc điểm lâm sàng, cận lâm sàng và các yếu tố nguy cơ của đợt cấp làm gia tăng tỉ lệ nhập viện của COPD tại Bệnh viện Đại học Y Hải Phòng năm 2020 - 2021	Đức Hồng Hương*	Vũ Thị Mai Anh, Lương Thanh Mai Trịnh Thị Ngân	BM. Y học gia đình	Khá	
131	Thực trạng sức khỏe và các bệnh tật mắc phải của sinh viên năm thứ nhất trường Đại học Y Dược Hải Phòng năm học 2020-2021	Nguyễn Thùy Linh*	Nguyễn Thị Thanh Tâm Đoàn Như Thắng Nguyễn Hải Ninh Nguyễn Thị Quỳnh Hoa Vũ Minh Thư	BM. Y học gia đình	Khá	
132	Nghiên cứu đặc điểm lâm sàng, yếu tố nguy cơ và kháu quả về sản khoa, sức động ở bệnh nhân đột quỵ não cấp tại Bệnh viện Hữu nghị Việt tiệp	Vũ Mạnh Tân*	Nguyễn Thị Mai Anh	BM. Nội	Xuất sắc	
133	Thực trạng nhu cầu và nhu cầu học tập phương pháp nghiên cứu khoa học của cán bộ, giảng viên trường Đại học Y Dược Hải Phòng năm 2021	Nguyễn Văn Khải	Đặng Văn Ninh Lê Tiến Thành Nguyễn Thị Thu Thảo*	Đơn vị QLĐTSĐH-NCKH	Khá	
134	Thực trạng kiến thức, thái độ về dự phòng và sơ trí phục vụ của sinh viên điều dưỡng chính quy trường Đại học Y Dược Hải Phòng năm 2021	Đoàn Thị Thu Thảo*	Nguyễn Thị Thu Hương	Khoa Điều dưỡng	Khá	
135	Thực trạng kiến thức điều trị ở người cao tuổi mắc tăng huyết áp tại Bệnh viện Việt tiệp, Hải Phòng, năm 2021	Lương Thị Thu Giang	Hoàng Thị Oanh* Đỗ Thị Ninh	Khoa Điều dưỡng	Khá	
136	Khảo sát kiến thức, thực hành chăm sóc răng của các bà mẹ có con dưới 1 tuổi tại hai xã huyện Kiến Thụy, Hải Phòng năm 2021	Nguyễn Thị Phương*	Thái Lan Anh	Khoa Điều dưỡng	Khá	
137	Thực trạng kiến thức và một số yếu tố liên quan đến kiến thức về bệnh răm sản sau sinh của bà mẹ tại Bệnh viện Phụ sản Hải Phòng năm 2021	Hoàng Thị Oanh *	Lương Thị Thu Giang Đỗ Thị Ninh	Khoa Điều dưỡng	Khá	
138	Một số yếu tố của mẹ và thai ảnh hưởng tới sự chênh sản của sức cách sức tinh trọng lượng thai	Đỗ Thị Lan Anh*		Khoa Điều dưỡng	Khá	
139	Thực trạng chèn ép ống sống thắt lưng tại khoa ngoại thần kinh - sự sản Bệnh viện Việt tiệp năm 2021	Nguyễn Thị Thu Hương*	Đoàn Thị Thu Thảo	Khoa Điều dưỡng	Khá	

STT	Tên đề tài	Chủ nhiệm đề tài	Thành viên	Đơn vị	Kết quả	Ghi chú
140	Kiến thức và nhu cầu chăm sóc y tế của bệnh nhân đái tháo đường tuýp 2 điều trị ngoại trú tại Bệnh viện Đại học Y Hải Phòng năm 2021	Đào Thị Thanh Mai*	Phạm Thị Thơ	Khoa Điều dưỡng	Khá	
141	Nghiên cứu nhu cầu chăm sóc của người bệnh sau phẫu thuật viêm mũi xoang tại Bệnh viện Hữu nghị Việt tiệp Hải Phòng	Phạm Thị Tuyết *	Vũ Thị Cẩm Doanh	Khoa Điều dưỡng	Khá	
142	Thực trạng tâm an toàn của sinh viên điều dưỡng chính quy trường Đại học Y Dược Hải Phòng năm 2018	Nguyễn Thị Anh Thơ*	Đỗ Thị Tuyết Mai Trần Thị Vân Anh	Khoa Điều dưỡng	Khá	
143	Thực trạng kiến thức điều trị tăng huyết áp của người bệnh ngoại trú tại Bệnh viện Đại học Y Hải Phòng năm 2021	Hoàng Tuấn Anh*		Khoa Điều dưỡng	Khá	
144	Thực trạng kiến thức, thái độ của điều dưỡng trong chăm người bệnh đái tháo đường tại Bệnh viện Da khoa Quốc tế Hải Phòng năm 2021	Đỗ Thị Ninh	Hoàng Thị Oanh * Lương Thị Thu Giang	Khoa Điều dưỡng	Khá	
145	Kiến Thức, thực hành về bệnh viêm da của bà mẹ có con bị viêm da đang điều trị tại khoa sơ sinh, Bệnh viện Trẻ em Hải Phòng năm 2021	Lê Thị Thu Hằng*		Khoa Điều dưỡng	Khá	
146	Khảo sát kiến thức về quản lý hen của các bà mẹ có con điều trị hen tại khoa Hô hấp, Bệnh viện Trẻ em Hải Phòng năm 2021	Nguyễn Thanh Xuân*	Nguyễn Thị Trang Nguyễn Mai Phương	Khoa Điều dưỡng	Khá	
147	Kiến thức thực hành về vệ sinh bàn tay của sinh viên điều dưỡng chính quy trường Đại học Y Dược Hải Phòng năm 2020	Đỗ Thị Tuyết Mai *	Nguyễn Thị Anh Thơ	Khoa Điều dưỡng	Khá	
148	Đánh giá chất lượng cuộc sống người bệnh xơ gan tại khoa Nội tiêu hóa Bệnh viện Hữu nghị Việt Tiệp năm 2020	Vũ Thị Cẩm Doanh*	Phạm Thị Tuyết	Khoa Điều dưỡng	Khá	
149	Thực trạng chất lượng cuộc sống của người bệnh sau phẫu thuật thay khớp háng tại Bệnh viện Hữu nghị Việt Tiệp năm 2021	Trần Thùy Dương *	Nguyễn Thị Hòa	Khoa Điều dưỡng	Khá	
150	Thực trạng hiểu biết và hài lòng về nghề nghiệp của sinh viên Điều dưỡng chính quy trường Đại học Y Dược Hải Phòng năm 2021	Trần Lan Anh	Nguyễn Thị Phương*	Khoa Điều dưỡng	Khá	
151	Kiến thức về chế độ ăn bổ sung của các bà mẹ có con từ 6 đến 24 tháng tuổi và một số yếu tố liên quan tại xã Đoàn Xá, huyện Kiến Thụy, Hải Phòng năm 2021	Phạm Thị Thơ*	Đào Thị Thanh Mai	Khoa Điều dưỡng	Khá	

STT	Tên đề tài	Chủ nhiệm đề tài	Thành viên	Đơn vị	Kết quả	Ghi chú
132	Nghiên cứu phân lập, xác định cấu trúc hóa học và hoạt tính kháng vi sinh vật một số hợp chất từ chủng vi nấm biển Mmt1	Cao Đình Tuấn*	Trần Thị Lương Phạm Phương Dung Đặng Thị Phương Thảy	Khoa Dược	Xuất sắc	
133	Nghiên cứu sự phù hợp của chương trình đào tạo dược sỹ trong việc đáp ứng nhu cầu thực hành chăm sóc dược, Trường Đại học Y Dược Hải Phòng	Nguyễn Văn Hùng	Võ Thị Quỳnh* SV: Nguyễn Thị Ngọc	Khoa Dược	Khá	
134	Tối ưu hóa quy trình chiết xuất flavonoid từ rau Vối	Ngô Thị Quỳnh Mai	Lưu Thị Thu Huyền, SV. Nguyễn Thành Đạt* Đinh Hoài Nam	Khoa Dược	Khá	
135	Nghiên cứu ảnh hưởng của các yếu tố tá dược và thông số động khô đến nhu chuẩn chất lượng thuốc tiêm đông khô chứa nhũ phức nano paclitaxel và DHA.	Hoàng Thị Kim Thu*	Nguyễn Ngọc Châu Phạm Thị Anh	Khoa Dược	Khá	
136	Nghiên cứu thành phần hoá học và hoạt tính gây độc trên dòng ung thư phổi A549 của quả bạch đàn (Eucalyptus globulus), họ Sim (Myrtaceae)	Phạm Thị Anh*	Phạm Thị Phương Thảo Hoàng Thị Kim Thu	Khoa Dược	Khá	
137	Nghiên cứu chiết xuất và bào chế viên nang chứa anthocyanidin từ lá tía tô Perilla frutescens	Nguyễn Thanh Tâm*	Vũ Thùy Dung Vũ Thùy Dương	Khoa Dược	Khá	
138	Nghiên cứu bào chế hệ phân tán rắn quercetin và bước đầu ứng dụng dạng bào chế thuốc bột	Võ Thị Quỳnh*	SV. Vương Thu Ngọn Vũ Thuỳ Dương	Khoa Dược	Khá	
139	Nghiên cứu xây dựng quy trình chiết xuất lactoferin từ vàng đắng Coptidisrhizo flavostamen thu mua tại Hải Phòng trong quy mô phòng thí nghiệm	Vũ Thùy Dung*	Nguyễn Thanh Tâm	Khoa Dược	Khá	
140	Thực trạng sử dụng kháng sinh điều trị viêm phổi bệnh viện tại khoa Hồi sức tích cực Bệnh viện Kiến An năm 2020	Lê Thị Thúy Lanh*	Hà Quang Tuấn Vũ Thùy Dương SV: Lại Văn Tú	Khoa Dược	Khá	
141	Khảo sát thực trạng sử dụng thuốc cấm, truyền tại Bệnh viện Đa khoa Quốc tế Hải Phòng	Trần Thị Nghĩa	Nguyễn Thị Hạnh*	Khoa Dược	Khá	
142	Thực trạng sử dụng vancomycin trong điều trị rối loạn lipid máu trên bệnh nhân đái tháo đường điều trị tại Bệnh viện Đa khoa Quốc tế Hải Phòng năm 2019	Nguyễn Minh Thái*	Nguyễn Thị Thu Phương Phạm Thanh Thủy Bùi Thị Thắm	Khoa Dược	Khá	

STT	Tên đề tài	Chủ nhiệm đề tài	Thành viên	Đơn vị	Kết quả	Ghi chú
163	Xây dựng bộ công cụ hỗ trợ công tác đánh giá chất lượng chương trình đào tạo Dược sĩ hệ chính quy của trường Đại học Y Dược Hải Phòng	Nguyễn Thị Thu Phương	Nguyễn Văn Hùng Ngô Thị Quỳnh Mai Trần Thị Ngân Cao Đức Tuấn Vũ Thị Quỳnh*	Khoa Dược	Đạt	
164	Phân tích thực trạng kê đơn thuốc trong điều trị ngoại trú tại Trung tâm Y tế huyện Cát Hải - thành phố Hải Phòng năm 2019	Đỗ Thị Bình Diệp*	Phùng Chí Thiện	Khoa Dược	Đạt	
165	Phân tích chi phí và các yếu tố ảnh hưởng đến chi phí trực tiếp điều trị bệnh viêm phổi tại Bệnh viện Trẻ em Hải Phòng năm 2020	Trương Đình Phong*	Phùng Chí Thiện	Khoa Dược	Đạt	
166	Đánh giá hàm lượng Rutin trong dược liệu hòe (Styphnolobium japonicum (L.) Schott.) tại Hải Phòng, Hưng Yên, Thái Bình bằng phương pháp quang phổ tử ngoại khả kiến	Phạm Thị Phương Thảo	Bùi Thị Thắm*	Khoa Dược	Khá	
167	Tổng hợp hợt Gd-DTPA có kích thước nano nhằm tương phản sử dụng trong chụp MRI và CT	Nguyễn Thị Thúy Hoài*	GV. Phạm Tiến Quốc	Khoa Dược	Khá	
168	Nhận xét thực trạng bệnh sâu răng theo chỉ số DMF ở học sinh tiểu học tại xã Thuỷ Đường, Thuỷ Nguyên, Hải Phòng năm 2021	Nguyễn Thị Ninh*	Nguyễn Trường Thịnh	Khoa RHM	Đạt	
169	Khảo sát số lượng và hình thái ống tủy răng hàm lớn vĩnh viễn hàm dưới trên phim Cone beam computed tomography tại Bệnh viện Đại học Y Hải Phòng năm 2021	Trần Thị Anh Huy*		Khoa RHM	Khá	
170	Nhận xét đặc điểm lâm sàng, X - quang và kết quả điều trị phẫu thuật viêm quanh cùng răng ngầm tại khoa Răng hàm mặt Trung ương Hà Nội	Đồng Thị Mai Hương*		Khoa RHM	Khá	
171	Khảo sát số lượng và hình thái ống tủy răng hàm lớn vĩnh viễn hàm trên phim Cone beam computed tomography tại Bệnh viện Đại học Y Hải Phòng năm 2021	Vũ Quang Hưng*		Khoa RHM	Xuất sắc	
172	Khảo sát lâm sàng và điều trị phẫu thuật bảo tồn TK VII của u tuyến nước bọt mang tai tại Khoa Răng hàm mặt Bệnh viện Hữu nghị Việt tiệp Hải Phòng năm 2018	Nguyễn Minh Tuấn*	Lê Thành Nam	Khoa RHM	Khá	

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173	Nghiên cứu đặc điểm lâm sàng, X quang và điều trị bệnh viêm nha chu viêm răng khu trú tại Bệnh viện Đại học Y Hải Phòng năm 2020 - 2021	Phạm Văn Liệu*	Bùi Minh Khuê Phạm Thị Thanh Dung	Khoa RHM	Xuất sắc	
174	Khảo sát chiều sâu sương tủ răng vùng răng hàm lớn hàm trên và Mevàng cách tủ khớp chèn răng hàm lớn hàm trên đến sàn xoang trên phim cắt cuanimam tại Bệnh viện Đại học Y Hải Phòng năm 2020	Phan Thị Thanh Giang*	Nguyễn Thị Phương Anh	Khoa RHM	Khá	
175	Đánh giá kết quả quá phục hình cố răng theo kĩ thủ hệ thống Implant Neodent tại Bệnh viện Đại học Y Hải Phòng 2020-2021	Nguyễn Đức Tịn*	Phạm Thanh Hải Nguyễn Thị Hải Quỳnh	Khoa RHM	Xuất sắc	
176	Kết quả điều trị viêm nhị không hồi phục có sử dụng resin Gutta flow 2 trên răng hàm lớn vĩnh viễn thì nhổ hàm dưới	Nguyễn Tiến Đức*		Khoa RHM	Khá	
177	Kết quả bảo tồn xương ổ răng ghép khối Ebrin giàu tiểu cầu (PRF) sau nhổ răng số 8 hàm dưới tại Bệnh viện Đại học Y Hải Phòng, 2021	Phạm Thanh Hải*	Đỗ Quốc Uy Nguyễn Đức Tín	Khoa RHM	Xuất sắc	
178	Thực trạng bệnh sâu răng và một số yếu tố liên quan ở sinh viên năm thứ nhất trường Đại học Y Dược Hải Phòng năm học 2019 - 2020	Lương Xuân Quỳnh*		Khoa RHM	Khá	
179	Thực trạng sâu răng hàm lớn thứ nhất và một số yếu tố liên quan ở học sinh trường Tiểu học và Trung học cơ sở Nghĩa Lộ, Cát Hải, Hải Phòng năm 2021	Đoàn Trung Hiếu*	Vũ Quang Hưng Phạm Thị Hồng Thủy	Khoa RHM	Khá	
180	Nhận xét kết quả giảm đau của phương pháp điện châm kết hợp kéo giãn cột sống bằng máy trên bệnh nhân đau thần kinh tọa do thoát vị đĩa đệm tại Bệnh viện Lê Chân năm 2021	Đoàn Mỹ Hạnh*	BV. Nguyễn Thị Huyền Trang	Khoa Y học cổ truyền	Khá	
181	Khảo sát thành phần hóa học của cây ma mương (Ludwigia prostrata) thu hái tại An Dương, Hải Phòng năm 2021	Nguyễn Thị Thúy Dung*	Phạm Thị Phương Thảo BV. Đoàn Thị Hải Yến	Khoa Y học cổ truyền	Khá	
182	Đánh giá độc tính cấp và tác dụng điều chỉnh rối loạn lipid máu trên mô hình nội sinh thực nghiệm của cao toàn phần "ba mươi hai"	Nguyễn Thị Tâm Hiếu*	Phạm Thúy Phương BV. Phạm Thị Phương Thúy	Khoa Y học cổ truyền	Khá	
183	Nhận xét kết quả điều trị đau thần kinh tọa bằng điện châm, xoa bóp bấm huyệt kết hợp bài thuốc Tứ vật đào hồng tại Bệnh viện Y học cổ truyền Hải phòng năm 2021	Nguyễn Thị Thúy*	BV. Phạm Thị Lệ Thủy	Khoa Y học cổ truyền	Khá	

STT	Tên đề tài	Chủ nhiệm đề tài	Thành viên	Đơn vị	Kết quả	Ghi chú
180	Đánh giá tác dụng điều trị tác hòa chức năng mạn tính bằng bài thuốc Hoạt huyết chuyển tắc sinh tân ấm tại Bệnh viện Y học cổ truyền Hà Nội năm 2021.	Nguyễn Thị Thanh Hoa *		Khoa Y học cổ truyền	Khá	
181	Khảo sát đặc điểm lâm sàng, cận lâm sàng và một số yếu tố liên quan của bệnh nhân suy tuần hoàn não tại Bệnh viện số 1 trường Đại học Trung Y Dược Quảng Châu	Khúc Thị Song Hương*		Khoa Y học cổ truyền	Xuất sắc	
182	Đánh giá kết quả điều trị thoái hóa cột sống thắt lưng bằng phương pháp tác động nội sống, điện châm kết hợp bài thuốc Tam tý thang tại Bệnh viện Đại học Y Hải Phòng năm 2021	Phạm Tiến Dũng*	GV. Phạm Đình Trọng	Khoa Y học cổ truyền	Khá	
183	Thực trạng nguồn nhân lực và hoạt động khám chữa bệnh bằng Y học cổ truyền tại Bệnh viện Kiến An và Trung tâm y tế huyện Kiến Thụy năm 2021	Trần Thị Thu Hiền*		Khoa Y học cổ truyền	Đạt	
184	Nghiên cứu sự hài lòng của sinh viên đối với chất lượng giảng dạy của khoa Y học cổ truyền Trường Đại học Y dược Hải Phòng và một số yếu tố liên quan năm 2021	Vũ Thị Hải*		Khoa Y học cổ truyền	Khá	
185	Thực trạng bệnh nhân đồng nhiễm Lao/HIV được quản lý tại các phòng khám ngoại trú thành phố Hải Phòng từ 01/01/2016-30/06/2020	Trần Thị Bích Hải*	Nguyễn Duy Hùng DS.Nguyễn Thị Tường Vi	Khoa Y tế công cộng	Khá	
186	Kiến thức, thái độ, thực hành về vaccin phòng HPV của sinh viên trường Đại học Y Dược Hải Phòng năm 2021	Nguyễn Thị Thanh Bình	Nguyễn Thị Minh Ngọc; Nguyễn Thị Thu Thảo* Hoàng Thị Hoa Lê	Khoa Y tế công cộng	Khá	
187	Thực trạng nghiện điện thoại thông minh và một số yếu tố liên quan ở học sinh phổ thông huyện An Dương, Hải Phòng năm 2021	Nguyễn Thị Minh Ngọc*	Nguyễn Thị Thu Thảo Nguyễn Thị Thanh Bình SV. Nguyễn Thị Nghi SV. Đỗ Hoàng Trang	Khoa Y tế công cộng	Khá	
188	Đặc điểm nhiễm giun đa của bệnh nhân suy thận mạn chạy thận nhân tạo tại Bệnh viện Đại học Y Hải Phòng năm 2021	Nguyễn Thị Thảm	Cáp Minh Điền* Phạm Thị Như Quỳnh	Khoa Y tế công cộng	Khá	
189	Thực trạng và một số yếu tố liên quan đến chi tiêu cho bữa phụ của học sinh trường Tiểu học Lê Hồng Phong, Hải Phòng năm 2021	Nguyễn Thị Thuý Linh*	Nguyễn Thị Thảm Cáp Minh Điền SV. Bùi Thị Mỹ Linh	Khoa Y tế công cộng	Xuất sắc	
190	Thực trạng tai nạn lao động và một số yếu tố liên quan của người lao động tại làng nghề đúc đồng và gia công cơ khí Mỹ Đồng, huyện Thủy Nguyên, TP Hải Phòng năm 2020	Hoàng Thị Giang*	Phạm Thị Ngọc SV. Phạm Thị Phương Thảo	Khoa Y tế công cộng	Xuất sắc	

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195	Thực trạng chất lượng cuộc sống của người cao tuổi mắc bệnh mãn tính không lây và một số yếu tố liên quan tại huyện Kiến Thụy, thành phố Hải Phòng năm 2021	Nguyễn Quang Dũng Phạm Thị Ngọc	Hoàng Thị Thuận	Khoa Y tế công cộng	Khá	
196	Thực trạng hành vi sức khỏe của học sinh trường THPT Trần Nguyên Hãn, Hải Phòng năm 2021	Trần Thị Thúy Hà	Phạm Thị Mai Hoàng Thị Thuận*	Khoa Y tế công cộng	Khá	
197	Tiền liệu rối loạn giấc ngủ và một số yếu tố liên quan trên đối tượng đến khám tại Bệnh viện Đại học Y Hải Phòng năm 2021	Nguyễn Thị Thu Thảo*	Nguyễn Thị Thanh Bình Nguyễn Thị Minh Ngọc Hoàng Thị Hòa Lê Trịnh Thanh Xuân	Khoa Y tế công cộng	Khá	
198	Thực trạng và một số yếu tố liên quan đến chăm sóc bàn giá của học sinh trường Tiểu học Hồng Thái, huyện An Dương, thành phố Hải Phòng năm 2021	Cáp Minh Đức*	Nguyễn Thị Thắm SV. Nguyễn Thị Thanh Ngà Phạm Thị Minh Phương	Khoa Y tế công cộng	Khá	
199	Thực trạng và một số yếu tố liên quan đến sự hài lòng của người bệnh đến khám tại khoa khám bệnh, Bệnh viện Đại học Y Hải Phòng năm 2021	Trịnh Thanh Xuân*	Phạm Thị Ngọc SV. Cao Thị Huyền	Khoa Y tế công cộng	Khá	
200	Thực trạng chất lượng cuộc sống và một số yếu tố liên quan ở bệnh nhân lupus ban đỏ hệ thống điều trị ngoại trú tại Bệnh viện đa khoa tỉnh Nghệ An năm 2020	Dương Thị Hương	Nguyễn Thị Minh Huyền Nguyễn Quang Dũng* Phạm Minh Châu	Khoa Y tế công cộng	Khá	
201	Thực trạng kiến thức, thái độ và thực hành của sinh viên Y dự khoa Việt Nam về phòng chống viêm gan vi rút năm 2020	Phạm Minh Khuê	Nguyễn Thị Thuý Linh*	Khoa Y tế công cộng	Xuất sắc	
202	Nghiên cứu tác dụng phụ hiếm thấn trên da sau khi tiêm Vaccin Covid 19	Nguyễn Thị Liên	Cao Việt Phương* Nguyễn Thị Lệ Thủy Hoàng Thị Lân Nguyễn Thị Thanh Thanh Thuyền Lưu Hải Phương	BM. Da liễu	Khá	*Đã đăng kỷ BC*
203	Một số yếu tố liên quan đến tử vong của suốt nặng sơ sinh tại Bệnh viện Trẻ em Hải Phòng năm 2018 - 2019	Vũ Sỹ Khánh*	Đặng Văn Chức Đỗ Thị Thu Trang	BM. Nhi phổi	Khá	*Đã đăng kỷ BC*

STT	Tên đề tài	Chủ nhiệm đề tài	Thành viên	Đơn vị	Khá quá	Ghi chú
204	Nhân một trường hợp điều trị liệt thần kinh quay sau không hồi phục bằng chuyển gân theo phương pháp SMITH tại Bệnh viện Đại học Y Hải Phòng	Trịnh Đình Thanh*	Phạm Văn Thương Phạm Tâm Long	BM. Ngoại	Khá	ĐT đăng ký BC
205	Đặc điểm dịch tễ học lâm sàng và biến chứng của bệnh sởi tại Bệnh viện Trẻ em Hải Phòng năm 2019	Đào Thị Tha Hiền	Nguyễn Ngọc Sáng Vũ Thị Ánh Hồng*	BM. Nhi	Khá	ĐT đăng ký BC
206	Đặc điểm lâm sàng, cận lâm sàng, nồng độ glucose máu đói và sau ăn hai giờ ở bệnh nhân đái tháo đường típ 2 điều trị tại khoa Thận - Nội tiết, Bệnh viện Hữu nghị Việt tiệp năm 2020 - 2021	Kê Thị Lan Anh	SV. Nguyễn Thị Nga*	BM. Nội	Khá	ĐT đăng ký BC
207	Nghiên cứu mối liên quan giữa biến chứng thận và một số đặc điểm lâm sàng cận lâm sàng ở bệnh nhân đái tháo đường typ 2 tại khoa Nội 3, Bệnh viện Hữu nghị Việt tiệp - Hải Phòng	Kê Thị Lan Anh	Trần Văn Dũng*	BM. Nội	Khá	ĐT đăng ký BC
208	Thực trạng tiêm vắc xin Covid 19 của sinh viên trường Đại học Y Dược Hải Phòng năm 2021	SV. Đoàn Hải Minh*	Cao Việt Phương SV. Nguyễn Thị Hà Lê Trần Tuấn Anh Võ Quang Tuyên Hoàng Tuấn Anh	BTN - HSV TRƯỜNG	Xuất sắc	ĐT đăng ký BC
209	Thực trạng các hoạt động chăm sóc sức khoẻ bà mẹ trẻ em và kế hoạch hoá gia đình tại huyện An Lão, Hải Phòng năm 2018	Nguyễn Minh Ngọc*	Trần Thị Bích Hải Dương Đức Hoàn	Khoa Y tế công cộng	Đạt	ĐT đăng ký BC
210	Thực trạng kháng kháng sinh in vitro của H. influenzae và kết quả điều trị trong viêm phổi cộng đồng ở trẻ em Hải Phòng 2019 – 2020	Đinh Dương Tùng Anh	Nguyễn Mai Phương Trần Thị Thanh Hằng*	BM. Nhi	Khá	Tự túc
211	Đánh giá tình trạng nhiễm khuẩn Bệnh viện ở bệnh nhân được điều trị BCMO tại Bệnh viện Bạch Mai	Trần Đức Trung*	Đào Xuân Cơ	Khoa Điều dưỡng	Đạt	Tự túc
212	Hiệu quả can thiệp về nuôi con bằng sữa mẹ ở các bà mẹ sau đẻ thường tại khoa sản 2, Bệnh viện Đa khoa Quốc tế Hải Phòng năm 2020	Nguyễn Thị Hòa	Trần Thúy Dương*	Khoa Điều dưỡng	Khá	Tự túc

STT	Tên đề tài	Chủ nhiệm đề tài	Thành viên	Đơn vị	Kết quả	Ghi chú
213	Nghiên cứu xây dựng mô hình sánh bảo các sai sót trong kê đơn thuốc tại Bệnh viện Đa khoa Quốc tế Hải Phòng	Nguyễn Thị Thu Phương	Trần Thị Ngân Trần Văn Anh*	Khoa Dược	Xuất sắc	Tự túc
214	Kiến thức, thái độ, thực hành về phòng chống bệnh dại và một số yếu tố liên quan của người dân tại huyện Yên Châu, tỉnh Sơn La năm 2019	Hoàng Thị Thuận*		Khoa Y tế công cộng	Khá	Tự túc

Tổng: 214 đề tài

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

Số: 864 /QĐ-YDHP

Hải Phòng, ngày 14 tháng 6 năm 2023

QUYẾT ĐỊNH

Về việc công nhận kết quả nghiệm thu nhiệm vụ NCKH cấp cơ sở năm 2022

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Căn cứ Quyết định số 0613999/QĐ-TTg ngày 23 - 01 - 1999 của Thủ tướng Chính phủ về việc thành lập Trường Đại học Y Hải Phòng;

Căn cứ Quyết định số 2153/QĐ-TTg ngày 11-11-2013 của Thủ tướng Chính phủ về việc đổi tên Trường Đại học Y Hải Phòng thành Trường Đại học Y Dược Hải Phòng;

Căn cứ Quyết định số 1070/QĐ-BYT ngày 08/03/2016 của Bộ trưởng Bộ Y tế về ban hành quy chế tổ chức và hoạt động của Trường Đại học Y Dược Hải Phòng;

Căn cứ Quyết định số 2703/QĐ-YDHP ngày 19 tháng 12 năm 2022 của Hiệu trưởng trường Đại học Y Dược Hải Phòng về việc thành lập Hội đồng nghiệm thu đề tài KH&CN cấp cơ sở năm 2022;

Xét đề nghị của ông Trưởng phòng Quản lý Khoa học.

QUYẾT ĐỊNH:

Điều 1: Công nhận kết quả nghiệm thu 222 nhiệm vụ nghiên cứu khoa học cấp cơ sở năm 2022 (*có danh sách kèm theo*).

Điều 2: Phòng QLKH có trách nhiệm thực hiện cấp quyết định công nhận kết quả cho tất cả các đề tài đã bảo vệ nghiệm thu năm 2022 và gửi báo cáo kết quả nhiệm vụ đã sửa theo ý kiến Hội đồng về Trung tâm Thông tin Thư viện để lưu trữ.

Điều 3: Các Ông (Bà): Trưởng phòng Quản lý Khoa học, Trung tâm Thông tin thư viện, Thường trực Hội đồng Khoa học Giáo dục và các Ông/ Bà có tên trong danh sách chủ nhiệm đề tài căn cứ Quyết định thi hành./.

Nơi nhận:
- Như điều 3;
- Lưu QLKH, VT.

HIỆU TRƯỞNG

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

HIỆU TRƯỞNG

PGS.TS. Phạm Văn Linh

TRƯỜNG ĐẠI HỌC DƯỢC HẢI PHÒNG
Phòng QLKH&HTQT

Cộng hòa xã hội chủ nghĩa Việt Nam
Độc lập - Tự do - Hạnh phúc

KẾT QUẢ NGHIỆM THU NHIỆM VỤ NCKH CẤP CƠ SỞ NĂM 2022

(Theo theo Quyết định số: 364 /QĐ-YDHP ngày 24 tháng 6 năm 2022)

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Thành viên nhóm NC	Đơn vị	Tên đề tài	Kết quả	Ghi chú
1	ThS	Phan Xuân Cường	Nguyễn Văn Long, Vương Đức Hưng, Lưu Văn Quý	BM. Châm cứu-Dưỡng sinh-Phục hồi	Nghiên cứu đặc điểm lâm sàng của chứng rối loạn vị giác do dây tổn thương sau phẫu thuật viêm tai giữa mạn tính tại Bệnh viện Hữu Nghị Việt Tiệp	Khá	
2	PGS.TS	Hoàng Đức Hạ	Đặng Văn Phương	BM. Châm cứu-Dưỡng sinh-Phục hồi	Nghiên cứu đặc điểm lâm sàng và giá trị của sắt lớp vỏ thần kinh đệm trong chẩn đoán tổn thương não thiếu máu cục bộ nhồi máu não cấp tại Bệnh viện Đa khoa quốc tế Hải Phòng, năm 2018-2021	Khá	
3	TS	Nguyễn Thị Liên	Phạm Thị Thu Trang, Cao Việt Phương	BM. Da liễu	Thực trạng tổn thương da của sinh viên trường Đại học Y Dược Hải Phòng khi sử dụng đồ bảo hộ chống dịch covid 19 tại 1 số tỉnh phía Bắc 01/2021 - 04/2022	Khá	
4	ThS	Hoàng Thị Lân	Đào Minh Châu, Nguyễn Thị Lệ Thủy	BM. Da liễu	Mô tả đặc điểm lâm sàng, các lâm sàng và kết quả điều trị bệnh dày sừng ở Khoa Da liễu Bệnh viện Đại học Y Hải Phòng	Đạt	
5	ThS	Đào Minh Châu	Hoàng Thị Lân, Nguyễn Thị Lệ Thủy	BM. Da liễu	Đặc điểm lâm sàng, kiến thức, mức độ, thực hành của sinh viên Y về bệnh viêm da tiếp xúc kích ứng mạn tính bàn tay năm 2022.	Đạt	
6	ThS	Nguyễn Thị Thanh	Đỗ Đào Châu, Nguyễn Quang Lợi, Vũ Thị Hải	BM. Dây sọ-Mắt-Tai mũi họng	Tác dụng của Neostrain và Atropin, Paracetamol để điều trị đau đầu sau ghép M tủy sống tại Bệnh viện Đại học Y Hải Phòng	Khá	
7	ThS	Lê Phi Đại	Phạm Thị Dung, Vũ Thị Mến	BM. Giải phẫu	Nghiên cứu đặc điểm hình thể chai và đối chiếu nhà hình ảnh MRI của bệnh nhân nghiện rượu	Khá	
8	ThS	Trần Thị Xen	Trần Xuân Bách	BM. Giải phẫu	Nghiên cứu đặc điểm lâm sàng, hình ảnh nội soi và chẩn sát kết quả điều trị bệnh loét dạ dày tá tràng tại Khoa Khám bệnh Bệnh viện Đại học Y Hải Phòng	Khá	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Thành viên chính NC	Bm vị	Tên đề tài	Kết quả	Ghi ch
9	TS	Phạm Thiết Nguyên		BM. Giải phẫu	Nghiên cứu đặc điểm hình thái vùng vô sản thủy tiêu, thủy đính, thủy chẩm và thủy thái dương của người trưởng thành bình thường bằng MSCT 3-D Torin	Khá	Gia hạn 2021
10	ThS	Lê Thị Yến	Nguyễn Hồng Phúc	BM. Giải Phẫu	Nghiên cứu đặc điểm hình thái siêu âm và chụp cắt lớp vi tính trên bệnh nhân viêm tụy cấp tại Bệnh viện Hữu Nghị Việt Tiệp	Khá	
11	ThS	Hoàng Thị Bích Thủy	Vũ Đức Mạnh	BM. Giáo dục thể chất	Thực trạng sức khỏe và hiệu quả ứng dụng bài tập sức mạnh nâng cao thể lực cho nữ sinh viên học môn Bóng rổ Trường Đại Y Dược Hải Phòng năm 2021	Khá	
12	ThS	Nguyễn Thị Phương Thảo	Phạm Tuấn Linh	BM. Giáo dục thể chất	Nghiên cứu ứng dụng bài tập nhảy phát triển khả năng phối hợp vận động cho sinh viên học Bóng chuyền K43 trường Đại học Y Dược Hải Phòng	Đạt	
13	ThS	Nhữ Văn Thuần	Nguyễn Khánh Hưng	BM. Giáo dục thể chất	Thực trạng tật lồng vẹo một số yếu tố liên quan về học phần bóng chuyền của sinh viên năm thứ nhất trường đại học Y Dược Hải Phòng năm học 2021 – 2022	Khá	
14	TS	Bùi Ngọc Tân	Nguyễn Thị Hương	BM. Hoá học	Nghiên cứu chiết xuất và hoạt tính kháng vi sinh vật kiểm định của tinh dầu lá tiền (Piper betel L.) tại Thuỷ Nguyên, Hải Phòng	Khá	
15	ThS	Nguyễn Thị Cúc	Nguyễn Quang Thành	BM. Hoá học	Xây dựng quy trình phân tích một số hoạt chất diệt chuột Warfarin, Brodifacoum, Bromadiolone trong mẫu máu bằng sắc ký lỏng ghép nối hai lần khối phổ	Khá	
16	ThS	Ngô Thanh Hường	Nguyễn Quang Thành	BM. Hoá học	Sử dụng ngôn ngữ lập trình Python phát triển mô hình nâng lực các hoạt chất có nguồn gốc từ thực phẩm có tiềm năng kích hoạt con đường tín hiệu đáp ứng độc tính kim loại nặng HIF1/HREAP1/ARE.	Đạt	
17	TS	Nguyễn Văn Dương	Nguyễn Thị Hương, Nguyễn Thị Hồng Nhung	BM. Hoá học	Thực trạng và hiệu quả xử lý các hóa chất hữu cơ độc hại trong nước thải bằng phương pháp oxy hóa nâng cao tại phòng thí nghiệm Hóa học – ĐH Y Dược Hải Phòng năm 2022	Đạt	
18	ThS	Bùi Thị Hương Giang	Vũ Văn Quang, Dương Thị Minh Thơm	BM. Hoá sinh	Giá trị chẩn đoán vàng da bằng phương pháp đo Bilirubin qua da và Bilirubin huyết thanh ở trẻ sơ sinh	Đạt	
19	ThS	Dương Thị Minh Thơm	Bùi Thị Hương Giang, Nguyễn Thị Tình	BM. Hoá sinh	Hồng độ Calci, Fitnaphe, PTH huyết tương ở bệnh nhân suy thận mạn lọc máu chu kỳ tại Bệnh viện Hữu Nghị Việt Tiệp	Đạt	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Thành viên nhóm NC	Đơn vị	Tên đề tài	Kết quả	Ghi ch
30	ThS	Nguyễn Thị Nga	Lại Thị Mai, Đào Thị Thu Giang	BM. Lý luận chính trị	Thực trạng và giải pháp nâng cao chất lượng dạy và học học phần Lịch sử Đảng Cộng Sản Việt Nam tại Trường Đại học Y Dược Hải Phòng	Đạt	
31	TS	Nguyễn Ngọc Mạnh		BM. Lý luận chính trị	Đánh giá hiệu quả của phương pháp dạy học "giờ học đầu ngược" trong học phần tư tưởng Hồ Chí Minh tại Trường Đại học Y Dược Hải Phòng	Khá	
32	ThS	Đinh Thị Mai Hương	Vũ Thị Thu Hằng	BM. Lý luận chính trị	Thực trạng và giải pháp nâng cao kỹ năng tự học cho sinh viên năm thứ 3 tại trường Đại học Y Dược Hải Phòng năm 2022	Đạt	
33	ThS. BS	Nguyễn Thị Thu Trang Nguyễn Ngọc Sơn		BM. Nội	Đánh giá tình trạng viêm loét giác mạc và kết quả điều trị tại Khoa nội Bệnh viện Việt Tiệp từ tháng 4/2021- 10/2021	Khá	
34	ThS	Đái Thị Dịu		BM. Nội	Một số yếu tố liên quan đến những biến đổi đầu thị nhãn lành ở bệnh nhân glôcôm góc mở nguyên phát có vận thị nặng	Khá	
35	ThS	Phạm Thị Thu Thuỷ	Đào Xuân Thành, Khổng Thị Vân Anh, Đỗ Đình Tiệp, Trần Thị Thanh Bình, Phạm Hồng Minh	BM. Mô – Bệnh học	Khảo sát hình thái và chức năng động mạch cảnh đoạn ngoài sọ bằng siêu âm Doppler ở bệnh nhân nhồi máu não tại Bệnh viện Đa khoa quốc tế Hải Phòng năm 2021.	Khá	
36	ThS	Đỗ Đình Tiệp	Phạm Thị Thu Thủy, Khổng Thị Vân Anh, Phạm Hồng Minh, Trần Thị Thanh Bình, Hoàng Đình Khánh	BM. Mô – Bệnh học	Sự phát triển thai kỳ của thai phụ tiêm vaccine Covid - 19	Đạt	
37	ThS	Khổng Thị Vân Anh	Phạm Thị Thu Thủy, Trần Thị Thanh Bình, Đỗ Đình Tiệp, Phạm Hồng Minh, Lê Tất Thanh Hương	BM. Mô – Bệnh học	Khảo sát hình ảnh nhân tuyến giáp trên siêu âm đối chiếu với hình thái vi bào học tại Bệnh viện Đại học Y Hải Phòng năm 2022	Khá	
38	ThS	Trần Thị Phương	Đào Thị Lan	BM. Mô – Bệnh học	Đánh giá hiệu quả sử dụng tuyết trong trong kỹ thuật cắt lạnh dịch trong phẫu trong chẩn đoán sang thương ác tính	Đạt	
39	PGS.TS	Vũ Sỹ Khang	Đặng Văn Chức	BM. Mô-Bệnh học	Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị viêm loét da dày tá tràng tại Bệnh viện Tai mũi Hải Phòng năm 2015-2022	Khá	Tự tú

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Thành viên nhóm NC	Đơn vị	Tên đề tài	Kết quả	Ghi chú
20	TS	Nguyễn Thị Phương Mai	Đào Thu Hồng, Lê Thị Yến, Nguyễn Thị Hồng Liên, Nguyễn Thị Tươi, Phạm Thị Vân	BM. Hoá sinh	Đánh giá kết quả đào tạo liên tục kỹ năng cập nhật của giảng viên theo chương trình đổi mới giáo dục y khoa dựa trên năng lực của Trường Đại học Y Dược Hải Phòng, năm 2021-2022	Xuất sắc	
21	ThS	Nguyễn Thị Phương Thảo	Nguyễn Thị Phương Mai	BM. Hoá sinh	Mô tả các đột biến gen GAA gây bệnh Pompe ở Việt Nam	Khá	
22	TS	Vũ Văn Thái	Đỗ Văn Thiện, Cao Đỗ Lợi, Trịnh Thị Thuỷ	BM. Kỹ sinh trùng	Nghiên cứu tỷ lệ và một số yếu tố liên quan đến nhiễm sán Clonorchis spp. đường mật dịch dưới ở nữ công nhân vệ sinh tại khu công nghiệp Nam Sách, Hải Dương năm 2021	Khá	
23	TS	Vũ Thị Thanh Hiền	Nguyễn Thị Huyền Sương, Đinh Thị Thanh Mai, Đỗ Thị Huyền, Trịnh Thị Thuỷ	BM. Kỹ sinh trùng	Nghiên cứu đặc điểm các loài nấm gây bệnh da ở bệnh nhân đến khám tại phòng khám nấm Bệnh viện Da liễu Thái Bình	Khá	
24	BS	Nguyễn Thị Huyền Sương	Vũ Thị Thanh Hiền, Đinh Thị Thanh Mai, Vũ Văn Thái, Phạm Thanh Hiền, Trịnh Thị Thuỷ	BM. Kỹ sinh trùng	Kiến thức thực hành và một số yếu tố liên quan về phòng ngừa tình trạng nhiễm giun kim của người nhân viên tại hai trường mầm non Hải Phòng năm 2022	Đạt	
25	PGS.TS	Đinh Thị Thanh Mai	Vũ Thị Thanh Hiền, Vũ Văn Thái, Trịnh Văn Khương, Trịnh Thị Thuỷ	BM. Kỹ sinh trùng	Thực trạng và một số yếu tố liên quan đến nhiễm giun truyền qua đất ở người dân xã Đoàn Xá, Kiến Thụy, Hải Phòng, năm 2022	Xuất sắc	
26	PGS.TS	Trần Quang Phục	Phạm Thị Hồng Thanh, Nguyễn Đức Tâm, Nguyễn Thị Trang	BM. Lao và bệnh phổi	Nghiên cứu đặc điểm lâm sàng, cận lâm sàng đợt cấp bệnh phổi tắc nghẽn mạn tính tại Bệnh viện phổi Hải Dương	Xuất sắc	
27	ThS	Nguyễn Thị Trang	Vũ Thị Thu Uyên, Đinh Thị Tâm, Nguyễn Thị Hải Thơ, Trương Thành Kiên	BM. Lao và bệnh phổi	Nghiên cứu đặc điểm lâm sàng, cận lâm sàng và thực trạng kháng thuốc chống lao hàng một ở bệnh nhân lao phổi có HIV/AIDS tại Bệnh viện Phổi Hải Phòng năm 2018-2021	Khá	
28	PGS.TS	Nguyễn Huy Diệu	Trương Thành Kiên	BM. Lao và bệnh phổi	Đặc điểm lâm sàng, cận lâm sàng tràn dịch màng phổi do lao ở bệnh nhân lạm dụng rượu tại Bệnh viện Phổi Hải Phòng 2017-2021	Xuất sắc	
29	TS	Nguyễn Đức Thọ	Nguyễn Tuấn Anh, Nguyễn Thị Thuỷ	BM. Lao và bệnh phổi	Đặc điểm lâm sàng, cận lâm sàng của bệnh nhân tạo phổi không xâm nhập tăng áp nghiệp Xpert MB/RIF tại Bệnh viện Phổi Hải Phòng	Khá	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Thành viên nhóm NC	Đơn vị	Tên đề tài	Kết quả	Ghi chú
40	BSCKII	Nguyễn Ngọc Hùng	Vũ Đình Hàm	BM. Ngoại - PTTH	Đánh giá kết quả điều trị sẹo lồi bằng điện lạnh, tiêm corticoid kết hợp với băng ép trong cấy ghép da tự thân tại Bệnh viện Hữu nghị Việt Tiệp.	Khá	
41	ThS	Bùi Văn Dương	Trần Tiến Thành	BM. Ngoại - PTTH	Đánh giá kết quả điều trị vết thương mặt người già điều trị tổn thương do tai nạn giao thông tại Bệnh viện Hữu Nghị Việt Tiệp	Khá	
42	ThS	Hoàng Anh Công		BM. Ngoại - PTTH	Đặc điểm lâm sàng , hình thái tổn thương và kết quả điều trị vết thương động mạch vùng cổ tay tại Bệnh viện Hữu Nghị Việt Tiệp Hải Phòng	Đạt	
43	TS	Nguyễn Đức Tiến	Lê Thế Sơn	BM. Ngoại - PTTH	Nghiên cứu đánh giá kết quả tạo hình ngón tay bằng vạt V-Y tại chỗ phẫu thuật tạo hình thẩm mỹ Bệnh viện Hữu nghị Việt Tiệp	Khá	
44	ThS	Trần Thanh Tùng	Hoàng Hữu Duẩn	BM. Ngoại - PTTH	Đánh giá kết quả điều trị sỏi thận bằng phẫu thuật tán sỏi thận qua da đường hầm nhỏ có sử dụng Laser Holmium tại Bệnh viện Đại học Y Hải Phòng	Đạt	
45	ThS	Nguyễn Trung Thành	Hoàng Bảo Ngọc Cương	BM. Ngoại - PTTH	Đặc điểm lâm sàng và kết quả phẫu thuật gãy đuổi hàu mỏ tại Bệnh viện Đại học Y Hải Phòng	Đạt	
46	BSCKII	Trịnh Đình Thanh		BM. Ngoại - PTTH	Nghiên cứu kết quả điều trị gãy hở xương cẳng chân bằng phương pháp nẹp ốp tại Bệnh viện Hữu nghị Việt Tiệp	Khá	
47	ThS	Phan Văn Tuấn	Lê Thế Sơn	BM. Ngoại - PTTH	Đặc điểm lâm sàng, X quang và kết quả điều trị gãy khớp thân hai xương cẳng tay ở người lớn bằng nẹp vít tại Bệnh viện Đại học Y Hải Phòng	Đạt	
48	PGS.TS	Phạm Văn Duyệt	Đào Thị Ngọc Anh, Nguyễn Thị Thảo	BM. Ngoại - PTTH	Đánh giá kết quả phẫu thuật nội soi điều trị viêm tủi mật cấp do sỏi tại Bệnh viện Đại học Y Hải Phòng	Xuất sắc	
49	BSCKII	Phạm Quốc Hữu		BM. Ngoại - PTTH	Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị bệnh lồng ruột bằng tháo tuyến (dịch lỏng) bằng cải tiến nội soi Hysteker qua đường niệu đạo tại Bệnh viện Hữu nghị Việt Tiệp năm 2022	Khá	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Thành viên nhóm NC	Đơn vị	Tên đề tài	Kết quả	Ghi chú
10	TS	Phạm Văn Thương	Đào Thị Ngọc Anh, Nguyễn Đại Dương	BM. Ngoại - PTTH	Đánh giá kết quả phẫu thuật sửa rộng nối mật chủ mỏ tại Bệnh viện Hữu nghị Việt Tiệp	Khá	
11	ThS	Trần Đức Tâm	Hà Thị Thu Huyền	BM. Hồi	Đặc điểm lâm sàng, cận lâm sàng động kinh cơn lớn ở trẻ em tại Bệnh viện Trẻ em Hải Phòng 2021 – 2022	Khá	
12	ThS	Phạm Thị Ngọc		BM. Hồi	Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị bệnh viêm loét dạ dày tá tràng do HP ở trẻ em từ 6 tuổi tại Bệnh viện Trẻ em Hải Phòng năm 2021- 2022	Khá	
13	TS	Đinh Dương Tùng Anh	Nguyễn Thị Thúy Hường, Trần Thị Thanh Hằng, Đỗ Thị Hiền, Phạm Thị Vân	BM. Nhi	Đặc điểm dịch tễ lâm sàng, cận lâm sàng của trẻ mắc viêm thanh quản cấp tại Bệnh viện Trẻ em Hải Phòng năm 2021-2022	Xuất sắc	
14	PGS.TS	Nguyễn Ngọc Hằng	Phạm Thị Quỳnh Vân, Nguyễn Thị Phương Thảo	BM. Hồi	Đánh giá chất lượng cuộc sống của trẻ em xuất huyết giảm tiểu cầu tiên phát mạn tính tại Bệnh viện Trẻ em Hải Phòng	Khá	
15	ThS	Nguyễn Thành Trung		BM. Hồi	Đặc điểm suy dinh dưỡng ở trẻ dưới 5 tuổi mắc viêm phổi tại Bệnh viện Trẻ em Hải Phòng 2021-2022	Khá	
16	ThS	Vũ Thị Ánh Hồng		BM. Nhi	Đặc điểm lâm sàng, cận lâm sàng trẻ mắc COVID-19 tại Bệnh viện Trẻ em Hải Phòng	Đạt	
17	ThS	Trần Thị Hải Yến	Đinh Dương Tùng Anh, Vũ Thị Yến	BM. Nhi	Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị đóng ống động mạch ở trẻ sơ sinh non tháng tại Bệnh viện Trẻ em Hải Phòng năm 2021 - 2022	Đạt	
18	PGS.TS	Đặng Văn Chiến	Đồng Thị Phương Thuỷ, Phạm Thị Vân, Nguyễn Văn Giang, Đào Thị Thu Giang	BM. Nhi	Lâm sàng, cận lâm sàng viêm tiểu phế quản và một số yếu tố liên quan đến viêm tiểu phế quản nặng ở trẻ dưới 2 tháng tại Bệnh viện Trẻ em Hải Phòng năm 2022	Xuất sắc	
19	ThS	Cao Thị Hà	Tiêu Hạnh Nhi, Hà Minh Tâm	BM. Nhi	Đặc điểm dịch tễ học lâm sàng, một số yếu tố liên quan và kết quả điều trị bệnh tay chân miệng	Khá	
20	BSCKII	Hà Thị Thu Huyền	Lê Thị Huyền Trang	BM. Hồi	Nghiên cứu đặc điểm dịch tễ lâm sàng, cận lâm sàng Viêm loét dạ dày tá tràng có nhiễm H.Pylori	Khá	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Thành viên nhóm NC	Đơn vị	Tên đề tài	Kết quả	Ghi chú
61	ThS	Nguyễn Mai Phương, Dinh Dương Tăng Anh	Nguyễn Thị Hiệp Hòa	BM. Nhi	Đặc điểm dịch tễ lâm sàng và kết quả điều trị ca giật do sốt đơn thuần tại Bệnh viện Trẻ em Hải Phòng năm 2021 - 2022	Khá	
62	ThS	Nguyễn Việt Hà	Lã Thị Huyền Trang	BM. Nhi	Các yếu tố liên quan đến mức độ nặng của viêm phổi ở trẻ 2 - 24 tháng tại Bệnh viện Trẻ em Hải Phòng	Khá	
63	PGS.TS	Vũ Văn Quang	Đặng Thị Thảo	BM. Nhi	Đặc điểm lâm sàng, xét nghiệm và kết quả điều trị sởi bị viêm loét da dạ dày tại Bệnh viện Quốc tế Green	Khá	
64	ThS	Trần Huy Duy		BM. Nhi	Nghiên cứu đặc điểm lâm sàng, cận lâm sàng và nhận xét kết quả điều trị viêm cương cứng dưới 3 tháng tuổi tại Bệnh viện Trẻ em Hải Phòng năm 2020- 2021.	Khá	
65	PGS.TS	Hoàng Văn Thiên	Đỗ Thị Cúc, Đinh Dương Tăng Anh	BM. Nhi	Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị bệnh nhiễm khuẩn huyết ở trẻ sơ sinh tại Bệnh viện Trẻ em Hải Phòng năm 2018 - 2021	Khá	
66	ThS	Nguyễn Ngọc Toàn		BM. Ngoại ngữ	Ứng dụng mindmap để giảng dạy tiếng Anh chuyên ngành Y cho sinh viên Y đa khoa - Đại học Y Dược Hải Phòng năm 2022.	Đạt	
67	ThS	Lê Thị Quyên	Lê Thị Diệu Hiền	BM. Nội	Đặc điểm dịch tễ học lâm sàng, cận lâm sàng và kết quả điều trị ở bệnh nhân lao phổi điều trị tại khoa nội 3 Bệnh viện Hữu nghị Việt Tiệp Hải Phòng năm 2021	Khá	
68	ThS	Nguyễn Ngọc Ánh	Phạm Minh Nguyệt	BM. Nội	Nghiên cứu đặc điểm lâm sàng, cận lâm sàng và đánh giá kết quả điều trị bệnh nhân nhiễm khuẩn tiết niệu tại khoa nội 3 Bệnh viện Hữu nghị Việt Tiệp Hải Phòng	Khá	
69	BS	Đoàn Hải Hằng	Vũ Mạnh Tân, BV. Nguyễn Kỷ Chính	BM. Nội	Nghiên cứu một số yếu tố liên quan đến nồi loạn nhịp tim của các bệnh nhân nhồi máu cơ tim cấp tại khoa Tim mạch - Bệnh viện Hữu nghị Việt Tiệp năm 2021 - 2022	Khá	
70	ThS	Đỗ Thị Thanh Loan	Hoàng Thị Trang	BM. Nội	Khảo sát nước tiểu tồn dư bằng cystatin C huyết trong ở người bệnh mắc bệnh thalassemia ở khoa Huyết học lâm sàng Bệnh viện Hữu nghị Việt Tiệp	Khá	
71	BS	Doãn Đức Mạnh	Vũ Mạnh Tân, Nguyễn Đức Thành	BM. Nội	Nghiên cứu đặc điểm nồi loạn nhịp tim và một số yếu tố liên quan ở bệnh nhân suy tim mạn tính tại Bệnh viện Hữu nghị Việt Tiệp năm 2022	Khá	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Thành viên nhóm NC	Đơn vị	Tên đề tài	Kết quả	Ghi c
72	ThS	Đoàn Thị Ủy		BM. Nội	Thực trạng nhiễm nấm ở bệnh nhân Leucemie cấp điều trị tại khoa Huyết học lâm sàng Bệnh viện Việt Tiệp năm 2021- 2022	Khá	
73	BS	Phạm Thị Thu Hương	Đỗ Thị Tình	BM. Nội	Đặc điểm vi khuẩn gây tổn thương bàn chân ở bệnh nhân đái tháo đường năm 2019-2021 tại Bệnh viện Hữu nghị Việt Tiệp	Khá	
74	TS	Kiều Thị Lan Anh	Nguyễn Thị Hiền	BM. Nội	Đặc điểm lâm sàng, cận lâm sàng, nguyên nhân của hạ đường huyết ở bệnh nhân đái tháo đường điều trị tại Khoa Thận – Nội Tiết - Bệnh viện Hữu nghị Việt Tiệp - Hải Phòng 2020 - 2021	Xuất sắc	
75	TS	Vũ Minh Tân	Phạm Việt Quang, Nguyễn Thị Hoa	BM. Nội	Nghiên cứu đặc điểm lâm sàng, cận lâm sàng, tình trạng rối loạn giấc ngủ và một số yếu tố liên quan ở bệnh nhân suy tim mạn tính tại Bệnh viện Hữu Nghị Việt Tiệp	Xuất sắc	
76	ThS	Trịnh Hồng Nhung	Lê Thị Diệu Hiền	BM. Nội	Nghiên cứu đặc điểm lâm sàng, cận lâm sàng và kinh nghiệm siêu âm trong thoái hóa khớp gối nguyên phát tại Bệnh viện Hữu Nghị Việt Tiệp Hải Phòng năm 2021-2022	Khá	
77	TS	Vũ Thị Thu Trang		BM. Nội	Nghiên cứu đặc điểm huyết áp ở bệnh nhân xơ gan tại Bệnh viện Hữu Nghị Việt Tiệp năm 2022	Khá	
78	ThS	Bùi Thị Bích Ngọc	Lâm Ngọc Trâm	BM. Phục hồi chức năng	Tác dụng của kantrowitz, nuôi và giới thiệu kết quả điều trị phục hồi chức năng của bệnh nhân nội tiết sau thay khớp háng nhân tạo tại Bệnh viện Hữu nghị Việt Tiệp Hải Phòng năm 2022	Đạt	
79	ThS	Nguyễn Thị Thanh Nga		BM. Phục hồi chức năng	Đánh giá kết quả phục hồi chức năng khớp gối bằng phương pháp tập vận động thụ động liên tục bằng máy ở bệnh nhân thay khớp gối nhân tạo toàn phần do thoái hóa	Đạt	
80	ThS	Đoàn Thị Thanh Hà		BM. Phục hồi chức năng	Đánh giá điều trị viêm dính cho người vai mạn tính bằng điều trị nội khoa kết hợp với điều trị phục hồi chức năng, ứng dụng tại khoa Phục hồi chức năng – Bệnh viện Đại học Y Hải Phòng	Đạt	
81	ThS	Trần Thị Quỳnh Trang	Đào Thu Hằng, Ngô Mỹ Hằng, Vi Văn Long, Phạm Thị Hương, Phạm Thị Thu	BM. Sinh lý	Thực trạng bỏ chồng chuyển loại ở người lao động có gan nhiễm mỡ uống tỷ xí măng chiliên Hải Phòng	Đạt	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Thành viên nhóm NC	Đơn vị	Tên đề tài	Kết quả	Ghi chú
82	TS	Đào Thu Hồng	Phạm Thị Nguyên, Trần Thị Quỳnh Trang, Đào Thu Hồng, Đào Thị Thu Loan	BM. Sinh lý	Thái độ của sinh viên y đa khoa Trường Đại học Y Dược Hải Phòng về dạy học trực tuyến trong điều kiện dịch Covid-19	Khá	
83	ThS	Phạm Thị Nguyên	Đào Thu Hồng, Trần Thị Quỳnh Trang, Phạm Thùy Dương	BM. Sinh lý	Nghiên cứu đặc điểm lâm sàng, cận lâm sàng viêm tuỵ cấp tại Bệnh viện Đại học Y Hải Phòng năm 2022.	Đạt	
84	BSCKII	Nguyễn Quang Đại	Phùng Thị Vân Anh, Trần Thị Thanh Thủy	BM. Tai-Mũi-Họng	Nhận xét đặc điểm lâm sàng, thính lực, và kết quả điều trị điếc đột ngột vô mủ tuy giảm thính lực PTA > 40dB bằng tiêm Dexamethasone xuyên nhĩ	Xuất sắc	
85	TS	Phạm Thanh Hải	Tạ Hồng Sơn, Vũ Văn Bảo	BM. Tai-Mũi-Họng	Nghiên cứu hiệu chỉnh lâm sàng, hình ảnh nội soi và kết quả chụp cắt lớp vi tính của bệnh nhân viêm xoang mạn tính có polyp mũi tại Khoa Tai-mũi-họng Bệnh viện Hữu nghị Việt Tiệp Hải Phòng từ tháng 4/2021 – 5/2022	Khá	
86	ThS	Ngô Văn Dũng		BM. Thần kinh	Đặc điểm lâm sàng và cận lâm sàng của chảy máu não không do chấn thương điều trị tại Khoa Thần kinh – Bệnh viện Việt Tiệp Hải Phòng	Xuất sắc	Gia hạn 2021
87	ThS	Lê Sao Mai	Nguyễn Quang Đại, Trần Thị Dung	BM. Tâm Thần	Nghiên cứu các rối nghiện hết lợi thời lo của bệnh nhân loạn thần do sử dụng zonthenyphetamine điều trị tại Bệnh viện Tâm thần Hải Phòng năm 2022	Khá	
88	BS	Lương Thị Mai Loan	Vương Thị Thủy, Trương Văn Tú	BM. Tâm thần	Nghiên cứu đặc điểm lâm sàng và kết quả điều trị trầm cảm trên bệnh nhân sử dụng các chất kích thích dạng amphetamine điều trị tại Bệnh viện Tâm thần Hải Phòng	Khá	
89	BSCKII	Vương Thị Thủy Phạm Văn Minh	Nguyễn Hồng Chính, Nguyễn Quang Anh	BM. Tâm thần	Đánh giá thực trạng rối loạn lo âu, trầm cảm, stress ở nhân viên y tế trường Đại học Y Dược Hải Phòng khi tham gia chống dịch Covid- 19 tại Hải Phòng năm 2021	Đạt	
90	ThS	Đoàn Thị Hoa Yến	Nguyễn Quang Đại, Nguyễn Đức Thuận, BV. Hồ Khánh Linh	BM. Tâm Thần	Nghiên cứu đặc điểm lâm sàng và các yếu tố liên quan đến trầm cảm ở phụ nữ vô sinh điều trị tại Bệnh viện Quốc tế sản nhi Hải Phòng năm 2022	Đạt	
91	BSNT	Nguyễn Thanh Huyền		BM. Sản	Kết cục thai kỳ của thai phụ có thai rị lật tim bẩm sinh tại Bệnh viện Phụ sản Hải Phòng	Khá	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Thành viên nhóm NC	Đơn vị	Tên đề tài	Kết quả	Ghi chú
92	ThS	Thái Thị Huyền		BM. Sản	Nghiên cứu đặc điểm lâm sàng và cận lâm sàng của thai phụ mắc Sar- CoV2 tại Bệnh viện Phụ sản Hải phòng	Khá	
93	ThS	Nguyễn Thị Mai Phương		BM. Sản	Mối tách dính lượng thai ro	Khá	
94	ThS	Nguyễn Thị Thúy		BM. Sản	Thực trạng điều trị sau đẻ tại khoa Sản 1 - Bệnh viện Phụ sản Hải Phòng trong 6 tháng đầu năm 2022	Khá	
95	ThS	Phạm Thanh Hiền		BM. Sản	Đánh giá kết quả điều trị hội chứng quá kích buồng trứng nặng ở bệnh nhân thụ tinh ống nghiệm tại Bệnh viện Phụ Sản Hải Phòng	Đạt	
96	ThS	Trần Văn Bức		BM. Sản	Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị thai lưu sau mổ lấy thai tại Bệnh viện Phụ sản Hải Phòng	Khá	
97	ThS	Nguyễn Thị Hường		BM. Sản	Hiệu quả điều trị băng huyết sau sinh bằng phương pháp chèn bằng trong buồng tử cung tại Bệnh viện Phụ Sản Hải Phòng năm 2019-2021	Đạt	
98	BS	Nguyễn Thị Lan Oanh		BM. Sản	Nghiên cứu đặc điểm lâm sàng, cận lâm sàng và xử trí sản phụ có bệnh lý sau tiền đục vỡ sau mổ có lấy thai tại Bệnh viện Phụ sản Hải Phòng năm 2021	Đạt	
99	ThS	Nguyễn Thị Hoàng Trang	Bùi Phúc Thịnh	BM. Sản	Tỷ lệ và một số yếu tố nguy cơ sinh con to tại Bệnh viện Phụ sản Hải Phòng	Đạt	
100	BS	Phạm Thị Diệu		BM. Sản	Nghiên cứu kết cục thai kỳ của những trường hợp thiểu ối ở tuổi thai từ 16 tuần tại Bệnh viện Phụ Sản Hải Phòng	Đạt	
101	ThS	Bùi Văn Hiếu	Lê Thị Nhung, Bùi Tùng Lâm	BM. Sản	Nghiên cứu đặc điểm lâm sàng, cận lâm sàng của thai phụ có thai trên 12 tuần sau tiêm vaccine giảm tại Bệnh viện Đại Học Y Hải Phòng Năm 2021	Đạt	
102	ThS	Lê Anh Nam		BM. Sản	Tỉ lệ thiếu máu ở phụ nữ mang thai trong ba tháng đầu đến khám và sàng lọc tại khoa Khám bệnh Bệnh viện Phụ Sản Hải Phòng sáu tháng đầu năm 2021	Đạt	
103	ThS	Lê Thị Thu Huyền	Nguyễn Thị Tươi, Nguyễn Thị Hải	BM. Sinh học DT	Xác định tỷ lệ thai phụ mang gen kh bệnh tan thalassemia ở Hải Phòng bằng kỹ thuật giải trình tự gen thế hệ mới (NGS next generation sequencing)	Khá	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Thành viên nhóm NC	Đơn vị	Tên đề tài	Kết quả	Ghi chú
104	ThS	Nguyễn Thị Hải	Lê Thị Thu Huyền, Hoàng Thị Lá	BM. Sinh học DT	Ứng dụng kỹ thuật giải trình tự gen thế hệ mới phát hiện đột biến gây bệnh Digeorge trong nhóm thai phụ mang thai nguy cơ cao rối loạn nhiễm sắc thể	Khá	
105	ThS	Nguyễn Thị Tươi	Nguyễn Thị Hải, Nguyễn Thị Quỳnh Thư	BM. Sinh học DT	Nhân một trường hợp bệnh nhân nữ vị mắc đoạn NST số 5	Khá	
106	GS.TS	Phạm Văn Thêm	Phạm Bích Ngọc, Nguyễn Dương Tuyến	BM. SLB - DU - MD	Nghiên cứu một số test chẩn đoán lâm phê quản dị ứng do Dermatophagoides tại Viện Y học biển năm 2021 - 2022	Khá	
107	ThS	Phạm Thị Khuyên	Phạm Huy Quyền	BM. SLB - DU - MD	Nghiên cứu sự biến đổi của huyết áp được đo bằng máy holter huyết áp trên bệnh nhân Tăng huyết áp điều trị tại Khoa Hồi sức - Tim mạch Bệnh viện Đại học Y Hải Phòng năm 2021-2022	Đạt	
108	TS	Nguyễn Thị Kim Hương	Lê Thị Hương, Phùng Chí Thiện	BM. SLB - DU - MD	Mối liên quy tăng lipid máu trên chuột thực nghiệm bằng P407	Khá	
109	PGS.TS	Phạm Huy Quyền	Phạm Thị Khuyên	BM. SLB - DU - MD	Thực trạng điều trị kiểm soát đường máu ở bệnh nhân đái tháo đường typ 2 có suy thận tại Bệnh viện Đại học Y Hải Phòng năm 2022	Xuất sắc	
110	ThS	Vũ Thị Hồng		BM. SLB - DU - MD	Kết quả điều trị ngoại trú bệnh sỏi thận-niệu trong (preprint volver) HP (+) tại Khoa Khám bệnh Bệnh viện Đại Học Y Hải Phòng	Đạt	
111	ThS	Nguyễn Thị Hồng Liên	Nguyễn Thị Mai Thanh, Đào Thị Bích Hạnh	BM. SLB - DU - MD	Một số rối loạn tâm thần trên bệnh nhân sử dụng sản phẩm SARS-CoV-2/COVID-19 trên địa bàn thị Vật	Khá	
112	PGS.TS	Phạm Văn Linh		BM. SLB - DU - MD	Nghiên cứu các biến loạn tâm COVID-19 trên đối tượng người lớn có tiền sử nhiễm virus SARS-CoV-2/COVID - 19 điều trị nhà và trung tâm kiểm soát tại Bệnh viện Đại học Y Hải Phòng	Xuất sắc	
113	ThS	Nguyễn Thị Chăm	Nguyễn Văn Huy, Hoàng Thị Lá	BM. Tin học	Chất lọc mô hình với Hạn sản xuất đối Nhựa dụng thực để đánh dược y sinh tiếng Việt	Khá	
114	ThS	Vũ Ngọc Thanh	Doãn Văn Thành	BM. Tin học	Thực trạng dạy và học thực tuyến của sinh viên K48 trong năm học 2020-2021 Trường Đại học Y Dược Hải Phòng	Đạt	
115	ThS	Trịnh Anh Tuấn	Hà Minh Tâm	BM. Tin học	Khảo sát và đánh giá mức độ hài lòng về môi trường học tập của sinh viên Trường Đại học Y Dược Hải Phòng	Khá	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Thành viên nhóm NC	Đơn vị	Tên đề tài	Kết quả	Ghi ch
116	ThS	Trần Thanh Vân	Hà Minh Tâm, Tô Thị Hồng Ngọc	BM. Tin học	Mô tả thực trạng sử dụng mạng xã hội facebook và một số yếu tố ảnh hưởng tới việc học tập của sinh viên y đa khoa Trường Đại học Y Dược Hải Phòng năm 2021	Đạt	
117	TS	Trần Thị Liên		BM. Truyền nhiễm	Đặc điểm lâm sàng và kết quả điều trị bệnh nhân sốt xuất huyết tại khoa Hồi sức Nội, Bệnh viện Hữu nghị Việt Tiệp, Hải Phòng năm 2019	Khá	Tự tú
118	ThS	Hoàng Thị Thìn	Nguyễn Thuý Trang	BM. Truyền nhiễm	Đặc điểm lâm sàng, cận lâm sàng nhiễm khuẩn huyết do Klebsiella Pneumoniae tại Bệnh viện Hữu Nghị Việt Tiệp năm 2020 - 2021	Khá	
119	ThS	Nguyễn Đức Hùng	Trịnh Thị Bích Ngọc, Hồ Thị Huyền Sương, Nguyễn Hồng Hà, Nguyễn Thị Phương Thảo	BM. Ung bướu	Đánh giá đáp ứng và tác dụng không mong muốn của hoá xạ đồng thời trên bệnh nhân ung thư vòm giai đoạn III-IV chưa có di căn xa tại Bệnh viện Việt Tiệp Hải Phòng từ năm 2019- 2021	Đạt	
120	PGS.TS	Nguyễn Lam Hòa	Hồ Thị Huyền Sương, Cao Bích Loan, Lê Ngọc Dương	BM. Ung bướu	Kết quả sớm trong điều trị ung thư phổi không tế bào nhỏ giai đoạn III-IV bằng phác đồ TC tại Bệnh viện Đại học Y Hải Phòng từ 1/2017 đến 12/2021	Khá	
121	BS	Hồ Thị Huyền Sương	Nguyễn Thị Phương Thảo, Nguyễn Hồng Hà, Nguyễn Đức Hùng, Nguyễn Lam Hòa, Trịnh Thị Bích Ngọc	BM. Ung bướu	Đánh giá sớm kết quả điều trị ung thư vú giai đoạn tái phát di căn bằng phác đồ Vinorelbin uống đơn trị liệu tại Bệnh viện Hữu nghị Việt Tiệp, Hải Phòng.	Khá	
122	ThS	Nguyễn Thị Phương Thảo	Nguyễn Hồng Hà, Hồ Thị Huyền Sương, Trịnh Thị Bích Ngọc	BM. Ung bướu	Hiệu quả kết quả điều trị ung thư phổi không tế bào nhỏ giai đoạn tái phát, di căn có đột biến gen EGFR bằng thuốc kháng TKTr thế hệ 1 tại Bệnh viện Hữu nghị Việt Tiệp Hải Phòng	Khá	
123	ThS	Nguyễn Hồng Hà	Nguyễn Thị Phương Thảo, Hồ Thị Huyền Sương, Trịnh Thị Bích Ngọc	BM. Ung bướu	Đánh giá kết quả bước đầu của phác đồ FOLFIRI – Bevacizumab trong điều trị ung thư đại trực tràng di căn tại Bệnh viện Hữu nghị Việt Tiệp Hải Phòng	Đạt	
124	ThS	Hoàng Thị Hải Yến	Trịnh Văn Khương, Nguyễn Hồng Cường, Vũ Thị Hương, Vũ Thị Luyến, Vũ Thị Xuân	BM. Vi sinh	Ứng dụng phương pháp Zia sigma trong kiểm soát chất lượng xét nghiệm hoá sinh tại Bệnh viện Đại học Y Hải Phòng	Khá	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Thành viên nhóm NC	Đơn vị	Tên đề tài	Kết quả	Ghi chú
125	ThS	Phạm Thị Tâm	Trần Đức, Lại Thị Quỳnh, Nguyễn Hồng Cường, Vũ Thị Nữ, Nguyễn Thị Hạnh	BM. Vi sinh	Thực trạng nhiễm Streptococci Group B trên thai phụ 3 tháng cuối tại Bệnh viện Đa khoa Quốc tế Hải Phòng 2020-2021	Xuất sắc	
126	ThS	Trịnh Thị Hồng	Phạm Thị Tâm, Nguyễn Hồng Cường, Vũ Thị Nữ, Phạm Thị Tâm, Nguyễn Ngọc Mỹ Trinh	BM. Vi sinh	Đặc điểm và mức độ nhạy cảm với kháng sinh của vi khuẩn gây nhiễm khuẩn huyết tại Bệnh viện Hữu Nghị đa khoa tỉnh Nghệ An năm 2021-2022	Xuất sắc	
127	ThS	Vũ Thị Nữ	Nguyễn Hồng Cường, Trần Đức, Lại Thị Quỳnh, Trịnh Thị Hồng, Phạm Thị Tâm	BM. Vi sinh	Đặc điểm của nguyên vi khuẩn gây nhiễm khuẩn huyết và tình trạng kháng sinh của chúng tại Bệnh viện Hữu nghị Việt Tiệp Hải Phòng từ năm 2016 đến năm 2020	Khá	
128	TS	Nguyễn Hồng Cường	Lê Thị Hải Tâm, Vũ Thị Loyền, Vũ Thùy Dương, Nguyễn Thị Thanh Phương	BM. Vi sinh	Nghiên cứu mức độ nhạy cảm kháng sinh của vi khuẩn gây nhiễm khuẩn tiết niệu tại Bệnh viện đa khoa tỉnh Thanh Hóa năm 2021	Xuất sắc	
129	PGS.TS	Trịnh Thị Lý		BM. Y học gia đình	Bệnh nhân và bệnh nhiễm nam có tìm việc điều trị tại Bệnh viện đại học Y và Bệnh viện Việt Tiệp Hải Phòng năm 2019	Khá	
130	TS	Nguyễn Thị Thuý Hiền	Phạm Thị Thìn, Đoàn Thị Liễu, Mai Thùy Nga, Nguyễn Thị Thắm, Hoàng Thị Thanh Tâm	BM. Y học gia đình	Đặc điểm dịch tễ học lâm sàng và một số yếu tố liên quan điều nhiễm Sars-CoV2 của cán bộ - sinh viên trường Đại học Y Dược Hải Phòng năm 2021	Khá	
131	ThS	Nguyễn Thùy Linh	Trịnh Thanh Xuân, Nguyễn Thị Thanh Thìn, Nguyễn Hải Hình, SV. Nguyễn Thị Hồng	BM. Y học gia đình	Thực trạng thừa cân, béo phì ở sinh viên năm nhất Đại học Y Dược Hải Phòng năm học 2021-2022	Đạt	
132	ThS	Phùng Văn Duyên		BM. Y học gia đình	Kết quả bước đầu điều trị bệnh nhân COVID-19 nặng và vừa tại Bệnh viện Đại học Y Hải Phòng	Đạt	
133	ThS	Đỗ Hồng Hương	Vũ Thị Mai Anh, Trịnh Thị Ngân, Lương Thanh Hải	BM. Y học gia đình	Nghiên cứu đặc điểm lâm sàng, cận lâm sàng chung và các biến chứng hậu covid giữa bệnh nhân mắc covid 19 dòng vô không dòng không virut tại Khoa điều trị covid Bệnh viện Đại học Y Hải Phòng năm 2021	Đạt	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Thành viên nhóm NC	Đơn vị	Tên đề tài	Kết quả	Ghi chú
134	ThS	Nguyễn Văn Thành	Đoàn Như Thắng, Phạm Thị Yến	BM. Y học gia đình	Thực trạng phối hợp, quản lý và điều trị bệnh tăng huyết áp tại các trạm y tế xã tỉnh Hưng Yên năm 2022	Khá	
135	ThS	Vũ Thị Cẩm Doanh		Khoa Điều dưỡng	Khảo sát sự hài lòng của người dân sau khi tiêm phòng Covid 19 tại Bệnh viện Đại học Y Hải Phòng	Khá	
136	ThS	Lương Thị Thu Giang	Hoàng Thị Oanh, Đỗ Thị Ngà	Khoa Điều dưỡng	Thực trạng thực hành sử dụng thuốc dạng hít của người bệnh phổi tắc nghẽn mạn tính tại Bệnh viện Hữu nghị Việt Tiệp, Hải Phòng, năm 2022	Đạt	
137	ThS	Lã Thị Thu Hằng		Khoa Điều dưỡng	Kết quả sau chuyển kiến thức, thực hành dự phòng và sơ tán cư giật đu sắt cho các hộ ong tới con đang điều trị tại Bệnh viện Trẻ em Hải Phòng năm 2022	Khá	
138	ThS	Đỗ Thị Tuyết Mai	Nguyễn Thị Anh Tú	Khoa Điều dưỡng	Thực hành vệ thay băng, vùng vết thương tại Bệnh viện của sinh viên điều dưỡng chính quy trường Đại học Y Dược Hải Phòng năm 2022	Khá	
139	ThS	Đỗ Thị Thu Huyền	Nguyễn Thanh Tuấn, Nguyễn Thành Trung	Khoa Điều dưỡng	Thực trạng tự quản lý của người bệnh đái tháo đường typ 2 điều trị ngoại trú tại Bệnh viện Thanh Nhàn và một số yếu tố liên quan	Khá	
140	ThS	Hoàng Thị Oanh	Lương Thị Thu Giang, Đỗ Thị Hoài	Khoa Điều dưỡng	Thực trạng và các yếu tố liên quan đến kiến thức, thực hành về phòng bệnh ung thư cổ tử cung ở phụ nữ khám phụ khoa tại Bệnh viện Phụ sản Hải Phòng năm 2022	Khá	
141	TS	Phạm Thị Thu Hương	Nguyễn Thị Thu Hương	Khoa Điều dưỡng	Thực trạng hành vi tự chăm sóc và các yếu tố ảnh hưởng đến hành vi tự chăm sóc ở người sau nhồi máu bệnh mạn tính tại Bệnh viện đa khoa Việt Tiệp 2022	Khá	
142	ThS	Đỗ Thị Hoàn	Hoàng Thị Oanh, Lương Thị Thu Giang, Đỗ Thị Hà Mi	Khoa Điều dưỡng	Thực trạng sự hài lòng và tự tin trong học tập môi phòng của sinh viên Điều dưỡng trường Đại học Y Dược Hải Phòng năm 2022	Đạt	
143	ThS	Nguyễn Thanh Xuân	Phạm Thị Tuyết	Khoa Điều dưỡng	Thực trạng kiến thức về dự phòng và sơ trí tai nạn do vật sắc nhọn của Điều dưỡng viên Bệnh viện Trẻ em Hải Phòng năm 2022	Đạt	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Thành viên nhóm NC	Đơn vị	Tên đề tài	Kết quả	Ghi chú
144	BS	Cao Thị Vân Anh	Nguyễn Thị Trang	Khoa Điều dưỡng	Thực trạng và một số yếu tố liên quan đến nguy cơ bệnh nhân ở các khoa sau đẻ mắc bệnh viêm đang điều trị tại Khoa Hồi sức cấp cứu Bệnh viện Trẻ em Hải Phòng năm 2023	Khá	
145	TS	Đỗ Thị Lan Anh	Phạm Thị Yến	Khoa Điều dưỡng	Tác động thai kỳ và ảnh hưởng của tác biến tới chất lượng cuộc sống của thai phụ	Đạt	
146	ThS	Nguyễn Thị Anh Thư	Đỗ Thị Tuyết Mai	Khoa Điều dưỡng	Thực trạng kiến thức, thái độ, thực hành chuẩn dự đúc nghề nghiệp của sinh viên điều dưỡng hệ vừa làm vừa học trường Đại học Y Dược Hải Phòng năm học 2021 – 2022.	Khá	
147	TS	Nguyễn Thị Thu Hương	Phạm Thị Thu Hương	Khoa Điều dưỡng	Thực trạng kiệt sức và một số yếu tố liên quan đến tình trạng kiệt sức của Điều dưỡng tham gia phòng chống dịch covid 19 tại Hải Phòng năm 2022.	Khá	
148	ThS	Phạm Thị Tuyết	Nguyễn Thanh Xuân	Khoa Điều dưỡng	Thực trạng kiến thức về quản lý đau cho người bệnh của sinh viên điều dưỡng chính quy trường đại học Y Dược Hải Phòng năm 2021	Khá	
149	ThS	Nguyễn Thị Hòa	Trần Thùy Dương	Khoa Điều dưỡng	Thực trạng kiến thức về chăm sóc sau sinh ở sản phụ sau sinh và một số yếu tố liên quan tại Bệnh viện Phụ sản Hải Phòng năm 2022	Khá	
150	ThS	Bùi Thị Thanh Mai	Phạm Thị Tâm	Khoa Điều dưỡng	Thực trạng hài lòng về công việc của điều dưỡng và một số yếu tố liên quan tại Bệnh viện Đại học Y Hải Phòng năm 2022	Khá	
151	ThS	Hoàng Tuấn Anh	Lê Thị Hương	Khoa Điều dưỡng	Thực trạng ảnh hưởng của dịch Covid 19 tới đời sống của sinh viên điều dưỡng chính quy tại trường đại học Y Dược Hải Phòng năm 2022	Khá	
152	ThS	Phạm Thị Tâm	Đới Thị Thanh Mai	Khoa Điều dưỡng	Thực trạng kiến thức, thực hành về phòng bệnh covid-19 của bà mẹ có con dưới 3 tuổi tại xã Đoàn Xá, huyện Kiến Thụy, Hải Phòng, năm 2022	Khá	
153	ThS	Trần Thùy Dương	Nguyễn Thị Hòa	Khoa Điều dưỡng	Thực trạng kiến thức, thái độ về phòng ngừa chuẩn trong môi trường bệnh viện của sinh viên Điều dưỡng Trường Đại học Y Dược Hải Phòng năm 2022	Đạt	
154	TS	Nguyễn Thị Thúy Khuê	Phạm Phương Dung, Trần Thị Lương	Khoa Dược	Tổng hợp chất lỏng từ tiêu cơ sở hạt nano Gd2O3 được bọc bởi vật polyme tương thích sinh học nhằm hướng tới ứng dụng trong chẩn MRI và CT	Khá	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Thành viên nhóm NC	Đơn vị	Tên đề tài	Kết quả	Ghi c
135	ThS	Trịnh Thị Quyên	Lưu Thị Thu Huyền, Bùi Thị Hồng Vân, Ngô Thị Quỳnh Mai	Khoa Dược	Xây dựng bộ công cụ nhận thức được liệu online cho sinh viên ngành dược	Khá	
136	TS	Trần Thị Nghĩa	Nguyễn Văn Hải, Hoàng Thị Bích Vân	Khoa Dược	Thực trạng sử dụng Lisinopril ở bệnh nhân điều trị nội trú tại Bệnh viện Đa khoa Quốc tế Hải Phòng năm 2021	Khá	
137	ThS	Lê Thị Thúy Linh	Hà Quang Tuấn	Khoa Dược	Thực trạng sử dụng oxytocin tại khoa Hồi sức tích cực, Bệnh viện Kiến An, Hải Phòng năm 2021	Khá	
138	ThS	Nguyễn Minh Thảo	Nguyễn Thị Ánh	Khoa Dược	Thực trạng sử dụng thuốc trong điều trị viêm loét dạ dày tá tràng tại Bệnh viện Trẻ em Hải Phòng năm 2021	Khá	
139	ThS	Nguyễn Thanh Tâm	Trần Thị Hường	Khoa Dược	Nghiên cứu xây dựng quy trình bào chế viên nén bao tan trong ruột chứa cao khô hoạt phần Calen	Khá	
140	ThS	Nguyễn Thị Hạnh	Đặng Thị Thu Hà	Khoa Dược	Xây dựng danh mục thuốc hiệu lợi của chỉ trong Bệnh lâm sàng tại Bệnh viện Đa khoa Thủy Nguyên Hải Phòng năm 2021	Xuất sắc	
141	ThS	Bùi Hải Ninh	Nguyễn Thị Thuý Khuê, Vũ Thuý Dung, Trần Thị Lương, Phạm Phương Dung	Khoa Dược	Nghiên cứu hoạt tính gây độc trên một số dòng tế bào ung thư trên các phức Arene ruth Diole ứng tử (Polycian Quinhydrat)	Khá	Gia hạ 2021
142	TS	Cao Đức Tuấn	Trần Thị Lương, Phạm Thị Phương Dung, Đặng Thị Phương Thúy, Nguyễn Văn Đạp, Lưu Mạnh Hùng	Khoa Dược	Nghiên cứu thành phần hóa học và hệ các chủng vi nấm phân lập từ khu vực biển Bãi Tử Long, Quảng Ninh	Đạt	
143	ThS	Hoàng Thị Kim Thu	Trần Thị Vân	Khoa Dược	Nghiên cứu bào chế tinh hột bảo tử bảo vàng của sông trên biển thành phố Hải Phòng	Khá	
144	ThS	Phạm Thuý Hằng	Nguyễn Thị Thu Hương, Nguyễn Thị Lý	Khoa Dược	Thực trạng sử dụng thuốc giãn phế quản ở bệnh nhân hen phế quản nội trú tại khoa Hồi sức tổng hợp Bệnh viện Kiến An Hải Phòng từ năm 2018 - 2022	Đạt	Gia hạ 2021
145	ThS	Vũ Thị Quỳnh	Phạm Thị Hảo, Nguyễn Thanh Tâm	Khoa Dược	Nghiên cứu bào chế vi nang quercetin bằng phương pháp tách pha động tụ với dung môi alginate	Khá	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Thành viên chính NC	Đơn vị	Tên đề tài	Kết quả	Ghi chú
177	BS	Đặng Thị Hồng	Phạm Thị Thu Trang, Lưu Vũ Dũng, Đỗ Ngọc Hải, Đỗ Thị Hồng Anh, Nguyễn Thị Dinh	Khoa Kỹ thuật Y học	Hàng độ một số Isoenzym sinh sản ở phụ nữ vô sinh tại Bệnh viện Phụ sản Hải Phòng năm 2022	Đạt	
178	ThS	Mạc Thị Tịnh	Hoàng Văn Phòng, Nguyễn Thị Thu Hiền, Trần Thị Phương Linh, Vũ Hải Hoàn	Khoa Kỹ thuật Y học	Nghiên cứu phương pháp sản xuất chế phẩm màu bằng tôi đỏ – dây trên máy dạ tài màu tự động tại Bệnh viện Hữu nghị Việt Tiệp Hải Phòng	Đạt	
179	TS	Trần Thị An Huy	Nguyễn Thị Thu Hà	Khoa Răng hàm mặt	Nhận xét kết quả điều trị viêm nha chu phá hủy quanh cuống mạn tính có sử dụng Mineral Trioxide Aggregate trong năm bệnh lý ống tủy	Khá	
180	ThS	Phan Thị Thanh Giang	Nguyễn Thị Phương Anh	Khoa Răng hàm mặt	Đặc điểm lâm sàng và cận lâm sàng của bệnh nhân u tuyến nước bọt mang tai Bệnh viện Hữu nghị Việt Tiệp Hải Phòng 2021	Khá	
181	BSCKII	Nguyễn Minh Tuấn	Nguyễn Thái Hòa	Khoa Răng hàm mặt	Khảo sát thực trạng và đường phẫu viêm hàm mặt tại Khoa Răng hàm mặt, Bệnh viện Hữu nghị Việt Tiệp Hải Phòng 2022	Khá	
182	ThS	Lương Xuân Quỳnh	Phạm Thị Vân	Khoa Răng hàm mặt	Đánh giá kết quả điều trị gãy ghi hàm xương hàm dưới bằng đường trong miệng sử dụng vitrot tại Khoa răng hàm mặt Bệnh viện Hữu nghị Việt Tiệp Hải Phòng 2021 – 2022	Đạt	
183	ThS	Nguyễn Đức Tín	Phạm Thanh Hải, Bùi Minh Khuê	Khoa Răng hàm mặt	Đặc điểm lâm sàng, cận lâm sàng viêm tủy răng hàm hàm không hồi phục của bệnh nhân tại Khoa Răng hàm mặt, Bệnh viện Đại học Y Hải Phòng, 2022	Khá	
184	TS	Võ Quang Hưng	Phạm Hữu Hùng, Đoàn Trung Hiếu	Khoa Răng hàm mặt	Đánh giá kết quả điều trị nội của sử sử dụng máy đo chiều dài ống tủy Dentaport ZX	Xuất sắc	
185	ThS	Lê Thị Thúy Ly	Nguyễn Thị Thu Hà, Võ Thị Xuân	Khoa Răng hàm mặt	Đặc điểm lâm sàng, Xquang và kết quả điều trị của Răng khôn hàm dưới mọc lệch ở những bệnh nhân được khô tại tại Khoa Răng hàm mặt - Bệnh viện Đại học Y Hải Phòng năm 2022	Khá	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Thành viên nhóm NC	Đơn vị	Tên đề tài	Kết quả	Ghi chú
166	ThS	Vũ Thùy Dung	Lê Quang Thân, Nguyễn Việt Chính	Khoa Dược	Định lượng đồng thời Desloratadin và chất bảo quản Methyl Paraben trong viên nhũ bằng sắc ký lỏng hiệu năng cao	Khá	
167	PGS.TS	Nguyễn Văn Hùng	Đỗ Thị Lá, Nguyễn Thùy Linh, Nguyễn Thị Thúy Hiền	Khoa Dược	Thực trạng sử dụng thuốc ở người cao tuổi điều trị ngoại trú tại Bệnh viện Đại học Y Hải Phòng năm 2022	Xuất sắc	
168	ThS	Trương Đình Phong	Đỗ Thị Bích Diệp, Phùng Chí Thiện	Khoa Dược	Đánh giá sự tiết lộ của người bệnh về hoạt động cấp phát thuốc ngoại trú tại Bệnh viện Đại học Y Hải Phòng năm 2022	Khá	
169	ThS	Phạm Thị Phương Thảo	Mai Thị Lý	Khoa Dược	Nghiên cứu thành phần hóa học, tác dụng kháng khuẩn và hoạt tính chống oxy hóa của cây trang (Kandelia obovata) tại Hải Phòng	Khá	
170	TS	Nguyễn Thị Tâm Phương	Trần Văn Anh, Hoàng Quốc An, Vi Thị Nhung, Nguyễn Minh Thao	Khoa Dược	Tổng quan nghiên cứu dược lý cổ truyền, dược động học trên người Việt từ năm 2000 đến năm 2022	Khá	
171	ThS	Đỗ Thị Bích Diệp	Trương Đình Phong, Phùng Chí Thiện	Khoa Dược	Sự tuân thủ các quy định "Thực hành tốt cơ sở bán lẻ thuốc" của các quầy thuốc tại Hải Phòng năm 2021	Khá	
172	TS	Phạm Thị Anh	Trần Thị Mỹ Hạnh, Lưu Thị Thu Huyền	Khoa Dược	Nghiên cứu đặc điểm thực vật, thành phần hóa học và tác dụng chống viêm in vitro của dược liệu chưa rõ	Khá	
173	ThS	Nguyễn Thị Dung	Bùi Thị Hồng Vân, Trần Thân Ngọc	Khoa Dược	Nghiên cứu đặc điểm thực vật, thành phần hóa học của loài Trà hoa vàng thu hái tại Quế Phong, Nghệ An	Đạt	
174	TS	Ngô Thị Quỳnh Mai	Nguyễn Thị Ánh Lâm	Khoa Dược	Nghiên cứu đặc điểm thực vật và thành phần hóa học của cây Rau vàng mọc dại tại Hải Phòng	Khá	
175	ThS	Nguyễn Văn Thành	Bạch Thị Như Quỳnh	Khoa Kỹ thuật Y học	Xác định đột biến mất một số exons của gen SCN5A ở bệnh nhân mắc hội chứng Brugada	Đạt	Tự túc
176	TS	Phạm Thị Thu Trang	Lương Tiến Thuận, Đỗ Ngọc Hải, Đào Văn Tùng, Lưu Vũ Dũng, Đặng Thị Hồng	Khoa Kỹ thuật Y học	Nghiên cứu giá trị của nghiệm pháp FISH ối trong chẩn đoán tại Bệnh viện Trẻ em Hải Phòng (6-12/2021)	Đạt	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Thành viên nhóm NC	Đơn vị	Tên đề tài	Kết quả	Ghi chú
186	TSC	Phạm Thị Hồng Thuý	Nguyễn Thị Ngọc Bích, Vũ Quang Hiển	Khoa Răng hàm mặt	Đánh giá sớm một kiểu cải tiến phẫu CDCT 3 bệnh nhân hẹp chiều ngang xương hàm trên sau khi ứng dụng cố định hỗ trợ vào Microsiv tại Khoa Răng hàm mặt Bệnh viện Đại học Y Hải Phòng năm 2021 - 2022	Khá	
187	TS	Phạm Thanh Hải	Nguyễn Đức Tín, Trần Thị An Thư	Khoa Răng hàm mặt	Kết quả điều trị viêm nha chu có sử dụng hệ thống ion nhiệt sợi trong túi ở một số năm 2022	Khá	
188	TS	Đồng Thị Mai Hương		Khoa Răng Hàm Mặt	Hiệu quả điều trị phẫu thuật viêm quanh răng mạn tính có tổ hợp bằng dẫn xuất từ thuốc nam-Dexkagain	Khá	
189	ThS	Nguyễn Thị Hinh	Nguyễn Trường Thịnh	Khoa Răng Hàm Mặt	Hiệu quả kháng bệnh ứng hợp bằng phương pháp lên ngang người giữa ứng hợp được tạo thành bằng trên máy truyền thống và ứng hợp được tạo thành bằng trên máy Protaper Universal	Đạt	
189	TS ThS	Nguyễn Văn Tâm Doãn Thị Phương		Khoa Y học biển	Đặc điểm bệnh chứng chuyển hoá và một số yếu tố liên quan của ngư dân nuôi trồng thủy sản huyện đảo Cát Hải- Hải Phòng năm 2021	Xuất sắc	
191	BSCKII	Doãn Mỹ Hạnh	BV. Lê Thu Phương	Khoa Y học cổ truyền	Nhận xét kết quả điều trị của phương pháp xoa châm kết hợp điện châm trên bệnh nhân đau thần kinh tọa do TBCS năm 2022	Khá	
192	ThS	Phạm Hải Dương	Phạm Hồng Ngọc	Khoa Y học cổ truyền	Đánh giá hiệu quả phục hồi chức năng vận động của châm cứu kết hợp phương pháp vận động Bobath trên bệnh nhân đột quỵ não giai đoạn cấp tại Bệnh viện Đa khoa huyện Thái Nguyên	Khá	
193	TS	Khúc Thị Dung Hương	BV. Nguyễn Khánh Tuấn Anh	Khoa Y học cổ truyền	Đánh giá tác dụng của phương pháp điện châm kết hợp bài tập gập trong điều trị viêm quanh khớp vai	Khá	
194	BSCKII	Nguyễn Thị Thanh Hoa	Phạm Hồng Ngọc, Nguyễn Thị Hồng Hà	Khoa Y học cổ truyền	Khảo sát tình hình sang tuổi châm điều trị đái tháo đường typ 2 điều trị nội trú tại Bệnh viện Y học cổ truyền typ 2 điều trị nội trú tại Bệnh viện Y học cổ truyền Hải phòng	Khá	
195	ThS	Hoàng Thị Huyền Trang		Khoa Y học cổ truyền	Thực trạng chất lượng cuộc sống của người bệnh đau thần kinh tọa điều trị tại Bệnh viện Y học cổ truyền Hải Phòng	Khá	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Thành viên nhóm NC	Đơn vị	Tên đề tài	Kết quả	Ghi chú
196	ThS	Nguyễn Thị Thúy Lê		Khoa Y học cổ truyền	Thực trạng bệnh cơ xương khớp và kết quả điều trị bằng y học cổ truyền kết hợp y học hiện đại tại Bệnh viện Y học cổ truyền Hải Phòng năm 2023	Khá	
197	ThS	Phạm Hồng Ngọc	Phạm Hải Dương	Khoa Y học cổ truyền	Châm cứu chứng đau vai 1 số yếu tố liên quan trên bệnh nhân sau đột quỵ nhồi máu não tại khoa YHCT – PHCH – Bệnh viện Đa khoa tuyến Thuỷ Nguyên năm 2021	Khá	
198	TS	Nguyễn Thị Thu Hiền	Phạm Quốc Hiện, Nguyễn Trung Kiên, BV. Bùi Hữu Tùng	Khoa Y học cổ truyền	Đánh giá hiệu quả bài thuốc ngâm rơ uống bệnh nhân suy cột sống thắt lưng	Khá	
199	BS	Vũ Thị Ngoan	Phạm Hồng Ngọc, Hoàng Thị Huyền Trang, Nguyễn Thị Thanh Hoa	Khoa Y học cổ truyền	Thực trạng và kiến thức về sử dụng thuốc nam của người dân xã Kiến Xá, huyện Kiến Thụy, Hải Phòng năm 2023	Khá	
200	ThS	Phạm Tiến Dũng	BV. Trần Thị Minh Thư	Khoa Y học cổ truyền	Đánh giá kết quả điều trị đau vai gáy do thoái hóa cột sống cổ bằng phương pháp Đồng Thị kỹ huyệt, điện châm kết hợp bài thuốc Quyên tý thang tại Bệnh viện Đại học Y Hải Phòng năm 2022	Khá	
201	ThS	Trần Thị Thu Hiền	BV. Vũ Thanh Huyền	Khoa Y học cổ truyền	Đánh giá hiệu quả thẩm mỹ của phương pháp điện châm kết hợp với bài tập Wilson trên bệnh nhân đau lưng do thoái hoá cột sống thắt lưng	Đạt	
202	TS	Nguyễn Thị Thúy	BV. Hoàng Tâm Nhu	Khoa Y học cổ truyền	Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị đau vùng cổ gáy bằng điện châm, xoa bóp bấm huyệt kết hợp Quyên tý gia Cát căn Hoàng tại Bệnh viện Y học cổ truyền Hải phòng năm 2022	Khá	
203	ThS	Nguyễn Thị Thùy Dung	BV. Đào Thị Thơ	Khoa Y học cổ truyền	Đặc điểm lâm sàng và phân thể sơ gan theo Y học cổ truyền trên bệnh nhân tại Bệnh viện Đại học Y Hải Phòng	Khá	
204	ThS	Vũ Thị Mai	Nguyễn Thị Thu Hiền, Phạm Anh Hiếu, BV. Trần Văn Tuấn	Khoa Y học cổ truyền	Nghiên cứu tác dụng viêm mạng * Hạ mỡ máu * trên bệnh nhân rối loạn chuyển hoá lipid tại Bệnh viện Đại học Y Hải Phòng năm 2022	Đạt	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Thành viên nhóm NC	Đơn vị	Tên đề tài	Kết quả	Ghi chú
205	ThS	Hoàng Thị Thuận	Nguyễn Minh Ngọc	Khoa Y tế công cộng	Thực trạng học tập học đường và một số yếu tố liên quan của học sinh trường trung học cơ sở Đại Đồng, huyện Kim Thành, Hải Dương năm 2022	Khá	
206	TS	Nguyễn Thị Thu Thảo	Nguyễn Thị Diệp Linh, Nguyễn Trần Quý, Nguyễn Thị Minh Ngọc, Nguyễn Thị Thanh Hiền	Khoa Y tế công cộng	Thực trạng dinh dưỡng trẻ em và một số yếu tố liên quan của người điều dưỡng tại Bệnh viện Đại học Y Dược Hải Phòng, năm 2022	Khá	
207	ThS	Cấp Minh Hiếu	Nguyễn Thị Thắm, Đặng Thị Ngọc Ánh, Phạm Thị Minh Phương	Khoa Y tế công cộng	Thực trạng dinh dưỡng và kiến thức thực hành phụ nữ có thai đến khám tại Bệnh viện Đa khoa Tiên Lãng, TP. Hải Phòng năm 2022	Đạt	
208	PGS.TS	Dương Thị Hương	Ngô Văn Khánh	Khoa Y tế công cộng	Thực trạng và một số yếu tố liên quan đến điều trị dự phòng lamivudin phơi nhiễm HIV (PrEP) tại Quảng Ninh năm 2021-2022	Xuất sắc	
209	TS	Trần Thị Thúy Hà	Đào Thị Thu Huyền, Nguyễn Thị Quỳnh Giang	Khoa Y tế công cộng	Thực trạng sử dụng thuốc trên bệnh nhân tăng huyết áp mắc bệnh đái tháo đường tại phòng khám ngoại trú Bệnh viện Đại học Y Hải Phòng năm 2021	Khá	
210	TS	Hoàng Thị Giang	HVCHK.16. Phạm Sơn Lâm, Dương Thị Hương	Khoa Y tế công cộng	Thực trạng điều trị thay thế chất dạng thuốc phiện bằng Methadone liều cao và một số yếu tố liên quan tại Hải Phòng năm 2022	Xuất sắc	
211	TS	Nguyễn Thanh Hải	Nguyễn Quang Dũng, Hoàng Thị Thanh Tâm, SV. Hoàng Tùng Hiếu	Khoa Y tế công cộng	Sau mắc Covid-19: Thực trạng và một số yếu tố liên quan trên bệnh nhân tại một phường ở thành phố Hồ Chí Minh năm 2021.	Khá	
212	TS	Nguyễn Thị Thắm	Phạm Thị Vân, Nguyễn Thị Cúc, Nguyễn Thị Tình	Khoa Y tế công cộng	Thực trạng kiến thức tăng huyết áp và một số yếu tố liên quan của bệnh nhân tăng huyết áp điều trị ngoại trú tại Trung tâm y tế huyện Hình Giang, Hải Dương năm 2022	Khá	
213	BSCKII	Trần Thị Bích Hồi	Nguyễn Việt Hà, SVYK. Nguyễn Huyền Thanh	Khoa Y tế công cộng	Đặc điểm dịch tễ học sùng và một số yếu tố liên quan đến kiến thức đái tháo đường type 2 được điều trị ngoại trú tại Trung tâm y tế Lê Chân, Hải Phòng từ tháng 01/01/2021 đến 31/12/2021	Khá	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Thành viên nhóm NC	Đơn vị	Tên đề tài	Kết quả	Ghi chú
214	ThS	Lê Trần Tuấn Anh	Nguyễn Quang Đức, Hoàng Thị Thuận, HV. Hoàng Đức Thắng,	Khoa Y tế công cộng	Thực trạng và một số yếu tố liên quan đến kiến thức, thái độ, thực hành về tuân thủ các biện pháp phòng chống Covid 19 của người dân thị trấn Tiên Lãng, Hải Phòng năm 2021	Khá	
215	PGS.TS	Phạm Minh Khải	Nguyễn Thanh Bình, Nguyễn Đức Dương	Khoa Y tế công cộng	Kết quả hoạt động chăm sóc lồng ghép nhóm gan C cho người nhiễm chích ma túy dựa vào cộng đồng tại Hải Phòng năm 2021	Khá	
216	ThS	Nguyễn Thị Thanh Hảo	Lại Văn Thuận, Nguyễn Trần Quý, Nguyễn Thùy Linh, Nguyễn Thị Thu Thảo, Nguyễn Thị Minh Ngọc	Khoa Y tế công cộng	Kiến thức và hành vi dự phòng một số bệnh nghề nghiệp không lây của người đến khám tại Bệnh viện Đại học Y Dược Hải Phòng, năm 2022	Khá	
217	TS	Chu Khắc Thọ	Cấp Minh Đức, Hà Thị Hương	Khoa Y tế công cộng	Thực trạng và một số yếu tố liên quan đến nhân cảm sau sinh ở phụ nữ tại Hải Phòng	Xuất sắc	
218	TS	Nguyễn Thị Thuỳ Linh	Phạm Ngọc Tuấn, Hoàng Thị Thuận	Khoa Y tế công cộng	Thực trạng và một số yếu tố liên quan đến ăn kiêng của sinh viên ngành Y học dự phòng trường Đại học Y Dược Hải Phòng năm 2022	Khá	
219	TS	Nguyễn Thị Minh Ngọc	Hoàng Đình Cao, Nguyễn Thị Thanh Bình, Nguyễn Thị Thu Thảo, Nguyễn Thị Hoa	Khoa Y tế công cộng	Kiến thức, thái độ thực hành về chế độ ăn và một số yếu tố liên quan của sinh viên 2 trường Đại học tại Hải Phòng năm 2022	Khá	
220	PGS.TS	Phạm Văn Hòa	Cấp Minh Đức, Nguyễn Minh Ngọc	Khoa Y tế công cộng	Thực trạng mắc tật khúc xạ và một số yếu tố liên quan của học sinh hai trường THCS huyện Tứ Kỳ, Hải Dương năm 2021	Xuất sắc	
221	TS	Nguyễn Văn Hiến	Vũ Thị Hường, Lê Tiến Thành, Nguyễn Minh Hằng, Phan Thị Huyền Trang, Bùi Lê Tuấn	Phòng ĐTĐH	Thực trạng kết quả học tập của sinh viên Y khoa tuyển sinh đầu vào theo tổ hợp khối A00 và D08 các khoá K41, K42, K43 của trường Đại học Y Dược Hải Phòng	Khá	
222	ThS	Phạm Thị Vân Anh	Bùi Minh Khôi, Phạm Duẩn Tuấn Anh, Vũ Thị Thu Hà, Đỗ Thị Hương	Trung Tâm Mô Phỏng Lâm Sàng	Thực trạng và các yếu tố liên quan đến nhu cầu CSSK của người nhiễm HIV tại Thuỷ Nguyên, Hải Phòng	Khá	Gia hạn 2021

Tổng số: 222 nhiệm vụ

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Số: 234 /QĐ-YDHP

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

Hải Phòng, ngày 08 tháng 04 năm 2024

QUYẾT ĐỊNH
Về việc công nhận kết quả nghiệm thu đề tài NCKH cấp cơ sở năm 2023

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Căn cứ Quyết định số 99/1999/QĐ-TTg ngày 21 - 01 - 1999 của Thủ tướng Chính phủ về việc thành lập Trường Đại học Y Hải Phòng;

Căn cứ Quyết định số 3113/QĐ-TTg ngày 11-11-2013 của Thủ tướng Chính phủ về việc đổi tên Trường Đại học Y Hải Phòng thành Trường Đại học Y Dược Hải Phòng;

Căn cứ Nghị quyết số 03/NQ - HĐT - YDHP ngày 02/02/2021 của Hội đồng Trường Trường Đại học Y Dược Hải Phòng về việc ban hành quy chế tổ chức và hoạt động của Trường Đại học Y Dược Hải Phòng;

Căn cứ Quyết định số 2550/QĐ-YDHP ngày 09 tháng 12 năm 2023 của Hiệu trưởng trường Đại học Y Dược Hải Phòng về việc thành lập các Tiểu ban KH&CN đánh giá, nghiệm thu đề tài cơ sở năm 2023 và Sổ tay khoa học tại Hội nghị KH&CN trường Đại học Y Dược Hải Phòng lần thứ XXII;

Xét đề nghị của ông Trưởng phòng Quản lý Khoa học

QUYẾT ĐỊNH:

Điều 1: Công nhận kết quả nghiệm thu của 336 đề tài NCKH cấp cơ sở năm 2023 (có danh sách kèm theo).

Điều 2: Các chủ nhiệm đề tài NCKH cấp cơ sở năm 2023 có trách nhiệm gửi báo cáo kết quả đề tài đã sửa theo ý kiến Hội đồng về phòng Quản lý Khoa học. Phòng Quản lý Khoa học có trách nhiệm kiểm tra, giám sát và gửi báo cáo kết quả của các đề tài đã nghiệm thu về Trung tâm Thông tin Thư viện để lưu trữ.

Điều 3: Các Ông (Bà) Trưởng phòng Quản lý Khoa học, Trung tâm Thông tin thư viện, Thường trực Hội đồng Khoa học Giáo dục và các Ông/ Bà có tên trong danh sách chủ nhiệm đề tài của các Quyết định thi hành./.

HIỆU TRƯỞNG

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

HIỆU TRƯỞNG

PGS.TS. Phạm Văn Linh

Nơi nhận:
- Như điều 3;
- Lưu: QLKH, VT.

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

KẾT QUẢ NGHIỆM THU ĐỀ TÀI NGHIÊN CỨU KHOA HỌC CẤP CƠ SỞ NĂM 2023

(Kèm theo Quyết định số: 251/QĐ-YDHP ngày 28 tháng 03 năm 2024)

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Đơn vị/Bộ môn	Tên đề tài	Thời gian hoàn thành	Thành viên tham gia	Xếp loại	Ghi chú
KHOA ĐIỀU DƯỠNG								
1	TS	Phạm Thị Thu		Thực trạng và một số yếu tố liên quan đến sử dụng dỗ ăn nhanh của sinh viên điều dưỡng trường đại học Y Dược Hải Phòng năm 2023		Bùi Thị Thanh Mai	Khá	
2	ThS	Nguyễn Thị Anh Thơ		Thực trạng kiến thức, thực hành về vệ sinh răng miệng của sinh viên điều dưỡng chính quy trường Đại học Y Dược Hải Phòng năm học 2022 - 2023		Đỗ Thị Tuyết Mai	Khá	
3	ThS	Hoàng Tuấn Anh		Thực trạng và một số yếu tố liên quan đến gánh nặng chăm sóc người bệnh tại hiện người nhà của người chăm sóc chính, năm 2023		Lê Thị Nhung	Khá	
4	ThS	Trần Thùy Dương		Khảo sát năng lực tự học và một số yếu tố liên quan của sinh viên Điều dưỡng chính quy trường Đại học Y Dược Hải Phòng năm 2023		Nguyễn Thị Hiền	Khá	
5	Th	Phạm Thị Thu Hương		Thực trạng và một số yếu tố liên quan đến tuân thủ chế độ ăn ở người bệnh Đái tháo đường type 2 tại khoa Nội 3 - bệnh viện Hữu nghị Việt Tiệp Hải Phòng năm 2023		TS. Trần Thị Thúy Linh	Khá	
6	Th	Nguyễn Thị Hiền		Kiến thức thực hành của người chăm sóc sau phẫu thuật tại bệnh viện Phụ sản Hải Phòng năm 2023		Trần Thị Thuý Dương	Khá	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Đơn vị/Bộ môn	Tên đề tài	Thầy/cô hướng dẫn	Thành viên tham gia	Xếp loại	Ghi chú
7	ThS	Đỗ Thị Tuyết Mai		Thực trạng và một số yếu tố liên quan đến tật khúc ván của người bệnh đái tháo đường tại Bệnh viện Đại học Y Hải Phòng năm 2021		Nguyễn Thị Anh Thư, Nguyễn Hải Hành	Khá	
8	CN	Cao Thị Vân Anh		Thực trạng và một số yếu tố liên quan đến nuôi con bằng sữa mẹ của các bà mẹ có con bị dị tật bẩm sinh, Bệnh viện Đại học Y Hải Phòng		Nguyễn Thị Trang	Khá	
9	ThS	Lê Thị Thu Hằng		Kỹ năng thực hành Điều dưỡng cơ bản của sinh viên Điều dưỡng chính quy tại trường Đại học Y Dược Hải Phòng năm 2021			Khá	
10	ThS	Lương Thị Thu Giang		Thực trạng và một số yếu tố liên quan đến chất lượng cuộc sống của người mắc bệnh phổi tắc nghẽn mạn tính điều trị ngoại trú tại Bệnh viện Việt Tiệp Hải Phòng, năm 2023		Đinh Thị Hải Hương	Khá	
11	ThS	Phạm Thị Tuyết		Thực trạng kiến thức về chăm sóc vết thương của sinh viên điều dưỡng chính quy trường Đại học Y Dược Hải Phòng năm 2023		Nguyễn Thị Thu Hương	Khá	
12	TS	Đỗ Thị Lan Anh		Thực trạng và một số yếu tố liên quan đến stress, sức nặng của trẻ sơ sinh đẻ tại Bệnh viện Phụ sản Hải Phòng năm 2021		Trần Hào Ngọc, Phạm Thị Yến, Phạm Thị Phương Thảo	Khá	
13	TS	Nguyễn Thị Thu Hương		Nghiên cứu tình trạng răng thông của sinh viên Điều dưỡng chính quy năm 3 khi học lâm sàng tại Bệnh viện năm 2022		Phạm Thị Tuyết	Khá	
14	ThS	Vũ Thị Cẩm Oanh		Khảo sát nhu cầu học sau đại học của sinh viên Điều Dưỡng chính quy năm cuối khoá 2019-2023 trường Đại học Y Dược Hải Phòng			Khá	
15	ThS	Bùi Thị Thanh Mai		Kiến thức thực hành và một số yếu tố liên quan đến quản lý chất thải y tế của điều dưỡng tại bệnh viện Đại học Y Hải Phòng năm 2023		Phạm Thị Thơ	Đạt	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Đơn vị/Bộ môn	Tên đề tài	Thời gian thực hiện	Thành viên tham gia	Xếp loại	Ghi chú
16	ThS	Đỗ Thị Thu Huyền		Thực trạng stress nghề nghiệp ở điều dưỡng viên tại Bệnh viện Đại học Y Hải Phòng năm 2021		Nguyễn Thanh Xuân	Đạt	
17	ThS	Nguyễn Thanh Xuân		Kiến thức, thực hành về chăm sóc trẻ sốt xuất huyết của các bà mẹ có con đang điều trị tại khoa Nhi, bệnh viện Đại học Y Hải Phòng		Hoàng Thị Mai Hương	Đạt	
KHOA DƯỢC								
18	PGS.TS	Nguyễn Thị Thu Phương		Nghiên cứu xây dựng công cụ tính liều bevacizumab nhằm cá thể hoá điều trị bệnh ung giáp điều trị ngoại trú tại Bệnh viện Đa khoa Quốc tế Hải Phòng		Đặng Hương Trà	Xuất sắc	cá biệt
19	TS	Ngô Thị Quỳnh Mai		Xây dựng quy trình chiết xuất berberine từ cây rau vớ vẩn (Gargaranus Cissoensis) thu hái tại Hải Phòng		Nguyễn Thành Đạt, Nguyễn Trần Thị Trà My, Lê Thị Mai Ngân, Lưu Thị Thu Huyền	Xuất sắc	
20	TS	Cao Đức Tuấn		Tối ưu hóa quy trình tổng hợp quy mới 2H-n2, chứng ra khuẩn C195 tạo dược mới có hoạt tính kháng vi sinh vật			Xuất sắc	
21	PGS.TS	Nguyễn Văn Hùng		Nguy cơ tương tác thuốc bất lợi ở bệnh nhân sau tuổi điều trị ngoại trú tại Bệnh viện Đại học Y Hải Phòng từ 01/01/2021-31/12/21		Nguyễn Thị Thúy Hiền, Phạm Thị Hòa	Xuất sắc	
22	TS	Trần Thị Ngân		Thực trạng sử dụng colistin khí dụng trong điều trị viêm phổi do vi khuẩn Gram âm đa kháng tại Bệnh viện Đa khoa Quốc tế Hải Phòng từ năm 2021 đến năm 2022		Hoàng Thị Bích Vân	Xuất sắc	
23	TS	Phạm Thị Anh		Nghiên cứu thành phần hóa học và một số tác dụng sinh học của dược liệu Xa Cừ (Delonix regia (Hook.) Raf)		Phạm Hà Hưng, Nguyễn Hải Hiếu, Lưu Thị Thu Huyền, Nguyễn Thu Hương	Xuất sắc	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Đơn vị công tác	Tên đề tài	Thầy/cô hướng dẫn	Thành viên tham gia	Xếp loại	Ghi chú
24	Ths	Lê Thị Thúy Linh		Tham vấn áp dụng quy trình giám sát nồng độ amikacin trong máu tại Bệnh viện Đa khoa Quốc tế Hải Phòng giai đoạn 2019-2022			Xuất sắc	
25	Ths	Trần Văn Anh		Phân tích tính hình sử dụng và giám sát nồng độ thuốc vancomycin trong máu theo AUC Bayesian tại Bệnh viện Đa khoa Quốc tế Hải Phòng			Xuất sắc	
26	Ths	Nguyễn Minh Thảo		Mức thỏa lợi uống, nhu lợi uống và thực trạng điều trị dậy thì sớm tại Bệnh viện Trẻ em Hải Phòng			Xuất sắc	
27	BV	Nguyễn Hương Giang	Theo thông quy KH	Xây dựng và thẩm định phương pháp xác định hiệu quả liên quan điều trị dụng kháng thuốc nghiệm trong dịch Carbamazepin bằng kĩ thuật Real-time PCR	PGS.TS. Nguyễn Thị Thu Phương TS. Trần Thị Ngân	Ngô Phương Thảo, Đào Thu Hương, Nghiêm Ngọc Mai	Xuất sắc	ĐTSV đứng kỷ bảo cáo TA
28	HV	Nguyễn Thị Anh Lâm		Tác dụng kháng vi sinh vật in vitro của tinh chất vỏ rau chùa phân lập từ Rau răng cưa (Peperomia pellucida L.) thu hái tại Hải Phòng	TS. Ngô Thị Quỳnh Mai	Phạm Thị Minh Hà, Đoàn Thị Minh Phương, Nguyễn Cẩm Tú, Nguyễn Thị Lan Anh	Xuất sắc	BTHV cấp KP đứng kỷ BC bằng TA
29	Ths	Đỗ Đắc Hiếu		Xác định cấu trúc hóa học của các chất phân lập được từ loài nhân khổ - Syzygium corallifrons (Blume) Merr. & L. M. Perry		Vũ Thuỳ Dung	Khá	
30	Ths	Vũ Thùy Dung		Nghiên cứu phân lập và khảo hiểu có hoạt tính không vi sinh vật từ đảo Bạch Long Vĩ, thị Phòng		Cao Đức Tuấn, Hoàng Thị Như Quỳnh, Trương Bích Phong	Khá	
31	DSCKII	Đỗ Quang Tuấn		Thực trạng dược sĩ đang tại Bệnh viện Quốc tế Green năm 2021		Nguyễn Thị Hoàng, Nguyễn Thu Hương	Khá	
32	Ths	Đỗ Thị Bích Diệp		Thực trạng hoạt động công ứng thuốc tại Bệnh viện Trẻ em Hải Phòng năm 2022		Trương Bích Phong, Phùng Chí Thiện	Khá	

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33	ThS	Nguyễn Thị Hạnh		Phân tích chi phí trực tiếp điều trị bệnh nhân Crohn A tại bệnh viện Trẻ em Hải Phòng từ tháng 10/2021 đến tháng 9/2022		Nguyễn Thu Hương, Trần Ngọc Khánh Hoà, Bùi Thị Anh Tuyết	Khá	
34	TS	Nguyễn Thị Thúy Khuê		Nghiên cứu sử dụng chất tương phản trên cơ sở hạt nano Gd2O3 được bọc bởi các polyme trong kỹ thuật chụp cộng hưởng từ MRI và CT		Phạm Thị Phương Thảo	Khá	
35	ThS	Nguyễn Thanh Tâm		Nghiên cứu bào chế gel dưỡng da chiết xuất từ quả mướp đắng (Momordica charantia)		Kiều Thị Thơ	Khá	sửa báo
36	ThS	Hoàng Thị Kim Thơ		Tác dụng chống oxy hóa in vitro của hệ tiểu phân nano phối hợp giữa Paclitaxel và Dihydroartemisinin		Trần Tuấn Hiệp	Khá	sửa báo
37	ThS	Vũ Thị Quỳnh		Nghiên cứu bào chế một số dạng thuốc chứa cao cạp Vối (Choerospondias axillaris, Myrtaceae)		Nguyễn Thị Thuý, Nguyễn Thanh Tâm, Ngô Thị Quỳnh Mai	Khá	sửa báo
38	ThS	Phạm Thị Phương Thảo		Bước đầu đánh giá một số chỉ tiêu chất lượng của cao lỏng bài thuốc Kim tiền thảo		Mai Thị Lá, Nguyễn Thị Dung	Đạt	
39	ThS	Nguyễn Thị Dung		Đặc điểm thực vật - dược liệu và tác dụng chống oxy hóa của lá cây Chòm ngày (Mallotus oblongifolius)			Đạt	
KHOA KỸ THUẬT Y HỌC								
40	TS	Nguyễn Hoàng Cường		Ứng dụng xét nghiệm QuantiFERON-TB Access trong chẩn đoán lao tiềm ẩn tại quận Dương Kinh, thành phố Hải Phòng		Hoàng Thị Hoa Quỳnh, Mai Nguyễn Quỳnh Trâm	Xuất sắc	
41	TS	Vũ Văn Thái		Thực trạng và một số yếu tố liên quan đến tuổi thọ sinh lượng với nghiệm tại các phòng xét nghiệm của tỉnh Hải Dương năm 2021		Cao Văn Tuyến, Đinh Kim Tuyến	Xuất sắc	sửa báo

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Đơn vị/Bộ môn	Tên đề tài	Thầy/cô hướng dẫn	Thành viên tham gia	Xếp loại	Ghi chú
42	TS	Phạm Thị Thu Trang		Nghiên cứu một số đặc điểm lâm sàng, cận lâm sàng và một số yếu tố liên quan đến hiệu lực vòng chỉ ở trẻ sa sinh tại Bệnh viện Trẻ em Hải Phòng năm 2022 - 2023		Bùi Thị Hương Giang, Nguyễn Anh Ngọc, Nguyễn Thị Phương	Xuất sắc	
43	TS	Phạm Thị Lâu		Nghiên cứu một số đặc điểm lâm sàng và khảo sát quy định sự biệt hoá của bệnh ung thư máu cấp dòng tuỷ tế bào lớp bệnh nhân tại Viện huyết học quốc gia		Atsushi Hiron, Masaya Ueno	Khá	
44	ThS	Bùi Thị Hương Giang		Thực trạng và một số yếu tố liên quan đến đặt thời đường thở của thai phụ của khám tại Bệnh viện Quốc tế Green năm 2022		Phạm Thị Thu Trang, Nguyễn Anh Ngọc, Nguyễn Thị Phương	Khá	
45	ThS	Vũ Thị Hồ		Đặc điểm lâm sàng, cận lâm sàng của bệnh nhân nhiễm khuẩn huyết do Acinetobacter Azotropicilus tại Bệnh viện Hữu nghị Việt Tiệp Hải Phòng năm 2020 đến năm 2022		Nguyễn Hồng Cường, Trịnh Thị Hằng, Phạm Thị Tiên, Nguyễn Thị Thúy Phương, Lại Thị Quỳnh	Khá	
46	ThS	Phạm Mạnh Khánh		Thực trạng nhiễm khuẩn huyết liên quan đến đường truyền tĩnh mạch trung tâm tại Bệnh viện Hữu nghị Việt Tiệp năm 2022		Vũ Xuân Tiến, Đoàn Văn Hiếu	Khá	
47	ThS	Mạc Thị Tịnh		Đặc điểm các chỉ số lồng của máu ngoại vi và các chỉ số đánh giá ở bệnh nhân truyền máu thiếu máu điều trị tại Bệnh viện Hữu nghị Việt Tiệp		Hoàng Văn Phòng, Nguyễn Thị Thu Hiền, Nguyễn Thị Ngọc Anh, Trần Thị Phương Linh	Khá	
48	KV	Dương Đỗ Thanh Hằng	CHKDY 12	Nghiên cứu mối tương quan giữa giá trị PAPP-A ở tam cá nguyệt I với Đái tháo đường thai kì của phụ nữ mang thai tại Bệnh viện Phụ sản Hải Phòng 2021 - 2021	TS. Phạm Thị Thu Trang	Lưu Vũ Dũng, Nguyễn Thị Mai, Nguyễn Thị Phương	Khá	DTSV cấp KP
49	SV	Trần Thị Hải	CHKDY 12	Đánh giá hiệu quả của bộ sinh nghiệm nhanh kháng nguyên SOTI-Bio (COVID-19 Ag one step) trong xét nghiệm SARS-CoV-2 tại bệnh viện Đa khoa Quốc tế Hải Phòng năm 2022	TS. Phạm Thị Thu Trang	Trần Quang Đức, Nguyễn Thị Hải Dương	Đạt	DTSV cấp KP

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Đơn vị/Bộ môn	Tên đề tài	Thời gian bắt đầu	Thành viên tham gia	Xếp loại	Ghi chú
LABO TRUNG TÂM								
50	TS	Bạch Thị Như Quỳnh	Labo trung tâm	Xác định đột biến gen JAK2 V617F trên bệnh nhân tăng sinh đa dòng tủy nguyên phát và tăng tiểu cầu vô căn phát tại Bệnh viện Việt Tiệp Hải Phòng		Lê Hồng Thu, Phạm Thu	Xuất sắc	có bảo
51	ThS	Nguyễn Văn Thành	Labo trung tâm	Đánh giá độ nhạy và độ đặc hiệu của bộ sinh phẩm TaqPath COVID-19 CE-IVD RT-PCR kit trong nghiên cứu định Sars-Cov2		Bạch Thị Như Quỳnh, Lê Hồng Thu, Nguyễn Thị Thùy Dương, Vũ Thị Trang Linh	Khá	
KHOA RĂNG HÀM MẶT								
52	TS	Vũ Quang Hưng		Kết quả phẫu thuật nội nha răng hàm dưới loại Paraet 8 có sử dụng máy Piezotome			Xuất sắc	có bảo
53	TS	Trần Thị An Huy		Kết quả điều trị nội nha răng vĩnh viễn tủy không hồi phục ở người cao tuổi có sử dụng trâm xoay Protaper Ultimate trong tạo hình ống tủy		Nguyễn Thị Thu Hà, Lương Xuân Quỳnh	Khá	
54	TS	Phạm Thanh Bái		Đánh giá kết quả cấy ghép Implant One tì có sử dụng màng barrier dẫn phẫn thuật tại Bệnh viện Đại học Y Hải Phòng năm 2022 - 2023		HV. Vũ Đình Dương, Nguyễn Đức Tín	Khá	có bảo
55	TS	Hồng Thị Mai Hương		Đặc điểm lâm sàng viêm tủy và kết quả điều trị trên bệnh nhân đeo mắc cài chỉnh nha		Phạm Thị Vân	Khá	
56	BSCKII	Nguyễn Minh Tuấn		Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị của bệnh nhân viêm nhiễm phần mềm vùng hàm mặt tại khoa Răng hàm mặt, bệnh viện Hữu nghị Việt Tiệp Hải Phòng 2021			Khá	
57	ThS	Phạm Thị Hồng Thơm		Kết quả sang bám theo chiều dọc và chiều ngang sau khi phẫu thuật nâng sàn xoang tại Bệnh viện Đại học Y Hải Phòng năm 2022		Nguyễn Thị Ngọc Minh	Khá	có bảo

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58	ThS	Đỗ Quốc Vụ		Kết quả phẫu thuật implant đơn lẻ liền răng tức thì tại vùng răng cửa trong thẩm mỹ tại Bệnh viện Đại học Y Hải Phòng năm 2023		Lê Thành Nam	Khá	
59	ThS	Lương Xuân Quỳnh		Đặc điểm lâm sàng, X-Quang và kết quả điều trị sang chấn hàm tại khoa Răng hàm mặt Bệnh viện Hữu Nghị Việt Tiệp Hải Phòng năm 2023		Vũ Thị Xuân Lưu Bảo Linh	Khá	
60	ThS	Phạm Thị Hương		Kết quả điều trị sự rộng hàm ếch nhổ hàm dưới chỉ định điều trị nắn chỉnh không phẫu thuật và sử dụng guma flow bioseal		Đoàn Trung Hiếu	Khá	
61	ThS	Nguyễn Đức Tín		Nhận xét kết quả cấy ghép implant răng cửa sau hàm trên ở bệnh nhân sang chấn hàng chấy lợi có ghép xương		Vũ Quang Hưng Lê Tất Thanh Hương	Khá	
62	TS	Nguyễn Thị Thu Hà		Thực trạng lệch lạc khớp cắn răng ở người cao tuổi tới khám tại Bệnh viện Đại học Y Hải Phòng và một số yếu tố liên quan, năm 2022		Lê Thị Thuý Ly SV. Lê Thị Hiệp, Lê Thành Nam	Đạt	
63	BSCKI	Phan Thị Thanh Giang		Đặc điểm lâm sàng và cận lâm sàng khớp cắn của bệnh nhân mất răng hàng loạt		Trần Thị Quỳnh Trang	Đạt	
64	ThS	Nguyễn Trường Thịnh		Nhận xét kết quả và một số yếu tố liên quan điều trị u xơ xương hàm trên.		Lê Thị Thúy Ly	Đạt	
KHOA Y HỌC BIỂN								
65	TS ThS	Nguyễn Văn Tâm Đoàn Thị Phương		Thực trạng và một số yếu tố liên quan tới suy giảm thính lực thần của công nhân khai thác thủy sản Hải Phòng			Xuất sắc	
66	ThS ThS	Đỗ Thị Hà Đỗ Thị Hoài		Thực trạng và một số yếu tố liên quan đến chất lượng cuộc sống của người cao tuổi tại viện dưỡng lão thành phố Cát Bà Việt Y học biển năm 2021			Khá	

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KHOA Y HỌC CỔ TRUYỀN								
67	TS	Nguyễn Thị Thu Hiền		Thực trạng bệnh tật và nhu cầu sử dụng các phương pháp y học cổ truyền trong điều trị bệnh ở người cao tuổi phường Đồng Quốc Bình năm 2022-2023		Vũ Thị Nguyên Nguyễn Trung Kiên Nguyễn Hoàng Anh	Xuất sắc	
68	BSCKII	Doãn Mỹ Hạnh		Đặc điểm lâm sàng và kết quả điều trị của phương pháp Hồi châm kết hợp với Laser nội sọ trên bệnh nhân rối loạn giấc ngủ		Nguyễn Thị Kim Hoé SV Y18CT K3	Khá	ĐTCS, HĐKL
69	BSCKII	Lê Ngọc Sơn		Kết quả điều trị của phương pháp điện châm kết hợp bài tập vận động Nguyễn Văn Giường trong điều trị hội chứng thắt lưng hông tại Bệnh viện Đại học Y Hải Phòng năm 2022-2023		Nguyễn Thị Hường (SV Y18CT K3	Khá	
70	BSCKII	Nguyễn Thị Thanh Hoa		Mô tả các thể lâm sàng Y học cổ truyền của bệnh nhân đau dây thần kinh Tọa điều trị tại Bệnh viện Đại học Y Hải Phòng 2022 - 2023		Nguyễn Thị Kim Trang (SV Y18CT K3)	Khá	ĐTCS, HĐKL
71	ThS	Nguyễn Thị Thuý Dung		Kết quả điều trị bằng điện châm, xoa bóp, bấm huyệt và chườm Hapaka trên bệnh nhân đau lưng do thoái hóa cột sống		SV: Nguyễn Nhật Long	Khá	ĐTCS, HĐKL
72	TS	Nguyễn Thị Thuý		Nhận xét các dạng thể chất Y học cổ truyền và một số đặc điểm của tăng trưởng thể lực của trẻ chậm tăng trưởng Đại học Y Dược Hải Phòng năm 2023		SV: Đào Phương Linh	Khá	
73	ThS	Phạm Thị Hoà		Nhận xét tác dụng của điện châm, xoa bóp bấm huyệt kết hợp bài tập McCLIP trên bệnh nhân đau lưng do thoái hóa cột sống			Khá	
74		Trần Thị Thu Hiền		Kết quả điều trị của phương pháp điện châm, thủy châm với loại thuốc Hoa Kimono trên bệnh nhân Gout thể hàn thấp và thấp nhiệt ở Bắc Ninh và một số tỉnh vị		SV: Hoàng Thị Phe	Khá	ĐTCS, HĐKL

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Đơn vị/Bộ môn	Tên đề tài	Tải/Số tương đồng	Thành viên tham gia	Xếp loại	Ghi chú
15	ThS	Vũ Thị Nhi		Mối tỉ dịu điều kiện sống và ảnh hưởng của những sinh đến chất lượng cuộc sống của sinh viên Trường Đại học Y Dược Hải Phòng năm 2021		SV: Nguyễn Thị Hải Yến, Phạm Thị Huệ	Khá	
16	SV	Vi Thuý Tiên	SV Y học cổ truyền	Nhóm thể chất y học cổ truyền của sinh viên Trường Đại học Y Dược Hải Phòng năm 2022 - 2023	TS. Nguyễn Thị Thuý	Lê Thanh Huyền Nguyễn Thị Tình	Khá	ĐTSV cấp ĐP
17	ThS	Nguyễn Hồng Thái		Mối tỉ các thể lâm sàng bệnh nhân tai biến mạch máu não giai đoạn hồi phục tại Bệnh viện Y học cổ truyền Hải Phòng năm 2022-2023		SV YHCT K3. Phan Thị Hiền Kiên	Đạt	ĐTCS, HĐKL
18	ThS	Vũ Thị Nguyên		Mối bệnh tật và thực trạng điều trị tại khoa Y học cổ truyền – Phục hồi chức năng, Bệnh viện Trẻ em Hải Phòng từ 6/2022 – 6/2023			Đạt	
19	ThS	Hoàng Thị Huyền Trang		Đánh giá tác dụng của phương pháp điện châm kết hợp với châm trong điều trị rối loạn giấc ngủ thể can dương lưu trạng tại Khoa Nội quan - Bệnh viện Y học cổ truyền Hải Phòng			Đạt	
20	TS	Khúc Thị Ông Hương		Đánh giá tác dụng của phương pháp giáo kết hợp điện châm điều trị hội chứng cổ vai cánh tay tại Bệnh viện Đại học Y Hải Phòng năm 2021 - 2022		SV YHCT K3. Phạm Thị Hành Hằng	Đạt	ĐTCS, HĐKL
21	ThS	Phạm Hồng Ngọc		Khảo sát thể lâm sàng YHCT của bệnh nhân mắc hội chứng cổ vai cánh tay điều trị tại Bệnh viện Y học cổ truyền Hải Phòng năm 2022 - 2023		Vũ Minh Hiền Nguyễn Thị Thanh Hoa	Đạt	ĐTCS, HĐKL
22	ThS	Nguyễn Thị Phương		Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị thoái hóa khớp gối nguyên phát tại Bệnh viện Y học cổ truyền Hải Phòng năm 2019-2021			Đạt	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Đơn vị/Bộ môn	Tên đề tài	Thời gian thực hiện	Thành viên tham gia	Xếp loại	Ghi chú
KHOA Y TẾ CÔNG CỘNG								
83	TS	Nguyễn Thị Thắm	Khoa Y tế công cộng	Thực trạng chất lượng cuộc sống và một số yếu tố liên quan ở người cao tuổi tại huyện Vĩnh Bảo, Quảng Ninh năm 2023		Cấp Minh Đức, Bùi Ngọc Liên	Xuất sắc	
84	TS	Hoàng Thị Giang		Thực trạng học tập trên cơ sở giới và các yếu tố liên quan trên giáo viên tiểu học tại Hải Phòng, Việt Nam		Phạm Thị Ngọc, Nguyễn Minh Ngọc, Phạm Minh Khuê, Hoàng Thị Hoa Lê, Phạm Thị Nguyệt	Xuất sắc	Hoàn tất HC bằng TA
85	TS	Nguyễn Thanh Hải		Thực trạng kiến thức, thực hành về sử dụng thuốc corticoid và một số yếu tố liên quan trên phụ nữ sau mãn kinh đang điều trị bệnh lý Cơ Xương Khớp tại Bệnh viện Việt Tiệp Hải Phòng năm 2023		Nguyễn Quang Hiếu	Xuất sắc	
86	PGS.TS	Dương Thị Hương		Thực trạng và kết quả can thiệp kiến thức về sức khỏe tâm thần học sinh trung học cơ sở tại Hưng Yên, năm 2021		Dương Thị Hương, Nguyễn Quang Đức, Nguyễn Văn Kiệt	Xuất sắc	
87	TS	Trần Thị Thúy Hà		Thực trạng kiến thức, thái độ, thực hành vệ sinh bảo vệ của nhân viên y tế tại Bệnh viện Đại học Y Hải Phòng năm 2023		Đoàng Thị Thuận	Xuất sắc	
88	TS	Cha Khắc Tân		Thực trạng và một số yếu tố liên quan đến bạo lực trẻ em trong gia đình tại Huyện An Dương, Hải Phòng năm 2023		Cha Khắc Tân	Xuất sắc	
89	TS	Nguyễn Thị Thuỳ Linh		Thực trạng hoạt động hỗ trợ người học ở sinh viên năm 2 trường Đại học Y Dược Hải Phòng năm 2023.		Nguyễn Thị Thắm, Phạm Mai Linh, Hoàng Thị Hoa Lê, Nguyễn Minh Ngọc, Vũ Đức Minh	Xuất sắc	
90	TS	Vũ Minh Đức		Kiến thức, thái độ, thực hành về sử dụng muối trong bữa ăn của người dân phường Đông Khê, Hải Phòng		Lương Vũ Ngọc Mai	Xuất sắc	sửa bìa

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Đơn vị/Bộ môn	Tên đề tài	Thời gian thực hiện	Thành viên tham gia	Xếp loại	Ghi chú
91	ThS	Hoàng Thị Thuận		Thực trạng và một số yếu tố liên quan đến một số bệnh phụ khoa ở phụ nữ 15-49 tuổi tại xã Đồng Cương, huyện An Dương, Hải Phòng năm 2021		Hoàng Thị Hoa Lá, Nguyễn Minh Ngọc, Trịnh Thanh Xuân	Xuất sắc	
92	CKI.TS	Phạm Minh Khoa		Thực trạng sử dụng thuốc lá, thuốc lá điện tử và một số yếu tố liên quan ở học sinh trường THPT Hải An, Hải Phòng năm 2023		Nguyễn Thị Thảo, Ngô Tùng Lâm, Trần Thị Thanh Thuỷ	Khá	ĐTCS, ĐĐHV đăng ký BC tiếng TA
93	PGS.TS	Phạm Văn Hán		Thực trạng tiêu chảy cấp và một số yếu tố liên quan ở trẻ dưới 5 tuổi tại Khoa Nội nhi Bệnh viện Sản Nhi Hưng Yên năm 2021		Nguyễn Minh Ngọc, Cáp Minh Đức	Khá	
94	BSCKII	Trần Thị Minh Hồi		Thực trạng nhiễm HIV và một số yếu tố liên quan đến hành vi lây nhiễm trong phụ nữ ăn chơi và nam quan hệ tình dục đồng giới tại Hải Phòng năm 2012 - 2022		Nguyễn Duy Hùng, Trần Thị Hòa, Ngô Hương Ly	Khá	
95	ThS	Nguyễn Thị Thanh Bình		Thực trạng và một số yếu tố liên quan đến mắc tiêu chảy trẻ em giữa ngũ của bệnh nhân nội trú tại Trung tâm Y tế huyện Tam Nông, tỉnh Phú Thọ, năm 2023		Lê Hiệp Hòa, Nguyễn Thị Minh Ngọc, Nguyễn Thị Thu Thảo, Hoàng Thị Hợi Lê	Khá	
96	TS	Nguyễn Thị Minh Ngọc		Nhận thức, thái độ về bảo đảm xanh, bảo vệ môi trường theo mục tiêu phát triển bền vững và một số yếu tố liên quan của học sinh trung học phổ thông Hải Phòng năm 2023		SVYK Nguyễn Thị Phương Trang, Nguyễn Trọng Lasks, Nguyễn Thị Thu Thảo, Nguyễn Thị Thanh Bình	Khá	
97	TS	Nguyễn Thị Thu Thảo		Chuẩn hóa bộ câu hỏi Geriatric Depression Scale (Short form)-GDS 15		Quách Thị Hà, Nguyễn Thị Minh Ngọc, Nguyễn Thị Thanh Bình, Hoàng Thị Hợi Lê	Khá	
98	ThS	Phạm Thị Ngọc		Thực trạng sức khỏe tâm thần và một số yếu tố liên quan của trường THPT Cộng Hiền và Trung tâm giáo dục thường xuyên Vĩnh Bảo, Hải Phòng năm 2023		Hoàng Thị Giang, Phạm Khánh Linh	Khá	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Đơn vị/Bộ môn	Tên đề tài	Tư vấn hướng dẫn	Thành viên tham gia	Xếp loại	Ghi chú
99	ThS	Nguyễn Quang Đức		Thực trạng kiến thức, thực hành và một số yếu tố liên quan tới phòng loại các thói quen hoạt tại nguồn của người dân huyện Thanh Hà, tỉnh Hải Dương năm 2021		Nguyễn Thị Minh Ngọc, Nguyễn Thanh Hải	Khá	
KHOA KHOA HỌC CƠ BẢN								
100	ThS	Nguyễn Trần Quý	Giáo dục thể chất	Ứng dụng một số bài tập phát triển thể lực chung cho nam sinh viên K44 trường Đại học Y Dược Hải Phòng năm học 2020 - 2021		Phạm Tiến Linh	Xuất sắc	rút bài
101	ThS	Hoàng Thị Bích Thủy	Giáo dục thể chất	Thực trạng rèn luyện thể thao ngoại khóa của sinh viên năm thứ nhất trường Đại học Y Dược Hải Phòng		Vũ Đức Minh, Hà Thị Minh Phương	Đạt	
102	ThS	Đinh Văn Thuần	Giáo dục thể chất	Đánh giá kết quả bài tập phát triển sức bền tốc độ cự ly 1000m của nam và 800m nữ cho sinh viên năm thứ nhất trường Đại học Y Dược Hải Phòng năm học 2021 - 2022		Nguyễn Khánh Hưng	Đạt	
103	TS	Bùi Ngọc Tân	Hoá học	Nghiên cứu chiết xuất và hoạt tính kháng vi khuẩn vật liệu dịch của các chiết từ lá (Psidium Guajava) tại Vĩnh Long, Hưng Yên năm 2022		Nguyễn Quang Thành	Xuất sắc	
104	ThS	Nguyễn Thị Cần	Hoá học	Khảo sát nghiên cứu quy trình tinh chế Polyphenol từ vỏ xanh		Nguyễn Thị Hương	Khá	
105	ThS	Ngô Thanh Hương	Hoá học	Nghiên cứu xây dựng mô hình đánh giá khả năng đáp thời oxon về cơ trên động tế bào sang theo gan HepG2 tại phòng thí nghiệm độc chất - Khoa Dược- Đại học Y Dược Hải Dương - Hiệp Hòa năm 2021 - 2022		Phạm Minh Châu, Nguyễn Quang Thành	Khá	Đồng tự (IC bằng Tiếng
106	TS	Nguyễn Văn Dương	Hóa Học	Xây dựng quy trình thực nghiệm định lượng đồng trong nước sông bằng phương pháp động học xúc tác		Nguyễn Thị Hương	Khá	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Đơn vị/Bộ môn	Tên đề tài	Thầy/cô hướng dẫn	Thành viên tham gia	Xếp loại	Ghi chú
107	ThS	Nguyễn Thị Chăm	Tin học	Xây dựng website tin tức của Trung tâm nội chính, liên công trường Đại học Y Dược Hải Phòng năm 2023		Phạm Thị Vân Anh Trịnh Anh Tuấn Đỗ Thị Việt Hồng Trần Văn Trọng	Khá	
108	ThS	Nguyễn Thị Tươi	Y sinh học di truyền	Tỷ lệ thai phụ mang gen G6PD trong nhóm thai phụ thực hiện sàng lọc trước sinh tại Hải Phòng bằng kỹ thuật NIPT năm 2021-2023		Lê Thị Thu Huyền Nguyễn Thị Hải	Xuất sắc	
109	ThS	Lê Thị Thu Huyền	Y sinh học di truyền	Tỷ lệ thai phụ mang đột biến gen ATP7B gây bệnh Wilson bằng kỹ thuật giải trình tự gen thế hệ mới tại Hải Phòng		Nguyễn Thị Hải Nguyễn Thị Tươi	Khá	
110	ThS	Nguyễn Thị Hải	Y sinh học di truyền	Phát hiện thai phụ mang đột biến gen F alpha-thalassaemia bằng kỹ thuật giải trình tự gen thế hệ mới		Nguyễn Thị Tươi Lê Thị Thu Huyền	Khá	
111	ThS ThS	Nguyễn Hoàng Thảo Khang Trần Thị Thúy	Y sinh học di truyền	Kết quả sàng lọc và chẩn đoán trước sinh hội chứng Miller-Dieker qua siêu âm và kỹ thuật FISH			Khá	
KHOA Y								
112	9118.75	Hoàng Diệu Hạ	Chẩn đoán hình ảnh	Giá trị của sóng Doppler từ I.F Tasia trong chẩn đoán tổn thương dây chằng chéo khớp gối tại Bệnh viện Đa Khoa Quốc tế Hải Phòng			Xuất sắc	
113	ThS	Phan Xuân Cường	Chẩn đoán hình ảnh	Nghiên cứu vai trò của chụp CLVT 160 dãy trong đánh giá chức năng tâm thu thất trái trên bệnh nhân có chỉ định chụp CLVT mạch vành tại Bệnh viện Hữu nghị Việt Tiệp năm 2022		Bùi Hoàng Tú, Phạm Thị Thu Huyền, Lê Quyết Chiến	Khá	
114	BS	Nguyễn Hồng Phúc	Chẩn đoán hình ảnh	Nghiên cứu đặc điểm siêu âm, tế bào học của bướu nhân tuyến giáp TIRADS 3, 4, 5 ở bệnh nhân đến khám và điều trị tại Bệnh viện Hữu nghị Việt Tiệp năm 2021			Đạt	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Bộ môn/Đơn vị	Tên đề tài	Thầy/cô hướng dẫn	Thành viên tham gia	Xếp loại	Ghi chú
115	Ths	Nguyễn Văn Long	Chẩn đoán hình ảnh	Đặc điểm lâm sàng và giá trị của siêu âm, chụp cắt lớp vi tính trong chẩn đoán viêm ruột thừa cấp tại Bệnh viện Đại học Y Hải Phòng.		Lê Thị Yến	Đạt	
116	TS	Nguyễn Thị Liên	Da liễu	Đặc điểm tương tổn da và một số yếu tố liên quan ở bệnh nhân suy thận mạn lọc máu chu kì tại Bệnh viện Đại học Y Hải Phòng		Hoàng Thị Lân, Đào Minh Châu	Khá	
117	ThS	Nguyễn Thị Lệ Thủy	Da liễu	Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị bệnh vảy nến thể thông thường trên bệnh nhân điều trị nội trú tại Bệnh viện Việt Tiệp		Đào Minh Châu, Hoàng Thị Lân	Khá	có bảo
118	TS	Phạm Xuân Hùng	Gây mê hồi sức	Đánh giá hiệu quả giảm đau sau mổ cắt túi mật nội soi của gây tê mặt phẳng cơ dựng sống tại Bệnh viện Đại học Y Hải Phòng		Nguyễn Thị Thành, Nguyễn Thị Nga, Nguyễn Quang Lợi	Khá	
119	Ths	Nguyễn Thị Thành	Gây mê hồi sức	Đánh giá hiệu quả giảm đau sau mổ đi lồng gây tê cơ vuông thắt lưng tại Bệnh viện Đại học Y Hải Phòng		Nguyễn Thị Nga, Phạm Xuân Hùng, Đỗ Đức Chiến, Vũ Thị Hải (BV), Nguyễn Thị Hoa (BV)	Khá	
120	TS	Phạm Thành Nguyên	Giải Phẫu	Đặc điểm giải phẫu hệ thống tĩnh mạch cửa ở người trưởng thành bình thường bằng cắt lớp vi tính (CT Scanner)		Trần Xuân Bách	Xuất sắc	
121	Ths	Lê Thị Yến	Giải Phẫu	Nghiên cứu giá trị chẩn đoán sỏi niệu quản của siêu âm và X-quang thường chuẩn bị tại Bệnh viện Đại học Y Hải Phòng		Nguyễn Thị Thanh Phương, Lê Văn Long, Nguyễn Công Trán	Khá	
122	Ths	[illegible] Thị Xoa	Giải Phẫu	Thực trạng điều trị tiêm insulin thường trên 6 bệnh nhân đái tháo đường typ 2 có suy thận tại bệnh viện Đại học Y Hải Phòng năm 2021		Trần Bách Bách	Khá	

TT	Học hàm, học vị	Họ và tên chữ nhiệm	Học viên/Nghiên cứu	Tên đề tài	Thầy/cô hướng dẫn	Thành viên tham gia	Xếp loại	Ghi chú
123	TS	Nguyễn Thị Phương Mai	Hoá sinh	Mối tương quan giữa nồng độ Procalcitonin, C-reactive protein với urê, creatinine và albumin trong huyết thanh của bệnh nhân mắc bệnh thận mạn tục mắc của kỳ tại Bệnh viện Hữu nghị Việt Tiệp, năm 2023		Dương Thị Minh Thoa	Xuất sắc	
124	ThS	Nguyễn Thị Phương Thảo	Hóa sinh	Phục hồi người bệnh mang gen trong các gia đình có bệnh nhân Prompt		Nguyễn Thị Phương Mai, Vũ Chí Dũng, Trần Văn Khánh, Hoàng Thị Ngọc Lan, Tạ Thành Văn	Xuất sắc	có bài
125	TS	Vũ Thị Thanh Hiền	Kỹ sinh trùng	Thực trạng và một số yếu tố liên quan đến bệnh sốt rét ở bệnh nhân đến khám tại Bệnh viện Hữu nghị Việt Tiệp năm 2021		Đinh Thị Thanh Mai, Trịnh Văn Khương, Nguyễn Thị Huyền Sương	Xuất sắc	
126	PGS.TS	Đinh Thị Thanh Mai	Kỹ sinh trùng	Thực trạng và một số yếu tố liên quan đến nhiễm nấm Candida spp. ở phụ nữ viêm âm đạo khám định kỳ tại bệnh viện Phụ sản Hải Phòng, năm 2023		Vũ Văn Thái, Vũ Thị Thanh Hiền, Nguyễn Thị Huyền Sương, Đinh Thị Minh Thơ, Trịnh Văn Khương	Xuất sắc	
127	PGS.TS	Nguyễn Huy Hiếu	Lao và bệnh phổi	Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị viêm phổi tại khoa HH bệnh nhân Bệnh viện Đại học Y Hải Phòng		Nguyễn Thị Hồng, Đào Thị Trà My	Xuất sắc	
128	ThS	Nguyễn Thị Trang	Lao và bệnh phổi	Đặc điểm và một số yếu tố liên quan tới tình trạng loãng xương ở bệnh nhân lao phổi mới tại Bệnh viện Phổi Hải Phòng năm 2021-2022		Đặng Thị Hoà, Nguyễn Thị Thanh Huyền, Nguyễn Như Hải	Xuất sắc	
129	TS	Nguyễn Đức Thọ	Lao và bệnh phổi	Đặc điểm lâm sàng, cận lâm sàng của bệnh nhân lao xương khớp tại Bệnh viện Phổi Hải Phòng 2019-2021		Nguyễn Tuấn Anh, Đỗ Thị Hòa	Xuất sắc	
130	PGS.TS	Trần Quang Phục	Lao và bệnh phổi	Tỉ lệ mắc và một số yếu tố liên quan đến bệnh phổi tắc nghẽn mạn tính ở người cao tuổi từ 60 tuổi trở lên tại đảo Cát Hải năm 2022		Nguyễn Đức Thọ, Nguyễn Thị Trang, Phạm Trung Kiên	Khá	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Bm chủ nhiệm	Tên đề tài	Thầy/cô hướng dẫn	Thành viên tham gia	Xếp loại	Ghi chú
131	ThS	Trương Thành Kiên	Lao và bệnh phổi	Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị lao phổi mới ở người cao tuổi tại Hải Phòng năm 2021-2023		Nguyễn Thị Thuý, Hà Minh Tâm, Đào Thanh Hoàn, Phạm Thị Vân, Mai Thị Thuý Hồng	Khá	
132	ThS	Hoàng Đình Khánh	Mắt - Bệnh học	Tận dụng ngôn ngữ cơ thể phát ụ xuyên đại-trực tràng của người dụng nông bằng phương pháp tổng quan hệ thống và phân tích gộp mạng lưới		Trần Thị Thanh Bình, Phạm Hồng Minh	Xuất sắc	
133	ThS	Phạm Hồng Minh	Mắt - Bệnh học	Kết quả điều trị bong tách trung tâm hoàng mạc bằng tiêm nội nhãn kháng VEGF tại Khoa Phụ Sản - Bệnh viện Đại học Y Hải Phòng		Bùi Văn Hiếu, Nguyễn Đình Lợi	Xuất sắc	
134	ThS	Phạm Thị Thu Thuỷ	Mắt - Bệnh học	Nghiên cứu đặc điểm lâm sàng và hình ảnh siêu âm u sợi tử cung ở bệnh nhân điều khám tại khoa Phụ sản, Bệnh viện Đại học Y Hải Phòng năm 2023		Đỗ Đình Tiệp, Trần Thị Thanh Bình, Phạm Hồng Minh, Phạm Thị Thu	Khá	
135	ThS	Đỗ Đình Tiệp	Mắt-Bệnh học	Đặc điểm lâm sàng, cận lâm sàng ở người bệnh có hội chứng rối loạn chuyển hóa tại phòng khám Da khoa Trung Hà năm 2023		Phạm Thị Thu Thủy, Khổng Thị Vân Anh, Phạm Hồng Minh, Trần Thị Thanh Bình, Hoàng Đình Khánh	Khá	
136	ThS	Khổng Thị Vân Anh	Mắt-Bệnh học	Nhận xét đặc điểm nội soi và Mô bệnh học của Polyp Đại tràng tại Bệnh viện Đại học Y Hải Phòng năm 2023		Đỗ Đình Tiệp, Trần Thị Thanh Bình, Mai Thị Là, Bùi Thị Mỹ Hạnh	Khá	
137	ThS	Trần Thị Phương	Mắt-Bệnh học	Đặc điểm lâm sàng, cận lâm sàng của bệnh nhân u quái trưởng thành (Mature teratoma) tại Bệnh viện Phụ sản Hải Phòng		Trần Thị Thanh Bình, Bùi Thị Mỹ Hạnh	Khá	
138	BS	Tào Thị Ngọc Anh	Ngoại - PTTH	Kết quả phẫu thuật ban đầu điều trị phình đại tràng bẩm sinh qua đường hậu môn một thì đơn thuần			Xuất sắc	
139	ThS	Hoàng Hữu Điền	Ngoại - PTTH	Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị sỏi tổ chức bằng phương pháp tán sỏi thận qua da đường hầm nhỏ tại Bệnh viện Đại học Y Hải Phòng		Lê Thế Sơn	Xuất sắc	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Đơn vị/Bộ môn	Tên đề tài	Thầy/cô hướng dẫn	Thành viên tham gia	Xếp loại	Ghi chú
140	BSCKII	Phạm Quốc Hiệu	Ngoại - PTTH	Kết quả điều trị tổng hợp bệnh nhân viêm tụy tuyến có khối lượng trên 80 gram bằng nội dẫn nội soi Stgente qua đường miệng tại Bệnh viện Hữu Nghị Việt Tiệp năm 2021 - 2023			Xuất sắc	
141	PGS.TS	Phạm Văn Duyệt	Ngoại - PTTH	Nghiên cứu đặc điểm lâm sàng, cận lâm sàng và kết quả phẫu thuật nội soi điều trị thủng ổ loét dạ dày - tá tràng tại Bệnh viện Đại học Y Hà Nội		Nguyễn Quang Tuyến	Xuất sắc	
142	BS	Trần Thị Nhung	Ngoại - PTTH	Kết quả phẫu thuật cắt nửa thùy tuyến giáp điều trị ung thư biểu mô tuyến giáp thể nhú giai đoạn sớm tại Bệnh viện Nội tiết Trung ương			Xuất sắc	
143	BSCKII	Trịnh Đình Thanh	Ngoại - PTTH	Nhận xét kết quả điều trị gãy hở khớp mâu chuyển xương đùi bằng nẹp vít khóa có lỗ mở rộng kinh nghiệm tại Bệnh viện Hữu nghị Việt Tiệp			Xuất sắc	nữ bác
144	BS	Vũ Đình Nam	Ngoại - PTTH	Kết quả điều trị phẫu thuật nội soi u tuyến yên bằng đường mũi qua xoang bướm tại Bệnh viện Hữu nghị Việt Đức			Xuất sắc	
145	BS	Vũ Thị Thanh Trúc	Ngoại - PTTH	Đặc điểm lâm sàng và kết quả điều trị vết thương bàn ngón tay tại Bệnh viện Hữu nghị Việt Tiệp			Xuất sắc	
146	TS	Phạm Văn Thương	Ngoại - PTTH	Đánh giá kết quả phẫu thuật điều trị bệnh trĩ độ III bằng phương pháp Longo tại Bệnh viện Đại học Y Hà Nội		Nguyễn Đại Quang, Đào Thị Ngọc Anh	Xuất sắc	
147	BS	Hoàng Bảo Ngọc Cương	Ngoại - PTTH	Đặc điểm lâm sàng và cận lâm sàng của bệnh nhân xuất huyết được phẫu thuật tại Bệnh viện Hữu nghị Việt Đức từ tháng 1/2018 đến tháng 6/2021			Khá	
148	BS	Nguyễn Đại Quang	Ngoại - PTTH	Kết quả phẫu thuật nội soi điều trị ung thư dạ dày Siguna triệt căn tại Bệnh viện Trung Ương Quân Đội 108		Lê Thế Sơn	Khá	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Đơn vị/Bộ môn	Tên đề tài	Tác giả/ đồng tác giả	Thành viên tham gia	Xếp loại	Ghi chú
149	BS	Nguyễn Quang Tuyển	Ngoại - PTTH	Đặc điểm lâm sàng, cận lâm sàng của bệnh nhân sau thư bàng quang ruột tại Bệnh viện Hữu Nghị Việt Đức từ tháng 8- 2022 đến tháng 8-2023.			Khá	
150	BS	Trần Tiến Thành	Ngoại - PTTH	Kết quả phẫu thuật nội soi điều trị sỏi đa tầng phối hợp tại Bệnh viện Trung Ương Quân Đội 108			Khá	
151	ThS	Hoàng Anh Công	Ngoại - PTTH	Kết quả điều trị phẫu thuật vết phồng động mạch chủ bụng dưới thận tại bệnh viện Hữu Nghị Việt Tiệp			Khá	
152	ThS	Phạm Tân Long	Ngoại - PTTH	Đặc điểm lâm sàng, chẩn đoán hình ảnh và kết quả phẫu thuật nội soi điều trị cách gắn nối ruột non tại Bệnh viện Trung ương Quân đội 108			Khá	
153	ThS	Phan Văn Toàn	Ngoại - PTTH	Đánh giá kết quả phẫu thuật bằng nẹp titan mini điều trị gãy xương đòn ở người lớn tại Bệnh viện Hữu nghị Việt Tiệp Hải Phòng			Khá	
154	ThS	Bùi Văn Dương	Ngoại - PTTH	Kết quả ban đầu phẫu thuật nội soi lấy sỏi ống mật chủ, dẫn lưu thường sau tại Bệnh viện Hữu Nghị Việt Tiệp			Khá	
155	BSCKII	Nguyễn Ngọc Hùng	Ngoại- PTTH	Kết quả điều trị phẫu thuật nối tuyến sữa tại tại bệnh nhân tại Bệnh viện hữu nghị Việt Tiệp		Vũ Đình Nam	Xuất sắc	
156	BS	Nguyễn Đình Khương	Ngoại- PTTH	Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị phẫu thuật gãy xương mu Monteggia ở người lớn bằng kết hợp xương nẹp vít tại Bệnh viện Hữu nghị Việt Tiệp			Khá	
157	TS	Nguyễn Đức Tiến	Ngoại- PTTH	Kết quả tạo hình khuyết thủng vòi bán niệu tại Khoa Phẫu thuật tạo hình thẩm mỹ Bệnh viện Hữu nghị Việt Tiệp		Vũ Thị Thanh Trúc	Khá	
158	BS	Hồng Văn Chiến	Mắt	Thực trạng thiếu vitamin A và một số yếu tố liên quan tại Phòng khám Dinh dưỡng Bệnh viện Trẻ em Hải Phòng năm 2023		Đặng Thị Phương Thuỷ, Nguyễn Thị Hoa, Phạm Thị Vân	Xuất sắc	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Đơn vị/Bộ môn	Tên đề tài	Thời gian hướng dẫn	Thành viên tham gia	Xếp loại	Ghi chú
159	SV	Chidpanit Somsouk	Lớp K40F MSSV: 1821010091	Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị viêm tiểu phế quản cấp tại Bệnh viện Trẻ em Hải Phòng năm 2022	TS. Đinh Dương Tăng Anh	Chidpanit somsouk, Inthavong Daeng, Bounyavong Bounnaty, Vangyer Yerkhang, Thongkham Senpaseut	Xuất sắc	DTSV
160	SV	Phạm Thanh Hương	Lớp Y16DPK 13 MSSV: 1816180038	Đặc điểm lâm sàng, cận lâm sàng của trẻ nhắc viêm thanh quản cấp tại Bệnh viện Trẻ em Hải Phòng năm 2022	TS. Đinh Dương Tăng Anh	Phạm Thanh Hương, Hoàng Thị Ngọc Yến, Phạm Thị Mỹ Linh, Nguyễn Thị Ngọc Anh, Đào Hoàng Giang	Xuất sắc	DTSV đăng ký bảo vệ TA
161	ThS	Phạm Thị Quỳnh Vân	Nhi	Đặc điểm dịch tễ học lâm sàng, cận lâm sàng và kết quả điều trị nhiễm khuẩn tiết niệu ở trẻ em tại Bệnh viện Trẻ em Hải Phòng		Phạm Thị Thanh Hà	Khá	
162	ThS	Chu Thị Hà	Nhi	Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị bệnh sốt xuất huyết tại Bệnh viện Trẻ em Hải Phòng năm 2022 -2023		Tiên Bạnh Nhi, Hà Minh Tâm, Trần Thị Bích Hạ, Vũ Thị Yến	Khá	
163	ThS	Trần Đức Tâm	Nhi	Kết quả điều trị viêm tụy cấp tại 8 trẻ em Bệnh viện Trẻ em Hải Phòng		Nguyễn Thanh Trung	Khá	
164	ThS	Vũ Thị Yến	Nhi	Đặc điểm lâm sàng, cận lâm sàng, các yếu tố liên quan và kết quả điều trị trẻ bị sốt xuất huyết Dengue tại Bệnh viện Đại học Y Hải Phòng năm 2022 - 2023		Nguyễn Mai Phương	Khá	
165	ThS	Nguyễn Thị Thúy Hường	Nhi	Đánh giá kiến thức, thực hành nói trẻ dưới 5 tuổi của người chăm sóc trẻ và một số yếu tố liên quan tại khoa Tự nguyện 3 - Bệnh viện Trẻ em Hải Phòng năm 2023		Đinh Dương Tăng Anh, Hoàng Thị Thảo, Triệu Ngọc Thảo, SV Phạm Hải Đăng	Khá	
166	TS	Đinh Dương Tăng Anh	Nhi	Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị viêm phổi thùy tại Bệnh viện Trẻ em Hải Phòng năm 2022		Trần Thị Thanh Hằng, Hoàng Ngọc Anh	Khá	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Đơn vị/Bộ môn	Tên đề tài	Thấy/cô hướng dẫn	Thành viên tham gia	Xếp loại	Ghi chú
167	BS	Lê Thị Huyền Trang	Nhi	Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị bệnh xuất huyết giảm tiểu cầu tiên phát tại Bệnh viện Trẻ em Hải Phòng năm 2023		Nguyễn Thị Thúy Hường, Đinh Dương Tùng Anh	Khá	
168	ThS	Trần Huy Duy	Nhi	Đặc điểm dịch tễ lâm sàng và kết quả điều trị cơn co thắt ở trẻ em tại Bệnh viện Đại học Y Hải Phòng		Nguyễn Ngọc Minh, Nguyễn Thành Chung, Phạm Thị Thanh Hà	Khá	HTCB, HDCL
169	ThS	Nguyễn Thanh Trang	Nhi	Đặc điểm dịch tễ lâm sàng, cận lâm sàng và kết quả điều trị viêm tiểu phế quản có nhiễm RSV tại bệnh viện Trẻ em Hải Phòng năm 2023		Đinh Dương Tùng Anh, Trần Đức Tâm	Khá	
170	ThS	Nguyễn Việt Hà	Nhi	Khảo sát kiến thức, thái độ và thực hành của bà mẹ có con sơ sinh đẻ non điều trị tại Bệnh viện Trẻ em Hải Phòng năm 2023		Trần Ngọc Thắm	Khá	
171	PGS.TS	Vũ Văn Quang	Nhi	Xu hướng nhiễm khuẩn lâm sàng và đáp ứng điều trị hỗ trợ ở hai bệnh nhi dãy màng bẩm sinh do đột biến gen Kinesin KIA và KIT			Xuất sắc	
172	ThS	Vũ Thị Ánh Hồng	Nhi	Đặc điểm dịch tễ học lâm sàng, hiệu chứng và nhận xét kết quả điều trị của bệnh nhân sơ sinh viêm phổi nặng tại Bệnh viện Trẻ em Hải Phòng		Chu Thị Hà, Nguyễn Việt Hà	Khá	
173	GS.TS	Nguyễn Ngọc Sáng	Nhi	Đặc điểm dịch tễ học lâm sàng và hiệu chứng của bệnh Thủy đậu tại Bệnh viện Trẻ em Hải Phòng		Đỗ Kim Thuần, Nguyễn Thị Phương Thảo	Khá	
174	TS	Bế Thị Lan Anh	Nội	Đặc điểm lâm sàng, cận lâm sàng và một số yếu tố nguy cơ ở bệnh nhân suy thượng thận mạn do lạm dụng glucocorticoid tại Bệnh viện Hữu nghị Việt Tiệp năm 2021		Trần Thị Thanh Vân	Xuất sắc	
175	[illegible]	[illegible] Hiệu Hiền	Nội	Đặc điểm lâm sàng, cận lâm sàng và tỷ lệ/yếu tố nguy cơ hoại tử chân ở bệnh nhân viêm phổi cộng đồng		Trần Thanh Vân, Lương Thanh Nhã, Trần Thị Ngân	Xuất sắc	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Đơn vị (Bộ môn)	Tên đề tài	Thời gian hướng dẫn	Thành viên tham gia	Xếp loại	Ghi chú
176	ThS.	Đoàn Thị Dr	Nội	Đánh giá kết quả điều trị ung thư vòng tái phát bằng phác đồ Bortezomib Cyclophosphamid Dexamethason tại Bệnh Huyết học tim mạch năm 2021-2023		Hoàng Đức Mạnh	Xuất sắc	
177	BSCKII	Trịnh Hồng Hương	Nội	Thực trạng suất cấp điều và kết quả thông anh đã theo phương pháp thông thường ở bệnh nhân mắc bệnh tắc hẹp tại khoa Nội 3 Bệnh viện Hữu nghị Việt Tiệp năm 2022			Xuất sắc	
178	ThS	Phạm Thị Thu Hương	Nội	Đánh giá thực trạng tiêm vaccin phòng nhiễm các tác nhân gây bệnh hô hấp của bệnh nhân COPD tại bệnh viện Đại học Y Hải Phòng năm 2023		Phạm Minh Nguyệt, Lương Thanh Nhã, Phạm Thị Hiền	Xuất sắc	
179	TS	Vũ Mạnh Tân	Nội	Vai trò của siêu âm Doppler mạch máu chi trên trong hướng dẫn tạo đường nối động – tĩnh mạch cho bệnh nhân lọc máu chu kỳ tại Bệnh viện Hữu nghị Việt Tiệp		Đào Thị Hương Liên, Nguyễn Thị Hương	Xuất sắc	
180	TS	Vũ Thị Thu Trang	Nội	Kết quả điều trị nhiễm Aleiconkaster pulorri bằng phác đồ PPI + Amoxicillin + Levofloxacin + Bismuth tại bệnh viện Hữu nghị Việt Tiệp năm 2023		Nguyễn Thu Thủy	Xuất sắc	
181	ThS.	Lê Thị Quyên	Nội	Đặc điểm lâm sàng và một số yếu tố liên quan đến bệnh phổi tắc nghẽn mạn tính ở bệnh nhân trên 60 tuổi điều trị tại Bệnh viện Hữu nghị Việt Tiệp năm 2022- 2023			Khá	
182	BS	Đoàn Thị Kim Anh	Nội	Tình hình nhiễm Aleiconkaster gamedi tại Bệnh viện Hữu nghị Việt Tiệp năm 2023		Ngô Duy Hưng	Khá	
183	BS	Hoàng Thị Trang	Nội	Nghiên cứu đặc điểm lâm sàng, cận lâm sàng bệnh nhân Celiac tại Bệnh viện Hữu nghị Việt Tiệp năm 2023		Nguyễn Thu Thuỷ, Lê Thị Hà	Khá	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Đơn vị/Bộ môn	Tên đề tài	Thầy/cô hướng dẫn	Thành viên tham gia	Xếp loại	Ghi chú
184	Th.S	Bùi Thị Bích Ngọc	Phục hồi chức năng	Đánh giá hiệu quả của bài tập bước khởi bệnh nhân đau khớp háng nhân tạo tại Bệnh viện Hữu nghị Việt Tiệp Hải Phòng		Lâm Ngọc Trâm	Xuất sắc	
185	Th.S	Nguyễn Thị Ngọc Thuý	Phục hồi chức năng	Hiệu chỉnh tăng cơng, cân bằng và kiểm soát điều cơ bằng thuốc NDAIDs: Vật lý trị liệu. Phục hồi chức năng bệnh nhân chuẩn bị cho giải đi 2-3		DVBHU. Lê Tuấn Anh	Khá	
186	Th.S	Nguyễn Thị Thanh Nga	Phục hồi chức năng	Đánh giá kết quả phục hồi chức năng khớp gối sau phẫu thuật tái tạo dây chằng chéo trước theo chương trình Symptom women's hospital tại Bệnh viện Hữu nghị Việt Tiệp			Khá	
187	Th.S	Đoàn Thị Thanh Hà	Phục hồi chức năng	Kết quả điều trị phục hồi chức năng bệnh nội khoa trên bệnh nhân viêm quanh khớp vai thể đông cứng tại Bệnh viện Hữu hạn Y Hải Phòng			Khá	
188	BS	Lâm Ngọc Trâm	Phục hồi chức năng	Đánh giá kết quả hoạt động trị liệu trong phục hồi chức năng vận động chi trên ở bệnh nhân nhồi máu não tại Bệnh viện Hữu nghị Việt Tiệp Hải Phòng		Bùi Thị Bích Ngọc Nguyễn Thị Thanh Nga	Khá	
189	Th.S	Nguyễn Thị Hoà	Phục hồi chức năng	Thực trạng chức năng tâng hồng ở bệnh nhân sau đột quỵ não tại Bệnh viện Hữu nghị Việt Tiệp Hải Phòng		Bùi Thị Bích Ngọc	Đạt	
190	BS CKII	Thái Thị Huyền	Sản	Nhận xét kết cục thai kì của thai phụ được tiêm Vaccin Pfizer ngừa Covid 19 từ 13 tuần thai kỳ tại Bệnh viện Phụ sản Hải Phòng			Khá	
191	T.S	Nguyễn Thị Mai Phương	Sản	Tình giá trị và độ tin cậy của các công cụ lượng giá vùng tiền khoa Sản Phụ khoa 1 của một số nước năm 4 dự án HPST trường Đại học Y Dược Hải Phòng năm 2022			Khá	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Đơn vị/Bộ môn	Tên đề tài	Thời/số tháng cấp	Thành viên tham gia	Xếp loại	Ghi chú
192	ThS	Bùi Văn Hiếu	Sản	Xác định một số yếu tố ở quý 1 liên quan kiểu đường thai tử của các thai phụ khám thai tại Bệnh viện Đại học Y Hải Phòng		Bùi Tùng Lâm	Khá	đi BC tại HN ngày chuyên ngành sản
193	ThS	Lê Anh Mạnh	Sản	Đặc điểm Karyotype ở các cặp vợ chồng có kiểu sẩy thai, thai lưu đến khám tại Bệnh viện Phụ sản Hải Phòng từ tháng 10/2019 đến tháng 9/2021.			Khá	
194	ThS	Nguyễn Thị Hoàng Trang	Sản	Nghiên cứu giá trị dự báo sinh non của giới cổ tử cung ở thai phụ đơn thai nuôi thai từ 18 đến 24 tuần		Bùi Phúc Thịnh	Khá	
195	BS	Đào Thị Hải Lý	Sản	Nhau thấm tăng sáng, nhu tăng sáng và kết quả điều trị chửa về nơi tại Bệnh viện Phụ sản Hải Phòng năm 2022-2023		Nguyễn Thị Hải Phương	Khá	
196	ThS	Nguyễn Thị Thắp	Sản	Kết quả các thăm dò cổ tử cung trên bệnh nhân nhiễm Human Papilloma Virus các type nguy cơ cao tại Bệnh viện Phụ sản Trung Ương		Trần Thị Hà	Khá	
197	ThS	Phạm Thanh Nhàn	Sản	Kết quả điều trị sa sinh dục đã 3 bằng phương pháp phẫu thuật treonco tại Bệnh viện Phụ Sản Hải Phòng năm 2022 - 2023		Đoàn Việt Hòa	Khá	BVCSSKLTN
198	TS	Đào Thị Hải Yến	Sản	Thực trạng thăm phát hiện và điều trị sản trường hợp lạc nội mạc tử cung tại Bệnh viện Phụ sản Hải Phòng trong 2 năm 2021 - 2022		Nguyễn Thị Thu	Đạt	
199	BS	Bùi Phúc Thịnh	Sản	Đặc điểm lâm sàng, cận lâm sàng bệnh nhân nhồi buồng tử cung tại Bệnh viện Phụ sản Hải phòng năm 2021 - 2022		Nguyễn Quang Trên	Đạt	
200	BSNT	Trần Văn Bảo	Sản	Kết quả phẫu thuật khối u tuyến vú tại bệnh viện Phụ sản Hải Phòng năm 2022		Lê Phi Đạc, TV. Lê Xuân Tiến	Đạt	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Đơn vị/Cá nhân	Tên đề tài	Thời gian hoàng cầu	Thành viên tham gia	Xếp loại	Ghi chú
201	BSCKI	Lê Đức Hiệp	Sản	Nghiên cứu về hiệu quả phác đồ phá thai nội khoa trong thời gian có thang 11/2022 đến tháng 4/2023 tại khoa Sản bệnh viện Đại học Y Hải Phòng			Đạt	
202	TV	Đào Thu Hồng	Sinh lý	Thực trạng học tập ngoài giờ của sinh viên Y đa khoa K40 Trường Đại học Y Dược Hải Phòng năm 2023.		Phạm Thị Nguyệt, Trần Thị Quỳnh Trang, Đào Thu Hồng, Đào Thị Thu Loan	Khá	
203	BS	Đào Thị Thu Loan	Sinh lý	Thực trạng nhiễm Helicobacter Pylori và hành kinh nội soi dạ dày và trong ở bệnh nhân nghiện rượu tại Bệnh viện Đại học Y Hải Phòng năm 2023		Đào Thu Hồng, Trần Thị Quỳnh Trang	Đạt	
204	TS	Nguyễn Thị Kim Hương	Sinh lý bệnh - lý sinh - Miễn dịch	Mối tách gây tăng lipid máu trên chuột thực nghiệm bằng bổ sợi giàu Cholesterol		Nguyễn Thị Kim Hương, Phùng Chí Thiện, Phạm Thị Thanh Dung	Xuất sắc	
205	ThS	Trần Thị Thu Hằng	Sinh lý bệnh - lý sinh - Miễn dịch	Nồng độ MMP-9 trong huyết tương thai phụ sảo sớm giữ		Lê Thị Nhung	Xuất sắc	
206	GS.TS	Phạm Văn Thân	Sinh lý bệnh - lý sinh - Miễn dịch	Nghiên cứu đặc điểm lâm sàng, cận lâm sàng và một số yếu tố liên quan đến hen phế quản dầu mũ ngoại mũ tại Viện Y học biển Việt Nam		Nguyễn Dương Truyền, Phạm Bích Ngọc, Nguyễn Thị Thuý	Xuất sắc	
207	PGS	Nam Văn Linh	Sinh lý bệnh - lý sinh - Miễn dịch	Điều chỉnh tuyến tại trong nguy trên đối tượng người lớn nơi tuổi			Xuất sắc	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Đơn vị(Bộ môn)	Tên đề tài	Thầy/cô hướng dẫn	Thành viên tham gia	Xếp loại	Ghi chú
208	ThS	Nguyễn Thị Hồng Liên	Sinh lý bệnh - Ký sinh trùng - Miễn dịch	Đánh giá kết quả sau can thiệp tích dịch tại chương bệnh nhân mắc hội chứng ống cổ tay nặng tại bệnh viện Mê ngủ		Phạm Văn Linh, Phạm Trung Đức, Phạm Thị Thanh Huyền, Trần Thị Thu Hằng	Khá	có bảo
209	ThS	Phạm Thị Khuyên	Sinh lý bệnh - Ký sinh trùng - Miễn dịch	Đặc điểm lâm sàng, cận lâm sàng và điều trị ở bệnh nhân suy tim điều trị tại Bệnh viện Đại học Y Hải Phòng năm 2023		Phạm Huy Quyền, TVKAIE. Lê Minh Tuấn, Đào Thị Hồng Hoàng, Vũ Thị Ngọc Hồng	Đạt	
210	ThS	Võ Thị Hồng	Sinh lý bệnh - Ký sinh trùng - Miễn dịch	Kiến thức, thực hành về đái tháo đường của bệnh nhân và nhân viên y tế tại Khoa Khám bệnh - Bệnh viện Đại học Y Hải Phòng năm 2023			Đạt	
211	PGS.TS	Phạm Huy Quyền	SLB - KSTrùng - Miễn dịch	Hoạt tính của tế bào diệt tự nhiên NK ở người bình thường			Khá	
212	ThS	Tạ Hồng Sơn	Tai Mũi Họng	Kết quả tiêm Triamcinolon tại chỗ sau phẫu thuật vi phẫu thanh quản điều trị các tổn thương lành tính dây thanh		Vũ Văn Dân, Trần Thị Thanh Thuỷ	Xuất sắc	
213	BSCKII	Nguyễn Quang Đạo	Tai Mũi Họng	Xác định tần suất, các tổn thương và kết quả sớm Amidan bằng dao điện đơn cực tại Bệnh viện Đại học Y Hải Phòng từ năm 2018 - 2023		Trần Thị Thanh Thuỷ, Phùng Thị Vân Anh, Đỗ Thị Vân Anh, Nguyễn Thị Tịnh	Xuất sắc	
214	TS	Phạm Thanh Hải	Tai Mũi Họng	Đặc điểm tổn thương, cận lâm sàng và kết quả điều trị Viêm tai giữa cấp tại Bệnh viện Tai mũi Hải Phòng			Khá	
215	PGS.TS	Phạm Văn Hoành	Tâm mắn	Nghiên cứu đặc điểm tổn thương và một số yếu tố ảnh hưởng đến vụng thời kinh động ở bệnh nhân sau phẫu phẫu lệ điều trị tại Bệnh viện Tâm thần Hải Phòng năm 2023		Vương Thị Thuý, KV Nguyễn Thị Mường, Lương Thị Mai Loan	Khá	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Đơn vị công tác	Tên đề tài	Thời gian bắt đầu	Thành viên tham gia	Xếp loại	Ghi chú
216	TS.	Đoàn Thị Như Yến	Tâm thần	Nghiên cứu đặc điểm lâm sàng bệnh nhân tâm thần phân liệt tại Bệnh viện Tâm thần Hải Phòng		Nguyễn Quang Đại, ĐV. Phạm Thị Lý	Đạt	
217	ThS	Lê Sao Mai	Tâm thần	Nghiên cứu thực trạng chất lượng cuộc sống và một số yếu tố liên quan ở bệnh nhân đang điều trị methadone tại Hải Phòng năm 2022		Lê Anh Duy, Nguyễn Quang Thanh, Vũ Thị Mến	Đạt	
218	BS	Lương Thị Mai Loan	Tâm thần	Đặc điểm lâm sàng bệnh nhân rối loạn hưng cảm có triệu chứng loạn thần điều trị nội trú tại Bệnh viện Tâm thần Hải Phòng 2023		Vương Thị Thúy, Nguyễn Quang Đại	Đạt	
219	BSCKII	Vương Thị Thúy	Tâm thần	Đặc điểm lâm sàng ám giác ở bệnh nhân rối loạn tâm thần và hành vi do sử dụng rượu tại Bệnh viện Tâm thần Hải Phòng năm 2022		Lương Thị Mai Loan, DV. Nguyễn Thị Hạnh	Đạt	
220	TS	Nguyễn Tuấn Lương	Thần kinh	Đặc điểm lâm sàng, cận lâm sàng viêm não thể thủy điều trị tại khoa Thần kinh - Bệnh viện Hữu nghị Việt Tiệp từ năm 2021 - 2023		Vũ Thị Phương Thảo	Khá	
221	ThS	Đào Thị Hồng Hải	Thần kinh	Thực trạng nhận cảm và một số yếu tố liên quan ở bệnh nhân nhồi máu não tại khoa Thần kinh Bệnh viện Việt Tiệp từ tháng 10/2021 đến tháng 6/2022		Tiêu Thanh Vân	Khá	
222	ThS	Chu Tất Thiện	Thần kinh	Đặc điểm lâm sàng bệnh nhân đau đầu nguyên phát tại Khoa Khám bệnh Bệnh viện Đại học Y Hải Phòng từ 01/2023 đến 06/2023			Đạt	
223	PGS.	Hoàng Thị Thìn	Truyền nhiễm	Đặc điểm lâm sàng, cận lâm sàng và một số yếu tố nguy cơ liên quan ở bệnh nhân nhồi máu não huyết tán (Loại điều trị tại Bệnh viện Hữu nghị Việt Tiệp năm 2022 – 2023.			Khá	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Đơn vị/Bộ môn	Tên đề tài	Thầy/cô hướng dẫn	Thành viên tham gia	Xếp loại	Ghi chú
224	TS	Trần Thị Liên	Truyền nhiễm	Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị bệnh nhân sốt xuất huyết Dengue điều trị tại khoa Bệnh nhiệt đới, Bệnh viện Hữu nghị Việt Tiệp Hải Phòng, năm 2022		Trần Thanh Yên Tô Thị Hồng Nga Lê Thị Hòa	Khá	
225	ThS	Nguyễn Thị Phương Thảo	Ung bướu	Đánh giá kết quả điều trị ung thư vú tái phát di căn bằng phác đồ Gemcitabine-Carboplatin tại trung tâm Ung bướu Hải Phòng		Trịnh Thị Bích Ngọc	Khá	
226	ThS	Nguyễn Hồng Hà	Ung bướu	Đánh giá kết quả điều trị bước đầu ung thư đại trực tràng giai đoạn tiến xa có Oxaliplatin kết hợp Bevacizumab tại Bệnh viện Hữu nghị Việt Tiệp Hải Phòng năm 2022 - 2023		Trịnh Thị Bích Ngọc	Khá	
227	ThS	Nguyễn Diệu Hằng	Ung bướu	Đánh giá một số tác dụng phụ trên bệnh nhân ung thư vòm điều trị hóa xạ đồng thời			Đạt	
228	ThS	Phạm Thị Tâm	Vi sinh	Thực trạng nhiễm khuẩn do Klebsiella pneumoniae kháng Carbapenem tại Bệnh viện Hữu nghị Việt Tiệp 2021-2022.		Phạm Thị Thơ, Trần Dần, Lại Thị Quỳnh, Vũ Thị Nữ, Nguyễn Thị Thanh Phương	Khá	
229	ThS	Trịnh Thị Hằng	Vi Sinh	Thực trạng nhiễm khuẩn do Escherichia coli sinh beta-lactamase phổ rộng tại Bệnh viện Hữu nghị Việt Tiệp năm 2022.		Vũ Thị Nữ, Nguyễn Ngọc Mỹ Trinh, Trần Dần, Lại Thị Quỳnh	Khá	
230	BSNT, TS	Dương Thị Lý	Y học gia đình	Khảo sát đặc điểm lâm sàng và kết quả điều trị tại khoa Hồi sức Bệnh viện Đại học Y Hải Phòng		Nguyễn Đức Trung	Xuất sắc	
231	ThS	Nguyễn Văn Thành	Y học gia đình	Thực trạng và kết quả điều trị viêm đại tràng tại Bệnh viện Đại học Y Hải Phòng năm 2023		Đoàn Như Thăng, Vũ Thị Hồng	Xuất sắc	

TT	Học hàm, học vị	Họ và tên chủ nhiệm	Đơn vị/Bộ môn	Tên đề tài	Thời gian bắt đầu	Thành viên tham gia	Xếp loại	Ghi chú
232	[illegible]	Nguyễn Thùy Linh	Y học gia đình	Thực trạng quy giáo dục sức khỏe cho người chăm sóc người bệnh khám tại khoa Khám bệnh bệnh viện Đại học Y Hải Phòng		Nguyễn Thị Thảo, Nguyễn Thị Thúy Hiền, Nguyễn Hải Ninh, Bùi Thị Hoè	Xuất sắc	
233	ThS	Nguyễn Thị Thúy Hiền	Y học gia đình	Thực trạng hiểu biết sử dụng thuốc và một số yếu tố liên quan ở bệnh nhân cao tuổi cộng đồng tại điều trị ngoại trú tại Bệnh viện Đại học Y Hải Phòng năm 2023		Trần Đức Trung, Nguyễn Thùy Linh	Khá	
234	ThS	Phùng Văn Duyên	Y học gia đình	Kết quả bước đầu điều trị bằng phương pháp nội soi laser tại Bệnh viện Đại học Y Hải Phòng năm 2022		Trần Đức Trung, Ngô Mỹ Hằng, Nguyễn Thị Hạnh, Đỗ Thị Huyền	Khá	
235	ThS	Bùi Hồng Nhung	Y học gia đình	Thực trạng kiến thức về phòng bệnh sốt xuất huyết của người dân tại Bệnh viện Đại học Y Hải Phòng		Vũ Thị Mai Anh	Khá	
236	BS	Nguyễn Thị Thanh Thảo	Y học gia đình	Cơ cấu bệnh tật tại phòng khám Bác sĩ gia đình bệnh viện Đại học y Hải Phòng năm 2023		Vũ Thị Mai Anh	Khá	

Tổng số: 236 đề tài

TRƯỞNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

PHÓ HIỆU TRƯỞNG

Phạm Văn Linh

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

HỘI ĐỒNG
TRƯỜNG ĐẠI HỌC Y DƯỢC

BIÊN BẢN
NGHIỆM THU ĐỀ TÀI KHCN CẤP CƠ SỞ NĂM 2023

Tên đề tài: Hoạt tính của tế bào diệt tự nhiên NK ở người bình thường

Chủ nhiệm đề tài: Phạm Huy Quyền

Thành viên tham gia:

Giảng viên hướng dẫn (nếu có): .....

Đơn vị: SLB - Dị ứng - Miễn dịch

Căn cứ Quyết định số: 2550 /QĐ - YDHP ngày 08 tháng 12 năm 2023 của Hiệu trưởng trường Đại học Y Dược Hải Phòng về việc thành lập Tiểu ban Khoa học công nghệ nghiệm thu đề tài nghiên cứu khoa học cấp cơ sở năm 2023, Tiểu ban đã tiến hành họp để đánh giá, nghiệm thu đề tài vào hồi 14h ngày 12 tháng 12 năm 2023 tại trường Đại học Y Dược Hải Phòng.

Các thành viên có mặt:

PGS.TS. Đặng Văn Chức
PGS.TS. Nguyễn Huy Hoàng
TS. Phạm Thị Thái Trang
TS. Nguyễn Thị Kim Thúy
TS. Trần Thị Thúy Hà

Thư ký hành chính: ThS. Vũ Thị Thanh Hằng

Các thành viên vắng mặt:

.....

.....

NỘI DUNG NGHIỆM THU:

1. Đọc quyết định thành lập Tiểu ban: TS. Trần Thị Thúy Hà
2. Trưởng Tiểu ban điều khiển buổi nghiệm thu.
3. Chủ nhiệm đề tài trình bày tóm tắt báo cáo tổng kết đề tài *(có bảo cáo của tuần văn kèm theo)*.
4. Các thành viên Tiểu ban nhận xét, góp ý *(có bản nhận xét kèm theo)*.

5. Các thành viên trong Tiểu ban và những người tham dự buổi nghiệm thu trao đổi về nội dung, phương pháp, kết quả nghiên cứu của đề tài; và thống nhất một số ý kiến sau:

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6. Đánh giá kết quả:

6.1. Ban kiểm phiếu gồm:

- **TS. Trần Thị Thúy Hà**
- **ThS. Vũ Thúy Dung**

6.2. Tiểu ban đã bỏ phiếu đánh giá kết quả như sau:

Tổng số phiếu phát ra : 05 phiếu
Tổng số phiếu thu vào : 05 phiếu
Số phiếu hợp lệ : 05 phiếu
Số phiếu không hợp lệ : 0 phiếu

6.3. Kết quả đánh giá:

Xuất sắc : 0 phiếu
Khá : 05 phiếu
Đạt : 0 phiếu
Không đạt : 0 phiếu

Kết quả đề tài đạt loại: Khá

7. Kết luận:

Thông qua đề tài

.....

Hải Phòng, ngày 8 tháng 1 năm 2023

Trưởng Tiểu ban	**Thư ký**
(Ký và ghi rõ họ tên)	*(Ký và ghi rõ họ tên)*
Đặng Văn Chiến	**TS. Trần Thị Thúy Hà**

LÝ LỊCH KHOA HỌC

1. Họ và tên: NGUYỄN THỊ HỒNG LIÊN

2. Năm sinh: 1984 **3. Giới tính:** Nữ

4. Nơi sinh: Hà Nội

5. Nguyên Quán: Xã Phù Minh – huyện Sóc Sơn – TP Hà Nội

6. Địa chỉ liên hệ:
Điện thoại: NR_____ Mobile: 0915061324 Fax: _____
Email: nthlien@hpmu.edu.vn

7. Học hàm, học vị:
Năm được công nhận TS: 2024 Nơi cấp bằng: Trường Đại học Y Dược Hải Phòng
Năm được phong GS/PGS: _____ Nơi phong: _____

8. Cơ quan công tác:
Tên cơ quan: Trường Đại học Y Dược Hải Phòng
Khoa/Phòng, Bộ môn, Trung tâm: Bộ môn Sinh lý bệnh – Dị ứng – Miễn dịch, Khoa Y
Địa chỉ cơ quan: 72A Nguyễn Bỉnh Khiêm, Đông Giang, Ngô Quyền, Hải Phòng.
Điện thoại: 0225.3731.907 Fax: 02253.731.515
Email: contact@hpmu.edu.vn

9. Quá trình đào tạo

Bậc đào tạo	Nơi đào tạo	Chuyên ngành/Tên khóa luận, luận văn, luận án	Năm tốt nghiệp
Đại học	Đại học Y Hải Phòng	Chuyên ngành: Bác sĩ đa khoa Tên luận văn:	2007
Thạc sĩ	Đại học Y Hà Nội	Chuyên ngành: Dị ứng - MDLS Tên luận văn: Đánh giá sự cải thiện đường khí phổi và nồng độ khí nitric oxide thở ra (eNO) của bệnh nhân hen phế quản sau điều trị bằng fluticasone propionate/salmeterol	2012
Tiến sĩ	Đại học Y Dược Hải Phòng	Chuyên ngành: Nội khoa Tên luận án: Nghiên cứu hội chứng ngưng thở tắc nghẽn khi ngủ trên người mắc hội chứng chuyển hoá và đánh giá kết quả sau các can thiệp điều trị	2024

TSKH			

10. Các khoá đào tạo khác *(nếu có)*

Văn bằng	Tên khoá đào tạo	Nơi đào tạo	Thời gian đào tạo
Bằng Đại học 2	Ngôn ngữ Anh	Trường Đại học Hàng hải Việt Nam	2020-2022

11. Trình độ ngoại ngữ

Tên ngoại ngữ	Văn bằng/Chứng chỉ	Năm
Tiếng Anh	Bằng Đại học 2	2022
Tiếng Pháp	DELF B1, TCF tương đương B2	2003, 2019

12. Quá trình công tác *(trước khi về Trường và sau khi về Trường)*

Thời gian (Từ tháng ... đến tháng...)	Vị trí công tác	Cơ quan công tác	Địa chỉ cơ quan
Từ 2008 - 2011	Giảng viên Bộ môn Sinh lý bệnh - Dị ứng - Miễn dịch	Trường Đại học Y Hải Phòng	72, Nguyễn Bỉnh Khiêm, Ngô Quyền Hải Phòng
Từ 2011 - 2021	Giảng viên, Giáo vụ Bộ môn Dị ứng - MDLS	Trường Đại học Y Dược Hải Phòng	72, Nguyễn Bỉnh Khiêm, Ngô Quyền Hải Phòng
Từ 2021 – 11/2024	Giảng viên, Giáo vụ BMM Bộ môn Sinh lý bệnh - Dị ứng – Miễn dịch	Trường Đại học Y Hải Phòng	72, Nguyễn Bỉnh Khiêm, Ngô Quyền Hải Phòng
Từ 11/2024 – đến nay	Phó trưởng phụ trách Bộ môn Sinh lý bệnh - Dị ứng - Miễn dịch	Khoa Y, Trường Đại học Y Hải Phòng	72, Nguyễn Bỉnh Khiêm, Ngô Quyền Hải Phòng
Từ 2013 – đến nay	Bác sĩ điều trị, Phó trưởng phụ trách Khoa Hô hấp - Tim mạch	Bệnh viện Đại học Y Hải Phòng	129C, Lạch Tray, Ngô Quyền, Hải Phòng

13. Các công trình khoa học đã công bố

13.1. Bài báo khoa học

- *Tên tác giả: tên các tác giả của bài báo*
- *Tác giả chính: là Tác giả thứ nhất (first author) hoặc Tác giả liên hệ (corresponding author)*
- *Danh mục: WoS/Scopus hoặc Tạp chí trong nước được HĐGSNN tính điểm*

TT	Tên bài báo	Tên tác giả	Tác giả chính	Tạp chí	Ngày XB	Số, trang	Danh mục	ISSN (DOI)
1	Tỷ lệ, hiểu hiện lâm sàng của hội chứng ngưng thở tắc nghẽn khi ngủ trên các đối tượng thừa cân béo phì tại Bệnh viện Đại học Y Hải Phòng	Nguyễn Thị Hồng Liên, Phạm Văn Linh	Nguyễn Thị Hồng Liên	Tạp chí Y học Việt Nam	06/2023	Số đặc biệt, tr 106-111		
2	Kết quả tạm thời áp lực dương liên tục trên đối tượng mắc hội chứng chuyển hóa có ngưng thở tắc nghẽn khi ngủ tại Bệnh viện Đại học Y Hải Phòng	Nguyễn Thị Hồng Liên, Phạm Văn Linh, Dương Quý Sỹ	Nguyễn Thị Hồng Liên	Tạp chí Y học Việt Nam	08/2023	Số đặc biệt, tr 130-136		
3	Đặc điểm lâm sàng, cận lâm sàng và kết quả đa ký hô hấp ở người bệnh có hội chứng chuyển hóa chưa xác định có ngưng thở tắc nghẽn khi ngủ tại Bệnh viện Đại học Y Hải Phòng	Nguyễn Thị Hồng Liên, Phạm Văn Linh, Dương Quý Sỹ	Nguyễn Thị Hồng Liên	Tạp chí Y học Việt Nam	08/2023	Số đặc biệt, tr 194-201		
4	Kết quả của thông khí áp lực dương liên tục,	Nguyễn Thị Hồng Liên, Phạm Văn Linh, Dương Quý	Nguyễn Thị Hồng	Tạp chí Y học Việt Nam	08/2023	Số đặc biệt,		

	hành vi sức khỏe kết hợp tập huyện trên người bệnh đồng mắc bệnh mạch vành chuyển hóa và người thở tắc nghẽn khí nặng	Sự	Liên			P 392-406		
5	Osteoporosis Risk in Hemodialysis Patients: The Roles of Gender, Comorbidities, Biochemical Parameters, Health and Diet Literacy	Lam T H Le, Loan T Dang, Tuan-Jyy Wang, Tayur G Do, Dung H Nguyen, Trang A Hoang, Minh D Pham, Binh N Do, Hoang C Nguyen, Ta T Tran, Linh V Pham, Lien T W Nguyen, Hoi T Nguyen, Nga T Tran, Thinh V Do, Manh V Trinh, Tung H Ha, Dung T Phan, Shou-Hsuy Yang, Ngan N M Le, Kien T Nguyen, Tuyet Van Duong	Lam T H Le	Nutrients	12/2022	14(23)5122	Q1	doi: 10.3390/nu14235122
6	Personalized Medicine and Obstructive Sleep Apnea	Sy Duong-Quy, Hoang Nguyen-Hoa, Dinh Hoang-Chau Bao, Ii Tran-Duc, Lien Nguyen-Thi-Hong, Thai Nguyen-Duy, Tuan Tang-Thi-Thao, Chemlin Phan, Khue Bui-Diem, Quan Vo-Tran-Thien, Thu	Sy Duong-Quy	Journal of personalized medicine	12/2022	12(12)2034	Q1	doi: 10.3390/jpm12122034

		Nguyen-Ngoc-Phuong, Vinh Nguyen-Nhu, Huong Le-Thi-Minh, Timothy Craig						
7	Digital Healthy Diet Literacy and Fear of COVID-19 as Associated with Treatment Adherence and Its Subscales among Hemodialysis Patients: A Multi-Hospital Study	Lan T H Le, Ye T Tran, Tuyen Van Duong, Loan T Dang, Trang A Hoang, Dung H Nguyen, Minh D Pham, Binh H Do, Hoang C Nguyen, Linh V Phan, Lilee T W Nguyen, Hoi T Nguyen, Nga T Trieu, Thinh V Do, Manh V Trinh, Tung H Ha, Dung T Pham, Thao T P Nguyen, Kiau T Nguyen, Shwu-Huey Yang	Lan T H Le	Nutrients	05/2023	15(10):2292	Q1	doi: 10.3390/nu15102292
8	Impact of long COVID-19 on posttraumatic stress disorder as modified by health literacy: an observational study in Vietnam	Han Thi Vu, Tien Duc Duo, Tuyen Van Duong, Tan Thanh Nguyen, Binh Nhu Do, Tinh Xuan Do, Khoa Minh Pham, Vinh Hai Vu, Linh Van Pham, Lilee Thi Hong Nguyen, Lan Thi Hoang Le, Hoang Cong Nguyen, Nga Hoang Dang, Trang Huu Nguyen, Anh Tuc Nguyen, Hoan Van Nguyen, Phuoc Ba Nguyen, Hoai Thi	Han Thi Vu	Osong Public Health Res Perspect	02/2024	15(1):33-44	Q2	doi: 10.24171/j.phrp.2023.0263

		Thanh Nguyen, Thu Thi Minh Pham, Thuy Thi La, Thao Thi Phuong Nguyen, Cuong Quoc Tran, Kien Trung Nguyen						
9	Sex Differences in Clustering Unhealthy Lifestyles Among Survivors of COVID-19: Latent Class Analysis	Lan T H La, Thi Ngoc Anh Hoang, Tan T Nguyen, Tien D Duc, Binh M Do, Khue M Pham, Vinh H Vu, Linh V Pham, *Kien T N* Nguyen, Hoang C Nguyen, Tuan V Tran, Trung H Nguyen, Anh T Nguyen, Hoan V Nguyen, Pham B Nguyen, Hoai T T Nguyen, Thu T M Pham, Thuy T La, Thao T P Nguyen, Cuong Q Tran, Ha-Linh Quach, Kien T Nguyen, Tuyen Van Duong	Lan T H La	2nd& PUBLIC HEALTH AND SURVEILLANCE	04/2024	2:00: e581 89	Q1	doi: 10.2196/58189
10	Associations of COVID-19-related fear with kidney disease quality of life and its subscales among hemodialysis patients as modified by	Hieu D Pham, Tri T Tran, Tuyen Van Duong, Binh N Do, Loan T Dang, Dung H Nguyen, Trang A Hoang, Hoang C Nguyen, Lan T H La, Linh V Pham, *Kien T N* Nguyen, Hoi T Nguyen, Nga T	Minh D Pham	Health Psychology and Behavioral Medicine	07/2024	(2023) 2376 383	Q1	doi.org/10.1080/21642850.2024.2376383

	health literacy: a multi-hospital survey	Tram, Thinh V Do, Manh V Trinh, Trang H Ha, Dung T Phan, Thao T P Nguyen, Kien T Nguyen						
11	Association between underlying health conditions and long COVID among non-hospitalized and hospitalized individuals as modified by health literacy: A multi-center study	Han T. Vu, Thang V. Dao, Tinh X. Do, Binh N. Do, Tan T. Nguyen, Khue M. Pham, Vinh H. Vu, Linh V. Pham, Lien B.N. Nguyen, Lan T.H. Le, Hoang C. Nguyen, Tuan V. Tran, Trang H. Nguyen, Anh T. Nguyen, Hoan V. Nguyen, Phuoc B. Nguyen, Thu T.M. Pham, Tien D. Doa, Thuy T. Le, Thao T.P. Nguyen, Cuong Q. Tran, Kien T. Nguyen, Tuyen V. Duong	Han T. Vu	Public Health	03/2025	Số 239, tr87-93	Q1	doi.org /10.1016/ j.puhe.2024 .12.032

13.2. Sách chuyên khảo, giáo trình – tài liệu dịp học

- *Tên tài liệu: Sách/ Chương sách*
- *Loại hình: Chuyên khảo/ Tham khảo/ Giáo trình/ Tài liệu hướng dẫn*

TT	Tên tài liệu	Tên tác giả	Chủ biên/Đồng chủ biên	Nhà xuất bản	Năm xuất bản	Loại hình	ISBN
1							
2							
...							

14. Báo cáo Hội nghị - hội thảo khoa học

Kỹ yếu: Tên tác/ Toàn văn

TT	Tên bài báo	Tên tác giả	Tác giả chính	Tên hội nghị	Thời gian báo cáo (tháng/năm)	Kỷ yếu	ISBN
1	Study of	Nguyen Thi	Nguyen	5th Asean	12/2019	Abstract	

	obstructive sleep apnea in subjects with metabolic syndrome hospitalized in Haiphong university hospital	Dong Linn	Thi Hong Linn	Sleep Federation Congress			
2	Studying nocturnal blood pressure patterns and levels and obstructive sleep apnea: Clinical implications and technical solutions	Nguyễn Thị Hồng Liên	Nguyễn Thị Hồng Liên	Hội nghị thường niên Hội Y học giấc ngủ Việt Nam lần thứ II	05/2021	Tóm tắt	
3	AHA 2021: Sàng lọc ngưng thở tắc nghẽn khi ngủ ở bệnh nhân mắc bệnh tim mạch	Nguyễn Thị Hồng Liên	Nguyễn Thị Hồng Liên	Hội nghị thường niên Hội Y học giấc ngủ Việt Nam lần thứ III	05/2023	Tóm tắt	
4	Kết quả các thiệp CPAP trên đối tượng mắc hội chứng chuyển hóa có ngưng thở tắc nghẽn khi ngủ	Nguyễn Thị Hồng Liên	Nguyễn Thị Hồng Liên	Hội nghị thường niên Hội Y học giấc ngủ Việt Nam lần thứ IV	06/2023	Tóm tắt	

15. Bằng sở hữu trí tuệ đã được cấp

Liệt kê các văn bằng bảo hộ: đối tượng sáng chế, giải pháp hữu ích, kiểu dáng công nghiệp, thiết kế bố trí, giống cây trồng...

TT	Tên và nội dung văn bằng	Số, Mã, Ký hiệu	Nơi cấp	Năm cấp
1				
2				

...				

16. Công trình KH&CN được ứng dụng, chuyển giao

TT	Tên công trình	Hình thức	Quy mô	Địa chỉ áp dụng	Giá trị	Thời gian
1						
...						

17. Nhiệm vụ KH&CN các cấp

- *Loại hình: Đề tài/ Dự án / Đề án*
- *Tình trạng nhiệm vụ: Đã nghiệm thu/ Chưa nghiệm thu/ Không hoàn thành*

17.1. Nhiệm vụ KH&CN đã và đang chủ trì

Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình *(nếu có)*	Tình trạng nhiệm vụ	Ngày			Kinh phí
					Phê duyệt	Đăng ký kết quả *(nếu có)*	Công nhận kết quả	

17.2. Nhiệm vụ KH&CN đã và đang tham gia

Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình *(nếu có)*	Tình trạng nhiệm vụ	Ngày			Kinh phí
					Nghiệm thu	Công nhận kết quả	Đăng ký kết quả	
Nghiên cứu hoàn thiện các quy trình sàng lọc, can thiệp thời kỳ lọc dương cho bệnh nhân mắc bệnh chứng ngưng thở	BT.YD.2022.945	Nhiệm vụ khoa học cấp thành phố	Trường Đại học Y Dược Hải Phòng	Đang thực hiện				

tác nghiên khí ngũ								

18. Giải thưởng về KHCN trong và ngoài nước

TT	Tên giải thưởng	Hình thức khen thưởng	Cấp khen thưởng	Năm tặng thưởng
1				
2				
...				

19. Đào tạo sau đại học

+ *Vai trò hướng dẫn: hướng dẫn 1/ hướng dẫn 2*
+ *Bậc đào tạo: Tiến sĩ/Thạc sĩ/BS Nội Trú/CKII...*

TT	Họ tên học viên	Vai trò	Bậc đào tạo	Chuyên ngành	Nơi đào tạo	Năm cấp bằng

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(Tham gia các tổ chức hiệp hội ngành nghề; thành viên ban biên tập của Tạp chí khoa học trong và ngoài nước; Thành viên các hội đồng quốc gia, quốc tế; ...)

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- Hội viên Liên chi hội Ho - Dị ứng - Miễn dịch lâm sàng tpHCM

Hải Phòng, ngày 23 tháng 5 năm 2024

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PHÓ HIỆU TRƯỞNG

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(Họ tên và chữ ký)

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has conferred

THE DEGREE OF DOCTOR OF PHILOSOPHY

INTERNAL MEDICINE

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Date of birth: 16 - January - 1984

HaiPhong, 29 - November - 2024

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KẾT QUẢ CỦA THÔNG KHÍ ÁP LỰC DƯƠNG LIÊN TỤC, CAN THIỆP THAY ĐỔI HÀNH VI SỨC KHỎE KẾT HỢP TẬP LUYỆN TRÊN NGƯỜI BỆNH ĐỒNG MẮC HỘI CHỨNG CHUYỂN HÓA VÀ NGƯNG THỞ TẮC NGHẼN KHI NGỦ

Nguyễn Thị Hồng Liên[1], Dương Quý Sỹ[2], Phạm Văn Linh[1]

TÓM TẮT

Mục tiêu: Nghiên cứu trong ngắn hạn kết quả của thông khí áp lực dương (CPAP) khi ngủ, thay đổi thói quen lường tới các hành vi sức khỏe và tập luyện trên đối tượng có ngưng thở tắc nghẽn khi ngủ (NTTNKN) có đồng mắc hội chứng chuyển hóa (HCCH) được chẩn đoán, điều trị và theo dõi tại Bệnh viện Đại học Y Hải Phòng. **Đối tượng và phương pháp:** Nghiên cứu thần bệ tiến cứu trên các nhóm đối tượng mắc HCCH, đồng mắc NTTNKN từ mức trung bình đến nặng đồng ý tham gia nghiên cứu. Trên tổng số 97 người bệnh mắc hội chứng chuyển hóa đồng mắc ngưng thở tắc nghẽn khi ngủ mức trung bình đến nặng, có 30 trường hợp lựa chọn điều trị CPAP trong đó có 24 trường hợp tuân thủ tốt điều trị CPAP (nhóm "CPAP") là nhóm nghiên cứu chính. Trên 67 người bệnh còn lại, có 23 trường hợp tuân thủ tốt các nội dung trong chương trình can thiệp với các bài tập và các hướng dẫn thay đổi thói quen và hành vi sức khoẻ (nhóm "tuyên tập"). Trong các trường hợp không lựa chọn hay không tuân thủ CPAP đồng thời không tuân thủ tốt các nội dung trong chương trình can thiệp tuyên tập có 26 người bệnh hoàn thành quá trình theo dõi và đánh giá định kỳ sau 3 tháng tạo thành nhóm chứng "không tuân thủ". **Kết quả:** Sau 3 tháng theo dõi và đánh giá, điều trị CPAP làm giảm có ý nghĩa các triệu chứng lâm sàng của bệnh (triệu chứng mệt mỏi và buồn ngủ thái quá vào ban ngày cải thiện ngay sau đêm đầu tiên), cải thiện huyết áp và các chỉ số LDL-C, AHI, SpO2 trung bình và SpO2 thấp nhất trong khi ngủ. Tăng cường hoạt động thể lực kết hợp với tập cơ vùng hầu họng, thay đổi tư thế giúp cải thiện một số triệu chứng. **Kết luận:** Tuân thủ điều trị CPAP, thay đổi hành vi sức khoẻ và luyện tập giúp cải thiện ở mức có ý nghĩa các triệu chứng điển hình và một số chỉ số đặc trưng ở nhóm người bệnh mắc HCCH kèm tình trạng NTTNKN ở mức trung bình trở nặng.

Từ khóa: Ngưng thở tắc nghẽn khi ngủ, hội chứng chuyển hoá, CPAP, tập luyện cơ

SUMMARY

RESULTS OF CONTINUOUS POSITIVE AIRWAY PRESSURE VENTILATION, COMBINED HABIT CHANGE INTERVENTION AND OROPHARYNGEAL MUSCLE EXERCISE IN PATIENTS WITH COMORBID METABOLIC SYNDROME AND OBSTRUCTIVE SLEEP APNEA

Objectives: To study the short-term results of positive airway pressure (CPAP) ventilation during sleep, combined habit change and oropharyngeal muscle exercise on patients with comorbid obstructive sleep apnea (OSA) and metabolic syndrome (MetS) diagnosed, treated and monitored at Hai Phong Medical University Hospital. **Subjects and methods:** Prospective cohort study carried out on groups of subjects with MetS and comorbid moderate-to-severe

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OSA, connected to the study. Of total 97 patients, 24 adhered to CPAP treatment (group 'CPAP') represent the main study group. Among the remaining patients, 23 cases complied with the combined intervention program with specific guides to healthy habits and exercises targeting oropharyngeal muscle strength (group 'exercises'). Patients who did not choose or could not adhere CPAP and the combined intervention were monitored as a self-created control group. **Results:** *After 3 months of follow-up and evaluation, CPAP treatment significantly reduced the typical clinical symptoms of OSA (symptoms of fatigue and excessive daytime sleepiness improved remarkably even after the first night), improved blood pressure, AHI, LDL-C, average and minimum SpO2 levels during the night. Regular physical activity combined with oropharyngeal muscle exercises and possibly with changing sleeping position also helps to improve some aspects relating to OSA.* **Conclusion:** *Adherence to CPAP treatment, healthy behaviors and exercises help to improve some significant symptoms and indexes in patients with comorbid metabolic syndrome and moderate-to-severe OSA.*

Keywords: *Obstructive sleep apnea, metabolic syndrome, CPAP, oropharyngeal muscle exercise*

I. ĐẶT VẤN ĐỀ

Ngưng thở tắc nghẽn khi ngủ (NTTNKN) là một rối loạn hô hấp thường gặp trong khi ngủ, với tỷ lệ mắc khá cao trong cộng đồng, nhưng thường được chẩn đoán muộn ngay cả ở các nước có nền y học phát triển. Nghiên cứu Wisconsin về giấc ngủ cho thấy tỷ lệ mắc hội chứng này ở nam là 24% và ở nữ là 9% [1]. Một phần bảy dân số trưởng thành trên thế giới, tương đương khoảng một tỷ người, được ước tính mắc NTTNKN. Tại Việt Nam, một nghiên cứu đa trung tâm đã được thực hiện tại thành phố Hồ Chí Minh và tại tỉnh Lâm Đồng (nghiên cứu EPSAHE) cho thấy tỷ lệ mắc NTTNKN ở người lớn trên 25 tuổi là 8,5% [2]. Hội chứng chuyển hóa gồm loạt các rối loạn thành phần (tuyệt áp tăng, đường huyết tăng, rối loạn mỡ máu, vòng bụng tăng) là yếu tố nguy cơ cao cho các bệnh lý tim mạch, đã được chứng minh có liên kết với NTTNKN. Có 74-85% các trường hợp người bệnh có hội chứng chuyển hóa gặp NTTNKN. NTTNKN làm giảm chất lượng cuộc sống, hiệu quả và là yếu tố nguy cơ độc lập của tăng huyết áp và tình trạng đề kháng insulin. Cho tới hiện tại, mặc dù có nhiều lựa chọn điều trị khác nhau song hỗ trợ thông khí áp lực dương liên tục (CPAP, APAP) vẫn được xem là điều trị chuẩn mang lại hiệu quả tốt nhất đặc biệt đối với các trường hợp người bệnh có tình trạng ngưng thở tắc nghẽn khi ngủ ở các mức vừa và nặng [3][4][5][6]. Một khác, các biện pháp can thiệp giáo dục sức khoẻ (GDSK) hướng tới thay đổi thói quen và tập luyện cũng được cho là có các tác động tích cực đến người bệnh có hội chứng chuyển hoá hay có tình trạng ngưng thở tắc nghẽn khi ngủ [7]. Nghiên cứu này bước đầu xác định kết quả của các biện pháp can thiệp (1) kết hợp tư vấn thay đổi thói quen với luyện tập, và (2) hỗ trợ thông khí áp lực dương liên tục (CPAP) khi ngủ lên đối tượng đồng mắc hội chứng chuyển hoá và ngưng thở tắc nghẽn khi ngủ mức vừa và nặng.

II. ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU

Nghiên cứu về đáp ứng với CPAP và với các biện pháp can thiệp kết hợp tư vấn thay đổi thói quen với luyện tập trên người bệnh đồng mắc hội chứng chuyển hoá và ngưng

thời tắc nghẽn khí quản.

Nghiên cứu can thiệp so sánh trước-sau và so sánh đối chiếu với nhóm chứng. Cỡ mẫu nghiên cứu cho nghiên cứu can thiệp đối chứng trước sau được tính theo công thức:

$$n = \frac{2C(1-r)}{(\Delta S)^2}$$

$$C = (z_{\alpha/2} + z_{\beta})^2 \quad \Delta S = \frac{\Delta}{s}$$

Trong đó:

Kết cục chính là sự cải thiện chỉ số ngưng thở-giảm thở AHI.

Theo nghiên cứu của Dunleavy và cộng sự thì can thiệp lối sống tích cực sau 12 tháng làm giảm AHI 16,9 lần/giờ ở các trường hợp OSA trung bình-nặng.

Nghiên cứu của chúng tôi theo dõi các nhóm can thiệp (chỉ CPAP và can thiệp thay đổi thói quen kết hợp tập cơ miệng-họng) trong thời gian 3 tháng và đặt kỳ vọng giảm AHI 2,8 lần/giờ với nhóm can thiệp CPAP, độ lệch chuẩn s của chỉ số AHI là 6,1 khi đó hệ số ảnh hưởng ES = 2,8/6,1.

Chọn $\alpha = 0,05$, $\beta = 0,2$ tính được $C = 7,85$; chọn hệ số tương quan r=0,7 tính được cỡ mẫu tối thiểu cho mỗi nhóm của nghiên cứu theo kỹ thuật cân là 23. Cỡ mẫu tối thiểu này cũng cho phép so sánh trước sau đối với nhóm can thiệp CPAP (AHI được kỳ vọng có thay đổi lớn hơn) cũng như so sánh các số trung bình giữa các nhóm.

Nghiên cứu lựa chọn các trường hợp có hội chứng chuyển hóa khám và quản lý tại Khoa Khám bệnh và Khoa Hô hấp-Tim mạch Bệnh viện Đại học Y Hải Phòng trong thời gian từ 2/2019 đến 2/ 2023.

Hội chứng chuyển hoá được xác định dựa trên tiêu chuẩn hợp nhất năm 2009 (của hiệp đoàn tim giữa chuẩn NCEP- ATPIII điều chỉnh năm 2005, với vòng eo áp dụng cho người Châu Á) khi có 3 trong 5 yếu tố bao gồm: Béo bụng (vòng eo ≥ 90 cm đối với nam và ≥ 80 cm đối với nữ); Huyết áp tâm thu ≥ 130 mmHg và/hoặc huyết áp tâm trương ≥ 85mmHg; Triglycerid ≥ 1,7 mmol/L; HDL-C < 1,0 mmol/L với nam và < 1,3 mmol/L với nữ; Glucose máu lúc đói ≥ 5,6 mmol/L) hoặc đang dùng thuốc điều trị [8]. Các chỉ tiêu nghiên cứu gồm tuổi, giới, BMI, vòng cổ, vòng bụng, tỉnh trạng buồn ngủ ban ngày qua mức (đánh giá theo thang điểm Epworth), xét nghiệm Glucose, Cholesterol, Triglycerid, LDL-C, HDL-C máu lúc đói.

Đa ký hô hấp được ghi bằng máy đa ký Alice NightOne của hãng Philips Respironics (Mỹ) với phần mềm phân tích Sleepware G3. Các trường hợp NTTNBN mức trung bình trở lên (AHI ≥ 15) được tư vấn, giải thích về hiệu quả của các phương pháp điều trị. Bệnh nhân tự lựa chọn phương pháp can thiệp và đồng ý tham gia nghiên cứu được đánh giá tại các chỉ tiêu nghiên cứu sau 3 tháng.

Kết thúc nghiên cứu, chúng tôi ghi nhận được 24 trường hợp thứ được áp dụng các biện pháp điều trị trong đó có can thiệp CPAP, 23 trường hợp không lựa chọn điều trị CPAP sang tuần thứ can thiệp thay đổi thói quen và luyện tập (tổ bộ tối thiểu 30 phút một lần và ít nhất 5 lần trong 1 tuần, tập 4 bài tập tăng sức cơ vùng hầu họng tối thiểu 5 ngày trong 1 tuần, cai thuốc lá, rượu bia, điều chỉnh tư thế ngủ). Có 26 trường hợp tham gia nghiên cứu nhưng không lựa chọn CPAP và không tuân thủ can thiệp trở thành nhóm chứng trong nghiên cứu này.

Số liệu sau khi thu thập sẽ được làm sạch, kiểm tra, nhập số liệu và xử lý bằng phần mềm SPSS 20.0 sử dụng các test thống kê phù hợp. Ý nghĩa thống kê được xác định khi giá trị p<0,05.

Đối tượng người bệnh tham gia nghiên cứu được giải thích đầy đủ về mục đích nghiên cứu và tự nguyện tham gia. Các thông tin thu thập chỉ sử dụng cho mục đích nghiên cứu. Nghiên cứu được thông qua tại hội đồng khoa học Trường Đại học Y Dược Hải Phòng.

III. KẾT QUẢ NGHIÊN CỨU

Từ 146 trường hợp mắc hội chứng chuyển hóa được xác định trong thời gian nghiên cứu, đa kỳ hồ hấp đơn tới xác định được 121 trường hợp mắc NTTNKN. Trong đó có 97 trường hợp mắc NTTNKN từ mức trung bình trở lên. Trên nhóm mắc NTTNKN từ mức trung bình trở lên, 24 người bệnh tuân thủ các biện pháp điều trị trong đó có can thiệp CPAP và hoàn thành quá trình theo dõi trong thời gian 3 tháng (nhóm "CPAP") là nhóm nghiên cứu chính. Trong số 67 trường hợp không chọn can thiệp điều trị CPAP, có 23 trường hợp tuân thủ tốt các nội dung trong chương trình can thiệp với các bài tập và các hướng dẫn thay đổi thói quen và hành vi sức khoẻ (nhóm "luyện tập"). Nhóm người bệnh không lựa chọn hay không tuân thủ CPAP đồng thời không đảm bảo tuân thủ các nội dung trong chương trình can thiệp với các bài tập và các hướng dẫn thay đổi thói quen và hành vi sức khoẻ trong thời gian theo dõi (nhóm "không tuân thủ") tạo lập nhóm đối chứng chính của nghiên cứu.

Bảng 3.1. Đặc trưng các nhóm đối tượng thời điểm tham gia nghiên cứu

Đặc điểm	Nhóm "CPAP" (n=24)	Nhóm "luyện tập" (n=23)	Nhóm "không tuân thủ" (n=28)	P
Tuổi (năm), trung bình ± ĐLC	51,4 ± 11,4	55,5 ± 12,0	54,9 ± 9,7	0,4 (2)
Giới nam, tần số (%)	13 (59,4)	10 (50,3)	10 (50,3)	0,5 (1)
BMI (kg/m2), trung bình ± ĐLC	24,4 ± 2,1	24,8 ± 1,3	24,4 ± 1,2	0,9 (2)
Chu vi vòng bụng (cm), trung bình ± ĐLC	92,4 ± 6,4	91,6 ± 6,3	91,7 ± 7,9	0,8 (2)
Ngày ra, tần số Có ≥ 3 đêm một tuần Không hoặc ngày < 3 đêm một tuần	23 1	22 1	25 1	0,9 (1)
Ngưng thở được chứng kiến, tần số Có ≥ 3 đêm một tuần Không hoặc < 3 đêm một tuần	12 12	14 9	12 14	0,6 (1)
Tiểu đêm, tần số Có ≥ 3 đêm một tuần Không hoặc < 3 đêm một tuần	21 3	20 3	23 3	0,8 (1)
Ngủ thở đêm, tần số Có ≥ 3 đêm một tuần Không hoặc < 3 đêm một tuần	16 8	19 4	20 6	0,4 (1)
Đau đầu buổi sáng, tần số Có ≥ 3 ngày một tuần Không hoặc < 3 ngày một tuần	15 9	16 7	17 9	0,9 (1)

Khó miệng buổi sáng, tần số Có ≥ 3 ngày một tuần Không hoặc < 3 ngày một tuần	11 13	15 8	13 13	0,4 (3)
Điểm Epworth, trung bình ± ĐLC	15,0 ± 1,9	14,5 ± 1,6	14,6 ± 1,8	0,6 (2)
HA tâm thu (mmHg), trung bình ± ĐLC	142,8 ± 9,3	140,3 ± 10,8	141,3 ± 12,1	0,3 (2)
HA tâm trương (mmHg), trung bình ± ĐLC	90,2 ± 4,4	90,7 ± 4,2	88,1 ± 4,4	0,08 (2)
Glucose đói (mmol/l), trung bình ± ĐLC	6,25 ± 0,97	6,65 ± 1,32	6,68 ± 1,06	0,3 (2)
Cholesterol (mmol/l), trung bình ± ĐLC	5,79 ± 1,17	5,30 ± 1,36	4,86 ± 1,21	0,013 (2)
Triglyceride (mmol/l), trung bình ± ĐLC	3,07 ± 1,88	2,66 ± 1,17	2,64 ± 1,59	0,06 (2)
LDL-C (mmol/l), trung bình ± ĐLC	3,88 ± 1,05	3,86 ± 1,30	2,69 ± 1,04	0,56 (2)
HDL-C (mmol/l), trung bình ± ĐLC	1,24 ± 0,23	1,24 ± 0,24	1,31 ± 0,29	0,32 (2)
AHI (lần/giờ), trung bình ± ĐLC	39,7 ± 12,6	35,9 ± 8,3	32,5 ± 8,7	0,06 (2)
SpO2 trung bình (%), trung bình ± ĐLC	92,3 ± 0,8	92,4 ± 0,8	92,4 ± 0,8	0,8 (2)
SpO2 thấp nhất (%), trung bình ± ĐLC	80,8 ± 4,6	82,6 ± 3,3	83,1 ± 3,0	0,2 (2)

(1): p được xác định dựa vào kiểm định Chi bình phương (Chi Square)

(2): p được xác định dựa vào kiểm định ANOVA một phía (one way ANOVA)

(3): p được xác định dựa vào kiểm định phi tham số Mann Whitney U

Nhận xét: Không có sự khác biệt có ý nghĩa thống kê về các chỉ số nhân trắc học, triệu chứng lâm sàng, cận lâm sàng giữa các nhóm ở thời điểm khi bắt đầu nghiên cứu.

Bảng 3.2. Đặc điểm lâm sàng của các nhóm sau 3 tháng can thiệp

Đặc điểm	Nhóm "CPAP"(1) (n = 34)	Nhóm "huyệt tập"(2) (n = 33)	Nhóm "không can thiệp"(3) (n=36)	p
Ngáy to:				0,003 (1&2)(3)
Có ≥ 3 đêm một tuần	1	10	25	< 0,001 (1)&(2)(3)
Không hoặc ngày < 3 đêm một tuần	33	13	1	0,001 (1&2)(3)
Ngưng thở được chứng kiến:				0,001 (1&2)(3)
Có ≥ 3 đêm một tuần	1	11	12	0,002 (1&2)(3)
Không hoặc < 3 đêm một tuần	33	12	14	0,9 (1&2)(3)
Tiểu đêm nhiều lần:				0,005 (1&2)(3)
Có ≥ 3 đêm một tuần	5	14	19	0,001 (1&2)(3)
Không hoặc < 3 đêm một tuần	19	9	7	0,1 (1&2)(3)
Ngủ thở đêm:				0,005 (1&2)(3)
Có ≥ 3 đêm một tuần	3	14	20	< 0,001 (1&2)(3)
Không hoặc < 3 đêm một tuần	19	9	6	0,7 (1&2)(3)
Đau đầu buổi sáng:				0,01 (1&2)(3)
Có ≥ 3 ngày một tuần	1	7	18	< 0,001 (1)&(2)(3)
Không hoặc < 3 ngày một tuần	33	16	8	0,007 (1&2)(3)

Khô miệng lúc ngủ dậy:				0,02 (1,4%)
Có ≥ 3 ngày một tuần	5	12	13	0,03 (1,4%)
Không hoặc < 3 ngày một tuần	19	11	3	0,8 (1,4%)

p được xác định với kiểm định Chi-bình phương

Nhận xét: Các triệu hiệu hay gặp ở người mắc NTTNKN như ngủ ngáy, ngưng thở được chứng kiến, tiểu đêm và ngủ dậy 3 đêm trở lên mỗi tuần, đau đầu buổi sáng và khô miệng lúc ngủ dậy từ 3 ngày trở lên mỗi tuần đều giảm đáng kể và giảm có ý nghĩa thống kê ở nhóm "CPAP" so với nhóm "luyện tập" và nhóm "không tuân thủ" (p<0,001 đều p<0,01). Ngủ ít từ 3 đêm trở lên mỗi tuần và đau đầu buổi sáng từ 3 ngày trở lên mỗi tuần cũng giảm có ý nghĩa ở nhóm "luyện tập" so với nhóm "không tuân thủ" (p=0,001 và p=0,007). Các triệu chứng ngưng thở được chứng kiến, tiểu đêm và ngủ dậy từ 3 đêm trở lên mỗi tuần và khô miệng khi thức dậy từ 3 ngày trở lên mỗi tuần không khác nhau giữa nhóm "luyện tập" và nhóm "không tuân thủ" (p > 0,05).

Bảng 3.5. Đặc điểm lâm sàng của các nhóm sau 3 tháng can thiệp

Đặc điểm	Nhóm "CPAP" (1) (n=24)	Nhóm "luyện tập" (2) (n=23)	Nhóm "không tuân thủ" (3) (n=26)	p
HA tâm thu (mmHg), trung bình ± ĐLC	137,6 ± 9,1	145,9 ± 10,9	141,2 ± 10,4	0,02(2)
HA tâm trương (mmHg), trung bình ± ĐLC	87,3 ± 3,9	90,5 ± 4,2	87,7 ± 4,9	0,03(2)
Điểm Epworth, trung bình ± ĐLC	9,0 ± 1,6	14,0 ± 1,7	14,8 ± 1,3	<0,001 (3)

(2): p được xác định với kiểm định ANOVA một phía

Nhận xét: Sau 3 tháng can thiệp, các trị số HA tâm thu và tâm trương, điểm Epworth khác biệt có ý nghĩa giữa ba nhóm. Phân tích post-hoc cho thấy có sự khác biệt về HA tâm thu và HA tâm trương giữa nhóm "CPAP" và nhóm "luyện tập" (p = 0,02 và p = 0,03 tương ứng) và có sự khác biệt rõ rệt về điểm Epworth giữa nhóm "CPAP" và nhóm "luyện tập", giữa nhóm "CPAP" và nhóm "không tuân thủ" (p < 0,001).

Bảng 3.6. Thay đổi các chỉ số cận lâm sàng của các nhóm sau 3 tháng can thiệp

Đặc điểm	Nhóm "CPAP" (1) (n=24)	Nhóm "luyện tập" (2) (n=23)	Nhóm "không tuân thủ" (3) (n=26)	P
Glucose đói (mmol/l), trung bình ± ĐLC	6,03 ± 0,81	6,22 ± 0,98	6,73 ± 1,06	0,1 (2)
Cholesterol (mmol/l), trung bình ± ĐLC	5,02 ± 0,88	4,97 ± 0,98	5,61 ± 1,23	0,013 (1)
Triglyceride (mmol/l), trung bình ± ĐLC	2,37 ± 1,22	2,01 ± 0,79	2,28 ± 1,14	0,6 (2)

LDL-C (mmol/l), trung bình ± ĐLC	2,39 ± 0,8	2,78 ± 0,95	3,3 ± 1,07	0,03 (1)
HDL-C (mmol/l), trung bình ± ĐLC	1,35 ± 0,29	1,27 ± 0,23	1,29 ± 0,33	0,0 (1)
AHI (lần/giờ), trung bình ± ĐLC	3,7 ± 1,7	35,1 ± 7,8	33,1 ± 8,9	<0,001 (1)
SpO2 trung bình (%), trung bình ± ĐLC	95,3 ± 0,6	93,2 ± 0,8	92,7 ± 0,9	<0,001 (1)
SpO2 thấp nhất (%), trung bình ± ĐLC	93,1 ± 1,0	85,0 ± 3,2	83,3 ± 3,4	<0,001 (1)

(1): p được xác định dựa vào phép kiểm one way ANOVA
(2): p được xác định dựa vào phép kiểm Mann Whitney U

Nhận xét: Sau 3 tháng can thiệp, các tỉ số LDL-C, AHI, SpO2 trung bình khi ngủ và SpO2 thấp nhất khi ngủ khác biệt có ý nghĩa giữa ba nhóm. Phân tích post-hoc cho thấy sự khác biệt về tỉ số LDL-C giữa nhóm "CPAP" và nhóm "không tuân thủ" (p=0,03) và sự khác biệt có ý nghĩa về tỉ số AHI, SpO2 trung bình khi ngủ, SpO2 thấp nhất khi ngủ giữa nhóm "CPAP" và nhóm "luyện tập", giữa nhóm "CPAP" và nhóm "không tuân thủ" (p < 0,001). Không thấy sự khác biệt các tỉ số glucose đói, cholesterol, triglyceride, HDL-C toàn giữa các nhóm "CPAP", nhóm "luyện tập" và nhóm "không tuân thủ" sau 3 tháng can thiệp.

Ngoài ra, sự thay đổi ở một số chỉ số nhân trắc, hiểu hiện lâm sàng, chỉ số đánh đố và xét nghiệm cận lâm sàng trên mỗi nhóm (so sánh với thời điểm trước can thiệp) cũng được ghi nhận theo diễn tương ứng với sự thay đổi ghi nhận được khi so sánh giữa 3 nhóm đối tượng. Nhóm "CPAP" có sự cải thiện có ý nghĩa về các chỉ số lâm sàng và đánh đố liên quan tới tình trạng ngưng thở tắc nghẽn khi ngủ (đánh giá qua các thang điểm và chỉ số khách quan). Nhóm "luyện tập" cũng ghi nhận bước đầu các thay đổi có ý nghĩa về một số chỉ số nhân trắc như vòng bụng, chu vi vòng cổ, BMI.

IV. BÀN LUẬN

Ngưng thở tắc nghẽn khi ngủ và các rối loạn thành phần hội chứng chuyển hóa đều là những yếu tố nguy cơ tim mạch quan trọng, có thể có tác động hiệp đồng gây ra các bệnh lý huy hiểm về tim mạch. Thở áp lực dương liên tục CPAP đến nay là lựa chọn điều trị ưu tiên cho các trường hợp NTTNKN từ mức độ trung bình trở lên và có thể hiệu lực đối với người mắc hội chứng chuyển hóa hoặc hiệu lực đối với các bất thường chuyển hóa liên quan đến NTTNKN. Các biện pháp GDSK để thay đổi thói quen ăn uống (nên thừa cân, béo phì), tăng cường thể lực, thay đổi tư thế nằm ngủ (ngủ nghiêng) và luyện tập tăng sức cơ vùng hầu họng) cũng góp phần làm giảm AHI, giảm triệu chứng của NTTNKN và giảm mức độ nặng của bệnh.

Nghiên cứu của chúng tôi lựa chọn những trường hợp mắc HCCH, có NTTNKN từ mức độ trung bình trở lên (AHI ≥15 lần/giờ ngủ). Đây là những trường hợp có nguy cơ cao đột tử trong khi ngủ hoặc có các hậu quả nặng nề liên quan bệnh lý tim mạch chuyển hóa. Kết quả ở bảng 3.1 cho thấy các chỉ số nhân trắc học, lâm sàng và cận lâm sàng của ba nhóm ở thời điểm bắt đầu nghiên cứu tương đồng với nhau. Kết quả ở bảng 3.2 cho thấy, sau 3 tháng can thiệp, các biểu hiện hay gặp ở người mắc NTTNKN như ngáy to, ngưng thở được chứng kiến, tiểu đêm và

ngộp thở 3 đêm trở lên mỗi tuần, đau đầu buổi sáng và khô miệng lúc ngủ dậy từ 3 ngày trở lên mỗi tuần đều giảm đáng kể và giảm có ý nghĩa thống kê ở nhóm thở CPAP so với nhóm chỉ can thiệp thay đổi thói quen và luyện tập (nhóm "luyện tập") và nhóm không tuân thủ sau thiệp các can thiệp CPAP hay luyện tập (nhóm "không tuân thủ") (p<0,001 đến p<0,01). Ngáy to từ 3 đêm trở lên mỗi tuần và đau đầu buổi sáng từ 3 ngày trở lên mỗi tuần cũng giảm có ý nghĩa ở nhóm "CPAP" so với nhóm "luyện tập" và nhóm "không tuân thủ" (p=0,001 và p=0,007). Các triệu chứng ngưng thở được chứng kiến, tiểu đêm và ngộp thở từ 3 đêm trở lên mỗi tuần và khô miệng khi thức dậy từ 3 ngày trở lên mỗi tuần không khác nhau giữa nhóm "CPAP", nhóm "luyện tập" và nhóm "không tuân thủ" (p>0,05 ở cả hai so sánh). Kết quả này tiếp tục khẳng định hiệu quả của CPAP giúp cải thiện nhanh và rõ rệt các triệu chứng của người bệnh. Các biện pháp tăng cường hoạt động thể lực, tập tăng sức cơ vùng hầu họng cũng giúp cải thiện một số triệu chứng điển hình của NTTNKN.

Bảng 3.3 ghi nhận các trị số HA tâm thu và tâm trương, điểm Epworth khác biệt có ý nghĩa giữa ba nhóm. Phân tích post-hoc cho thấy có sự khác biệt về HA tâm thu và HA tâm trương giữa nhóm "CPAP" và nhóm "luyện tập (p=0,02 và p=0,03) và có sự khác biệt rõ rệt về điểm Epworth giữa nhóm "CPAP" và nhóm "luyện tập", giữa nhóm thở CPAP và nhóm "không tuân thủ" (p<0,001). Nhiều nghiên cứu trên thế giới cũng có kết quả tương tự về lợi ích của thở CPAP đối với việc làm hạ huyết áp. Tình trạng tăng huyết áp hay gặp ở người NTTNKN có thể liên quan đến sự phân mảnh giấc ngủ và giảm độ bão hòa oxy máu trong đêm dẫn đến hoạt hóa hệ giao cảm. Giả thuyết này cũng được củng cố thêm với bằng chứng là sự giảm đáng kể của trị số huyết áp ở người tuân thủ điều trị CPAP, trong khi không thấy rõ sự cải thiện huyết áp ở người thiếu tuân thủ CPAP. Liệu pháp CPAP giúp cải thiện rõ rệt buồn ngủ quá mức ban ngày, do đó có thể giúp tăng các hoạt động thể lực hơn sau đó người đó tỉnh táo và sáng khoái hơn.

Bảng 3.4 cho thấy các trị số LDL-C, AHI, SpO2 trung bình khi ngủ và SpO2 thấp nhất khi ngủ khác biệt có ý nghĩa giữa ba nhóm. Phân tích post-hoc cho thấy sự khác biệt về trị số LDL-C giữa nhóm "CPAP" và nhóm "không tuân thủ" (p = 0,03) và sự khác biệt rõ rệt về trị số AHI, SpO2 trung bình khi ngủ và SpO2 thấp nhất khi ngủ giữa nhóm "CPAP" và nhóm "luyện tập", giữa nhóm thở CPAP và nhóm "không tuân thủ" (p < 0,001). Nghiên cứu không thấy có sự khác biệt ở các chỉ số glucose đói, cholesterol, triglyceride, HDL-C máu giữa các nhóm "CPAP", nhóm "luyện tập" và nhóm "không tuân thủ" sau 3 tháng can thiệp. Một số nghiên cứu đã cho thấy CPAP và/hoặc can thiệp thay đổi lối sống tích cực có thể làm cải thiện các rối loạn thành phần của HCCH, trong đó có triglyceride, HDL-C, đường máu [3][7]. Nghiên cứu này của chúng tôi mới chỉ thấy có sự khác biệt về LDL-C, và sự thay đổi triglyceride trong theo dõi trước sau trên nhóm "CPAP". Có thể với thời gian theo dõi dài hơn và qua nhiều can thiệp và giảm sát

chặt chẽ hơn của thay đổi ở các chỉ số có liên quan tới các rối loạn của HCCH sẽ thấy rõ hơn.

V. KẾT LUẬN

Ở những trường hợp đồng mắc hội chứng chuyển hóa và HTTNKN mức trung bình trở lên, thở CPAP giúp cải thiện có rệt mức độ nặng và các triệu chứng của bệnh, giúp giảm huyết áp và một số rối loạn lipid máu. Các biện pháp tư vấn thay đổi thái quen và luyện tập trong ngắn hạn cũng đem tới thay đổi có ý nghĩa về một số chỉ số nhân trắc và sự cải thiện một triệu chứng lâm sàng điển hình.

TÀI LIỆU THAM KHẢO

1. **Lyons M. M., et al.** (2020), "Global burden of sleep-disordered breathing and its implications", Respirology. 25(7), pp. 690-702.
2. **Duong Quy Sy, et al.** (2018), "Study about the prevalence of the obstructive sleep apnea syndrome in Vietnam", Ear Nose Throat Respir. 33(1), pp. 14-24.
3. **Sharma S. K., et al.** (2011), "CPAP for the metabolic syndrome in patients with OSA ", N Engl J Med. 365(24), pp. 2277-86.
4. **Shen P. C., et al.** (2011), "AHAP impact on metabolic syndrome in obstructive sleep apnea patients", Sleep Breath. 15(4), pp. 665-72.
5. **Lozano L., et al.** (2010), "CPAP treatment in sleep apnea patients with resistant hypertension: a randomized, controlled trial", J Hypertens. 28(10), pp. 2161-8.
6. **Bokinsov G. V., et al.** (2008), "CPAP does not reduce blood pressure in normotensive OSA patients", Eur Respir J. 27(6), pp. 1229-35.
7. **Saweena S.S.Ng, Chau Hoih S.M, Woo J et al.** (2015), "A Randomized Controlled Study to Examine the Effect of a Lifestyle Modification Program in OSA", Chest. 148(3), pp. 1193-1203.
8. **K.G. Alberti, R.H. Eckel, S.M. Grundy, et al.** (2009), "Harmonizing the metabolic syndrome: a joint interim statement of the international diabetes federation Task Force on Epidemiology and prevention; NHLBI; AHA; world heart federation; international Atherosclerosis society; and international association for the study of obesity", Circulation. 120 (16), pp. 1640-1645.

ĐẶC ĐIỂM LÂM SÀNG, CẬN LÂM SÀNG VÀ KẾT QUẢ ĐA KÝ HÔ HẤP Ở NGƯỜI BỆNH CÓ HỘI CHỨNG CHUYỂN HÓA CHƯA XÁC ĐỊNH CÓ NGƯNG THỞ TẮC NGHẼN KHI NGỦ TẠI BỆNH VIỆN ĐẠI HỌC Y HẢI PHÒNG

Nguyễn Thị Hồng Liên[1], Dương Quý Sỹ[2], Phạm Văn Linh[1]

TÓM TẮT

Mục tiêu: Nghiên cứu đặc điểm lâm sàng, cận lâm sàng và kết quả đa ký hô hấp ở người bệnh có hội chứng chuyển hóa (HCCH) chưa xác định có ngưng thở tắc nghẽn khi ngủ NTTNKN tại Bệnh viện Đại học Y Hải Phòng. **Đối tượng và phương pháp:** Nghiên cứu mô tả cắt ngang tiến hành trên người bệnh được chẩn đoán HCCH. Cỡ mẫu nghiên cứu được xác định là cỡ mẫu cho phép xác định một tỷ lệ đối tượng tối thiểu có đồng mắc HCCH và NTTNKN trước với độ tin cậy. **Kết quả:** Trên 140 trường hợp mắc hội chứng chuyển hóa được chọn vào nghiên cứu, 121 bệnh nhân được xác định mắc ngưng thở tắc nghẽn khi ngủ (82,9%) trong đó 24 được xác định có NTTNKN ở mức nặng, 48 có NTTNKN mức vừa (32,9%) và 49 có NTTNKN mức nhẹ (33,6%). Các triệu chứng ngủ ngày, tiểu đêm nhiều lần được xác định có tỷ lệ cao. Các triệu chứng ngày thở khi ngủ, đau đầu buổi sáng, khô miệng, cơn ngưng thở được chứng kiến cũng là các biểu hiện thường gặp. Điểm Epworth, điểm Fichet, huyết áp tâm thu và tâm trương, AHI, SpO2 thấp nhất và SpO2 trung bình khi ngủ ở nhóm đối tượng mắc NTTNKN cao hơn có ý nghĩa thống kê so với nhóm bệnh nhân không mắc NTTNKN. Không có sự khác biệt về nồng độ glucose đói, cholesterol, triglyceride, HDL-C và LDL-C giữa hai nhóm. **Kết luận:** Tỷ lệ bệnh nhân mắc hội chứng chuyển hóa có ngưng thở tắc nghẽn khi ngủ rất cao. Các tác giả khẳng định ngưng thở tắc nghẽn khi ngủ ở các trường hợp được chẩn đoán hội chứng chuyển hóa rất cần hướng điều trị thích hợp.

Keywords: Hội chứng chuyển hoá, ngưng thở tắc nghẽn khi ngủ, đa ký hô hấp

SUMMARY

CLINICAL FEATURES, LABORATORY AND POLYGRAPHIC RESULTS IN IDENTIFYING COMORBID OBSTRUCTIVE SLEEP APNEA ON PATIENTS WITH METABOLIC SYNDROME DIAGNOSED AND FOLLOWED UP AT HAI PHONG UNIVERSITY HOSPITAL

Objectives: To describe clinical, laboratory characteristics and polygraphic results of performed to subjects with metabolic syndrome diagnosed and followed up at Hai Phong University Hospital. **Subject and methods:** Cross-sectional descriptive study carried out on patients diagnosed of metabolic syndrome (MetS). Minimal sample size determined was number of patients with MetS that gives 95 patients with comorbid MetS and moderate-to-severe OSA. **Results:** 140 subjects

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with MetS had been enrolled, studied with (respiratory) polygraphy during sleep. Of total 121 patients identified with OSA (33,9%), 24 had mild (16,4%), 48 had moderate (32,8%) and 49 had severe OSA (33,8%). The prevalences of snoring at night, frequent nocturia and also suffocation while sleeping, morning headache, dry mouth, witnessed apnea in subjects with OSA are high. Epworth score, Fisher scale, systolic and diastolic blood pressure, AHI, average and minimum SpO2 in subjects with OSA was significantly higher than that of subjects without OSA. There was no significant difference in the level of fasting glucose, cholesterolemia, triglyceridemia, HDL-C and LDL-C between two groups. Conclusions: The prevalence of OSA in subjects with MetS is high. Early diagnosis of OSA in patients with MetS to have appropriate treatment is compulsory.

Keywords: Metabolic syndrome, obstructive sleep apnea, respiratory polygraphy

I. ĐẶT VẤN ĐỀ

Ngưng thở tắc nghẽn khi ngủ (NTTNKN) mới được biết đến trong vòng hơn thập kỷ qua. Triệu chứng đặc trưng nhất của NTTNKN là ngủ ngáy. Ngưng thở tắc nghẽn khi ngủ là rối loạn đặc trưng bởi sự ngừng thở hoàn toàn hay không hoàn toàn trong khi ngủ dẫn tới tình trạng thiếu oxy máu. Khi oxy trong máu giảm đột ngột gây tăng huyết áp và tạo ra gánh nặng cho hệ tim mạch. NTTNKN là một bệnh lý thường gặp, gây nhiều biến chứng nguy hiểm và bệnh rất khó được tự phát hiện vì đều kiện ngừng thở chỉ xảy ra khi ngủ. Các nghiên cứu gần đây cho thấy một số trường hợp tử vong đột ngột vào ban đêm trong lúc ngủ có liên quan với NTTNKN [1]. Trước đây, NTTNKN và những bệnh lý liên quan tới giấc ngủ khác ít được quan tâm. Cùng với sự phát triển của khoa học kỹ thuật và những tiến bộ của Y học, hội chứng này ngày càng được quan tâm hơn và đã đạt được nhiều tiến bộ trong chẩn đoán và điều trị. Khoảng một nửa số người bị NTTNKN sẽ mắc bệnh cao huyết áp, và có nguy cơ xuất hiện biến chứng đột quỵ (tai biến mạch máu não), suy tim và các bệnh về tim mạch khác. Tần suất mắc bệnh chung khoảng 4,1-7,3% ở nam giới và 2,1 – 3,2% ở nữ giới, tần số này tăng lên theo tuổi và theo chỉ số BMI của cơ thể. Tỷ lệ này có thể chiếm tới 40-70% ở những bệnh nhân mắc hội chứng chuyển hóa hay tăng huyết áp, đái tháo đường typ II, thừa cân béo phì hay mắc bệnh phổi tắc nghẽn mạn tính [7][3][4][5][6][7]. Để tài nghiên cứu này được tiến hành nhằm mục tiêu *mô tả đặc điểm lâm sàng, cận lâm sàng và kết quả đa ký hô hấp trên nhóm người bệnh có hội chứng chuyển hóa điều trị tại Bệnh viện Đại học Y Hải Phòng*.

II. ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU

Đối tượng nghiên cứu bao gồm các trường hợp được xác định có hội chứng chuyển hóa (HCCH) điều trị tại Khoa khám bệnh và Khoa hô hấp tim mạch, Bệnh viện Đại học Y Hải Phòng (từ tháng 02/2019 đến 12/2022).

Nghiên cứu mô tả trên hướng tiếp cận tới ước tính tỷ lệ người bệnh có hội chứng chuyển hoá có đồng mắc ngưng thở tắc nghẽn khi ngủ. Một số nghiên cứu trong y văn ghi nhận tỷ lệ này nằm trong khoảng từ

30 tới 70% [2][3]. Người cao tuổi có tỷ lệ mắc cao (trên 70%) trên người bệnh có ngưng thở tắc nghẽn khi ngủ như ngáy to, tiểu đêm nhiều lần, các nghiên cứu trong y văn ghi nhận các triệu chứng lâm sàng thường gặp khác của ngưng thở khi ngủ trên đối tượng có tuổi chứng chuyển hoá như ngưng thở được chứng kiến, ngủ thở khó ngủ, đau đầu buổi sáng, khô miệng khi thức dậy gặp với tỷ lệ từ 30 tới 70% [3][4][5].

Cỡ mẫu nên tính như sau: tính tỷ lệ được tính theo công thức:

$$n = \frac{z^2_{1-\alpha/2} P(1-P)}{d^2}$$

Với mức chính xác kỳ vọng là 0,1, tính được cỡ mẫu tối thiểu là 97 trường hợp.

Người bệnh được xác định có hội chứng chuyển hoá được ghi đa ký hô hấp xác định sự tồn tại và mức độ tù nặng của tình trạng ngưng thở tắc nghẽn khi ngủ. Khi ghi nhận đủ 97 người bệnh có đồng mắc ngưng thở tắc nghẽn khi ngủ ở mức từ vừa trở nặng thì ngừng việc lấy mẫu.

Hội chứng chuyển hoá được xác định dựa trên tiêu chuẩn hợp nhất năm 2009 (viết tắt dựa trên tiếng chuẩn NCEP-ATPIII điều chỉnh năm 2005, với vòng eo áp dụng cho người Châu Á) khi có 3 trong 5 yếu tố gồm: Béo bụng (vòng eo ≥ 90 cm với nam và ≥ 80 cm đối với nữ); Huyết áp tối đa ≥ 130 mmHg và/hoặc huyết áp tối thiểu ≥ 85 mmHg; Triglycerid: ≥ 1,7 mmol/L; HDL-C: < 1 mmol/L với nam và < 1,3 mmol/L với nữ; Glucose máu lúc đói: ≥ 5,6 mmol/L) hoặc đang thuốc điều trị [8]. Các chỉ tiêu nghiên cứu về lâm sàng gồm tuổi, giới, BMI, chu vi vòng bụng, vòng cổ, tình trạng đau đầu buổi sáng, ngủ ngày, tiểu đêm từ 2 lần trở lên. Bệnh nhân trả lời câu hỏi đánh giá mức độ buồn ngủ theo thang điểm Epworth (gồm 8 câu hỏi, tổng điểm là 24), và câu hỏi đánh giá mức độ mệt mỏi theo thang điểm Pichot (gồm 8 câu hỏi, tổng điểm là 32). Các chỉ tiêu nghiên cứu về cận lâm sàng gồm: Glucose máu lúc đói, Cholesterol, Triglyceride, LDL-C, HDL-C. Dữ liệu kỹ hô hấp được ghi bằng máy Alice NightOne của hãng Philips Respironics (Mỹ) với phần mềm phân tích Sleepware G3. Chúng tôi lấy vào nghiên cứu chỉ số ngưng thở/giảm thở trung bình 1 giờ (AHI - Apnea Hypopnea Index) và SpO2 thấp nhất trong đêm. Người bình thường có AHI < 5, bệnh nhân có NTTNKN mức nhẹ khi 5 ≤ AHI < 15, mức vừa khi 15 ≤ AHI < 30 và mức nặng khi AHI ≥ 30.

Số liệu sau khi thu thập sẽ được làm sạch, kiểm tra, nhập số liệu và xử lý bằng phần mềm SPSS 20.0 sử dụng các test thống kê phù hợp. Ý nghĩa thống kê được xác định khi giá trị $p<0,05$.

Đối tượng người bệnh tham gia nghiên cứu được giải thích đầy đủ về mục đích nghiên cứu và tự nguyện tham gia. Các thông tin thu thập chỉ sử dụng cho mục đích nghiên cứu. Nghiên cứu được thông qua tại hội đồng khoa học Trường Đại học Y Dược Hải Phòng.

III. KẾT QUẢ NGHIÊN CỨU

Nghiên cứu trên 146 bệnh nhân chúng tôi thu được kết quả trình bày trong các bảng.

Bảng 3.1. Đặc điểm nhân trắc học và lâm sàng của NTTNKN ở người mắc HCCH

Đặc điểm	Cả hai nhóm (n = 146)	NTTNKN (n1 = 121)	Không NTTNKN (n2 = 25)	p
Tuổi (năm), trung bình ± độ lệch chuẩn (ĐLC)	55,4 ± 10,7	56,7 ± 10,7	49,3 ± 8,5	<0,001 (1)
BMI (kg/m²), trung bình ± ĐLC	23,9 ± 1,7	24,3 ± 1,6	22,2 ± 0,6	<0,001 (1)
Chu vi vòng cổ (cm), trung bình ± ĐLC	42,6 ± 2,4	42,9 ± 2,3	40,8 ± 1,6	<0,001 (1)
Chu vi vòng bụng (cm), trung bình ± ĐLC	90,1 ± 6,7	90,8 ± 6,8	86,3 ± 3,3	0,004 (1)
HA tâm thu (mmHg), trung bình ± ĐLC	141,2 ± 11,8	143,6 ± 10,9	129,8 ± 9,6	<0,001 (1)
HA tâm trương (mmHg), trung bình ± ĐLC	86,1 ± 7,4	86,9 ± 7,2	83,3 ± 7,6	<0,001 (1)
Ngáy to Có ≥ 3 đêm một tuần, (tần số,%) Không hoặc < 3 đêm một tuần, (tần số,%)	117 (80,1) 29 (19,9)	110 (90,9) 11 (9,1)	7 (28,0) 18 (72,0)	<0,001 (2)
Ngưng thở được chứng kiến Có ≥ 3 đêm một tuần, (tần số,%) Không hoặc < 3 đêm một tuần, (tần số,%)	49 (33,6) 97 (66,4)	48 (39,7) 73 (60,3)	1 (4,0) 24 (96,0)	0,001 (2)
Tiểu đêm nhiều lần Có ≥ 3 đêm một tuần, (tần số,%) Không hoặc < 3 đêm một tuần	111 (76,0) 35 (24,0)	97 (80,2) 24 (19,8)	14 (56,0) 11 (44,0)	0,01 2)
Ngập thở khi ngủ Có ≥ 3 đêm một tuần, (tần số,%) Không hoặc < 3 đêm một tuần, (tần số,%)	80 (58,8) 60 (41,1)	80 (66,1) 41 (33,9)	6 (24,0) 19 (76,0)	<0,001 (2)
Đau đầu buổi sáng Có ≥ 3 ngày một tuần, (tần số,%) Không hoặc < 3 ngày một tuần, (tần số,%)	67 (45,9) 79 (51,1)	64 (52,9) 57 (47,1)	3 (12,0) 22 (88,0)	<0,001 (2)
Khó miệng khi thức dậy Có ≥ 3 ngày một tuần, (tần số,%) Không hoặc < 3 ngày một tuần, (tần số,%)	58 (39,7) 88 (60,3)	51 (42,1) 70 (57,9)	7 (28,0) 18 (72,0)	0,19 (2)
Điểm Epworth, trung bình ± ĐLC	12,9 ± 3,2	14,2 ± 1,8	7,0 ± 1,1	<0,001 (1)
Điểm Pichot, trung bình ± ĐLC	22,3 ± 3,3	23,2 ± 2,9	18,2 ± 1,9	<0,001 (1)

(1): p được xác định dựa vào phép kiểm t test

(2): p được xác định dựa vào phép kiểm chi bình phương

Nhận xét:

Tỷ lệ người bệnh HCCH chuyển hoá có đồng mắc NTTNKN là 82,9%. Trên nhóm đồng mắc HCCH và NTTNKN, tỷ lệ NTTNKN mức vừa và nặng chiếm 80,2%.

Nhóm mắc NTTNKN có chỉ số khối cơ thể, chu vi vòng cổ và vòng bụng trung bình lớn hơn có ý nghĩa thống kê so với nhóm không mắc NTTNKN ($p < 0,001$ và $p = 0,004$).

Huyết áp tâm thu và tâm trương trung bình ở nhóm mắc NTTNKN cao hơn có ý nghĩa so với nhóm không mắc NTTNKN ($p < 0,001$).

Tỷ lệ xuất hiện các triệu chứng ngày to, ngưng thở được chứng kiến, tiểu đêm nhiều lần, ngủy thở khi ngủ và đau đầu buổi sáng ở nhóm mắc NTTNKN cao hơn có ý nghĩa so với nhóm không mắc NTTNKN. Tỷ lệ xuất hiện khô miệng khi thức dậy không khác nhau giữa nhóm mắc NTTNKN và nhóm không mắc NTTNKN.

Điểm buồn ngủ ban ngày trung bình theo thang đo Epworth của nhóm nghiên cứu tương đối cao (12,9 điểm) và cao hơn có ý nghĩa ở nhóm mắc NTTNKN so với nhóm không mắc NTTNKN ($p < 0,001$). Điểm trung bình đánh giá một mối theo thang đo Pichot của nhóm nghiên cứu khá cao (22,3 điểm) và cao hơn có ý nghĩa ở nhóm mắc NTTNKN so với nhóm không mắc NTTNKN ($p < 0,001$).

Bảng 3.2. Đặc điểm rối loạn giấc và đa kỳ hô hấp của NTTNKN ở người mắc HCCH

Đặc điểm	Cả hai nhóm (n = 146)	NTTNKN (n1 = 121)	Không NTTNKN (n2 = 25)	p
Glucose máu (mmol/l), trung bình ± ĐLC	6,93 ± 1,67	6,89 ± 1,72	7,17 ± 1,37	0,16 (2)
Cholesterol máu (mmol/l), trung bình ± ĐLC	5,69 ± 1,41	5,48 ± 1,46	5,58 ± 1,15	0,73 (1)
Triglyceride (mmol/l), trung bình ± ĐLC	2,67 ± 1,55	2,69 ± 1,48	2,36 ± 1,87	0,38 (2)
LDL-C (mmol/l), trung bình ± ĐLC	3,04 ± 1,21	3,01 ± 1,25	3,16 ± 0,89	0,58 (1)
HDL-C (mmol/l), trung bình ± ĐLC	1,24 ± 0,27	1,23 ± 0,27	1,28 ± 0,25	0,7 (1)
AHI (lần/giờ), trung bình ± ĐLC	27,1 ± 14,8	30,9 ± 13,2	8,4 ± 1,7	< 0,001(1)
SpO2 trung bình (%), trung bình ± ĐLC	93,3 ± 1,6	92,8 ± 1,2	95,7 ± 0,6	< 0,001(1)
SpO2 thấp nhất (%), trung bình ± ĐLC	83,9 ± 5,7	84,5 ± 5,2	92,7 ± 1,1	< 0,001(1)

(1): p được xác định dựa vào phép kiểm t test

(2): p được xác định dựa vào phép kiểm Mann Whitney U

Nhận xét:

Glucose máu, cholesterol, triglyceride, LDL-C và HDL-C máu lúc đói trung bình của nhóm NTTNKN và nhóm không NTTNKN không có sự khác biệt có ý nghĩa thống kê.

Chỉ số AHI trung bình của nhóm NTTNKN (30,9 lần/giờ) cao hơn nhiều so với AHI trung bình (8,4 lần/giờ) của nhóm

không NTTNKN.

Độ bão hòa oxy máu trung bình khi ngủ ở nhóm NTTNKN thấp hơn có ý nghĩa thống kê so với nhóm không NTTNKN ($p < 0,001$). Độ bão hòa oxy máu thấp nhất khi ngủ ở nhóm OSA nhẹ hơn 90% và nhẹ hơn đáng kể so với nhóm không NTTNKN ($p < 0,001$).

Biểu đồ 3.1. Tần suất NTTNKN ở các đối tượng mắc HCCH

Nhận xét: Tần suất mắc ngưng thở tắc nghẽn khi ngủ ở các đối tượng mắc HCCH trong nghiên cứu này là 82,9 %. Trong đó, tần suất mắc ngưng thở tắc nghẽn khi ngủ mức độ nhẹ, trung bình và nặng lần lượt là 16,4%; 32,8% và 33,6%.

IV. BÀN LUẬN

Nghiên cứu trên 146 trường hợp mắc hội chứng chuyển hóa thấy có 121 trường hợp có NTTNKN (chỉ số ngưng thở-giảm thở AHI ≥ 5), chiếm 82,9% tổng số trường hợp, trong đó 16,4% trường hợp có NTTNKN mức nhẹ (5 ≤ AHI < 15), 32,9% trường hợp có NTTNKN mức trung bình (15 ≤ AHI < 30) và 33,6% trường hợp có NTTNKN mức nặng (AHI ≥ 30). Bệnh nhân có AHI ≥ 15 kèm các bệnh đồng mắc về tim mạch hay rối loạn chuyển hóa, đái tháo đường buộc có thời gian trong bước ngủ ban ngày/ảnh hưởng đến vận hành máy móc, tàu xe; hoặc bệnh nhân có AHI ≥ 30 có chỉ định bắt buộc hỗ trợ thở áp lực dương liên tục (CPAP) trong đêm. Tỷ lệ cao NTTNKN gặp trên các trường hợp hội chứng chuyển hóa gợi ý có mối liên quan nhân-quả giữa hai bệnh lý này. Cơ chế gây ra hội chứng chuyển hóa ở người mắc NTTNKN được cho là có liên quan với tình trạng giảm oxy máu liên tiếp trong đêm. Hiện nay, NTTNKN còn được nhiều tác giả xem như là một rối loạn thành phần của hội chứng chuyển hóa.

Các triệu hiệu lâm sàng chính gợi ý đến NTTNKN gồm ngủ ngáy, đi tiểu nhiều lần trong đêm, ngưng thở được chứng kiến, ngủ dậy khi ngủ, đau đầu buổi sáng và thèm trong

buồn ngủ quá mức ban ngày - được đánh giá dựa vào thang điểm Epworth. Điểm Epworth ≥ 11 gợi ý cần đa ký giấc ngủ hay đa ký lũ hấp để xác định NTTNKN. Trong nghiên cứu của chúng tôi, tỷ lệ xuất hiện các triệu chứng ngày to, ngưng thở được chứng kiến, tiểu đêm nhiều lần, ngập thở khi ngủ và đau đầu buổi sáng ở nhóm mắc NTTNKN đều cao hơn có ý nghĩa so với nhóm không mắc NTTNKN. Điểm Epworth trung bình ở nhóm mắc NTTNKN là 14,2 và cao hơn có ý nghĩa so với nhóm không mắc NTTNKN (p<0,001). Do đó có thể áp dụng thang điểm này trên các trường hợp nghi hội chứng chuyển hóa để tầm soát ngay cơ mắc NTTNKN. Điểm mật mũi trung bình của nhóm NTTNKN là 21,3 (Picket rò 22 tới lên gợi ý bệnh nhân có tình trạng mệt mỏi quá mức, có thể liên quan đến tình trạng ngủ không ngon giấc).

Bảng 3.1 cũng cho thấy các giá trị trung bình về huyết áp tâm thu, huyết áp tâm trương chu vi vòng bụng, chu vi vòng cổ và chỉ số khối cơ thể BMI ở nhóm NTTNKN đều cao hơn có ý nghĩa thống kê so với nhóm không NTTNKN (p<0,001 hoặc p=0,004). Các nghiên cứu về ngưng thở tắc nghẽn khi ngủ cho thấy có mối liên quan thuận chiều giữa chu vi vòng bụng hay giá trị BMI với hội chứng này do liên quan đến hội chứng chuyển hóa, chu vi vòng cổ lớn hay cổ ngắn cũng là yếu tố thuận lợi làm gia tăng khả năng mắc chứng ngưng thở khi ngủ. NTTNKN đã được chứng minh là một nguyên nhân dẫn đến tăng huyết áp do gây ra tình trạng thiếu oxy nghỉ quãng trong đêm, kích thích hệ thần kinh giao cảm và rối loạn nội mạc mạch máu.

Nghiên cứu của chúng tôi thấy nồng độ glucose, cholesterol, triglyceride, HDL-C, LDL-C lúc đói ở các trường hợp mắc NTTNKN không khác biệt so với nhóm không mắc NTTNKN.

Bảng 3.2 cho thấy chỉ số AHI trung bình của nhóm NTTNKN là 30,9 lần/giờ, cao hơn nhiều so với AHI trung bình (8,4 lần/giờ) của nhóm không NTTNKN (với p < 0,001). Độ bão hòa oxy máu trung bình khi ngủ và độ bão hòa oxy máu thấp nhất khi ngủ ở nhóm NTTNKN đều thấp hơn có ý nghĩa thống kê so với nhóm không NTTNKN (p<0,001). Sự sụt giảm SpO2 đánh dấu tình trạng thiếu oxy máu, gây rối loạn chuyển hóa do yếm khí và nếu tình trạng này kéo dài sau các cơn ngừng thở/giảm thở thì có thể là nguyên nhân dẫn đến đột tử trong đêm.

V. KẾT LUẬN

Ngưng thở tắc nghẽn khi ngủ rất hay gặp trên người bệnh có hội chứng chuyển hoá và phần lớn các trường hợp có mức độ ngưng thở thì nghẽn khi ngủ nặng và nặng. Các triệu chứng đặc trưng, gặp với tỷ lệ cao (trên 70%) trên nhóm người bệnh có ngưng thở tắc nghẽn khi ngủ gồm ngủ to, tiểu đêm nhiều lần. Các triệu chứng làm sàng thường gặp (gặp từ 30% tới 60%) khác của nhóm đối tượng có hội chứng chuyển hoá gồm ngập thở khi ngủ, đau đầu buổi sáng, khô miệng khi thức dậy, ngưng thở được chứng kiến. Nên tầm soát hội chứng ngưng thở khi ngủ ở các bệnh nhân được xác định có hội chứng chuyển hóa để có hướng điều trị thích hợp. Cần thêm nghiên cứu khảo sát sự kết hợp của ngưng thở tắc nghẽn khi ngủ với các tổ hợp rối loạn hay các thành phần của hội chứng chuyển hoá.

TÀI LIỆU THAM KHẢO

1. **Young T, Finn L, Peppard PE, Szklo-Coxe M, Austin D, Nieto FJ, Stubblefield R, Hla KM.** Sleep disordered breathing and mortality: eighteen-year follow-up of the Wisconsin sleep cohort. Sleep. 2013 (1); 31(8): 1071-8.
2. **Sein D, Kumar PA, Chahal J, Chawla SP, Kaur S, Garg R, et al** (2019). Evaluation of obstructive sleep apnea in metabolic syndrome. J Family Med Prim Care. 8:1586-8
3. **Satyakumari V, Vulli V, Rao GS, Anusha A, Kumar VS** (2018). Study of prevalence of obstructive sleep apnea in patients with metabolic syndrome. IOSR J Dent Med Sci;17:51-5.
4. **Custrada A, Jauregui-Maldonado, Bayarri T, Varea J, Bernal S** (2018). Correlation between metabolic syndrome and sleep apnea. World J Diabetes; 9:66-71.
5. **Kong DL, Qin Z, Wang W, Pan Y, Kang J, Peng J** (2016). Association between obstructive sleep apnea and metabolic syndrome: A meta-analysis. Clin Invest Med. 38:161-72.
6. **Choi, E.-K.** Cardiovascular research using the Korean National Health Information Database. Korean Circ. J. 48, 754–772 (2018).
7. **Kim, D.H., Kim, B., Han, K. et al** (2021). The relationship between metabolic syndrome and obstructive sleep apnea syndrome: A nationwide population-based study. Sci Rep 11, 8781.
8. **K.G. Alberti, R.H. Eckel, S.M. Grundy, et al.** (2009) "Harmonizing the metabolic syndrome: a joint interim statement of the International Diabetes Federation Task Force on Epidemiology and prevention; national Heart, Lung, and Blood Institute; American Heart Association; World Heart Federation; international Atherosclerosis society; and international association for the study of obesity", Circulation, 120 (16), pp. 1640-1645

KẾT QUẢ CAN THIỆP THỞ ÁP LỰC DƯƠNG LIÊN TỤC TRÊN ĐỐI TƯỢNG MẮC HỘI CHỨNG CHUYỂN HÓA CÓ NGƯNG THỞ TẮC NGHẼN KHI NGỦ TẠI BỆNH VIỆN ĐẠI HỌC Y HẢI PHÒNG

Nguyễn Thị Hồng Liên[1,2], Phạm Văn Linh[1,2]

TÓM TẮT

Mục tiêu: Hiện nay kết quả can thiệp thông khí áp lực dương liên tục (CPAP) trên các đối tượng ngưng thở tắc nghẽn khi ngủ có đồng mắc hội chứng chuyển hóa đều tự tại Bệnh viện Đại học Y Hải Phòng. ***Phương pháp:*** Nghiên cứu can thiệp không ngẫu lắn có đối chứng. Đối tượng có ngưng thở tắc nghẽn khi ngủ mức vừa và nặng được phân ngẫu nhiên vào nhóm nghiên cứu và nhóm chứng dựa trên sự đồng ý và tuân thủ CPAP. ***Kết quả:*** trên 61 đối tượng mắc hội chứng chuyển hóa có ngưng thở tắc nghẽn khi ngủ mức trung bình đến nặng, có 30 trường hợp điều trị CPAP và 31 người tham gia nhóm chứng. Sau 6 tháng, điều trị CPAP làm giảm có ý nghĩa huyết áp tâm thu (3,91 mmHg; 95%CI: 4,47 - 7,41; $p = 0,0001$), huyết áp tâm trương (3,71 mmHg; 95%CI: 2,68 - 4,71; $p < 0,0001$), cholesterol toàn phần (0,34 mmol/L; 95%CI: 0,21 - 0,71; $p < 0,0001$), LDL-C (0,22 mmol/L; 95%CI: 0,17 - 0,81; $p = 0,0081$), triglyceride (0,66 mmol/L; 95%CI: 0,31 - 0,71; $p < 0,0001$) và tăng HDL-C (0,1 mmol/L; 95%CI: 0,01 - 0,11; $p < 0,0001$). Tỷ lệ người mắc hội chứng chuyển hóa giảm 20% ở nhóm điều trị CPAP (6/30 người). ***Kết luận:*** Ở những trường hợp mắc hội chứng chuyển hóa bị ngưng thở tắc nghẽn khi ngủ từ trung bình đến nặng, liệu pháp CPAP trong 6 tháng làm giảm huyết áp và đảo ngược một phần những rối loạn thành phần của hội chứng chuyển hóa.

Từ khóa: Ngưng thở tắc nghẽn khi ngủ, thở áp lực dương liên tục (CPAP)

SUMMARY

EFFECT OF CONTINUOUS POSITIVE AIRWAY PRESSURE ON PATIENTS WITH COMORBID OBSTRUCTIVE SLEEP APNEA AND METABOLIC SYNDROME IN HAI PHONG UNIVERSITY HOSPITAL

Objectives: To study the effectiveness of continuous positive airway pressure (CPAP) on patients with comorbid obstructive sleep apnea (OSA) and metabolic syndrome (MetS) hospitalized in Hai Phong University Hospital. *Methods:* Controlled before-after design. The study and control groups are randomly constituted based on CPAP tolerance and adherence. *Results:* A total of 61 subjects with concomitant metabolic syndrome and moderate-to-severe obstructive sleep apnea, 30 of whom underwent 6 months of therapeutic CPAP (study group) and 31 participated in otherwise similar control group. CPAP treatment was associated with significant mean decreases in systolic blood pressure (3,91 mmHg; 95%CI: 4,47 to 7,41; $p < 0,001$), diastolic blood pressure (3,71 mmHg; 95%CI: 2,68 to 4,71, $p < 0,0001$), serum total cholesterol (0,34 mmol/L; 95%CI: 0,21 to 0,71, p

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< 0.0001), low-density lipoprotein cholesterol (0,32 mmol/L; 95%CI: 0,17 to 0,47, p < 0.0001), triglycerides (0,68 mmol/L; 95%CI: 0,33 to 0,73, p < 0.0001) and significant mean increases in high-density lipoprotein cholesterol (0,1 mmol/L; 95%CI: 0,05 to 0,15, p < 0.0001). The metabolic syndrome was reversed in in 6 of 30 patients (20%). **Conclusion:** In patients with comorbid moderate-to-severe obstructive sleep apnea and metabolic syndrome, a 6-month CPAP therapy course lowers blood pressure and partially reverses metabolic abnormalities.

Keywords: Obstructive Sleep Apnea, Metabolic Syndrome, CPAP

I. ĐẶT VẤN ĐỀ

Ngưng thở tắc nghẽn khi ngủ (NTTNKN) là một rối loạn hô hấp rất hay gặp trong khi ngủ, với tỷ lệ mắc khá cao trong cộng đồng, nhưng thường được chẩn đoán dưới mức ngay cả ở các nước có nền y học phát triển. Nghiên cứu thuần tập Wisconsin về giấc ngủ cho thấy tỷ lệ mắc hội chứng này ở nam là 24% và ở nữ là 9%. Một phần hãy dân số trưởng thành trên thế giới, tương đương khoảng một tỷ người, được xác định mắc OSA [1]. Tại Việt Nam, một nghiên cứu đa trung tâm đã được thực hiện tại thành phố Hồ Chí Minh và tại Lâm Đồng (nghiên cứu EPSASIB) cho thấy tỷ lệ mắc NTTNKN ở người lớn trên 25 tuổi là 8,3% [2]. Hội chứng chuyển hóa gồm hợp các rối loạn thành phần (huyết áp tăng, đường huyết tăng, rối loạn mỡ máu, vòa vi bụng tăng) là yếu tố nguy cơ cao cho các bệnh lý tim mạch, đã được chứng minh liên quan với NTTNKN. Hội chứng chuyển hóa gặp 74 - 85% các trường hợp NTTNKN. NTTNKN liên quan chặt chẽ với thừa cân, béo phì và là yếu tố nguy cơ độc lập của tăng huyết áp và đề kháng insulin. Cho tới hiện tại, mặc dù có nhiều lựa chọn điều trị song hỗ trợ thông khí áp lực dương (CPAP) vẫn được xem là điều trị chuẩn mang lại hiệu quả tốt nhất đặc biệt đối với các trường hợp người bệnh có tình trạng ngưng thở khi nghỉ khi ngủ từ mức vừa cho tới nặng. Với những bằng chứng thiết nối trên giữa NTTNKN với hội chứng chuyển hóa, chúng tôi tiến hành nghiên cứu *đối quả can thiệp thở áp lực dương liên tục (CPAP) trên các đối tượng ngưng thở tắc nghẽn khi ngủ mắc hội chứng chuyển hóa điều trị tại Bệnh viện Đại học Y Hải Phòng.*

II. ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU

2.1. Đối tượng nghiên cứu: Nghiên cứu về đáp ứng với CPAP trên người bệnh đồng mắc ngưng thở tắc nghẽn khi ngủ và hội chứng chuyển hóa.

2.2. Phương pháp nghiên cứu: Nghiên cứu can thiệp có đối trước-sau và có nhóm đối chiếu với nhóm chứng. Cỡ mẫu ước tính cho nghiên cứu can thiệp

$$n = \frac{(z_{1-\alpha/2} + z_{1-\beta})^2 \times 2\sigma^2}{(\mu_1 - \mu_2)^2}$$

Chọn kết cục chính là sự thiện huyết áp tâm trương, theo nghiên cứu của Sharma SK và cộng sự [3], σ=6,87; μ1-μ2 = 2,81 (với μ1 là huyết áp tâm trương trung bình của nhóm trước khi can thiệp và μ2 là huyết áp tâm trương trung bình của nhóm sau khi can thiệp; chọn α = 0,05 , β = 0,2 và γ = 0,6 thì cỡ mẫu tính được n = 29,28 = 30 bệnh nhân.

Nghiên cứu lựa chọn các trường hợp mắc hội chứng chuyển hóa tại Khoa khám bệnh và Khoa hô hấp tác mạch, Bệnh viện Đại học Y Hải Phòng (từ tháng 10/2018 đến 10/2022). Theo Tổ chức y tế thế giới áp dụng chẩn đoán HCCH khi người bệnh có từ 3 yếu tố trở lên trong các yếu tố sau: Nam có vòng

hụng ≥ 90 cm, nữ có vòng hụng ≥ 80cm; Triglycerid máu ≥ 150 mg/dl (1,69 mmol/L); HDL-C < 40mg/dl (nam) và < 50mg/dl (nữ); Huyết áp ≥ 130/85 mmHg; Tăng glucose máu lúc đói ≥ 100mg/dl (5,5 mmol/L). Các chỉ tiêu nghiên cứu gồm tuổi, giới, HA tâm thu/tâm trương, BMI, chu vi vòng hụng, tình trạng buồn ngủ qua mức hay ngày (đánh giá theo thang điểm Epworth gồm 8 câu hỏi, tổng điểm cao nhất là 24, người bệnh có buồn ngủ quá mức ban ngày khi tổng điểm > 10), xét nghiệm Glucose máu lúc đói, Cholesterol, Triglycerid, LDL-C, HDL-C. Đo đa ký giấc ngủ bằng máy đa ký Alice Nightone của hãng Philips Respironics (Mỹ) với phần mềm SleepwareG3. Chúng tôi lấy vào nghiên cứu chỉ số ngưng thở/giảm thở trong 1 giờ (AHI - Apnea Hypopnea Index), SpO2 thấp nhất trong đêm và tỷ lệ thời gian SpO2 giảm dưới 90% khi ngủ. Người bình thường có AHI < 5, bệnh nhân có NTTNKN mức nhẹ khi 5 ≤ AHI < 15, mức vừa khi 15 ≤ AHI < 30 và mức nặng khi AHI ≥ 30. Các trường hợp NTTNKN mức trung bình trở lên (AHI ≥ 15) được tư vấn, giải thích về hiệu quả của thở máy áp lực dương liên tục CPAP. Bệnh nhân đồng ý thở CPAP (máy ResMed AirSense 10, ResMed AirStart) và tuân thủ điều trị được đánh giá lại các chỉ tiêu nghiên cứu sau 6 tháng. Đề tài được Hội đồng khoa học trường DHYDHP thông qua và được sự chấp thuận của Hội đồng Y đức - Bệnh viện DHYHP. Số liệu thu thập được chỉ phục vụ mục đích nghiên cứu, thông tin của người bệnh được giữ bí mật.

2.3. Xử lý số liệu: Xử lý số liệu bằng phần mềm SPSS 20.0.

III. KẾT QUẢ NGHIÊN CỨU

Nghiên cứu lựa chọn 126 trường hợp mắc hội chứng chuyển hóa từ 2018 - 10/2022, xác định được 102 trường hợp mắc NTTNKN. Trong đó có 72 trường hợp mắc NTTNKN mức trung bình trở lên, 34 trường hợp đồng ý thở CPAP điều trị và 4 trường hợp bỏ theo dõi, còn lại 30 bệnh nhân đủ tiêu chuẩn nghiên cứu. Trong số 30 trường hợp không đồng ý thở CPAP, có 31 trường hợp khám và xét nghiệm lại sau 6 tháng, được đưa vào nhóm chứng.

Sau 6 tháng theo dõi, chúng tôi thu được kết quả như sau:

Bảng 3.1. Đặc trưng các nhóm đối tượng tham gia nghiên cứu

Đặc điểm	Nhóm thở CPAP (n=30)	Nhóm chứng (n=31)	p
Tuổi (năm)	51,10 ± 8,21	52,10 ± 8,15	0,79
Giới nam (n,%)	16 (53,3)	17 (54,8)	0,56
BMI (kg/m^2)	26,32 ± 2,69	25,74 ± 1,79	0,97
Chu vi vòng hụng (cm)	99,33 ± 8,38	98,14 ± 4,33	0,51
HA tâm thu (mmHg)	134,93 ± 12,76	135,45 ± 10,31	0,84
HA tâm trương (mmHg)	87,70 ± 7,28	87,74 ± 6,68	0,98
Glucose đói (mmol/L)	6,28 ± 1,03	6,27 ± 0,89	0,85
Cholesterol (mmol/L)	5,01 ± 0,87	5,03 ± 0,92	0,69
Triglyceride (mmol/L)	3,11 ± 1,52	3,16 ± 1,89	0,87
LDL-C (mmol/L)	3,31 ± 0,89	3,29 ± 0,89	0,90
HDL-C (mmol/L)	1,28 ± 0,24	1,29 ± 0,35	0,90

Nhận xét: Không có sự khác biệt có ý nghĩa thống kê về các chỉ số nhân trắc học và huyết áp, glucose máu và mỡ máu giữa nhóm chứng và nhóm can thiệp CPAP ở thời điểm bắt đầu nghiên cứu.

Bảng 3.2. Điểm Epworth và kết quả đa ký hô hấp ở hai nhóm nghiên cứu

Đặc điểm	Nhóm thở CPAP (n=30)	Nhóm chứng (n=31)	p
Điểm Epworth	15,03 ± 3,06	14,81 ± 3,08	0,77
AHI (lần/giờ)	39,22 ± 14,45	37,95 ± 10,11	0,75
SpO2 min (%)	82,5 ± 8,89	83,81 ± 4,13	0,46
Thời gian SpO2 < 90% (%)	22,43 ± 4,86	21,94 ± 4,86	0,69

Nhận xét: Ở hai nhóm nghiên cứu, điểm trung bình Epworth đều lớn hơn 11, chỉ số ngưng thở-giảm thở AHI ở mức nặng (AHI > 30 lần/giờ, độ bão hòa oxy SpO2 thấp nhất khi ngủ xuống đến 82,5-83,8% và thời gian SpO2 < 90% chiếm đến 21,94-22,43% thời gian ngủ của người bệnh. Các chỉ số không có sự khác biệt giữa hai nhóm.

Bảng 3.3. So sánh các chỉ số thành phần của hội chứng chuyển hóa sau 6 tháng ở hai nhóm nghiên cứu

Đặc điểm	Nhóm thở CPAP (n=30)	Nhóm chứng (n=31)	p
Chu vi vòng bụng (cm)	98,33 ± 8,50	97,63 ± 4,21	0,67
BMI (kg/m^2)	26,31 ± 2,03	25,97 ± 1,83	0,50
HA tâm thu (mmHg)	130,27 ± 10,78	136,84 ± 10,14	**0,017**
HA tâm trương (mmHg)	84,77 ± 6,37	88,32 ± 6,39	**0,029**
Glucose đói (mmol/L)	6,31 ± 0,83	6,21 ± 0,97	0,63
Cholesterol (mmol/L)	5,66 ± 0,65	6,20 ± 0,71	**0,001**
Triglyceride (mmol/L)	2,67 ± 1,36	3,38 ± 1,01	**0,024**
LDL-C (mmol/L)	3,06 ± 0,68	3,39 ± 0,67	**0,044**
HDL-C (mmol/L)	1,37 ± 0,20	1,27 ± 0,34	0,995
Không còn hội chứng chuyển hóa (n)	06 (20%)	0	

Nhận xét: Sau 6 tháng can thiệp thở CPAP ở các trường hợp NTTNKH mức trung bình trở lên, các chỉ số huyết áp tâm thu, huyết áp tâm trương, cholesterol, triglyceride và LDL-C của người bệnh đều giảm có ý nghĩa thống kê so với nhóm chứng (với p < 0,05 hoặc p = 0,01). Sau 6 tháng, có 6 trường hợp trong nhóm thở CPAP không còn chẩn đoán mắc hội chứng chuyển hóa.

Bảng 3.4. Hiệu quả của CPAP sau 6 tháng điều trị trên các chỉ số thành phần của hội chứng chuyển hóa và triệu chứng buồn ngủ qua mức ban ngày

Các chỉ số sau 6 tháng	Nhóm thở CPAP (n=30)	Nhóm chứng (n=31)	Chênh lệch hiệu số (95%CI)	P
Chu vi bụng (cm)	-0,89 ± 1,24	-0,51 ± 0,35	-0,38 (-0,16 ÷ -0,88)	0,12
BMI	-0,32 ± 0,42	0,24 ± 0,37	-0,46 (-0,18 ÷ 0,66)	< 0,0001
HA tâm thu (mmHg)	-6,56 ± 3,76	1,39 ± 1,65	-5,91 (-4,47 ÷ -7,43)	< 0,0001
HA tâm trương(mmHg)	-3,13 ± 2,28	0,58 ± 1,73	-3,71 (-2,68 ÷ -4,75)	< 0,0001

Glucose đói (mmol/L)	-0,09 ± 0,26	0,04 ± 0,26	-0,13 (-0,01 – 0,26)	0,07
Cholesterol (mmol/L)	-0,38 ± 0,10	0,18 ± 0,43	-0,54 (-0,31 – 0,73)	< 0,0001
Triglyceride (mmol/L)	-0,44 ± 0,17	0,22 ± 0,30	-0,66 (-0,48 – 0,83)	< 0,0001
LDL-C (mmol/L)	-0,35 ± 0,97	-0,13 ± 0,95	-0,22 (-0,17 – 0,87)	0,38
HDL-C (mmol/L)	0,08 ± 0,13	-0,02 ± 0,04	0,1 (0,01 – 0,15)	< 0,0001
Epworth	-10,17 ± 2,74	0,38 ± 1,28	-10,55(-8,43 – -11,65)	< 0,0001

Nhận xét: Sau 6 tháng theo dõi, các chỉ số thành phần của hội chứng chuyển hóa và BMI, nồng độ cholesterol máu của nhóm thở CPAP đều có sự cải thiện giảm so với nhóm chứng. Trong đó, huyết áp tâm thu giảm 5,95 mmHg, huyết áp tâm trương giảm 3,71 mmHg, cholesterol máu giảm 0,54 mmol/L, triglyceride máu giảm 0,66 mmol/L, LDL-C giảm 0,22 mmol/L và HDL-C tăng 0,1 mmol/L (sự khác biệt có ý nghĩa thống kê với với $p < 0,0001$). Biểu hiện buồn ngủ ban ngày qua mức đánh giá thông qua thang điểm Epworth cũng cho thấy sự thay đổi có ý nghĩa thống kê của giá trị này (giảm trung bình 10,55 điểm).

IV. BÀN LUẬN

Ngưng thở tắc nghẽn khi ngủ và hội chứng chuyển hóa đều là những yếu tố nguy cơ tim mạch quan trọng và chúng có thể có tác động hiệp đồng gây ra các bệnh lý tim mạch. Thở áp lực dương liên tục CPAP đến nay là lựa chọn điều trị ưu tiên cho các trường hợp NTTNKN từ mức độ trung bình trở lên (người còn lại vẫn giảm cân, tăng cường hoạt động thể lực hay trị liệu sự thể...) và có thể hữu ích đối với người mắc hội chứng chuyển hóa hoặc hữu ích đối với các bệnh thường chuyển hóa liên quan đến NTTNKN [3].

Nghiên cứu của chúng tôi lựa chọn những trường hợp mắc hội chứng chuyển hóa, có ngưng thở tắc nghẽn khi ngủ từ mức độ trung bình trở lên (có chỉ số ngưng thở-giảm thở AHI ≥15 lần/giờ ngủ). Đây là những trường hợp có nguy cơ cao đột tử trong khi ngủ hoặc gặp các hậu quả liên quan bệnh lý tim mạch chuyển hóa. Nghiên cứu có 126 trường hợp mắc hội chứng chuyển hóa từ 2018 – 10/2022, xác định được 72 trường hợp mắc NTTNKN mức trung bình trở lên. Trong đó 34 trường hợp đồng ý điều trị CPAP, 4 trường hợp bỏ theo dõi sau đó, còn lại 30 bệnh nhân được đánh giá sau 6 tháng. Trong số 36 trường hợp không đồng ý thở CPAP, có 31 trường hợp khám và xét nghiệm lại sau 6 tháng, được đưa vào nhóm chứng. Kết quả ở bảng 3.1 và bảng 3.2 cho thấy, các chỉ số nhân trắc học và huyết áp, glucose máu và mỡ máu giữa nhóm chứng và nhóm sau thấy CPAP ở thời điểm bắt đầu nghiên cứu tương đồng với nhau. Điểm trong bảng Epworth ở hai nhóm đều lớn hơn 11 cho thấy hầu hết các trường hợp tham gia nghiên cứu đều có biểu hiện buồn ngủ ban ngày quá mức. Độ bão hòa oxy SpO2 thấp nhất khi ngủ của hai nhóm giảm thấp xuống dưới 82,5 – 83,8%, trong đó có trường hợp có thời điểm SpO2 còn 54%. Thời gian SpO2 giảm dưới 90% chiếm đến 21,94 – 22,43% thời gian ngủ của người bệnh. Độ bão hòa oxy tụt thấp, ngắt quãng và lặp đi lặp lại

nhiều lần, kéo dài trong khi ngủ là nguồn gốc của tình trạng stress oxy hóa, tăng hoạt động giao cảm và viêm hệ thống, là nguy cơ gây ra đột tử hơn đáng kể các bệnh lý tim mạch chuyển hóa.

Bảng 3.3 cho thấy sau 6 tháng can thiệp thở CPAP ở các trường hợp NTTNKN mức trung bình trở lên, các chỉ số thành phần của hội chứng chuyển hóa gồm huyết áp tâm thu, huyết áp tâm trương, cholesterol và triglyceride của người bệnh đều giảm có ý nghĩa thống kê so với nhóm chứng (với $p < 0,05$ hoặc $p < 0,01$). Tuy nhiên sự thay đổi về chỉ số vòng bụng, glucose máu lúc đói, LDL-C và HDL-C không có ý nghĩa thống kê. Trong 30 trường hợp NTTNKN can thiệp, có 6 trường hợp (20%) không còn chẩn đoán mắc hội chứng chuyển hóa sau 6 tháng thở CPAP. Một số nghiên cứu khác cũng cho thấy điều trị CPAP làm giảm có ý nghĩa hội chứng chuyển hóa sau 3 đến 6 tháng [3],[4]. Kết quả bảng 3.4 cho thấy sau 6 tháng thở CPAP, huyết áp tâm thu giảm 5,95 mmHg, huyết áp tâm trương giảm 3,71 mmHg. Nhiều nghiên cứu trên thế giới cũng có kết quả tương tự về lợi ích của thở CPAP đối với việc làm hạ huyết áp [3],[4],[15]. Tình trạng tăng huyết áp hay gặp ở người NTTNKN có thể liên quan đến sự phối hợp giữa ngủ và giảm độ bão hòa oxy máu trong đêm dẫn đến hoạt hóa hệ giao cảm. Giả thuyết này cũng được củng cố thêm với bằng chứng là sự giảm đáng kể các trị số huyết áp ở người tuân thủ điều trị CPAP, trong khi không thấy rõ sự cải thiện huyết áp ở người không tuân thủ CPAP [6]. Nghiên cứu của chúng tôi cũng thấy thở CPAP sau 6 tháng ở người NTTNKN có hội chứng chuyển hóa làm giảm có ý nghĩa nồng độ cholesterol máu 0,34 mmol/L, giảm triglyceride máu 0,66 mmol/L, giảm LDL-C 0,22 mmol/L và HDL-C tăng có ý nghĩa thống kê. Ý nghĩa lâm sàng của nghiên cứu này có thể được ngoại suy từ các thử nghiệm cho thấy nguy cơ mắc bệnh mạch vành và đột quỵ giảm tương ứng là 15% và 42% với mỗi lần giảm huyết áp 5 mmHg [7] và nguy cơ mắc cả bệnh mạch vành và đột quỵ giảm 20% với mỗi lần giảm cholesterol máu 1 mmol/L (40 mg/dl) [8]. BMI giảm đáng kể sau 6 tháng điều trị cũng là kết quả đáng ghi nhận. Một số tác giả cho rằng BMI giảm là hiệu quả gián tiếp do CPAP giúp cải thiện rõ rệt buồn ngủ quá mức ban ngày, do đó có thể giúp tăng các hoạt động thể lực hơn sau đó người đó tỉnh táo và sảng khoái hơn [3]. Một đã tác động trực tiếp của CPAP đối với sự giảm mỡ còn nhiều tranh cãi, nhưng có thể suy đoán rằng CPAP có ảnh hưởng thuận lợi lên nồng độ leptin (đã được chứng minh là tăng ở người mắc NTTNKN và trở về bình thường với liệu pháp CPAP).

V. KẾT LUẬN

Với 6 tháng điều trị CPAP ở những trường hợp NTTNKN mức trung bình trở lên có hội chứng chuyển hóa giúp cải thiện cả huyết áp tâm thu, huyết áp tâm trương, mỡ máu (giảm cholesterol, triglyceride, LDL-C và tăng HDL-C) và BMI. Trong đó có 20% (6/30) trường hợp đảo ngược được tình trạng mắc hội chứng chuyển hóa.

TÀI LIỆU THAM KHẢO

1. Lyons MM, et al., Global burden of sleep-disordered breathing and its implications (2020), Respirology, 25(7), pp. 690-702.
2. Duong Quy Sy et al., Study about the prevalence of the obstructive sleep apnoea syndrome in Vietnam (2018), Tap Nghien Cuu Y Hoc, 107(1), pp. 14-24.
3. Sharma SK, et al., CPAP for the metabolic syndrome in patients with obstructive sleep apnea (2011), N Engl J Med, 365(24), pp. 2277-86.
4. Mota P. C. et al., APAP impact on metabolic syndrome in obstructive sleep apnea patients (2011), Sleep Breath, 15(4), pp. 693-72.
5. Lozano L. et al., Continuous positive airway pressure treatment in sleep apnea patients with resistant hypertension: a randomized, controlled trial (2010), J Hypertens, 28(10), pp. 2161-8.
6. Robinson GV., et al., Continuous positive airway pressure does not reduce blood pressure in nonsleepy hypertensive OSA patients (2006), Eur Respir J, 27(6), pp. 1229-35.
7. Collins R. et al., Blood pressure, stroke, and coronary heart disease. Part 2, Short-term reductions in blood pressure: overview of randomised drug trials in their epidemiological context (1990), Lancet, 335(8693), pp. 827-38.
8. Baigent C. et al., Efficacy and safety of cholesterol-lowering treatment: prospective meta-analysis of data from 90,056 participants in 14 randomised trials of statins (2005), Lancet, 366(9493), pp. 1267-78.

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TÓM TẮT

Mục tiêu: Mô tả tỷ lệ, đặc điểm lâm sàng và một số yếu tố liên quan của hội chứng ngưng thở tắc nghẽn khi ngủ trên các đối tượng thừa cân, béo phì điều trị tại Bệnh viện Đại học Y Hải Phòng năm 2020.

Phương pháp: Nghiên cứu cắt ngang, mô tả.

Kết quả: Trên 32 trường hợp thừa cân, béo phì (BMI ≥ 23) được chọn vào nghiên cứu, tỷ lệ mắc hội chứng ngưng thở tắc nghẽn khi ngủ là 78,8%. Các triệu chứng ngủ ngáy, tiểu đêm nhiều lần và đau đầu buổi sáng gặp với tỷ lệ cao. Điểm Epworth ở nhóm thừa cân, béo phì mức HCNTTHKN mức nặng và vừa cao hơn có ý nghĩa thống kê so với nhóm không mắc HCNTTHKN (p=0,01). Chỉ số khối cơ thể BMI tăng tỷ lệ thuận và có ý nghĩa thống kê với sự tăng của AHI (p < 0,05). Các bệnh đồng mắc của thể trạng thừa cân, béo phì (tăng huyết áp, đái tháo đường typ 2 và rối loạn chuyển hóa lipid máu) gặp với tỷ lệ cao ở những người mắc HCNTTHKN.

Kết luận: Tỷ lệ mắc HCNTTHKN ở người thừa cân, béo phì rất cao (78,8%). Nên tầm soát Mỏ chứng này ở các trường hợp có BMI ≥23 để có tư vấn điều trị và quản lý theo dõi thích hợp.

Từ khóa: Hội chứng ngưng thở tắc nghẽn khi ngủ, thừa cân, béo phì.

SUMMARY

PREVALENCE AND CLINICAL CHARACTERISTIC OF OBSTRUCTIVE SLEEP APNEA IN OVERWEIGHT AND OBESE SUBJECTS AT HAI PHONG UNIVERSITY HOSPITAL

Objectives: Describe the prevalence, clinicalcharacteristic and related factors of obstructive sleep apnea syndrome in overweight and obese subjects treated at Hai Phong University Hospital in 2020.

Methods: Cross-sectional, descriptive study.

Results: 32 subjects with BMI ≥ 23 had been enrolled and studies with PSG. The results why 41 subjects were with OSA (78,8%), 18 had mild OSAS (34,8%), 12 had moderate OSA (28,8%) and 8 had severe OSA (15,4%). The prevalence of snoring at night, nocturia and headache in the morning in subjects with OSA is high. Epworth score in overweight and obese subjects with severe or moderate OSA was significantly higher than that of subjects without OSA. Body mass index increased proportionally and significantly with AHI. Common comorbidities of overweight and obesity (hypertension, type 2 diabetes and dyslipidemia) were found at a high rate in people with OSA.

Conclusion: The prevalence of OSA in subjects with overweight and obesity was definitely high. Early diagnosis of OSAS in overweight and obese subjects to have appropriate treatment and management.

Keywords: Obstructive Sleep Apnea, Overweight, Obesity

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I. ĐẶT VẤN ĐỀ

Hội chứng ngưng thở khi ngủ do tắc nghẽn đường thở (Obstructive Sleep Apnea Syndrome: OSAS) mới được biết đến trong vòng hơn thập kỷ qua. Triệu chứng đặc trưng nhất của OSAS là ngủ ngáy. Các nghiên cứu gần đây cho thấy một số trường hợp tử vong đột ngột vào ban đêm trong lúc ngủ có liên quan với OSAS. Trước đây, OSAS thường ít được quan tâm. Nhưng ngày nay, cùng với sự phát triển của khoa học và xã hội, hội chứng này ngày càng được quan tâm hơn và đã đạt được nhiều tiến bộ trong chẩn đoán và điều trị. Hội chứng ngưng thở khi ngủ (HCNTTNKN) là một bệnh lý thường gặp, gây nhiều biến chứng nguy hiểm và bệnh rất khó được tự phát hiện vì dấu hiệu ngưng thở chỉ xảy ra khi ngủ. Hội chứng ngưng thở khi ngủ là rối loạn độc trung bởi sự ngừng thở hoàn toàn hay không hoàn toàn trong khi ngủ dẫn tới tình trạng thiếu oxy máu. Khi oxy trong máu giảm đột ngột gây tăng huyết áp và tạo ra gánh nặng cho hệ tim mạch. Khoảng một nửa số người bị HCNTTNKN tắc nghẽn sẽ mắc bệnh cao huyết áp, và có nguy cơ xuất hiện biến chứng đột quỵ (tai biến mạch máu não), suy tim, bệnh về mạch máu... Người bệnh thường không biết mình có vấn đề khi ngủ và tình trạng nặng của nó, người ngủ chung và người trong gia đình thường là người phát hiện được các triệu chứng này của bệnh nhân. Tần suất mắc bệnh chung khoảng 4,1-7,5% ở nam giới và 2,1 – 3,2% ở nữ giới, tần số này tăng lên theo tuổi và theo chỉ số BMI của cơ thể. Tỷ lệ này có thể chiếm tới 50-90% ở những người thừa cân, béo phì. Do đó chúng tôi tiến hành nghiên cứu này nhằm các mục tiêu:

1. Mô tả tỷ lệ, đặc điểm lâm sàng của hội chứng ngưng thở tắc nghẽn khi ngủ trên các đối tượng thừa cân, béo phì điều trị tại Bệnh viện Đại học Y Hải Phòng năm 2020.

2. Mô tả một số yếu tố liên quan đến hội chứng ngưng thở tắc nghẽn khi ngủ trên nhóm bệnh nhân nghiên cứu.

II. ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU

2.1. Đối tượng nghiên cứu

- Bao gồm 52trường hợp có chỉ số khối cơ thể BMI ≥23 (BMI = cân nặng [kg] / chiều cao*chiều cao [m]) khám tại Khoa khám bệnh và Khoa hô hấp tim mạch, Bệnh viện Đại học Y Hải Phòng (từ tháng 01/2020 đến 10/2020).

- Các chỉ tiêu nghiên cứu về lâm sàng gồm tuổi, giới, HA tâm thu/tâm trương, BMI, chu vi vòng bụng, vòng cổ, tình trạng đau đầu buổi sáng, ngủ ngáy, tiểu đêm từ 2 lần trở lên;

- Bệnh nhân trả lời vào bảng đánh giá mức độ buồn ngủ theo thang điểm Epworth gồm 8 câu hỏi, tổng điểm cao nhất là 24.

- Đo đa ký giấc ngủ được ghi bằng máy polygraphs CID 102L của hãng CIDELEC (Pháp) với phần mềm vùng Việt, có tính năng ghi nhận đa kênh và phân tích kết quả tự động. Chúng tôi lấy vào nghiên cứu chỉ số ngưng thở/giảm thở trong 1 giờ (AHI - Apnea Hypopnea Index) và SpO2 thấp nhất trong đêm. Người bình thường có AHI < 1, bệnh nhân có HCNTTNKN mức nhẹ khi 5 ≤ AHI < 15, mức vừa khi 15 ≤ AHI < 30 và mức nặng khi AHI ≥ 30.

2.2. Phương pháp nghiên cứu

Nghiên cứu cắt ngang mô tả.

2.4. Xử lý số liệu

Xử lý số liệu bằng phần mềm SPSS 16.0.

III. KẾT QUẢ NGHIÊN CỨU

Nghiên cứu trên 52 bệnh nhân chúng tôi thu được kết quả như sau:

Bảng 3.1.Đặc trưng nhóm đối tượng nghiên cứu

Đặc trưng nhóm bệnh nhân nghiên cứu	Giá trị ghi nhận	
Bệnh nhân nghiên cứu (số lượng, tỷ lệ)	52	100
Bệnh nhân là nam giới	33	63,5
Tuổi trung bình	58,2 ± 11,3	
BMI	26,7 ± 2,1	
HA tâm thu (trung bình, min, max)	132,1 ± 16,3	100–160
HA tâm trương (trung bình, min, max)	82,3 ± 11,1	60 – 105
Chu vi vòng bụng trung bình (cm)	84,3 ± 8,5	71 - 105
AHI ≥ 5 (số lượng, tỷ lệ)	41	78,8

Nhận xét: Trên 52 bệnh nhân nghiên cứu, có 33 bệnh nhân nam (chiếm 58,8%), tuổi trung bình của nhóm bệnh nhân nghiên cứu khá cao (58,2 ± 11,3 tuổi). Chỉ số BMI trung bình của nhóm nghiên cứu là 26,7 ± 2,1. Nghiên cứu cho thấy có 41 bệnh nhân có hội chứng ngưng thở tắc nghẽn khi ngủ (AHI ≥ 5), chiếm 78,8% số bệnh nhân.

Bảng 3.2. Đặc điểm lâm sàng của HCNTTNKN phân theo mức độ bệnh

AHI	Ngáy (%)	Tiểu đêm (%)	Đau đầu buổi sáng(%)	Epworth
[1]AHI < 5 (n=11, 21,2%)	18,2	54,5	36,4	4,6 ± 1,9
[2]15 >AHI ≥ 5 (n=18, 34,6%)	38,9*	72,3*	44,4*	5,7 ± 2,2*
[3]30 > AHI ≥ 15 (n=15, 28,8%)	53,3*	66,7*	48,0*	9,0 ± 2,8*
[4]AHI ≥ 30 (n=8, 15,4%)	87,5**	87,5*	62,5*	13,0 ± 3,9*

*$p > 0,05$ so với [1]; **$p < 0,05$ so với [1]; *$p < 0,01$ so với [1]

*Nhận xét:*Trong các trường hợp thỏa tiêu chuẩn tham gia nghiên cứu, có 34,6% trường hợp mắc HCNTTNKN mức nhẹ, 28,8% trường hợp mắc HCNTTNKN mức vừa và 15,4% trường hợp mắc HCNTTNKN mức nặng.Tỷ lệ bệnh nhân có các triệu liệu lâm sàng ngáy, tiểu nhiều lần về đêm và đau đầu buổi sáng cao hơn ở nhóm đối tượng có HCNTTNKN so với nhóm bệnh nhân không có HCNTTKN, trong đó tỷ lệ ngủ ngáy ở nhóm mắc HCNTTNKN mức nặng cao hơn có ý nghĩa thống kê so với nhóm không mắc hội chứng này ($p < 0,05$).

Điểm Epworth trung bình ở các nhóm HCNTTNKNmức vừa và mức nặng cao hơn có ý nghĩa so với nhóm không mắc HCNTTNKN (với $p < 0,01$).

Bảng 3.3.Đặc điểm nhân trắc học liên quan giữa theo chỉ số AHI

AHI	Tuổi	HA tâm thu (mmHg)	HA tâm trương (mmHg)	Vòng bụng (cm)	Vòng cổ (cm)	BMI (kg/m²)
(1) AHI < 5	53,2 ± 9,9	123,2 ±11,5	79,1±9,2	83,3 ± 8,5	37,5 ± 2,4	24,5±1,2
(2)15 > AHI ≥ 5	59,0 ± 12,4*	139,2± 15,5*	85,6±10,1*	92,3±6,4*	37,3 ± 2,4*	26,0±1,9**
(3)30 > AHI ≥ 15	55,9±10,8*	128,0±16,9*	78,3±11,3*	83,4±8,9*	38,3±1,6*	26,7±1,8**
(4)AHI ≥ 30	66,4 ± 7,8*	136,3±16,5*	86,9±12,8*	92,6±7,9*	39,3±1,5*	37,3±3,4**

** p> 0,05 so với (1); ** p < 0,05 so với (1)*

Nhận xét: Các giá trị trung bình về tuổi, huyết áp tâm thu, huyết áp tâm trương vòng bụng và vòng cổ đều có xu hướng tăng theo mức độ nặng của HCNTTNKN nhưng chưa có ý nghĩa thống kê (p > 0,05).

Chỉ số khối cơ thể BMI tăng tỷ lệ thuận, có ý nghĩa thống kê với sự tăng của chỉ số ngưng thở-giảm thở AHI (p < 0,05).

Bảng 3.4.Tỷ lệ các bệnh đồng mắc trên nhóm bệnh nhân nghiên cứu

AHI	Tăng huyết áp	Đái tháo đường typ 2	Rối loạn lipid máu
(1) AHI < 5 (n = 11)	2 (18,2%)	1 (9,1%)	4 (36,4%)
(2)15 > AHI ≥ 5 (n = 18)	8 (44,4%)	6 (33,3%)	13 (72,2%)
(3)30 > AHI ≥ 15 (n = 15)	12(80%)	7 (46,7%)	9 (60%)
(4)AHI ≥ 30 (n = 8)	8(75%)	3(37,5%)	7 (87,5%)
Tổng	30(53,8%)	17 (32,7%)	33(63,5%)

Nhận xét: Tỷ lệ các đối tượng thừa cân mắc tăng huyết áp, đái tháo đường typ 2 hay rối loạn lipid máu khá cao, chiếm tỷ lệ tương ứng là 53,8% , 32,7% và 63,5%.Trong đó các tỷ lệ này đều thấy cao hơn đáng kể ở các nhóm mắc HCNTTNKN mức độ nhẹ, trung bình và nặng so với nhóm thừa cân không mắc hội chứng này.

IV. BÀN LUẬN

4.1. Tỷ lệ và đặc điểm lâm sàng của HCNTTNKN trên các đối tượng thừa cân, béo phì

Nghiên cứu trên 52 trường hợp thừa cân, béo phì thấy có 41 bệnh nhân có hội chứng ngưng thở tắc nghẽn khi ngủ (chỉ số ngưng thở-giảm thở AHI ≥ 5), chiếm 78,8% tổng số các đối tượng nghiên cứu, trong đó 34,6% trường hợp có HCNTTNKN mức nhẹ (5 ≤ AHI < 15), 38,8% trường hợp có HCNTTNKN mức vừa (15 ≤ AHI < 30) và 15,4% trường hợp có HCNTTNKN mức nặng (AHI ≥ 30). Bệnh nhân có AHI ≥ 15 kèm các bệnh đồng mắc về tim mạch hay rối loạn chuyển hóa, đái tháo đường hoặc có tình trạng buồn ngủ ban ngày/ảnh hưởng đến vận hành máy móc, tàu xe; hoặc bệnh nhân có AHI ≥ 30 đều có chỉ định bắt buộc hỗ trợ thở áp lực dương liên tục trong đêm (CPAP-

continuous positive airway pressure). Tỷ lệ mắc của HCNTTNKN gặp trên các trường hợp thừa cân, béo phì đã được đề cập đến trong nhiều nghiên cứu [1], [2], [3], [7], [8].Thừa cân, béo phì là yếu tố nguy cơ độc lập, quan trọng đối với sự hình thành và tiến triển nặng của HCNTTNKN. Tỷ lệ mắc HCNTTNKN ở người béo phì cao gấp gấp đôi so với người có cân nặng trong giới hạn bình thường. Nguyên nhân dẫn đến HCNTTNKN ở người thừa cân, béo phì được cho là do sự lắng đọng chất béo trong các mô xung quanh đường hô hấp trên, kết hợp với tình trạng giảm trương lực cơ vùng hầu họng khi ngủ dẫn đến xẹp và hẹp đường dẫn khí, từ đó gây ra các cơn ngừng thở/giảm thở. Hơn nữa, chất béo tích tụ xung quanh ngực làm giảm tính đàn hồi của lồng ngực và có thể làm tăng nhu cầu oxy. Tuy nhiên, mối quan hệ giữa HCNTTNKN và béo phì rất phức tạp. Mặc dù có bằng chứng thuyết phục cho thấy rằng béo phì, cũng như béo phì trung tâm, có thể dẫn đến HCNTTNKN và giảm cân giúp cải thiện rõ HCNTTNKN, các nghiên cứu gần đây cho thấy rằng chính HCNTTNKN có thể gây tăng cân[7], [8].

Các biểu hiện lâm sàng chính gợi ý đến HCNTTNKN gồm ngủ ngáy, đi tiểu nhiều lần trong đêm, đau đầu buổi sáng và tình trạng buồn ngủ/ngủ gà (quá mức) ban ngày – tình trạng này được đánh giá dựa vào thang điểm Epworth. Điểm Epworth ≥ 11 gợi ý nên đo đa ký giấc ngủ hay đa ký hô hấp để xác định HCNTTNKN. Trong nghiên cứu của chúng tôi, tỷ lệ bệnh nhân có các biểu hiện ngáy, tiểu nhiều lần về đêm và đau đầu buổi sáng đều cao hơn ở nhóm thừa cân có HCNTTNKN so với nhóm thừa cân không mắc HCNTTNKN nhưng chưa có ý nghĩa thống kê. Điều này cũng có thể do cỡ mẫu trong bình của các đối tượng nghiên cứu khá nhỏ nên thường có tình trạng tiểu nhiều về đêm vì khát ngủ. Ngáy to là biểu hiện rất gợi ý đến tình trạng hẹp đường dẫn khí cũng như tình trạng ngưng thở khi ngủ. Nghiên cứu này thấy có 87,5% trường hợp HCNTTNKN mức nặng có ngáy. Tỷ lệ này cao hơn có ý nghĩa thống kê so với nhóm thừa cân không mắc HCNTTNKN ($p < 0,05$). Điểm Epworth trung bình ở các nhóm mắc HCNTTNKN mức vừa và mức nặng cao hơn có ý nghĩa so với nhóm không mắc HCNTTNKN (với $p < 0,01$ ở cả hai). Do đó có thể áp dụng thang điểm này vào các trường hợp thừa cân, béo phì để sàng lọc nguy cơ mắc HCNTTNKN.

4.2. Một số yếu tố liên quan đến HCNTTNKN trên nhóm bệnh nhân nghiên cứu

Bảng 3.3 cho thấy các giá trị trung bình về tuổi, huyết áp tâm thu, huyết áp tâm trương vòng bụng và vòng cổ đều có xu hướng tăng theo mức độ nặng của HCNTTNKN nhưng chưa có ý nghĩa thống kê ($p > 0,05$). Các nghiên cứu về hội chứng ngưng thở tắc nghẽn khi ngủ cho thấy có mối liên quan thuận chiều giữa chu vi vòng bụng/chu vi vòng cổ hay cổ ngắn với hội chứng này [1]. Ở người trưởng thành trên 40 tuổi chỉ số AHI cũng tăng dần theo tuổi. Nghiên cứu của chúng tôi có thể với cỡ mẫu chưa thấy rõ các mối liên quan này. Tuy nhiên, nghiên cứu này đã cho thấy chỉ số khối cơ thể BMI tăng tỷ lệ thuận và có ý nghĩa thống kê với sự tăng của chỉ số ngưng thở-giảm thở AHI ($p < 0,05$).

Bảng 3.4 cho thấy tỷ lệ các đối tượng thừa cân mắc tăng huyết áp, đái tháo đường typ 2 hay rối loạn lipid máu khá cao, chiếm tỷ lệ tương ứng là 53,8%, 32,7% và 63,5%. Trong đó, các tỷ lệ này đều thấy cao hơn đáng kể ở các nhóm mắc HCNTTNKN ở mức

ba mức độ so với nhóm thừa cân không mắc hội chứng này. Kết quả này phù hợp với kết quả của nhiều nghiên cứu về liên quan giữa hội chứng ngưng thở tắc nghẽn khi ngủ với các bệnh lý tim mạch hay các rối loạn chuyển hóa nói chung và với tăng huyết áp, đái tháo đường typ 2 hay rối loạn lipid máu nói riêng [2], [3], [4], [6]. Ngưng thở tắc nghẽn khi ngủ gây tình trạng thiếu oxy nghỉ quãng trong đêm, tăng tình trạng stress oxy hóa có thể dẫn đến hàng loạt các rối loạn chuyển hóa và các vấn đề tim mạch ở người bệnh sau này.

V. KẾT LUẬN

Tỷ lệ mắc Hội chứng ngưng thở tắc nghẽn khi ngủ ở các đối tượng thừa cân, béo phì trong nghiên cứu này rất cao (chiếm 78,8%). Các triệu chứng lâm sàng điển hình của bệnh biểu hiện khá rõ trên các đối tượng nghiên cứu. Tỷ lệ bệnh nhân có các biểu hiện lâm sàng ngày, tiểu nhiều lần về đêm và đau đầu buổi sáng cao hơn ở nhóm thừa cân có HCNTTNKN so với nhóm bệnh nhân không có HCNTTNKN (tỷ lệ tương ứng là 53,6%, 73,2%;46,3% so với 18,2%, 54,5%, 36,4%), trong đó tỷ lệ ngủ ngáy ở nhóm mắc HCNTTNKN mức nặng cao hơn có ý nghĩa thống kê so với nhóm không mắc hội chứng này ($p < 0,05$). Điểm Epworth trung bình ở các nhóm HCNTTNKN mức vừa và mức nặng cao hơn có ý nghĩa so với nhóm không mắc HCNTTNKN (với $p < 0,01$).

BMI tăng tỷ lệ thuận và có ý nghĩa thống kê với sự tăng của chỉ số ngưng thở-giảm thở AHI ở các bệnh nhân mắc HCNTTNKN ($p < 0,01$).Các bệnh đồng mắc hay gặp là tăng huyết áp, đái tháo đường typ 2 và rối loạn chuyển hóa lipid ở các đối tượng thừa cân, béo phì có kèm theo hội chứng ngưng thở tắc nghẽn khi ngủ.Do đó nên tầm soát hội chứng ngưng thở tắc nghẽn khi ngủ ở tất cả các trường hợp có chỉ số khối cơ thể BMI ≥ 23 để có tư vấn điều trị và quản lý theo dõi thích hợp.

TÀI LIỆU THAM KHẢO

1. **Hegar M Nessmir** (2019). Obesity: the major preventable risk factor of obstructive sleep apnea.J Curr Med Res Prac; 4(1):1-5.
2. **Shaela Jehan, Ferdousi Zizi, Saddikerigppa BP et al** (2017). Obstructive Sleep Apnea and Obesity: Implications for Public Health. Sleep Med Disord; 1(4): 00019.
3. **Martin JM, Carrizo SJ, Vicente E, Agusti AG** (2005). Long-term cardiovascular outcomes in men with obstructive sleep apnoea-hypopnoea with or without treatment with continuous positive airway pressure: an observational study.Lancet ; 365(9464): 1046-53.
4. **Somers VK, Dyken ME, Clary MP, Abboud FM** (2010). Sympathetic neural mechanisms in obstructive sleep apnea. J Clin Invest; 96: 1897–1904.
5. **Davies CW, Crosby JH, Mullins RL, Barbour C, Davies RJ, Stradling JR** (1818). Case-control study of 24 hour ambulatory blood pressure in patients with obstructive sleep apnoea and normal matched control subjects. Thorax; 53(9): 718-23.
6. **Luciano F.D, Shaia MT, Vasudad VP, Geraldo LF** (2012). Obstructive sleep apnea: a cardiometabolic risk in obesity and the metabolic syndrome.J Am Coll Cardiol; Aug 17;62(7):569-76.
7. **Ahmed Dalmar, Mishenj Singh, Beenan Pandey et al** (2018). The beneficial effect of weight reduction on adverse cardiovascular outcomes following bariatric surgery is attenuated in patients with obstructive sleep apnea.Sleep; May 1;41(5).
8. **Simon A Jonston I J, Jun K Kho I, Bradley A Edwards et al** (2017). Improvement in Obstructive Sleep Apnea With Weight Loss is Dependent on Body Position During Sleep. Sleep; May 1;40(5).

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

BIÊN BẢN
NGHIỆM THU ĐỀ TÀI KHCN CẤP CƠ SỞ NĂM 2023

Tên đề tài: Đánh giá kết quả sau sàn thiệp thứ áp lực dương liên tục trên đối tượng mắc hội chứng chuyển hóa có ngưng thở tắc nghẽn khi ngủ

Chủ nhiệm đề tài: ThS. Nguyễn Thị Hồng Liên

Thành viên tham gia: Phạm Văn Linh, Phạm Trung Đức, Phạm Thị Thanh Huyền, Trần Thị Thu Hằng

Giảng viên hướng dẫn (nếu có):

Đơn vị: Bộ môn Sinh lý bệnh - Dị ứng - Miễn dịch

Căn cứ Quyết định số: 2550/QĐ - YDHP ngày 08 tháng 12 năm 2023 của Hiệu trưởng trường Đại học Y Dược Hải Phòng về việc thành lập Tiểu ban Khoa học công nghệ nghiệm thu đề tài nghiên cứu khoa học cấp cơ sở năm 2023, Tiểu ban đã tiến hành họp để đánh giá, nghiệm thu đề tài vào hồi 8h Ngày 27 tháng 12 năm 2023 tại trường Đại học Y Dược Hải Phòng.

Các thành viên có mặt:

1. GS. TS. Phạm Văn Thôi - Trưởng tiểu ban
2. TS. Nguyễn Thị Thêm - Phó trưởng tiểu ban
3. TS. Nguyễn Thị Thu Hiền - Ủy viên
4. TS. Nguyễn Văn Tâm - Ủy viên
5. TS. Bùi Ngọc Tân - Ủy viên thư ký

Thư ký hành chính: ThS. Bùi Thị Hương

Các thành viên vắng mặt:

Không

NỘI DUNG NGHIỆM THU:

1. Đọc quyết định thành lập Tiểu ban: *TS. Bùi Ngọc Tân*
2. Trưởng Tiểu ban điều khiển buổi nghiệm thu.
3. Chủ nhiệm đề tài trình bày tóm tắt báo cáo tổng kết đề tài *(có bản sao tóm tắt kèm theo)*.
4. Các thành viên Tiểu ban nhận xét, góp ý *(có bản nhận xét kèm theo)*.

5. Các thành viên trong Tiểu ban và những người tham dự buổi nghiệm thu trao đổi về nội dung, phương pháp, kết quả nghiên cứu của đề tài; và thống nhất một số ý kiến sau:

.....

.....

.....

.....

.....

6. Đánh giá kết quả:

6.1. Ban kiểm phiếu gồm:

- TS. Bùi Ngọc Tân
- Ths. Bùi Thị Hương

6.2. Tiểu ban đã bỏ phiếu đánh giá kết quả như sau:

Tổng số phiếu phát ra : 5 phiếu
Tổng số phiếu thu vào : 5 phiếu
Số phiếu hợp lệ : 5 phiếu
Số phiếu không hợp lệ : 0 phiếu

6.3. Kết quả đánh giá:

Xuất sắc : 0 phiếu
Khá : 1 phiếu
Đạt : 4 phiếu
Không đạt : 0 phiếu

Kết quả đề tài đạt loại: Tốt

7. Kết luận:

Nghiệm thu đề tài

.....

Hải Phòng, ngày 17 tháng 12 năm 2021

Trưởng Tiểu ban	Thư ký
(Ký và ghi rõ họ tên)	*(Ký và ghi rõ họ tên)*
GS. TS. Phạm Văn Thôi	TS. Bùi Ngọc Tân

LÝ LỊCH KHOA HỌC

1. Họ và tên: Đào Thu Hồng

2. Năm sinh: 1976 3. Giới tính: Nữ

4. Nơi sinh: Hải Phòng

5. Nguyên quán: Xã Đoàn Lập, Huyện Tiên Lãng, TP Hải Phòng

6. Địa chỉ liên hệ:
Điện thoại: NR Mobile: (848) 76439 Fax:
Email: dthong@hpmu.edu.vn

7. Học hàm, học vị
Năm được công nhận TS: 2018. Nơi cấp bằng: Học viện Quân Y, Việt Nam.
Năm được phong GS/PGS: Nơi phong:

8. Cơ quan công tác:
Tên cơ quan: Trường Đại học Y Dược Hải Phòng
Khoa/Phòng, Bộ môn, Trung tâm: Khoa Y, Bộ môn Sinh lý.
Địa chỉ cơ quan: 72A Nguyễn Bỉnh Khiêm, Đằng Giang, Ngô Quyền, Hải Phòng.
Điện thoại: 02253.731.907. Fax: 02253.733.315.
Email: contact@hpmu.edu.vn.

9. Quá trình đào tạo

Bậc đào tạo	Nơi đào tạo	Chuyên ngành/Tên khóa luận, luận văn, luận án	Năm tốt nghiệp
Đại học	Trường Đại học Y Dược Hải Phòng	Bác sĩ y khoa	2000
Thạc sĩ	Học viện Quân Y	Thạc sĩ y học	2004
Tiến sĩ	Học viện Quân Y	Tiến sĩ y học (Khoa học y sinh)	2018

10. Các khoá đào tạo khác (nếu có)

Văn bằng	Tên khoá đào tạo	Nơi đào tạo	Thời gian đào tạo
Trung cấp lý	Trung cấp lý luận chính trị	Trường Chính trị Tô Hiệu Hải Phòng	08/2018-10/2019

hiện chức vụ			
Cử nhân Ngôn ngữ Anh	Cử nhân Ngôn ngữ Anh	Trường Đại học Hồng Đức Việt Nam	2019-2022

11. Trình độ ngoại ngữ

Tên ngoại ngữ	Văn bằng/Chứng chỉ	Năm
Tiếng Anh	Cử nhân	2022

12. Quá trình công tác *(trước khi về Trường và sau khi về Trường)*

Thời gian (Từ năm ... đến năm ...)	Vị trí công tác	Cơ quan công tác	Địa chỉ cơ quan
1/2001-12/2004	Giảng viên tập sự	Bộ môn Sinh lý, Trường Đại học Y Dược Hải Phòng	72A Nguyễn Bỉnh Khiêm, Đằng Giang, Ngô Quyền, Hải Phòng
12/2005-11/2012	Giảng viên	Bộ môn Sinh lý, Trường Đại học Y Dược Hải Phòng	72A Nguyễn Bỉnh Khiêm, Đằng Giang, Ngô Quyền, Hải Phòng
11/2012-11-2019	Phó trưởng bộ môn	Bộ môn Sinh lý, Trường Đại học Y Dược Hải Phòng	72A Nguyễn Bỉnh Khiêm, Đằng Giang, Ngô Quyền, Hải Phòng
11/2019-2023	Trưởng bộ môn	Bộ môn Sinh lý, Trường Đại học Y Dược Hải Phòng	72A Nguyễn Bỉnh Khiêm, Đằng Giang, Ngô Quyền, Hải Phòng
2023-nay	Phó Trưởng Khoa Y, Trưởng bộ môn	Bộ môn Sinh lý, Khoa Y, Trường Đại học Y Dược Hải Phòng	72A Nguyễn Bỉnh Khiêm, Đằng Giang, Ngô Quyền, Hải Phòng

13. Các công trình khoa học đã công bố

13.1. Bài báo khoa học

- *Tên tác giả: tên các tác giả của bài báo*
- *Tác giả chính: là Tác giả thứ nhất (First author) hoặc Tác giả liên hệ (corresponding author)*
- *Danh mục: WoS/Scopus hoặc Tạp chí trong nước được HĐGSNN tính điểm*

TT	Tên bài báo	Tên tác giả	Tác giả chính	Tạp chí	Ngày XB	Số, trang	Danh mục	ISSN (DOI)
1	Gây mê bệnh nhân		x	Tạp chí Y học Việt Nam	2016	446, 311-321		

	kỹ trên chuột nhắt bằng anh valproic							
2	Môi trường phong phú cải thiện hành vi chuột nhắt đã gây mô hình bệnh tự kỷ			Tạp chí Y học Việt Nam	2016	446, 322-333		
3	Đặc điểm phát âm trên chuột nhắt 3 đến 10 ngày tuổi			Tạp chí Sinh lý học Việt Nam	2016	20(4), 136-143		
4	Phơi nhiễm trước sinh với axit valproic gây thay đổi hành vi ở chuột sống			Tạp chí Sinh lý học Việt Nam	2016	20(3), 26-32		
5	Đánh giá hình			Tạp chí Y học Việt	2019	448, 388-394		

	đột và nhồi máu não thể trái bằng siêu âm tim trên bệnh nhân đái tháo đường type 2 tại Bệnh viện Đại học Y Hải Phòng năm 2018			Nam				
6	Đặc điểm siêu âm và thang điểm IPSS, QOL ở bệnh nhân 40-80 tuổi vào đại tuyến tiền liệt khám tại Bệnh viện Đại học Y Hải Phòng năm 2020			Tạp chí Y học Việt Nam	2021	tập 510, 316-322		1859-1868
7	Nghiên cứu đặc điểm			Tạp chí Y học Việt Nam	2022	515, 108-113		

	viên đơn vị ở bệnh nhân mẹ điều trị tại Bệnh viện Đại học Y Hải Phòng năm 2021							
8	Phản hồi của sinh viên y đa khoa Trường Đại học Y Dược Hải Phòng về dạy học trực tuyến trong đầu kiện dịch Covid-19			Tạp chí Y học Việt Nam	2023	527, 355-364		
9	Thực trạng hoạt động tự học của sinh viên y khoa			Tạp chí Y học Việt Nam	2024	539, 318-225		

	năm thứ 3 Trường Đại học Y Dược Hải Phòng năm 2023							

13.2. Sách chuyên khảo, giáo trình – tài liệu dạy học

- *Tên tài liệu: Xuất/ Chương sách*
- *Loại hình: Chuyên khảo/ Tham khảo/ Giáo trình/ Tài liệu hướng dẫn*

TT	Tên tài liệu	Tên tác giả	Chủ biên/Đồng chủ biên	Nhà xuất bản	Năm xuất bản	Loại hình	ISBN
1	Phương pháp dạy học y học cơ bản	Nguyễn Thị Phương Mai, Đào Thu Hằng	Nguyễn Thị Phương Mai, Đào Thu Hằng	NXB Y học	2024	Giáo trình	978604066[illegible]2
2							

14. Báo cáo Hội nghị - hội thảo khoa học

Ký yêu: Tóm tắt/ Toàn văn

TT	Tên báo cáo	Tên tác giả	Tác giả chính	Tên hội nghị	Thời gian báo cáo (tháng/năm)	Kỷ yếu	ISBN
			x				

15. Bằng sở hữu trí tuệ đã được cấp

Liệt kê các văn bằng bảo hộ: độc quyền sáng chế, giải pháp hữu ích, kiểu dáng công nghiệp, thiết kế bố trí, giống cây trồng

TT	Tên và nội dung văn bằng	Số, ngày, tháng, năm cấp	Nơi cấp	Năm cấp
1				

16. Công trình KH&CN được ứng dụng, chuyển giao

TT	Tên công trình	Hình thức	Quy mô	Địa chỉ áp dụng	Giá trị	Thời gian
1						

17. Nhiệm vụ KH&CN các cấp

- *Loại hình: Đề tài/ Dự án / Đề án*
- *Tình trạng nhiệm vụ: Đã nghiệm thu/ Chưa nghiệm thu/ Không hoàn thành*

17.1. Nhiệm vụ KHCN đã và đang chủ trì								
Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình (nếu có)	Tình trạng nhiệm vụ	Ngày			Kinh phí
					Phê duyệt	Đăng ký kết quả (nếu có)	Công nhận kết quả	
Nghiên cứu mật độ xương ở vận hộ nhân viên khám sức khỏe định kỳ tại Bệnh viện Đại học Y Hải Phòng			Trường Đại học Y Dược Hải Phòng	Đã nghiệm thu			2011	4.000.000 đ
Nghiên cứu hình ảnh siêu âm động mạch cảnh ở bệnh nhân tăng huyết áp tại Bệnh viện Đại học Y Hải Phòng			Trường Đại học Y Dược Hải Phòng	Đã nghiệm thu			2012	4.000.000 đ
Nghiên cứu điều trị đổi giảng sâu ở vận động viên nặt nổ xuất thể thao tại Hải Phòng			Trường Đại học Y Dược Hải Phòng	Đã nghiệm thu			2013	4.000.000 đ
Đánh giá hành thái và chức năng thất trái			Trường Đại học Y Dược	Đã nghiệm thu			2018	4.000.000 đ

Hồng siêu âm tim trên bệnh nhân đái tháo đường type 2 tại Bệnh viện Đại học Y Hải Phòng			Hải Phòng					
Đánh giá kinh thái và chức năng tim bằng siêu âm trên bệnh nhân bệnh phổi tắc nghẽn mạn tính tại Bệnh viện Đại học Y Hải Phòng.			Trường Đại học Y Dược Hải Phòng	Đề nghiệm thu			2019	6.000.000 đ
Đặc điểm siêu âm và thang điểm IPSS, QOL ở bệnh nhân 40-80 tuổi phì đại tuyến tiền liệt khám tại Bệnh viện Đại học Y Hải Phòng năm 2020			Trường Đại học Y Dược Hải Phòng	Đề nghiệm thu			2020	6.000.000 đ
Nghiên cứu đặc điểm siêu âm tim ở bệnh nhân			Trường Đại học Y Dược Hải Phòng	Đề nghiệm thu			2021	6.000.000 đ

suy thận mạn tại Bệnh viện Đại học Y Hải Phòng năm 2021								
Phản ứng của sinh viên y đa khoa Trường Đại học Y Dược Hải Phòng về dạy học trực tuyến trong điều kiện dịch Covid-19			Trường Đại học Y Dược Hải Phòng	Đã nghiệm thu			2022	6.000.000 đ
Thực trạng học tập ngoài giờ của sinh viên y khoa K48 Trường Đại học Y Dược Hải Phòng năm 2023			Trường Đại học Y Dược Hải Phòng	Đã nghiệm thu			2023	6.000.000 đ

17.2. Nhiệm vụ KH&CN đã và đang tham gia

Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình *(nếu có)*	Tình trạng nhiệm vụ	Ngày			Kinh phí
					Nghiệm thu	*Công nhận kết quả*	*Đăng ký kết quả*	

18. Giải thưởng về KH&CN trong và ngoài nước

TT	Tên giải thưởng	Hình thức	Cấp	Năm

		Khen thưởng	Kỷ luật	Tặng thưởng
1				

19. Đào tạo sau đại học

+ *Tại trả hướng dẫn: hướng dẫn 1/ hướng dẫn 2*
+ *Bậc đào tạo: Tiến sĩ/Thạc sĩ/BS Nội Trú/CKII...*

TT	Họ tên học viên	Vai trò	Bậc đào tạo	Chuyên ngành	Nơi đào tạo	Năm cấp bằng
1	Nguyễn Thị Huyền Sương	HD 2	Thạc sĩ	Kỹ thuật xét nghiệm y học	Trường Đại học Y Dược Hải Phòng	2024
2	Đinh Thị Minh Thư	HD 2	Thạc sĩ	Kỹ thuật xét nghiệm y học	Trường Đại học Y Dược Hải Phòng	2024
3	Bùi Thị Hồng Ánh	HD 1	Thạc sĩ	Kỹ thuật xét nghiệm y học	Trường Đại học Y Dược Hải Phòng	2025

NHỮNG THÔNG TIN KHÁC VỀ CÁC HOẠT ĐỘNG KHOA HỌC VÀ CÔNG NGHỆ

(Tham gia các tổ chức hiệp hội ngành nghề: thành viên Ban biên tập các Tạp chí khoa học trong và ngoài nước; Thành viên các hội đồng quốc gia, quốc tế; ...)

Hội viên Hội sinh lý học Việt Nam

Hội viên Hội Giáo dục y học Việt Nam

Hải Phòng, ngày 7 tháng 4 năm 2025

XÁC NHẬN CỦA ĐƠN VỊ

TL. HIỆU TRƯỞNG

TRƯỞNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

(Ký, họ tên, đóng dấu cơ sở)

TS. Nguyễn Hải Ninh

NGƯỜI KHAI

TS.BS. Đào Thu Hằng

BỘ Y TẾ
Số: 001 2565 /BYT-CCHN

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

CHỨNG CHỈ HÀNH NGHỀ KHÁM BỆNH, CHỮA BỆNH

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Căn cứ Luật khám bệnh, chữa bệnh ngày 23/11/2009;
Căn cứ Nghị định số 87/2011/NĐ-CP ngày 27/9/2011 của Chính phủ quy định chi tiết và hướng dẫn thi hành một số điều của Luật khám bệnh, chữa bệnh;
Căn cứ Thông tư số 41/2011/TT-BYT ngày14/11/2011 của Bộ trưởng Bộ Y tế hướng dẫn cấp chứng chỉ hành nghề đối với người hành nghề và cấp giấy phép hoạt động đối với cơ sở khám bệnh, chữa bệnh;
Xét đề nghị của Cục trưởng Cục Quản lý khám, chữa bệnh - Bộ Y tế,

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Họ và tên: **ĐÀO THU HỒNG.**
Ngày tháng năm sinh: 10/6/1976.
Giấy chứng minh nhân dân số: 030982561.
Ngày cấp: 18/11/2010. Nơi cấp: Công an Hải Phòng.
Chỗ ở hiện nay: Tổ 6, phường Trần Thành Ngọ, quận Kiến An, thành phố Hải Phòng.
Văn bằng chuyên môn: Bác sỹ.
Phạm vi hoạt động chuyên môn: Chuyên khoa Thăm dò chức năng.

Hà Nội, ngày 24 tháng 11 năm 2014
KT. BỘ TRƯỞNG
THỨ TRƯỞNG

Nguyễn Thị Xuyên

THE SOCIALIST REPUBLIC OF VIETNAM

THE MILITARY MEDICAL UNIVERSITY

confers

THE DEGREE OF DOCTOR OF PHILOSOPHY

IN MEDICINE

BIOMEDICAL SCIENCES

Upon: Ms. Dao Thu Hong

Born on: June 10, 1976 in Hai Phong

Given under the seal of

The President of the Military Medical University

November 20, 2018

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CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM

HỌC VIỆN QUÂN Y

Cấp

BẰNG TIẾN SĨ

Y HỌC

KHOA HỌC Y SINH

Cho: Bà Đào Thu Hồng

Sinh ngày: 10/6/1976 tại Hải Phòng

Hà Nội, ngày 20 tháng 11 năm 2018

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2024

TẬP 538

CÔNG TRÌNH NGHIÊN CỨU KHOA HỌC TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

TỔNG HỘI Y HỌC VIỆT NAM
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MỤC LỤC

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THỰC TRẠNG HOẠT ĐỘNG TỰ HỌC CỦA SINH VIÊN Y KHOA NĂM THỨ 5 TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG NĂM 2023

Đào Thu Hằng[1], Đào Thu Hằng[1]

TÓM TẮT

Mục tiêu: Mô tả thực trạng và một số yếu tố liên quan đến hoạt động tự học của sinh viên y khoa năm thứ 5 (Y5) Trường Đại học Y Dược Hải Phòng. **Đối tượng và phương pháp:** Điều tra mô tả cắt ngang bằng bộ câu hỏi trên 465 sinh viên Y5. **Kết quả và kết luận:** Sinh viên tự học cả hai lĩnh vực lý thuyết và lâm sàng chiếm 89,2%. 40,4% sinh viên có thời gian tự học mỗi ngày 1-2 giờ lý thuyết, 41,9% sinh viên có thời gian tự học mỗi ngày 1-2 giờ lâm sàng. Phương pháp tự học được sinh viên áp dụng nhiều nhất về lý thuyết là Học dàn hầu hết chiếm 28,5%, về thực hành là Dàn luận các ca lâm sàng chiếm 50,3%. Sinh viên không đi làm thêm chiếm tỷ lệ 57%. Có mối liên quan giữa học lực và thời gian tự học của sinh viên. Nhóm có thời gian tự học lý thuyết 2-4 giờ/ngày đạt học lực khá, giỏi thấp hơn nhóm có thời gian học lý thuyết khác 2-4 giờ/ngày (OR = 0,4182, p = 0,0017). Nhóm có thời gian tự học lâm sàng 1-2 giờ/ngày đạt học lực khá, giỏi cao hơn nhóm có thời gian học khác: 1-2 giờ/ngày (OR = 2,7845, p = 0,0159. Nhóm có thời gian tự học lâm sàng 2-4 giờ/ngày đạt học lực khá, giỏi thấp hơn nhóm có thời gian học khác 2-4 giờ/ngày (OR = 0,416, p = 0,034). Có mối liên quan giữa học lực và phương pháp tự học lý thuyết của sinh viên. Nhóm có phương pháp tự học lý thuyết là Học hợp đạt học lực khá, giỏi thấp hơn nhóm có các phương pháp học khác (OR = 0,4261, p = 0,0023).

Từ khóa: tự học, sinh viên y khoa.

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SUMMARY

SITUATION OF SELF-STUDY OF THE 5TH YEAR MEDICAL STUDENTS AT HAI PHONG UNIVERSITY OF MEDICINE AND PHARMACY IN 2023

Objectives: Describe the situation and some factors related to self-study of the 5th year medical students at Hai Phong University of Medicine and Pharmacy. **Subjects and methods:** cross-sectional descriptive survey using a questionnaire on 465 5th year medical students. **Results and conclusions:** the number of students self-studying both theoretical and clinical fields accounted for 89.2%. 40.4% of students had 1 to 2 hours of theoretical self-study per day, 41.9% of students had 1 to 2 hours of clinical self-study per day. The self-study method most used by students in theory was Deep learning, accounted for 28.5%, and in practice was Discussion of clinical cases, accounted for 50.3%. Students who did not work part-time accounted for 57%. There was a relationship between study result and self-study time. The group that had 2 to 4 hours of theoretical self-study per day achieved good or excellent study result lower than the group that had outside of 2 to 4 hours self study per day (OR = 0.4182, p = 0.0117). The group that had 1 to 2 hours clinical self-study per day achieved good or excellent study result higher than the group that had

outside of 1 to 2 hour of self-study per day (OR = 2.7945, p = 0.0159. The group that had 2 to 4 hours *clinical self-study per day* achieved good or excellent study result lower than the group that had outside of 2 to 4 hour of self-study per day (OR = 0.451, p = 0.034). There was a relationship between study result and theoretical self-study methods. The group that had the theoretical self-study method of flurf learning achieved good and excellent study result lower than the group had others method (OR = 0.4261, p = 0.0021).

Keywords: self-study, medical students

1. ĐẶT VẤN ĐỀ

Trong xã hội bùng nổ thông tin và khoa học kỹ thuật phát triển không ngừng, việc học là cần thiết và *suốt đời*, đặc biệt với sinh viên y khoa. Để có năng lực hành nghề sau khi tốt nghiệp, ngoài học trên lớp dưới sự hướng dẫn của thầy cô, sinh viên y khoa cần có thời gian tự học để nâng cao kiến thức và năng lực chuyên môn. Tự học sao cho có hiệu quả và phối hợp tốt với giờ học chính khóa để sinh viên đạt được kết quả học tập tối ưu là vấn đề được các trường Đại học Y Dược và xã hội quan tâm [1],[2],[3]. Thực trạng tự học của sinh viên y khoa như thế nào và những yếu tố nào ảnh hưởng đến hoạt động tự học của sinh viên là vấn đề cần được nghiên cứu nhằm nâng cao hiệu quả tự học cũng như chất lượng dạy – học của nhà trường. Đề tài được thực hiện với mục tiêu:

1. Mô tả thực trạng hoạt động tự học của sinh viên Y5 Trường Đại học Y Dược Hải Phòng trong học kỳ 1 năm học 2022-2023.

2. Nhận xét một số yếu tố liên quan đến hoạt động tự học của đối tượng nghiên cứu.

II. ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU

2.1. Đối tượng nghiên cứu

465 sinh viên Y5 Trường Đại học Y Dược Hải Phòng, học kỳ 1 năm học 2022-2023.

Thời gian nghiên cứu từ tháng 09/2022 đến tháng 05/2023.

Địa điểm nghiên cứu tại Trường Đại học Y Dược Hải Phòng.

2.2. Phương pháp nghiên cứu

Thiết kế nghiên cứu mô tả cắt ngang, sử dụng bộ câu hỏi tự điền.

Cỡ mẫu: áp dụng công thức tính cỡ mẫu (Sample size) cho nghiên cứu 1 tỷ lệ, tham khảo nghiên cứu của Lý Văn Toàn, tỷ lệ sinh viên có thời gian tự học 2-4 giờ/ngày là 42,2%, sai số tuyệt đối là 5%, tính được cỡ mẫu tối thiểu là 381. Nghiên cứu này chọn được 465 sinh viên tham gia nghiên cứu.

Phương pháp chọn mẫu thuận tiện.

Tiêu chuẩn chọn mẫu: sinh viên Y5 của Trường Đại học Y Dược Hải Phòng học kỳ 1 năm học 2022-2023 đồng thuận tham gia nghiên cứu.

Tiêu chuẩn loại trừ: sinh viên Y5 nhưng không thu thập thì để trống.

Các chỉ số nghiên cứu: giới, học lực, thời gian tự học, địa điểm tự học, lĩnh vực tự học, phương pháp tự học, kết quả học tập, thời gian làm thêm.

Các phương pháp tự học:

- Học sâu trước kỳ: đọc kỹ, chú thích nội dung bài, đặt câu hỏi và trả lời các câu hỏi để hiểu những gì đã học.
- Học lướt: đọc phần giới thiệu, các đề mục, các ý chính.
- Học qua việc làm test: luyện trả lời các câu hỏi trắc nghiệm.
- Học theo nhóm: nhiều sinh viên học cùng nhau.

- Học có sự hướng dẫn của thầy cô, anh chị khoá trên: sinh viên tự học có sự định hướng, hỗ trợ của thầy cô hoặc anh chị khóa trên.

- Bàn luận ca lâm sàng: học dựa trên thảo luận các ca bệnh

- Thực hành dưới sự quan sát: sinh viên quan sát và phản hồi cho nhau thực hiện các kỹ năng lâm sàng theo bảng kiểm

- Đóng vai mô phỏng ca lâm sàng: học bằng đóng vai trong các tình huống lâm sàng

- Tăng cường đi bệnh viện đi học, đi trực thêm ở bệnh viện ngoài lịch học bình thường [3].

Số liệu được thể hiện qua tỷ lệ %, sử dụng bảng, đồ thị, test thống kê Chi-square, OR. Phần mềm phân tích số liệu SPSS 20.

2.3. Đạo đức nghiên cứu

Nghiên cứu được tiến hành trên cơ sở tôn trọng quyền tự quyết của đối tượng tham gia nghiên cứu. Kết quả nghiên cứu nhằm mục đích phục vụ cộng đồng. Nghiên cứu đã được thông qua Hội đồng thông qua đề cương của Trường Đại học Y Dược Hải Phòng.

III. KẾT QUẢ NGHIÊN CỨU

3.1. Thực trạng hoạt động tự học của sinh viên Y5 Trường Đại học Y Dược Hải Phòng học kỳ 1 năm học 2022 – 2023

Qua khảo sát 465 sinh viên Y5 Trường Đại học Y Dược Hải Phòng học kỳ 1 năm 2022 - 2023 cho kết quả như sau:

Bảng 3.1. Đặc điểm đối tượng nghiên cứu (ĐTNC)

Đặc điểm	Tần số (n = 465)	Tỷ lệ (%)
Giới tính		
Nữ	282	61%
Nam	183	39%
Thời gian làm thêm		
Không đi làm thêm	265	57%
<8 giờ/tuần	127	27,3%
8-20 giờ/tuần	54	11,6%
>20 giờ/tuần	19	4,1%
Học lực		
≥ 3,2 (Giỏi)	18	3,9%
2,5 – 3,19 (Khá)	411	88,4%
< 2,5 (Trung bình)	36	7,7%

Nhận xét: Sinh viên nữ chiếm tỷ lệ 61%. Sinh viên xếp loại học lực khá chiếm 88,4%.

Bảng 3.2. Lĩnh vực tự học của đối tượng nghiên cứu theo giới

Giới	Lĩnh vực tự học n (%)			p
	Lý thuyết	Lâm sàng	Cả hai	
Nam (n = 183)	15 (8,2%)	4 (2,1%)	164 (89,7%)	p = 0,971
Nữ (n = 282)	24 (8,5%	7 (2,5%)	251 (89%)	
Tổng (n = 465)	39 (8,4%)	11 (2,4%)	415 (89,2%)	

Nhận xét: 89,2% sinh viên tự học ở cả hai lĩnh vực lâm sàng và lý thuyết. Không có sự khác biệt có ý nghĩa thống kê về lĩnh vực tự học giữa nam và nữ.

Bảng 3.3. Thời lượng tự học lý thuyết trong một ngày của ĐTNC theo giới

Giới	Số giờ lý thuyết n (%)				p
	< 1	1 - 2	3 - 4	> 4	
Nam (n = 182)	49 (26,8%)	69 (37,7%)	45 (24,6%)	20 (10,9%)	p = 0,246
Nữ (n = 282)	53 (18,8%)	119 (42,2%)	77 (27,3%)	33 (11,7%)	
Tổng (n = 465)	102 (21,9%)	188 (40,4%)	122 (26,2%)	53 (11,4%)	

Nhận xét: 40,4% sinh viên có thời gian tự học lý thuyết mỗi ngày từ 1 đến 2 giờ. Không có sự khác biệt có ý nghĩa thống kê về thời lượng tự học lý thuyết giữa nam và nữ.

Bảng 3.4. Thời lượng tự học lâm sàng trong một ngày của ĐTNC theo giới

Giới	Số giờ lâm sàng n (%)				p
	< 1	1 - 2	3 - 4	> 4	
Nam (n = 187)	74 (40,4%)	77 (39,9%)	23 (12,6%)	13 (7,7%)	p = 0,222
Nữ (n = 282)	89 (31,6%)	122 (43,3%)	48 (17%)	23 (8,3%)	
Tổng (n = 465)	163 (35,1%)	199 (41,3%)	71 (15,2%)	36 (7,5%)	

Nhận xét: 41,3% sinh viên có thời gian tự học lâm sàng mỗi ngày từ 1 đến 2 giờ. Không có sự khác biệt có ý nghĩa thống kê về thời lượng tự học lâm sàng giữa nam và nữ.

Bảng 3.5. Phương pháp tự học của ĐTNC

Phương pháp	Tỷ lệ
Các phương pháp tự học lý thuyết (%)	
Học câu hỏi kỹ	28,3%
Học qua việc làm test	27,0%
Học nhóm	15,3%
Học theo slides	11,8%
Học có sự hướng dẫn của chuyên môn	6,8%
Các phương pháp tự học lâm sàng (%)	
Thực hành dưới sự quan sát	20,2%
Bàn luận các ca lâm sàng	10,3%
Đóng vai mô phỏng ca lâm sàng	10,6%
Tăng cường việc đi bệnh viện	18,8%

Nhận xét: Phương pháp tự học lý thuyết được sinh viên áp dụng thường xuyên là "học câu hỏi kỹ" (28,3%). Phương pháp tự học lâm sàng được sinh viên áp dụng thường xuyên là "bàn luận các ca lâm sàng" (10,3%).

Bảng 3.6. Địa điểm tự học của ĐTNC

Địa điểm tự học	Tỷ lệ
Tại nhà	57,5%
Tại trường	19,9%
Tại bệnh viện	20,8%
Các địa điểm khác	1,8%

Nhận xét: Hình thức tự học thường xuyên của sinh viên là tại nhà với tỷ lệ 57,5%, trong khi có 19,9% học tại trường và 22,8% học tại bệnh viện.

3.2. Một số yếu tố liên quan đến tự học của sinh viên Y5 Trường Đại học Y Dược Hải Phòng

Bảng 3.7. Mối liên quan giữa học lực và giới của ĐTNC

Giới	Học lực		OR (95% CI)	P
	Giỏi, khá	Trung bình		
Nam	164	19	0,5537 (0,2798-1,0959)	0,0877
Nữ	265	17		
Tổng	429	36		

Nhận xét: Không có mối liên quan giữa học lực với giới của đối tượng nghiên cứu.

Bảng 3.8. Mối liên quan giữa học lực và thời gian tự học lý thuyết mỗi ngày của ĐTNC

Thời gian tự học lý thuyết	Học lực		OR (95% CI)	P
	Giỏi, khá	Trung bình		
< 1 giờ	92	10	0,7098 (0,3303-1,5252)	0,878
1-2 giờ	178	10	1,8438 (0,8871-3,99168)	0,1118
3-4 giờ	106	16	0,4102 (0,2051-0,8206)	0,0117
> 4 giờ	33	0	10,3732 (0,6274-171,5126)	0,1022
Tổng	429	36		

Nhận xét: Tỷ số chênh giữa nhóm có thời gian tự học lý thuyết 3-4 giờ/ngày đạt học lực khá, giỏi thấp hơn nhóm có thời gian học lý thuyết khác 3-4 giờ/ngày (OR = 0,4102, p = 0,0117).

Bảng 3.9. Mối liên quan giữa học lực và thời gian tự học lâm sàng mỗi ngày của ĐTNC

Thời gian tự học lâm sàng	Học lực		OR (95% CI)	P
	Giỏi, khá	Trung bình		
< 1 giờ	166	17	0,5766 (0,2989-1,1429)	0,1147
1-2 giờ	187	8	2,3843 (1,2048-4,971)	0,0159
3-4 giờ	61	10	0,431 (0,198-0,9383)	0,034
> 4 giờ	35	1	3,1891 (0,4134-23,3824)	0,2705
Tổng	429	36		

Nhận xét: Tỷ số chênh giữa nhóm có thời gian tự học lâm sàng 1-2 giờ/ngày đạt học lực khá, giỏi cao hơn nhóm có thời gian học khác 1-2 giờ/ngày (OR = 2,7045, p = 0,0139. Tỷ số chênh giữa nhóm có thời gian tự học lâm sàng 3-4 giờ/ngày đạt học lực khá, giỏi thấp hơn nhóm có thời gian học khác 3-4 giờ/ngày (OR = 0,431, p = 0,034).

Bảng 3.10. Mối liên quan giữa học lực và phương pháp tự học lý thuyết của BTNC

Phương pháp tự học lý thuyết	Học lực		OR (95% CI)	P
	Giỏi, khá	Trung bình		
Học sâu hiểu kỹ	197	10	2,0078 (0,9957-4,0483)	0,0214
Học qua việc làm test	183	13	1,306 (0,6886-2,4774)	0,4138
Học luân	163	25	0,4261 (0,2461-0,7376)	0,0023
Học theo nhóm	78	8	0,8263 (0,3775-1,8076)	0,6328
Học có sự hướng dẫn của thầy cô, anh chị khoá trên	43	2	2,1192 (0,5014-8,9559)	0,3071
Tổng (số lượt)	668	58		

Nhận xét: Tỷ số chênh giữa nhóm có phương pháp tự học tự truyền là Học luân đạt học lực khá, giỏi thấp hơn nhóm có các phương pháp học khác (OR = 0,4261, p = 0,0023).

Bảng 3.11. Mối liên quan giữa học lực và phương pháp tự học lâm sàng của BTNC

Phương pháp tự học lâm sàng	Học lực		OR (95% CI)	P
	Giỏi, khá	Trung bình		
Bám buộc các ca lâm sàng	319	18	1,5009 (0,8865-2,7931)	0,3
Thực hành chuỗi ca quan sát	134	12	0,6587 (0,3297-1,3158)	0,237
Đóng vai mô phỏng ca lâm sàng	63	8	0,5036 (0,2242-1,131)	0,0965
Tăng cường đi bệnh viện	120	6	1,503 (0,6207-3,6348)	0,367
Tổng (số lượt)	636	44		

Nhận xét: Không có mối liên quan giữa học lực và phương pháp tự học lâm sàng của ĐTNC.

Bảng 3.12. Mối liên quan giữa học lực và việc đi làm thêm của BTNC

Giới	Học lực		OR (95% CI)	P
	Giỏi, khá	Trung bình		
Không	239	26	0,4838 (0,2277-1,0281)	0,019
Có	190	10		
Tổng	429	36		

Nhận xét: Không có mối liên quan giữa học lực và việc đi làm thêm của ĐTNC.

Bảng 3.13. Mối liên quan giữa việc đi làm thêm và số giờ tự học lý thuyết của ĐTNC

Làm thêm	Số giờ tự học lý thuyết		OR (95%CI)	P
	> 2	≤ 2		
Không	108	157	1,3655 (0.93[6-2.0017)	0,1181
Có	67	133		
Tổng	175	290		

Nhận xét: Không có mối liên quan giữa việc đi làm thêm và số giờ tự học lý thuyết của ĐTNC.

Bảng 3.14. Mối liên quan giữa việc đi làm thêm và số giờ tự học lâm sàng của ĐTNC

Làm thêm	Số giờ tự học lâm sàng		OR (95%CI)	P
	> 2	≤ 2		
Không	61	204	1,0011 0.6472-1.5483	0,9963
Có	46	154		
Tổng	107	358		

Nhận xét: Không có mối liên quan giữa việc đi làm thêm và số giờ tự học lâm sàng của ĐTNC.

IV. BÀN LUẬN

4.1. Về thực trạng hoạt động tự học của sinh viên Y5 Trường Đại học Y Dược Hải Phòng học kỳ I năm học 2022 – 2023

Từ kết quả nghiên cứu cho thấy sinh viên tham gia khảo sát chủ yếu dành 1-2 giờ mỗi ngày cho việc tự học lý thuyết (tỷ lệ 40,6%) và dành 1-2 giờ mỗi ngày cho việc tự học lâm sàng (41,9%). Như vậy tổng thời gian tự học lý thuyết và lâm sàng của sinh viên trong khoảng 2-4 giờ trong một ngày. Kết quả này không có sự khác biệt có ý nghĩa thống kê với nghiên cứu của Lý Văn Xuân với 45,2% sinh viên tự học 2-4 giờ trong một ngày. Điều này cho thấy có sự tương đồng trong thời gian tự học giữa sinh viên Y5 Trường Đại học Y Dược Hải Phòng và sinh viên Y5 Trường Đại học Y Dược Thành phố Hồ Chí Minh. Lý giải cho sự tương đồng trên có thể do hai nghiên cứu này đều nghiên cứu về vấn đề tự học của đối tượng sinh viên y khoa [4].

Về hoạt động tự học lý thuyết, đa số sinh viên chọn phương pháp học sau tiêu lý (38,8%). Về hoạt động tự học lâm sàng, phương pháp được áp dụng chủ yếu là bàn luận các ca lâm sàng (39,3%). Trong đào tạo y khoa, do khối lượng kiến thức lớn và là ngành đào tạo đặc thù, học lý thuyết đi đôi với thực hành nên sinh viên phải thường xuyên đọc tài liệu, giáo trình để nắm vững kiến thức. Từ đó, sinh viên sẽ áp dụng các kiến thức đã học vào việc thảo luận, biện luận các ca bệnh trên thực tế.

Hầu hết sinh viên tự học tại nhà với tỷ lệ 57,5%, tại bệnh viện với tỷ lệ 20,8% và tại trường với tỷ lệ 19,9%. Kết quả này có khác biệt so với nghiên cứu trên sinh viên Y1 Trường Đại học Y Dược Thành phố Hồ Chí Minh của Lý Văn Xuân với tỷ lệ 92,2% sinh viên tự học tại nhà. Sự khác biệt trên có thể do sinh viên Y5 đã năng động và hoạt bát hơn trong việc đa dạng địa điểm học tập, đặc biệt là học tập tại bệnh viện để nâng cao hiệu quả học tập cả lý thuyết và lâm sàng. Ngoài ra, việc nâng cao cơ sở vật chất tại trường như xây dựng thêm các khu tự học cho sinh viên cũng thúc đẩy sinh viên học tập tại trường, tạo nhiều không khí trong quá trình

học tập [4],[7].

Sinh viên không đi làm thêm chiếm tỷ lệ 57%, kết quả này tương đồng với khảo sát của Lê Thúy Hường về Thực trạng đi làm thêm của sinh viên trường Đại học kỹ thuật y tế Hải Dương năm 2019 với số sinh viên không đi làm thêm là 58,6% [6]. Do sinh viên thời gian chương trình đào tạo y khoa, sinh viên vừa học lý thuyết ở trường, vừa học lâm sàng và thực tập trực tại bệnh viện. Vì vậy, sinh viên sẽ có ít thời gian cho việc đi làm thêm nếu muốn hoàn thành tốt chương trình học.

4.2. Về một số yếu tố liên quan đến hoạt động tự học của sinh viên Y5 Trường Đại học Y Dược Hải Phòng

Từ kết quả nghiên cứu trong Bảng 3.7 cho thấy không có mối liên quan có ý nghĩa thống kê giữa học lực với giới của sinh viên. Điều này cho thấy giới không ảnh hưởng đến kết quả học tập, có thể do cả hai giới đều có những phương pháp và thời gian học phù hợp để đạt kết quả học tập tốt.

Kết quả nghiên cứu ở Bảng 3.8 chỉ ra có mối liên quan giữa học lực và thời gian tự học lý thuyết của sinh viên. Tỷ số chênh giữa nhóm có thời gian tự học lý thuyết 2-4 giờ/ngày đạt học lực khá, giỏi thấp hơn nhóm có thời gian học lý thuyết khác 2-4 giờ/ngày (OR = 0,4102, p = 0,0117). Tỷ số chênh giữa nhóm có thời gian tự học lâm sàng 1-2 giờ/ngày đạt học lực khá, giỏi cao hơn nhóm có thời gian học khác 1-2 giờ/ngày (OR = 2,7045, p = 0,0159). Tỷ số chênh giữa nhóm có thời gian tự học lâm sàng 2-4 giờ/ngày đạt học lực khá, giỏi thấp hơn nhóm có thời gian học khác 2-4 giờ/ngày (OR = 0,431, p = 0,004). Có thể nhận thấy nhóm có thời gian tự học lý thuyết cũng như lâm sàng 2-4 giờ/ngày đều không đem lại kết quả học tập cao, trong khi nhóm có thời gian tự học lâm sàng 1-2 giờ/ngày lại có kết quả học tập cao. Như vậy, để đạt điểm cao không chỉ phụ thuộc vào thời gian tự học nhiều hay ít mà còn có các yếu tố khác chi phối, thời gian tự học vừa phải có thể đem lại hiệu quả cao hơn so với thời gian tự học quá ít hoặc quá nhiều [1],[3],[5].

Bảng 3.10 chỉ ra có mối liên quan có ý nghĩa thống kê giữa học lực và phương pháp tự học lý thuyết. Tỷ số chênh giữa nhóm có phương pháp tự học lý thuyết là Học hết đọc học lực khá, giỏi thấp hơn nhóm có các phương pháp học khác (OR = 0,4261, p = 0,0023). Sinh viên trong chương trình đều mới cần định hướng được phương pháp tự học phù hợp để đạt hiệu quả cao. Lượng kiến thức sinh viên y khoa phải tiếp cận rất nhiều. Để tránh việc quên hay không kịp nắm bắt kiến thức, điều sẽ ảnh hưởng lớn đến việc chẩn đoán và điều trị sau này, sinh viên cần học sâu, rộng để hiểu kỹ các vấn đề hơn là chỉ học lướt qua. Nghiên cứu này cho thấy không có mối liên quan có ý nghĩa thống kê giữa học lực và phương pháp tự học lâm sàng. Có thể các phương pháp tự học lâm sàng của sinh viên có hiệu quả tương đương nhau [1],[3].

Từ các kết quả ở bảng 3.12 đến 3.14 cho thấy không có mối liên quan giữa học lực và việc đi làm thêm trong tuần của sinh viên, cũng như không có mối liên quan giữa việc đi làm thêm và số giờ tự học lý thuyết, số giờ tự học lâm sàng. Điều này có thể lý giải rằng việc đi làm thêm không thực sự ảnh hưởng nhiều tới điều số cũng như số giờ tự học. Nhiều nghiên cứu cũng đã cho thấy hiệu quả của tự học còn phụ thuộc vào sự quản lý thời gian của mỗi cá nhân, chất lượng giờ học và nhiều yếu tố khác [7],[8].

V. KẾT LUẬN

Sinh viên tự học cả hai lĩnh vực lý thuyết

và làm sáng chiếm 39,2%. 40,6% sinh viên có thời gian tự học mỗi ngày 1-2 giờ lý thuyết, 41,9% sinh viên có thời gian tự học mỗi ngày 1-2 giờ làm sáng. Phương pháp tự học được sinh viên áp dụng nhiều nhất về lý thuyết là học nhóm kiểu kỹ chiếm 28,3%, về thực hành là thảo luận các ca lâm sàng chiếm 50,3%. Sinh viên không đi làm thêm chiếm tỷ lệ 37%.

Có mối liên quan giữa học lực và thời gian tự học của sinh viên. Nhóm có thời gian tự học lý thuyết 3-4 giờ/ngày đạt học lực khá, giỏi thấp hơn nhóm có thời gian học lý thuyết khác 3-4 giờ/ngày (OR = 0,4182, p = 0,0117). Nhóm có thời gian tự học làm sáng 1-2 giờ/ngày đạt học lực khá, giỏi cao hơn nhóm có thời gian học khác 1-2 giờ/ngày (OR = 2,7045, p = 0,0155. Nhóm có thời gian tự học làm sáng 2-4 giờ/ngày đạt học lực khá, giỏi thấp hơn nhóm có thời gian học khác 2-4 giờ/ngày (OR = 0,431, p = 0,024). Có mối liên quan giữa học lực và phương pháp tự học lý thuyết của sinh viên. Nhóm có phương pháp tự học lý thuyết là Học hiểu đạt học lực khá, giỏi thấp hơn nhóm có các phương pháp học khác (OR = 0,4361, p = 0,0433).

VI. KIẾN NGHỊ

Với lượng kiến thức lớn và thường xuyên cập nhật, để tổng hợp kiến thức cho sinh viên y khoa thì phương pháp học nào hiệu kỹ là phương pháp hiệu quả nhất.

Trong việc tự học lâm sàng, phương pháp bàn luận các ca lâm sàng giúp vận dụng kiến thức vào tình huống thực tế lâm sàng, tạo cơ hội cho sinh viên được tiếp xúc nhiều hơn với môi trường làm việc thực tế mà không có trong sách vở nào ghi chép hết được.

VII. LỜI CẢM ƠN

Một phần kinh phí thực hiện nghiên cứu này được tài trợ bởi Trường Đại học Y Dược Hải Phòng, mã số đề tài HPMU.DT.23.174.

TÀI LIỆU THAM KHẢO

1. **Barbosa J., Silva A., Ferreira M.A. et al.** "The impact of students and curriculum on self-study during clinical training in medical school: a multilevel approach. BMC Medical Education 2017; 17(9): DOI 10.1186/s12909-016-0846-3.
2. **Trương Thị Hồng Thúy.** Hoạt động tự học của sinh viên năm thứ nhất trường Đại học Y Dược Thái Nguyên trong phương thức đào tạo theo tín chỉ. Tạp chí Khoa học & Công nghệ 2021; 113(13): 247-250.
3. **Angélica M., Carlinda L., Cristina R.** Students' self-study time and its relationship with a lifelong learning profile. European Journal of Curriculum Studies 2019; 5(1): 757-768.
4. **Lý Văn Xuân, Nguyễn Ngọc Lâu, Trần Bảo Nhật.** Khảo sát hoạt động tự học của sinh viên y đa khoa năm thứ nhất Đại học Y Dược Thành Phố Hồ Chí Minh năm 2016. Y học Thành Phố Hồ Chí Minh 2016; 20(1): 28-34.
5. **Lý Văn Xuân, Lý Khánh Vân.** Khảo sát hoạt động tự học của sinh viên Y đa khoa năm thứ hai Đại học Y Dược TP. Hồ Chí Minh năm 2016-2017. Đề tài nghiên cứu khoa học cấp trường, Đại học Y Dược Tp. Hồ Chí Minh 2018.
6. **Lê Thúy Hường, Hoàng Thị Thanh Hiền, Nguyễn Dương Cầu và cs.** Thực trạng tự làm thêm của sinh viên Trường Đại học Kỹ thuật y tế Hải Dương năm 2019. Tạp chí Y học Việt Nam 2021; 505(2): 183-186.

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NGHIÊN CỨU ĐẶC ĐIỂM SIÊU ÂM TIM Ở BỆNH NHÂN SUY THẬN MẠN TẠI BỆNH VIỆN ĐẠI HỌC Y HẢI PHÒNG NĂM 2021

Đào Thu Hồng[1], Phạm Thị Nguyệt[1], Trần Thị Quỳnh Trang[1], Đào Thu Hằng[1]

TÓM TẮT

Mục tiêu: Mô tả đặc điểm hình thái và chức năng tim ở bệnh nhân suy thận mạn tại Bệnh viện Đại học Y Hải Phòng. Đánh giá mối liên quan giữa một số chỉ số siêu âm tim với một số biểu hiện lâm sàng, cận lâm sàng của bệnh nhân suy thận mạn. *Đối tượng:* 113 bệnh nhân được chẩn đoán suy thận mạn tại Khoa Thận nhân tạo Bệnh viện Đại học Y Hải Phòng. *Phương pháp:* mô tả cắt ngang, các bệnh nhân được khám xác định suy thận mạn, được đo các chỉ số siêu âm tim. *Kết quả và kết luận:* Bệnh nhân suy thận mạn trong nghiên cứu này nam chiếm ưu thế so với nữ, tuổi từ 18 đến 84, độ tuổi từ 40-69 tuổi chiếm 72,1%. Các chỉ số đường kính gốc động mạch chủ, chỉ số, thể tích thất trái tâm trương, tâm thu, phân suất co ngắn sợi cơ, chỉ số khối cơ thất trái trên bệnh nhân suy thận mạn có sự khác biệt theo giới, chỉ số kích thước nhĩ trái có sự khác biệt theo nhóm tuổi. Tỷ lệ dày thất trái là 76,52%, giảm chức năng tâm thu thất trái là 18,26%, rối loạn chức năng tâm trương thất trái là 52,87% không có sự khác biệt theo giới, tỷ lệ rối loạn chức năng tâm trương thất trái có sự khác biệt theo nhóm tuổi. Sự thay đổi chỉ số đường kính động mạch chủ có liên quan với tuổi, giới và nồng độ glucose máu. Thay đổi đường kính nhĩ trái có liên quan với huyết áp tâm thu và eGFR. Thay đổi thể tích thất trái có liên quan với giới và huyết áp tâm thu. Thay đổi EF% có liên quan với huyết áp tâm thu. Thay đổi chỉ số khối cơ thất trái có liên quan với giới. Rối loạn chức năng tâm trương thất trái có liên quan với tuổi của bệnh nhân nghiên cứu.

Từ khóa: siêu âm tim, suy thận mạn.

SUMMARY

CHARACTERISTICS OF ECHOCARDIOGRAPHY IN PATIENTS WITH CHRONIC KIDNEY FAILURE AT HAI PHONG MEDICAL UNIVERSITY HOSPITAL IN 2021

Objectives: To describe cadiac morphology in patients with chronic kidney failure at Hai Phong medical university Hospital. To evaluate the correlation between some echocardiography parameters and some clinical and para-clinical features in these patients. *Subjects:* 113 chronic kidney failure patients at Hai Phong medical university Hospital. *Methods:* cross-sectional study, patients were determined chronic kidney disease and had measured echocardiography parameters. *Results and conclusions:* In all cases of chronic kidney failure, the male patients had a higher rate than the females, the patient age were from 18 to 84 years old, the age from 40 to 69 reached up 72,1%. In chronic kidney failure patients, aorta diameter, left atrial diameter, Vd, Vs, EF%, FS%, LVMI were different by gender, left atrium diameter was different by age group. The proportion of LVH, LV systole dysfunction, LV diastole dysfunction were 76,52%, 18,26%,

[1]*Trường Đại học Y Dược Hải Phòng*
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32,8% respectively, they were not different by gender, the proportion of LV diastolic dysfunction was different by age group. Change in aortic diameter index related to age, sex and plasma glucose concentration. Change in left atrial diameter associated with systolic blood pressure and eGFR. Change in left ventricular volume associated with gender and systolic blood pressure. Change in EF% associated with systolic blood pressure. Change in left ventricular mass index associated with gender. Left ventricular diastolic dysfunction related to age of study patients.

Keywords: echocardiography, chronic kidney failure.

I. ĐẶT VẤN ĐỀ

Bệnh thận mạn là một vấn đề sức khỏe đang được quan tâm trong y học do tỷ lệ mắc ngày càng gia tăng, cùng với đó là tăng gánh nặng chi phí điều trị và chất lượng cuộc sống giảm. Nhiều nghiên cứu chỉ ra bệnh thận mạn có tỷ lệ mắc khoảng 9 - 13% dân số trên thế giới, bệnh diễn tiến đến giai đoạn suy thận bệnh nhân cần điều trị thay thế [2]. Ngày nay, mặc dù các biện pháp điều trị bảo tồn, các phương pháp điều trị thay thế thận suy đã có những tiến bộ đáng kể nhưng tỷ lệ tử vong ở nhóm bệnh nhân suy thận điều trị thay thế thận suy như thiếu máu, nhiễm trùng, suy dinh dưỡng,...trong đó biến chứng tim mạch gây tử vong hàng đầu [1]. Nhiều nghiên cứu cho thấy bệnh nhân bệnh thận mạn có bất thường tim mạch có nguy cơ tử vong cao gấp 3 lần đến 30 lần so với dân số chung [6],[7]. Những bất thường về cấu trúc và chức năng tim có thể đánh giá được bằng siêu âm tim, từ đó giúp cho bác sĩ điều trị có kế hoạch điều trị và hạn chế những biến cố tim mạch cho bệnh nhân suy thận mạn, vì vậy chúng tôi tiến hành đề tài này nhằm mục tiêu:

1. Mô tả đặc điểm hình thái và chức năng tim trên siêu âm Doppler ở bệnh nhân suy thận mạn tại Bệnh viện Đại học Y Hải Phòng năm 2021.

2. Đánh giá mối liên quan giữa chỉ số hình thái, chức năng tim với một số biểu hiện lâm sàng, cận lâm sàng của bệnh nhân nghiên cứu.

II. ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU

1. Đối tượng nghiên cứu

115 bệnh nhân được chẩn đoán suy thận mạn lọc máu chu kỳ tại Khoa Thận nhân tạo Bệnh viện Đại học Y Hải Phòng từ tháng 1 đến tháng 9 năm 2021.

Loại trừ các bệnh nhân có bệnh lý tim nguyên phát.

2. Phương pháp nghiên cứu

Nghiên cứu mô tả cắt ngang tại thời điểm bệnh nhân đến khám. Bệnh nhân được khám lâm sàng, xét nghiệm, chẩn đoán các độ suy thận mạn lọc máu chu kỳ tại Khoa Thận nhân tạo Bệnh viện Đại học Y Hải Phòng.

Bệnh nhân được làm siêu âm tim bằng máy siêu âm Aloka-Hitachi F31.

Các chỉ số nghiên cứu:

+ Kích thước nhĩ trái.

+ Kích thước thất trái.

+ Chức năng tâm thu thất trái.

+ Chức năng tâm trương thất trái.

+ Ước tính mức lọc cầu thận theo chỉ số creatinin như sau:

Mức lọc cầu thận eGFR MDRD (ml/ph/1,73m2 da) = 186 x (Creatinin máu (mmol/L)/88.4)-1,154 x tuổi-0,203 x (0,742

nếu là nữ) theo phương pháp Jaffe (là phương pháp thực hiện xét nghiệm Creatinin phổ biến hiện nay tại Việt Nam).

Trong đó eGFR: estimated Glomerular Filtration Rate, MDRD: Modification of Diet in Renal Disease

3. Xử lý số liệu

Số liệu được thống kê dưới dạng số trung bình, độ lệch chuẩn, tỷ lệ %. Các phép toán thống kê được thực hiện bằng phần mềm SPSS 20.0.

III. KẾT QUẢ NGHIÊN CỨU

1. Đặc điểm chung đối tượng nghiên cứu

Hình 3.1. Phân bố đối tượng nghiên cứu theo giới

Trong số 115 bệnh nhân suy thận mạn, có 74 bệnh nhân nam chiếm 64,3% và 41 bệnh nhân nữ chiếm 35,7%.

Hình 3.2. Phân bố tuổi của đối tượng nghiên cứu

Trong số 115 bệnh nhân suy thận mạn, bệnh nhân trẻ tuổi nhất là 18 tuổi, bệnh nhân cao tuổi nhất là 84 tuổi, bệnh nhân ở các nhóm tuổi từ 40 đến 69 chiếm tỷ lệ 72,1%.

2. Đặc điểm siêu âm tim ở bệnh nhân suy thận mạn tại Bệnh viện Đại học Y Hải Phòng

Bảng 3.1. Các chỉ số siêu âm tim của đối tượng nghiên cứu theo giới

Chỉ số	$\bar{X}_{\pm SD}$		p
	Nam (n=74)	Nữ (n=41)	
ĐMC (mm)	30,68 ± 3,62	27,63 ± 3,38	< 0,001
Nhĩ trái (mm)	38,01 ± 7,09	35,88 ± 6,43	> 0,05

Vd (ml)	140,31 ± 49,18	115,71 ± 42,05	< 0,01
Vs (ml)	34,63 ± 20,79	43,71 ± 28,11	< 0,05
EF %	59,78 ± 9,31	63,02 ± 9,97	> 0,05
FS %	31,74 ± 6,19	34,22 ± 6,55	< 0,05
LVMI (g/m^2)	124,89 ± 13,67	106,83 ± 11,45	< 0,001

Các chỉ số đường kính gốc động mạch chủ (DMC), thể tích thất trái tâm trương (Vd), thể tích thất trái tâm thu (Vs), phân suất co ngắn sợi cơ (FS %), chỉ số khối cơ thất trái (LVMI) có sự khác biệt theo giới có ý nghĩa thống kê, trong khi các chỉ số đường kính nhĩ trái, phân suất tống máu (EF %)không có sự khác biệt rõ rệt theo giới.

Bảng 3.2. Các chỉ số siêu âm tim của đối tượng nghiên cứu theo nhóm tuổi

Nhóm tuổi / Chỉ số	X ± SD						p
	< 20 (n=11)	20-29 (n=8)	40-49 (n=22)	50-59 (n=25)	60-69 (n=36)	> 70 (n=13)	
DMC (mm)	29,82 ±3,17	28,25 ±4,71	27,95 ±3,48	29,96 ±3,79	30,47 ±4,03	29,85 ±2,94	> 0,05
Nhĩ trái (mm)	44,18 ±8,31	31,25 ±8,03	36,64 ±6,36	37,24 ±3,92	38,08 ±5,86	33,83 ±5,98	<0,01
Vd (ml)	132,36 ±40,79	163,88 ±124,29	130,82 ±36,76	124,90 ±38,52	131,94 ±39,92	130,31 ±34,79	> 0,05
Vs (ml)	53,36 ±21,62	51,50 ±22,08	55,59 ±26,42	46,08 ±21,87	52,58 ±28,78	42,77 ±10,61	> 0,05
EF %	60,91 ±9,20	59,83 ±6,45	60,41 ±12,52	61,36 ±8,67	60,30 ±10,26	63,46 ±7,00	> 0,05
FS %	32,43 ±6,48	31,75 ±4,26	31,50 ±7,25	32,12 ±6,60	32,86 ±6,87	34,77 ±4,30	> 0,05
LVMI (g/m^2)	119,35 ±19,09	118,25 ±12,45	123,70 ±16,87	121,78 ±18,77	114,46 ±12,28	116,99 ±11,91	> 0,05

Chỉ số đường kính nhĩ trái có sự khác biệt theo nhóm tuổi, trong khi các chỉ số đường kính gốc động mạch chủ, thể tích thất trái tâm trương, thể tích thất trái tâm thu, phân suất tống máu, phân suất co ngắn sợi cơ, chỉ số khối cơ thất trái không có sự khác biệt theo nhóm tuổi.

Bảng 3.3. Tỷ lệ biến đổi hình thái và chức năng thất trái theo giới

Biến đổi thất trái	Nam (n=74)	Nữ (n=61)	Tổng (n=135)	p
Dày thất trái	54 (72,97%)	34 (82,91%)	88 (76,52%)	> 0,05
Giảm chức năng tâm thu	16 (21,62%)	5 (12,20%)	21 (18,26%)	> 0,05
Rối loạn chức năng tâm trương	43 (58,11%)	17 (41,46%)	60 (52,17%)	> 0,05

Tỷ lệ giảm chức năng tâm thu và rối loạn chức năng tâm trương nhưng có sự khác biệt theo giới.

Bảng 3.4. Tỷ lệ biến đổi hình thái và chức năng thất trái theo nhóm tuổi

Biến đổi thất trái	Nhóm tuổi						Tổng (n=115)	p
	<39 (n=11)	30-39 (n=8)	40-49 (n=22)	50-59 (n=25)	60-69 (n=36)	>70 (n=13)		
Dày thất trái	8 (72,73%)	7 (87,5%)	17 (77,27%)	21 (84,0%)	24 (66,67%)	11 (84,62)	88 (76,52%)	> 0,05
Giảm CNTT	2 (18,18%)	2 (25,0%)	5 (22,73%)	5 (20,0%)	6 (16,67%)	1 (7,69%)	21 (18,26%)	> 0,05
Rối loạn CNTTr	1 (9,09%)	2 (25,0%)	13 (59,09%)	17 (68,0%)	18 (50,0%)	9 (69,23%)	60 (52,17%)	< 0,01

Tỷ lệ rối loạn chức năng tâm trương (CNTTr) thất trái có sự khác biệt theo nhóm tuổi trong khi tỷ lệ dày thất trái và giảm chức năng tâm thu (CNTT) thất trái không có sự khác biệt theo nhóm tuổi.

3. Mối liên quan giữa chỉ số hình thái chức năng tim với một số biểu hiện tim mạch cận lâm sàng ở bệnh nhân nghiên cứu.

Bảng 3.5. Mối liên quan giữa chỉ số hình thái chức năng tim với một số biểu hiện tim mạch, cận lâm sàng ở bệnh nhân nghiên cứu

Chỉ số	R^2 hiệu chỉnh, p	Tuổi	Giới	HATT	HATTr	SLIBC	Glucose máu	eGFR
EMC (mm)	0,18 p<0,001	t=2,61 p<0,05	t=6,87 p<0,001	t=0,14 p>0,05	t=0,08 p>0,05	t=1,61 p>0,05	t=2,23 p<0,05	t=0,61 p>0,05
NM trái (mm)	0,14 p<0,01	t=0,32 p>0,05	t=1,96 p>0,05	t=2,50 p<0,05	t=1,00 p>0,05	t=0,95 p>0,05	t=1,74 p>0,05	t=2,39 p<0,05
Vd (ml)	0,11 p<0,01	t=0,43 p>0,05	t=3,10 p<0,01	t=2,18 p<0,05	t=1,13 p>0,05	t=0,33 p>0,05	t=1,71 p>0,05	t=1,26 p>0,05
Vs (ml)	0,08 p<0,05	t=0,04 p>0,05	t=2,58 p<0,05	t=2,43 p<0,05	t=0,25 p>0,05	t=0,06 p>0,05	t=1,95 p>0,05	t=0,45 p>0,05
EF %	0,03 p>0,05	t=-0,10 p>0,05	t=1,94 p>0,05	t=-2,34 p<0,05	t=-0,34 p>0,05	t=-0,09 p>0,05	t=1 p>0,05	t=0,89 p>0,05
LVMI (g/m^2)	0,33 p<0,001	t=-1,29 p>0,05	t=6,83 p<0,001	t=1,75 p>0,05	t=-1,21 p>0,05	t=-0,24 p>0,05	t=1,11 p>0,05	t=94 p>0,05
Rối loạn CNTTr	0,09 p<0,05	t=2,75 p<0,01	t=1,22 p>0,05	t=1,73 p>0,05	t=-1,21 p>0,05	t=1,31 p>0,05	t=0,09 p>0,05	t=0,49 p>0,05
Giảm CNTT	0,01 p>0,05	t=-0,55 p>0,05	t=1,08 p>0,05	t=1,75 p>0,05	t=-0,51 p>0,05	t=0,68 p>0,05	t=-0,64 p>0,05	t=-0,44 p>0,05

Sự thay đổi chỉ số đường kính động mạch chủ có liên quan với tuổi, giới và nồng độ glucose máu. Thay đổi đường kính nhĩ trái có liên quan với huyết áp tâm thu và eGFR. Thay đổi thể tích thất trái có liên quan với giới và huyết áp tâm thu. Thay đổi EF% có liên quan với huyết áp tâm thu. Thay đổi chỉ số khối cơ thất trái có liên quan với giới. Rối loạn chức năng tâm trương thất trái có liên quan với tuổi.

IV. BÀN LUẬN

1. Về đặc điểm chung đối tượng nghiên cứu

Kết quả nghiên cứu trong Hình 3.1. cho thấy trong số 115 bệnh nhân suy thận mạn, số bệnh nhân nam có 74 bệnh nhân chiếm 64,3% ưu thế so với 41 bệnh nhân nữ chiếm 35,7%. Các nghiên cứu cho thấy suy thận mạn có thể gặp ở cả hai giới, tỷ lệ nữ giới mắc bệnh thận mạn tính trước chạy thận cao hơn so với nam, nhưng chức năng thận ở nam giới giảm nhanh hơn và tỷ lệ nam giới phải điều trị thay thế thận cao hơn nữ giới. Nghiên cứu của chúng tôi tiến hành trên các bệnh nhân suy thận mạn đang điều trị thay thế thận nên tỷ lệ bệnh nhân nam cao hơn so với nữ là phù hợp [5],[6].

Về tuổi của đối tượng nghiên cứu, bệnh nhân có tuổi từ 18 đến 84 tuổi, trong đó chủ yếu là độ tuổi từ 40 đến 69 tuổi chiếm 72,1%.

2. Về đặc điểm siêu âm tim ở bệnh nhân suy thận mạn tại Bệnh viện Đại học Y Hải Phòng

Kết quả nghiên cứu ở Bảng 3.1 cho thấy các chỉ số đường kính gốc động mạch chủ, thể tích thất trái tâm trương, thể tích thất trái tâm thu, chỉ số khối cơ thất trái ở bệnh nhân nam cao hơn ở bệnh nhân nữ có ý nghĩa thống kê, trong khi chỉ số co ngắn sợi cơ ở bệnh nhân nữ cao hơn ở bệnh nhân nam. Các chỉ số đường kính nhĩ trái, phân suất tống máu chưa có sự khác biệt rõ rệt theo giới. Điều này cho thấy sự xuất hiện thay đổi chỉ số kích thước ở bệnh nhân nam sớm hơn, rõ hơn, và chức năng tim cũng có xu hướng giảm rõ hơn ở bệnh nhân nữ. Nhận xét của chúng tôi cũng phù hợp với nghiên cứu của Carrero và cs. Chức năng tim của bệnh nhân nam giảm nhanh hơn ở bệnh nhân nữ có thể liên quan đến lối sống và tác dụng bảo vệ của oestrogen hoặc tác hại của testosterone [3].

Kết quả trong Bảng 3.2. chỉ ra các chỉ số siêu âm tim trong nghiên cứu ngoại trừ đường kính nhĩ trái, đều chưa có sự khác biệt theo nhóm tuổi. Các nghiên cứu gần đây cho rằng sự thay đổi cấu trúc và chức năng tim từ giai đoạn sớm của bệnh thận mạn tính [7].

Về tỷ lệ biến đổi hình thái và chức năng tâm trương, kết quả nghiên cứu ở Bảng 3.3. và Bảng 3.4. chỉ ra tỷ lệ bệnh nhân suy thận mạn có dày thất trái chiếm 76,52%, giảm chức năng tâm thu chiếm 18,26%, rối loạn chức năng tâm trương chiếm 52,17%, các thay đổi này không có sự khác biệt theo giới, tỷ lệ bệnh nhân có rối loạn chức năng tâm trương thất trái có sự khác biệt theo nhóm tuổi, ở nhóm tuổi càng cao thì rối loạn chức năng tâm trương thất trái có xu hướng càng nhiều. Trong nghiên cứu của Jannoti cho thấy, ở bệnh nhân bệnh thận mạn lọc máu

chu kỳ tỷ lệ giảm chức năng tâm thu thất trái là 31%, rối loạn chức năng tâm trương là 47%, dày thất trái là 55%, đặc biệt những tỷ lệ này ở bệnh nhân bệnh thận mạn có tăng huyết áp cao hơn rõ rệt so với bệnh nhân không có tăng huyết áp [8]. Nhiều nghiên cứu cũng chỉ ra các bệnh lý tim mạch trên bệnh nhân bệnh thận mạn là do quá tải thể tích, thiếu máu, rối loạn điện giải, tăng huyết áp...[4],[6],[7].

3. Về mối liên quan giữa chỉ số hình thái chức năng tim với một số biểu hiện lâm sàng, cận lâm sàng ở bệnh nhân nghiên cứu.

Trong nghiên cứu này, chúng tôi nhận thấy sự thay đổi chỉ số đường kính động mạch chủ có liên quan với tuổi, giới và nồng độ glucose máu. Thay đổi đường kính thất trái có liên quan với huyết áp tâm thu và mức lọc cầu thận. Thay đổi thể tích thất trái có liên quan với giới và huyết áp tâm thu. Thay đổi phân suất tống máu thất trái có liên quan với huyết áp tâm thu. Thay đổi chỉ số khối cơ thất trái có liên quan với giới. Rối loạn chức năng tâm trương thất trái có liên quan với tuổi. Tuy nhiên các liên quan này chưa chặt chẽ. Nghiên cứu của Hoàng Viết Thắng và cs. trên bệnh nhân suy thận mạn lọc máu chu kỳ cũng cho thấy có mối liên quan giữa rối loạn chức năng thất trái với hemoglobin máu và thời gian lọc máu chu kỳ nhưng không có liên quan với tỷ số huyết áp, điều này có thể do ảnh hưởng của các loại thuốc hạ huyết áp vẫn đang được sử dụng [4]. Nghiên cứu của Nguyễn Thanh Tâm và Châu Ngọc Hoa tiến hành trên bệnh nhân bệnh thận mạn từ giai đoạn 1 đến giai đoạn 5 của thấy một số thay đổi tim mạch có liên quan đến sự giảm mức lọc cầu thận [2]. Của trong nghiên cứu của chúng tôi, có thể do các bệnh nhân đều ở cùng nhóm bệnh thận mạn giai đoạn cuối, đều có mức lọc cầu thận ở mức rất thấp nên điều vị thay thế nên sự tương quan giữa các thay đổi các chỉ số trên siêu âm tim với mức lọc cầu thận và một số chỉ số lâm sàng, cận lâm sàng khác có thể hiện rõ ràng hơn.

4. Hạn chế của nghiên cứu

Nghiên cứu sau khi tiến hành trên nhóm bệnh nhân suy thận mạn lọc máu chu kỳ, đây là giai đoạn cuối của bệnh thận mạn, chỉ số mức lọc cầu thận rất thấp, vì vậy đó nghiên cứu có chỉ ra những thay đổi về cấu trúc và chức năng tim trên siêu âm nhưng chưa theo dõi ảnh hưởng của những thay đổi này trên bệnh nhân. Các nghiên cứu tiếp theo nên nghiên cứu sâu hơn hoặc tiến hành trên các giai đoạn sớm hơn của bệnh để có cơ sở ngăn ngừa và dự phòng sớm biến chứng tim cho bệnh nhân bệnh thận mạn.

V. KẾT LUẬN

Sau khi nghiên cứu trên 113 bệnh nhân suy thận mạn tại Bệnh viện đại học Y Hải Phòng chúng tôi rút ra một số kết luận sau: Bệnh nhân suy thận mạn trong nghiên cứu này nam chiếm ưu thế so với nữ, tuổi từ 18 đến 84, độ tuổi từ 40-69 tuổi chiếm 72,1%. Các chỉ số đường kính gốc động mạch chủ, thất trái, thể tích thất trái tâm trương, tâm thu, phân suất tống máu, chỉ số khối cơ thất trái trên bệnh nhân suy thận mạn có sự khác

biệt theo giới, chỉ số kích thước thể trái có sự khác biệt theo nhóm tuổi. Tỷ lệ dày thất trái là 76,52%, giảm chức năng tâm thu thất trái là 18,26%, rối loạn chức năng tâm trương thất trái là 52,67% không có sự khác biệt theo giới, tỷ lệ rối loạn chức năng tâm trương thất trái có sự khác biệt theo nhóm tuổi. Sự thay đổi chỉ số đường kính động mạch chủ có liên quan với tuổi, giới và nồng độ glucose máu. Thay đổi đường kính nhĩ trái có liên quan với huyết áp tâm thu và eGFR. Thay đổi thể tích thất trái có liên quan với giới và huyết áp tâm thu. Thay đổi EF% có liên quan với huyết áp tâm thu. Thay đổi chỉ số khối cơ thất trái có liên quan với giới. Rối loạn chức năng tâm trương thất trái có liên quan với tuổi của bệnh nhân nghiên cứu.

TÀI LIỆU THAM KHẢO

1. **Nguyễn Thị Hương (2015).** Nghiên cứu một số yếu tố ảnh hưởng đến chức năng thất trái và các thông số huyết động ở bệnh nhân lọc máu bằng lưu lực ngoại vi, Luận án Tiến sỹ Y học, Trường Đại học Y Hà Nội.
2. **Nguyễn Thành Tâm, Châu Ngọc Hoa (2012).** Bệnh thận mạn làm tăng khối cơ thất trái ở bệnh nhân có nguy cơ tim mạch cao. Chuyên đề tim mạch học. http://timmachhoc.vn/benh-tim-mo-lam-tang-khi-o-cho-trai-benh-nhan-co-nguy-o-tim-mach-cao/. Truy cập ngày 12/11/2020.
3. **Ngô Thị Khánh Trang (2017).** Nghiên cứu đặc điểm và giá trị tiên lượng của hội chứng suy dinh dưỡng – viêm – xơ vữa ở bệnh nhân bệnh thận mạn giai đoạn cuối. Luận án Tiến sỹ Y học, Trường Đại học Y Dược Huế.
4. **Hoàng Việt Thắng, Phan Ngọc Tam, Trần Thị Anh Thư và cs. (2013).** Nghiên cứu rối loạn chức năng thất trái bằng siêu âm Doppler tim ở bệnh nhân suy thận mạn giai đoạn cuối điều trị lọc máu lưu. Tạp chí Y học Việt Nam tháng 8 - số đặc biệt, 419-423.
5. **Carrero J., Hecking M., Chesnaye N. et al. (2018).** Sex and gender disparities in the epidemiology and outcomes of chronic kidney disease. Nat Rev Nephrol 14, 151–164.
6. **Jamel E, Joanjo A, Khan Q, et al. (2020).** Echocardiographic Changes in Chronic Kidney Disease Patients on Maintenance Hemodialysis. Cureus 12(7): e8969.
7. **Rutherford E., Mark P.B. (2017).** What happens to the heart in chronic kidney disease ? Journal Royal College Physicians Edinburgh 47: 76-82.

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ĐẶC ĐIỂM SIÊU ÂM VÀ THANG ĐIỂM IPSS, QOL Ở BỆNH NHÂN 40-80 TUỔI PHÌ ĐẠI TUYẾN TIỀN LIỆT KHÁM TẠI BỆNH VIỆN ĐẠI HỌC Y HẢI PHÒNG NĂM 2020

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TÓM TẮT

Mục tiêu: Mô tả một số chỉ số siêu âm ở bệnh nhân 40-80 tuổi phì đại tuyến tiền liệt khám tại Bệnh viện Đại học Y Hải Phòng từ 1/5/2020 đến 31/10/2020. Đánh giá mối liên quan giữa một số chỉ số siêu âm và thang điểm IPSS, thang điểm QoL ở bệnh nhân có phì đại tuyến tiền liệt.

Phương pháp: mô tả cắt ngang 162 bệnh nhân phì đại tuyến tiền liệt được làm siêu âm và phỏng vấn theo bảng điểm IPSS và QOL.

Kết quả và kết luận: Tỷ lệ phì đại tuyến tiền liệt chung là 14,39% trong đó ở các nhóm tuổi 40-49, 50-59; 60-69; 70-80 lần lượt là 2,18%; 12,46%; 23,23%, 43,23%. Các chỉ số trọng lượng, chiều cao, chiều dài tuyến tiền liệt trên siêu âm có sự khác biệt theo nhóm tuổi, trong khi chỉ số chiều rộng tuyến tiền liệt không có sự khác biệt theo nhóm tuổi. Thang điểm IPSS và QOL có mối tương quan thuận mức độ mạnh với nhau. Thang điểm IPSS và QOL có mối tương quan thuận mức độ mạnh với chiều cao và trọng lượng, tương quan thuận mức độ trung bình với chiều rộng và chiều dài tuyến tiền liệt, tương quan thuận mức độ yếu với nhóm tuổi.

Từ khóa: phì đại tuyến tiền liệt, IPSS, QOL.

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SUMMARY

ULTRASOUND CHARACTERS AND INTERNATIONAL PROSTATE SYMPTOM SCORE, QUALITY OF LIFE SCORES IN 40-80 YEARS OLD PATIENTS WITH PROSTATE ENLARGEMENT IN HAI PHONG MEDICAL UNIVERSITY HOSPITAL IN THE YEAR 2020

Objectives: Describe some ultrasound parameters in 40-80 years old patients with prostate enlargement in Hai Phong Medical University Hospital from 1/5/2020 to 31/10/2020. Evaluate the collaboration between some ultrasound parameters and IPSS, QOL in patients with prostate enlargement.

Methods: Cross sectional study, 162 patients with prostate enlargement were assessed by ultrasound and interviewed according to IPSS and QOL checklists.

Results and conclusions: The ratio of patients with prostate enlargement was 14,39%, of which in the age groups 40-49; 50-59; 60-69; 70-80 were 2,18%; 12,46%; 23,23%; 43,23% respectively. The prostate volume, height, and length on ultrasound showed differences by age group, while the prostate width was not difference by age group. IPSS and QOL had a strong positive correlation. The IPSS and QOL were strongly positively correlated with height and weight, moderately positively correlated with prostate width and length, and weakly positively correlated with age groups.

Keywords: prostatic hyperplasia, IPSS, QOL.

I. ĐẶT VẤN ĐỀ

Tuyến tiền liệt là một cơ quan sinh dục nam, có thể phát sinh nhiều bệnh lý khi nam giới bước vào tuổi trung niên. Khoảng 25% nam giới từ 55 tuổi trở lên có vấn đề về tuyến tiền liệt. Tỷ lệ này tăng lên gần 50% khi đến tuổi 70 [1],[2]. Trong giai đoạn đầu, bệnh lành tính không có triệu chứng. Tuy nhiên, khi bệnh càng tiến triển, kích thước tuyến tiền liệt lớn dần gây chèn ép, người bệnh có cảm giác tiểu yếu, tiểu khó kéo dài. Thậm chí nếu tuyến tiền liệt quá lớn còn gây bí tiểu hoàn toàn. Phì đại tuyến tiền liệt gây rối loạn tiểu tiện dẫn đến khó chịu cho người bệnh, ảnh hưởng đến chất lượng cuộc sống. Hiện nay để đánh giá mức độ trọng các nghiên liên quan đến bệnh lý tuyến tiền liệt có nhiều phương pháp trong đó có thang điểm IPSS (International Prostate Symptom Score), đánh giá chất lượng cuộc sống dựa trên thang điểm QOL (Quality of Life) là các thang đo quốc tế đang sử dụng. Siêu âm là phương pháp thăm dò không thâm nhập có thể giúp chẩn đoán bệnh lý phì đại tuyến tiền liệt, giúp hạn chế các biến chứng cho bệnh nhân [3].

Mục tiêu nghiên cứu:

1. Mô tả một số chỉ số siêu âm ở bệnh nhân 40-80 tuổi phì đại tuyến tiền liệt khám tại Bệnh viện Đại học Y Hải Phòng từ 1/5/2020 đến 31/10/2020.

2. Đánh giá mối liên quan giữa một số chỉ số siêu âm và thang điểm IPSS, thang điểm QOL ở bệnh nhân có phì đại tuyến tiền liệt.

II. ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU

2.1. Đối tượng nghiên cứu

240 bệnh nhân nam từ 40 – 80 tuổi trong đó có 362 bệnh nhân phì đại tuyến tiền liệt đến khám tại Bệnh viện Đại học Y Hải Phòng từ 1/5/2020 đến 31/10/2020.

2.2. Phương pháp nghiên cứu

- Nghiên cứu sử dụng phương pháp mô tả cắt ngang.
- Địa điểm tiến hành nghiên cứu: Bệnh viện Đại học Y Hải Phòng.

2.2.1. Các chỉ số nghiên cứu

- Phỏng vấn: tuổi, lý do khám bệnh, hiểu kiện lâm sàng
- Tính điểm IPSS (International prostate symptom score) để đánh giá tính trọng các nghiên liên quan đến bệnh lý tuyến tiền liệt.

Bảng 2.1. Bảng thang điểm IPSS

Câu hỏi	Không lần nào	Ít hơn 1 trong 5 lần	Ít hơn một nửa số lần	Khoảng một nửa số lần	Hơn một nửa số lần	Hầu như luôn luôn
Trong tháng vừa qua, bao nhiêu lần ông cảm thấy đi tiểu không hết nước tiểu ?	0	1	2	3	4	5
Trong tháng vừa qua, bao nhiêu lần ông cảm thấy cần phải đi tiểu lại trong vòng 2 giờ sau khi đã đi tiểu?	0	1	2	3	4	5

Trong tháng vừa qua, bao nhiêu lần ông cảm thấy tống nước tiểu bị gián đoạn và ngắt quãng ?	0	1	2	3	4	5
Trong tháng vừa qua, bao nhiêu lần ông cảm thấy khó nín tiểu được ?	0	1	2	3	4	5
Trong tháng vừa qua, bao nhiêu lần ông cảm thấy dòng nước tiểu chảy yếu đi?	0	1	2	3	4	5
Trong tháng vừa qua, bao nhiêu lần ông phải gắng sức mới tiểu được?	0	1	2	3	4	5
	Không	1 lần	2 lần	3 lần	4 lần	5 lần
Trong tháng vừa qua, trung bình bao nhiêu lần ông phải thức dậy đi tiểu mỗi đêm ?	0	1	2	3	4	5

Cách đánh giá:

+ Triệu chứng kích: 1-7 điểm
+ Triệu chứng vừa: 8-19
+ Triệu chứng nặng: 20-35

- Tính điểm QOL (Quality of life) để đánh giá chất lượng cuộc sống liên quan đến bệnh lý tuyến tiền liệt.

Bảng 2.2. Bảng thang điểm QOL

Câu hỏi	Rất tốt	Tốt	Thỏa mãn	Tạm được	Không thỏa mãn	Bắt hạnh	Không thể chịu đựng được
Nếu quãng đời còn lại ông phải sống với tình trạng hiện tại, ông cảm thấy như thế nào?	0	1	2	3	4	5	6

Cách đánh giá điểm QOL:

+ 1 - 2 điểm : Sống tốt hoặc bình thường
+ 3 - 4 điểm: Sống được hoặc tạm được
+ 5 - 6: Không chịu được

- Các chỉ số siêu âm tuyến tiền liệt qua đường bụng:

+ Kích thước tuyến tiền liệt 3 chiều cao, rộng, dài (mm).

Hình 3.1. Cách đo bán thuốc tuyến tiền liệt 3 chiều trên siêu âm.

+ Ước tính trọng lượng tuyến tiền liệt (g) hoặc thể tích tiền liệt tuyến V (cm^3), 1 cm^3 tương ứng với 1 g [6].

$$V = \frac{Cao \times Rộng \times Dài}{2}$$

Các chỉ số trên được thực hiện trên máy siêu âm *ALOKA* – SSTACHI F31 của Nhật Bản tại viện.

2.2.3. Xử lý số liệu

Số liệu được dịc trang bởi giá trị trung bình, độ lệch chuẩn, tỷ lệ %. Các phép toán thống kê được thực hiện trên phần mềm SPSS 20.0.

III. KẾT QUẢ NGHIÊN CỨU

3.1. Đặc điểm siêu âm tuyến tiền liệt của đối tượng nghiên cứu

Bảng 3.1. Tỷ lệ phì đại tuyến tiền liệt (TTL) theo nhóm tuổi ở các đối tượng nghiên cứu

Nhóm tuổi	Số bệnh nhân phì đại TTL	Số bệnh nhân khỏe mạnh	%	P
40 - 49	19	871	2,18	< 0,001
50 - 59	97	779	12,46	
60 - 69	131	554	23,23	
70 - 80	115	266	43,23	
Tổng số	362	2481	14,59	

Tỷ lệ bệnh nhân phì đại tiền liệt tuyến tăng rõ rệt theo nhóm tuổi. Tuổi càng cao, tỷ lệ phì đại tuyến tiền liệt càng tăng.

Bảng 3.3. Kích thước tuyến tiền liệt trên siêu âm của bệnh nhân phì đại tuyến tiền liệt theo nhóm tuổi

Nhóm tuổi	Chiều cao (mm)	Chiều rộng (mm)	Chiều dày (mm)
40 – 49 (a) (n=19)	35,53 ± 3,86	44,22 ± 5,22	39,47 ± 5,33
50 – 59 (b) (n=97)	36,92 ± 4,96	44,30 ± 5,88	39,58 ± 5,41
60 – 69 (c) (n=131)	39,82 ± 5,78	43,39 ±5,87	41,89 ± 5,91
70 – 80 (d) (n=115)	41,17 ± 6,96	43,61 ± 7,53	43,44 ± 6,64
p	$p_{ab} < 0,05$ $p_{ac} < 0,01$ $p_{ad} < 0,01$ $p_{bd} < 0,001$	> 0,05	$p_{ab} < 0,05$ $p_{ac} < 0,01$ $p_{ad} < 0,001$

Các chỉ số chiều cao, chiều dày có sự khác biệt theo nhóm tuổi, trong khi chiều rộng tuyến tiền liệt chưa thấy có khác biệt theo nhóm tuổi.

Bảng 3.4. Trọng lượng tuyến tiền liệt trên siêu âm của bệnh nhân phì đại tuyến tiền liệt theo nhóm tuổi

Nhóm tuổi	Trọng lượng (g)	p
40 – 49 (a) (n=19)	31,22 ± 6,34	$p_{ab} < 0,01$ $p_{ac} < 0,01$ $p_{ad} < 0,001$
50 – 59 (b) (n=97)	33,08 ± 10,21	
60 – 69 (c) (n=131)	48,26 ± 15,17	
70 – 80 (d) (n=115)	43,39 ± 19,22	

Trọng lượng tuyến tiền liệt có sự khác biệt theo nhóm tuổi, tuổi càng cao, trọng lượng tuyến tiền liệt có xu hướng càng tăng.

3.2. Mối liên quan giữa thang điểm IPSS và QOL với một số chỉ số siêu âm tuyến tiền liệt của đối tượng nghiên cứu

Bảng 3.6. Thang điểm IPSS và QOL ở bệnh nhân có phì đại tuyến tiền liệt theo nhóm tuổi

Nhóm tuổi	IPSS	p	QOL	p
40 – 49 (a) (n=19)	3,53 ± 0,93	$p_{ab} < 0,05$ $p_{ac} < 0,01$ $p_{ad} < 0,001$	1,42 ± 0,27	$p_{ab} < 0,05$ $p_{ac} < 0,001$ $p_{ad} < 0,001$
50 – 59 (b) (n=97)	4,91 ± 0,55		1,80 ± 0,13	
60 – 69 (c) (n=131)	9,12 ± 0,75		2,63 ± 0,12	
70 – 80 (d) (n=115)	10,17 ± 0,42		2,83 ±0,12	

Thang điểm IPSS và QOL đều có sự khác biệt theo nhóm tuổi.

Bảng 3.5. Mối tương quan giữa thang điểm IPSS và QOL với nhóm tuổi ở bệnh nhân phì đại tuyến tiền liệt

Nhóm tuổi (n = 362)	IPSS	QOL
r	0,726	0,321
p	< 0,001	< 0,001

Thang điểm IPSS và QOL có mối tương quan thuận mức độ yếu với nhóm tuổi.

Bảng 3.6. Mối tương quan giữa thang điểm IPSS và thang điểm QOL với kích thước tuyến tiền liệt trên siêu âm ở bệnh nhân phì đại tuyến tiền liệt.

Kích thước TTL (n = 362)	IPSS	QOL
Cao	r = 0,833; p < 0,001	r = 0,757; p < 0,001
Rộng	r = 0,6; p < 0,001	r = 0,52; p < 0,001
Dày	r = 0,695; p < 0,001	r = 0,642; p < 0,001
Thể tích	r = 0,917; p < 0,001	r = 0,799; p < 0,001

Thang điểm IPSS và QOL có mối tương quan thuận mức độ mạnh với chiều cao và thể tích, tương quan thuận mức độ trung bình với chiều rộng và chiều dày tuyến tiền liệt.

Bảng 3.7. Mối tương quan giữa thang điểm IPSS với thang điểm QOL ở bệnh nhân phì đại tuyến tiền liệt.

Thang điểm	QOL (n=362)
IPSS (n=362)	r = 0,839; p < 0,001

Thang điểm IPSS và QOL có mối tương quan thuận mức độ mạnh.

IV. BÀN LUẬN

4.1. Về đặc điểm siêu âm tuyến tiền liệt của đối tượng nghiên cứu

Số liệu từ Bảng 3.1 cho thấy tỷ lệ phì đại tuyến tiền liệt tăng rõ rệt theo nhóm tuổi, ở nhóm 40 – 49 tuổi tỷ lệ này chỉ có 2,18% tăng lên tới 43% ở nhóm 70 – 80 tuổi. Nhiều nghiên cứu chỉ ra sau 40 tuổi quá trình tăng sản tuyến tiền liệt bắt đầu. Quá trình này có thể liên quan đến tác động của 2 yếu tố chính là các androgen và tuổi già. Estrogen cũng có vai trò quan trọng. Ở tuổi già testosteron trong máu giảm, trong khi estrogen tăng. Chính estrogen làm tăng nhạy cảm của thụ thể androgen ở tuyến tiền liệt. Tuổi già xuất hiện sự mất cân bằng giữa các yếu tố tăng trưởng có tác dụng kích thích và tác dụng ức chế. Sự mất cân bằng nữa ở tuổi già là giảm khu vực các tế bào đang tăng trưởng với mực khu vực tế bào định hướng chết theo chương trình (apoptosis). Sau cùng dưới ảnh hưởng của nhiều loại kích thích khác nhau như nhiễm khuẩn, tình trạng viêm... hệ thống miễn dịch dưới tác động của tế bào lymphô T loại hỗn có thể sản xuất các loại yếu tố tăng trưởng khác gây tăng sản tuyến tiền liệt [1],[2]

Kết quả từ Bảng 3.2 và Bảng 3.3 cho thấy các chỉ số siêu âm tuyến tiền liệt như chiều cao, chiều dày, thể tích tuyến tiền liệt đều có sự khác biệt theo nhóm tuổi, trong đó tuổi càng cao thì các chỉ số siêu âm trên có xu hướng tăng, trong khi chỉ số chiều rộng tuyến tiền liệt trên siêu âm không thấy có sự khác biệt theo nhóm tuổi. Nghiên cứu của Zang và cs. cũng chỉ ra sự khác biệt về các chỉ số siêu âm này theo xu hướng tăng kích thước và trọng lượng tuyến tiền liệt sau mỗi 10 năm cả về chiều cao, chiều rộng, chiều dài, thể tích tuyến tiền liệt [7].

4.2. Về mối liên quan giữa thang điểm IPSS và QoL với một số chỉ số siêu âm tuyến tiền liệt của đối tượng nghiên cứu

Kết quả trình bày ở Bảng 3.4 cho thấy các thang điểm IPSS và QOL đều tăng theo nhóm tuổi, điều này thể hiện tính trung thực nghiệm liên quan đến phì đại tuyến tiền liệt tăng và chất lượng cuộc sống giảm theo nhóm tuổi. Kết quả từ Bảng 3.5 cũng chỉ ra các thang điểm IPSS và QOL có mối tương

quan thuận với nhóm tuổi. Kết quả nghiên cứu của chúng tôi ở các Bảng 3.6 và Bảng 3.7 cũng chỉ ra các thang điểm IPSS và QOL có mối liên quan thuận chặt chẽ với nhau và tương quan thuận chặt chẽ với các thông số thấp cao và thể tích tuyến tiền liệt, tương quan thuận trung bình với chiều rộng và chiều dày tuyến tiền liệt.

Nhiều nghiên cứu cho thấy có mối liên quan rõ rệt giữa IPSS và QOL trong khi liên quan giữa hai thang điểm này với thể tích tuyến tiền liệt và tuổi có liên quan yếu ở bệnh nhân tăng sản lành tính tuyến tiền liệt. Nghiên cứu của Agrawal chỉ ra liên quan giữa thể tích tiền liệt tuyến với tuổi, các thang điểm IPSS, QOL chưa rõ ràng, nhưng liên quan giữa IPSS với QOL thì rất chặt chẽ, có liên quan giữa QOL và tuổi nhưng yếu. Bên cạnh đó nghiên cứu của Gyasi-Sarpong và cs. cho thấy có mối liên quan yếu giữa tuổi, nồng độ PSA, thể tích tiền liệt tuyến và IPSS [3],[4],[5].

V. KẾT LUẬN

5.1. Đặc điểm siêu âm tuyến tiền liệt ở bệnh nhân nam 40-80 tuổi khám tại Bệnh viện Đại học Y Hải Phòng.

- Tỷ lệ phì đại tuyến tiền liệt là 14,39% trong đó ở các nhóm tuổi 40-49; 50-59; 60-69; 70-80 lần lượt là 2,18%; 12,46%; 23,23%; 43,23%.

- Các chỉ số trọng lượng, chiều cao, chiều dày tuyến tiền liệt trên siêu âm có sự khác biệt theo nhóm tuổi, trong khi chỉ số chiều rộng tuyến tiền liệt không có sự khác biệt theo nhóm tuổi.

5.2. Mối liên quan giữa thang điểm IPSS và QOL với một số chỉ số siêu âm tuyến tiền liệt.

- Thang điểm IPSS và QOL có mối tương quan thuận mức độ mạnh với nhau. Thang điểm IPSS và QOL với mỗi tương quan thuận mức độ mạnh với chiều cao và trọng lượng, tương quan thuận mức độ trung bình với chiều rộng và chiều dày tuyến tiền liệt, tương quan thuận mức độ yếu với nhóm tuổi.

TÀI LIỆU THAM KHẢO

1. **Nguyễn Văn Hòa (2016).** Nghiên cứu một số đặc điểm về mối, siêu âm và mối liên quan giữa nồng độ PSA với một bệnh học ở bệnh nhân u tiền liệt tuyến. Tạp chí Y Dược học – Trường Đại học Y Dược Huế, 6(02), 33 – 42.
2. **Võ Anh, Phạm Ngọc Khải, Lê Ngọc Tờ và cộng sự (2010).** Kết quả điều trị dịch tễ tăng sản lành tính tuyến tiền liệt tại một số cụm dân cư của tỉnh Thái Bình. Tạp chí Y học Việt Nam, 2, 47-52.
3. **Agrawal C.S., Chalise P.R., Shrestha B.B (2008).** Correlation of prostate volume with transitional prostate symptomscore and quality of life in men with benign prostatic hyperplasia. Nepal Med Coll J, 10(2), 104-107.
4. **Gyasi-Sarpong C.K., Ashcampong E. Yeboah F.A., et al. (2018).** Predictors of the international prostate symptoms score for patients with lower urinary tract symptoms: A descriptive cross-sectional study. Urol Ann, 10(1), 111-117.
5. **Mazzucchi G., Boix L.O., Palma P.R. (2019).** Correlation of tests for objective evaluation of infravesical obstruction of men with lower urinary tract symptoms. Int Braz J Urol, 45(4), 775-781.
6. **Tylicki J.F., Wieczorek A.P. (2017).** The standards of an ultrasound examination of the prostate gland. Part 2. J Ultrason, 17(68), 41–58.
7. **Zhang S.J., Qian H.N., Zhao Y., et al. (2015).** Relationship between age and prostate size. Asian J Androl, 17(1), 118-123.

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

BIÊN BẢN
NGHIỆM THU ĐỀ TÀI KHCN CẤP CƠ SỞ NĂM 2020

Tên đề tài: Đặc điểm siêu âm và đàng điểm IPSS, QOL ở bệnh nhân 40-80 tuổi phì đại tuyến tiền liệt khám tại Bệnh viện Đại học Y Hải Phòng năm 2020

Chủ nhiệm đề tài: TS. Đào Thu Hằng

Đơn vị: Bộ Môn Sinh lý

Căn cứ Quyết định số: 1725/QĐ - YDHP ngày 07 tháng 12 năm 2020 của Hiệu trưởng trường Đại học Y Dược Hải Phòng về việc thành lập Hội đồng Khoa học nghiệm thu đề tài NCKH cấp cơ sở năm 2020, Hội đồng đã tiến hành họp để đánh giá, nghiệm thu đề tài vào hồi 16h00 ngày 19 tháng 12 năm 2020 tại trường Đại học Y Dược Hải Phòng.

Các thành viên Hội đồng có mặt:

1. PGS. TS. Phạm Minh Khuê — Trưởng tiểu ban
2. PGS. TS. Vũ Sỹ Khang — Ủy viên
3. PGS. TS. Đặng Văn Chiến — Ủy viên
4. PGS. TS. Vũ Thị Kim Loan — Ủy viên
5. TS. Bạch Thị Như Quỳnh — Ủy viên
6. TS. Ngô Thị Quỳnh Mai — Ủy viên

Tổ thư ký: *Ths. Nguyễn Minh Ngọc*

Các thành viên Hội đồng vắng mặt:

1. TS. Nguyễn Thị Thu Phương

Các cán bộ tham gia thực hiện đề tài: TS. Đào Thu Hằng; Phạm Thị Nguyên, Trần Thị Quỳnh Trang, Đào Thu Hằng

NỘI DUNG NGHIỆM THU:

1. Đọc quyết định thành lập Hội đồng: *Ths. Nguyễn Minh Ngọc*
2. Chủ tịch hội đồng điều khiển buổi nghiệm thu.
3. Chủ nhiệm đề tài trình bày tóm tắt báo cáo tổng kết đề tài (có bảo cáo tóm tắt kèm theo).
4. Các phản biện đọc bản nhận xét (có bản nhận xét kèm theo).
5. Các thành viên trong hội đồng và những người tham dự buổi nghiệm thu đã trao đổi về nội dung, phương pháp và kết quả nghiên cứu của đề tài; Hội đồng thống nhất một số ý kiến sau:

   - Đề tài có mục tiêu rõ ràng, kết quả phù hợp với mục tiêu

6. Hội đồng đã bỏ phiếu đánh giá kết quả như sau:

Ban kiểm phiếu của Hội đồng gồm:

1. PGS.TS. Đặng Văn Chiến
2. Ths. Nguyễn Minh Ngọc

Tổng số phiếu phát ra: 06 phiếu
Tổng số phiếu thu vào: 06 phiếu
Số phiếu hợp lệ: 06 phiếu
Số phiếu không hợp lệ: 0 phiếu

Kết quả đánh giá:

Xuất sắc : 3 phiếu
Khá : 3 phiếu
Đạt : 0 phiếu
Không đạt : 0 phiếu

Kết quả đề tài đạt loại: Xuất sắc

7. Kết luận của Hội đồng: Nghiệm thu đề tài

Hải Phòng, ngày 19 tháng 12 năm 2018

CHỦ TỊCH HỘI ĐỒNG
(Ký và ghi rõ họ tên)

PGS. TS. Phạm Minh Khuê

THƯ KÝ HỘI ĐỒNG
(Ký và ghi rõ họ tên)

Ths. Nguyễn Minh Ngọc

XÁC NHẬN CỦA
CƠ QUAN QUẢN LÝ ĐỀ TÀI

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

- SAO LỤC -
PHÓ HIỆU TRƯỞNG
PGS.TS. Phạm Minh Khuê

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

TL. HIỆU TRƯỞNG
PHÓ TRƯỞNG PHÒNG HCTH
CN. Đỗ Ngọc Hảo

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

BIÊN BẢN
NGHIỆM THU ĐỀ TÀI KHCN CẤP CƠ SỞ NĂM 2021

Tên đề tài: Nghiên cứu đặc điểm siêu âm tim trên bệnh nhân suy thận tại Bệnh viện Đại học Y Hải Phòng năm 2021

Chủ nhiệm đề tài: Đào Thu Hồng

Đơn vị: Bộ môn Sinh lý

Căn cứ Quyết định số: 1787/QĐ - YDHP ngày 10 tháng 12 năm 2021 của Hiệu trưởng trường Đại học Y Dược Hải Phòng về việc thành lập Hội đồng Khoa học nghiệm thu đề tài NCKH cấp cơ sở năm 2021, Hội đồng đã tiến hành họp để đánh giá nghiệm thu đề tài vào hồi 8h00 ngày 18 tháng 12 năm 2021 tại trường Đại học Y Dược Hải Phòng.

Các thành viên Hội đồng có mặt:

1.	GS.TS. Trần Quang Phục	Chủ tịch Hội đồng
2.	PGS.TS. Dương Thị Hương	Thành viên
3.	PGS.TS. Phạm Văn Nhiên	Thành viên
4.	TS. Vũ Quang Hưng	Thành viên
5.	TS. Nguyễn Thị Phương Mai	Thành viên

Thư ký: ThS. Hoàng Thị Thuận

Các thành viên Hội đồng vắng mặt: 0

Các cán bộ tham gia thực hiện chính: Đào Thu Hồng, Phạm Thị Nguyên, Trần Thị Quỳnh Trang, Đào Thu Hồng

NỘI DUNG NGHIỆM THU:

1. Đọc quyết định thành lập Hội đồng: ThS. Hoàng Thị Thuận
2. Chủ tịch hội đồng điều khiển buổi nghiệm thu.
3. Chủ nhiệm đề tài trình bày tóm tắt báo cáo tổng kết đề tài. (có bản báo cáo kèm theo).
4. Các phản biện đọc bản nhận xét (có bản nhận xét kèm theo).
5. Các thành viên trong hội đồng và những người tham dự buổi nghiệm thu đã trao đổi về nội dung, phương pháp và kết quả nghiên cứu của đề tài. Hội đồng thống nhất một số ý kiến sau:
   - Phương pháp nghiên cứu rõ ràng, nội dung nghiên cứu phù hợp với mục tiêu
   - Kết quả nghiên cứu có ý nghĩa trên lâm sàng

6. Hội đồng đã bỏ phiếu đánh giá kết quả như sau:

Ban kiểm phiếu của Hội đồng gồm:

1. TS. Nguyễn Thị Phương Mai
2. ThS. Hoàng Thị Thuận

Tổng số phiếu phát ra : 5 phiếu

Tổng số phiếu thu vào : 5 phiếu

Số phiếu hợp lệ : 5 phiếu

Số phiếu không hợp lệ : 0 phiếu

Kết quả đánh giá:

Xuất sắc : 1 phiếu

Khá : 4 phiếu

Đạt : 0 phiếu

Không đạt : 0 phiếu

Kết quả đề tài đạt loại: **Khá**

7. Kết luận của Hội đồng: Nghiệm thu đề tài.

Hải Phòng, ngày 18 tháng 12 năm 2021

CHỦ TỊCH HỘI ĐỒNG

PGS.TS. Trần Quang Phục

THƯ KÝ HỘI ĐỒNG

ThS. Hoàng Thị Thuận

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

BIÊN BẢN
NGHIỆM THU ĐỀ TÀI KHCN CẤP CƠ SỞ NĂM 2022

Tên đề tài: *Thái độ của sinh viên y đa khoa Trường Đại học Y Dược Hải Phòng về dạy-học trực tuyến trong điều kiện dịch Covid-19*

Chủ nhiệm đề tài: Đào Thu Hồng

Đơn vị: BM. Sinh lý

Căn cứ Quyết định số: 2763/QĐ - YDHP ngày 19 tháng 12 năm 2022 của Hiệu trưởng trường Đại học Y Dược Hải Phòng về việc thành lập Hội đồng Khoa học nghiệm thu đề tài NCKH cấp cơ sở năm 2022, Hội đồng đã tiến hành họp để đánh giá, nghiệm thu đề tài vào hồi 7h30 phút ngày 29 tháng 12 năm 2022 tại trường Đại học Y Dược Hải Phòng.

Các thành viên Hội đồng có mặt:

1. PGS.TS. Nguyễn Văn Hùng - Chủ tịch Hội đồng
2. PGS.TS. Nguyễn Huy Điện - Ủy viên
3. PGS.TS. Hoàng Đức Hạ - Ủy viên
4. TS. Bạch Thị Như Quỳnh - Ủy viên
5. TS. Nguyễn Thị Thắm - Ủy viên

Thư ký: BS. Trần Thị Thanh Hằng

Các thành viên Hội đồng vắng mặt: PGS.TS. Vũ Văn Quang

Các cán bộ tham gia thực hiện chính: *Phạm Thị Nguyên, Trần Thị Quỳnh Trang, Đào Thu Hồng, Đào Thị Thu Loan*

NỘI DUNG NGHIỆM THU:

1. Đọc quyết định thành lập Hội đồng: *BS. Trần Thị Thanh Hằng*
2. Chủ tịch hội đồng điều khiển buổi nghiệm thu.
3. Chủ nhiệm đề tài trình bày tóm tắt bản báo cáo tổng kết đề tài *(có bảo cáo tóm tắt đính kèm)*.
4. Các phản biện đọc bản nhận xét *(có bản nhận xét đính kèm)*.
5. Các thành viên trong hội đồng và những người tham dự buổi nghiệm thu đã trao đổi về nội dung, phương pháp và kết quả nghiên cứu của đề tài. Hội đồng thống nhất một số ý kiến sau:
   - Phương pháp nghiên cứu chặt chẽ.
   - Kết luận phù hợp với nội dung nghiên cứu.

6. Hội đồng đã bỏ phiếu đánh giá kết quả như sau:

Ban kiểm phiếu của Hội đồng gồm:

1. TS. Bạch Thị Hữu Quỳnh
2. BS. Trần Thị Thanh Hằng

Tổng số phiếu phát ra : 05 phiếu
Tổng số phiếu thu vào : 05 phiếu
Số phiếu hợp lệ : 05 phiếu
Số phiếu không hợp lệ : 0 phiếu

Kết quả đánh giá:

Xuất sắc : 2 phiếu
Khá : 3 phiếu
Đạt : 0 phiếu
Không đạt : 0 phiếu

Kết quả đề tài đạt loại: Khá

7. Kết luận của Hội đồng: Nghiệm thu đề tài

Hải Phòng, ngày 29 tháng 12 năm 2022

CHỦ TỊCH HỘI ĐỒNG
(Ký và ghi rõ họ tên)

PGS. TS. Nguyễn Văn Hùng

THƯ KÝ HỘI ĐỒNG
(Ký và ghi rõ họ tên)

BS. Trần Thị Thanh Hằng

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

BIÊN BẢN
NGHIỆM THU ĐỀ TÀI KHCN CẤP CƠ SỞ NĂM 2023

Tên đề tài: Thực trạng học tập ngoại giờ của sinh viên Y đa khoa K40 Trường Đại học Y Dược Hải Phòng năm 2023

Chủ nhiệm đề tài: Đào Thu Hằng

Thành viên tham gia: Phạm Thị Nguyên, Trần Thị Quỳnh Trang, Đào Thu Hằng, Đào Thị Thu Loan

Giảng viên hướng dẫn (nếu có): .....

Đơn vị: Sinh lý

Căn cứ Quyết định số: 2550/QĐ - YDHP ngày 08 tháng 12 năm 2023 của Hiệu trưởng trường Đại học Y Dược Hải Phòng về việc thành lập Tiểu ban Khoa học công nghệ nghiệm thu đề tài nghiên cứu khoa học cấp cơ sở năm 2023, Tiểu ban đã tiến hành họp để đánh giá, nghiệm thu đề tài vào hồi 8h30 ngày 19 tháng 12 năm 2023 tại trường Đại học Y Dược Hải Phòng

Các thành viên có mặt:

PGS.TS. Đặng Hữu Chức

PGS.TS. Nguyễn Hoàng Anh

TS. Phạm Thị Thu Trang

TS. Nguyễn Thu Anh Thường

TS. Trần Thị Thúy Hà

Thư ký hành chính: Thái Thị Thùy Dung

Các thành viên vắng mặt:

.....

.....

NỘI DUNG NGHIỆM THU:

1. Đọc quyết định thành lập Tiểu ban: **TS. Trần Thị Thúy Hà**
2. Trưởng Tiểu ban điều khiển buổi nghiệm thu
3. Chủ nhiệm đề tài trình bày tóm tắt báo cáo tổng kết đề tài (nội dung của quyển sản phẩm)

4. Các thành viên Tiểu ban nhận xét, góp ý *(có biên nhận xét kèm theo)*.
5. Các thành viên trong Tiểu ban và những người tham dự buổi nghiệm thu trao đổi về nội dung, phương pháp, kết quả nghiên cứu của đề tài; và thống nhất một số ý kiến sau:

6. Đánh giá kết quả:
   6.1. Ban kiểm phiếu gồm:
   - **TS. Trần Thị Thúy Hà**
   - **ThS. Võ Thúy Dung**

   6.2. Tiểu ban đã bỏ phiếu đánh giá kết quả như sau:
   Tổng số phiếu phát ra : 05 phiếu
   Tổng số phiếu thu vào : 05 phiếu
   Số phiếu hợp lệ : 05 phiếu
   Số phiếu không hợp lệ : 0 phiếu

   6.3. Kết quả đánh giá:
   Xuất sắc : 0 phiếu
   Khá : 04 phiếu
   Đạt : 01 phiếu
   Không đạt : 0 phiếu

   Kết quả đề tài đạt loại: Khá

7. Kết luận:
   Thông qua với kết

Mũi Pháng, ngày 07 tháng 04 năm 2023

Trưởng Tiểu ban	**Thư ký**
(Ký và ghi rõ họ tên)	*(Ký và ghi rõ họ tên)*
Đặng Văn Thức	TS. Trần Thị Thúy Hà

LÝ LỊCH KHOA HỌC

1. Họ và tên: NGUYỄN THỊ PHƯƠNG MAI

2. Năm sinh: 08/12/1973 **3. Giới tính:** Nữ

4. Nơi sinh: Thị xã Lao Cai

5. Nguyên quán: Xã Dại Thành, Huyện Hiệp Hòa, Tỉnh Bắc Giang

6. Địa chỉ liên hệ:
Điện thoại: NR_____ Mobile: 0987120? Fax: _____
Email: ngocmai@hpmu.edu.vn

7. Học hàm, học vị:
Năm được công nhận TS: 2020 Nơi cấp bằng: Đại học Y Hà Nội.
Năm được phong GS/PGS: _____ Nơi phong: _____

8. Cơ quan công tác:
Tên cơ quan: Trường Đại học Y Hải Phòng
Khoa/Phòng, Bộ môn, Trung tâm: Khoa Y, Bộ môn Hoá sinh
Địa chỉ cơ quan: 72A Nguyễn Bỉnh Khiêm, Đằng Giang, Ngô Quyền, Hải Phòng
Điện thoại: _____ Fax: _____
Email: _____

9. Quá trình đào tạo

Bậc đào tạo	Nơi đào tạo	Chuyên ngành/Tên khóa luận, luận văn, luận án	Năm tốt nghiệp
Đại học	Phân hiệu Đại học Y Hà Nội tại Hải Phòng		1997
Thạc sĩ	Viện Sức khỏe châu Á, Đại học Mahidol, Thái Lan	Preventive behaviors on pesticide usage among rice farmers in Muang district, Nephanburi province, Thailand	2004
Tiến sĩ	Trường Đại học Y Hà Nội	Nghiên cứu genotype của Human Papillomavirus	2020

		trên một số ung thư xuất hiện sớm	
TSKH			

10. Các khoá đào tạo khác (nếu có)

Văn bằng	Tên khoá đào tạo	Nơi đào tạo	Thời gian đào tạo

11. Trình độ ngoại ngữ

Tên ngoại ngữ	Văn bằng/Chứng chỉ	Năm
Tiếng Anh	C	1998

12. Quá trình công tác *(trước đây về Trường và sau khi về Trường)*

Thời gian (Từ năm - năm)	Vị trí công tác	Cơ quan công tác	Địa chỉ cơ quan
12/1997-2010	Giảng viên bộ môn Hoá sinh Bác sĩ đa khoa	Bộ môn Hóa sinh, Trường Đại học Y Dược Hải Phòng Khoa Sinh hoá, Bệnh viện Hữu nghị Việt Tiệp	225 Lạch Tray, Đông Quốc Bình, Ngô Quyền, Hải Phòng Số 1 đường Nhà Thương, Trại Cau, Lê Chân, Hải Phòng
2010-2020	GV chính, Phó trưởng Bộ môn Hoá sinh Bác sĩ chuyên khoa. Phó trưởng khoa từ 2015	Bộ môn Hóa sinh, Đại học Y Dược Hải Phòng Khoa xét nghiệm Tổng hợp BV DHYHP	T2A Nguyễn Bỉnh Khiêm, Đông Giang, Ngô Quyền, Hải Phòng 225 Lạch Tray, Đông Quốc Bình, Ngô Quyền, Hải Phòng
Từ 2020 → nay	GV chính, Trưởng Bộ môn Hoá sinh Phụ trách phát triển Giảng viên	Bộ môn Hóa sinh, Đại học Y Dược Hải Phòng Kiêm nhiệm Đơn vị GDYH-NCKH	

13. Các công trình khoa học đã công bố

13.1. Bài báo khoa học:

- *Tên tác giả: chỉ các tác giả của bài báo*
- *Tác giả chính, là Tác giả thứ nhất (First author) hoặc Tác giả liên hệ (corresponding author)*

- Danh mục: Bài báo khoa học Tạp chí trong nước được HĐGSNN tính điểm

TT	Tên bài báo	Tên tác giả	Tác giả chính	Tạp chí	Năm XB	Số, trang	Danh mục	ISSN (DOI)
1.	Identification of a novel 5-HT3 receptor cDNA in the ovary tissues of black tiger shrimp (*Penaeus monodon*).	Nguyen Thi Phuong Mai, Chaiyapechara, Ongvarava suphoni	Nguyen Thi Phuong Mai	*The Journal Of The International Federation Of Clinical Chemistry and Laboratory*	2005		e journal	
2.	Giá trị HbA1c máu trong chẩn đoán đái tháo đường tại Bệnh viện đa khoa Việt Tiệp, Hải Phòng	Nguyễn Thị Phương Mai	Nguyễn Thị Phương Mai	Y học thực hành	2010	5-7	Tạp chí trong nước	1859-1663
3.	Nghiên cứu sự thay đổi một số chỉ tiêu sinh hóa của bệnh nhân suy thận mạn trước và sau lọc máu tại Bệnh viện đa khoa Việt Tiệp, Hải Phòng	Nguyễn Thị Phương Mai	Nguyễn Thị Phương Mai	Y học thực hành	2018	8-13	Tạp chí trong nước	1859-1663
4.	Thực trạng bệnh tật của nam giới cao tuổi tại một số vùng sinh thái ven biển và hải đảo Hải Phòng năm 2010	Phạm Thị Lý, Nguyễn Thị Phương Mai	Nguyễn Thị Phương Mai	Y học thực hành	2010	119-121	Tạp chí trong nước	1859-1663
5.	Đánh giá hoạt độ γ-glutamyltransferase huyết thanh của bệnh nhân mắc một số bệnh gan, mật tại phòng khám đa khoa thành viên Đại học Y Hải Phòng	Nguyễn Thị Phương Mai, Phạm Thị Lý	Nguyễn Thị Phương Mai	Y học thực hành	2013	65-67	Tạp chí trong nước	1859-1663
6.	Đặc điểm mang *Human*	Nguyễn Thị	Nguyễn Thị	Y học Việt Nam	2013		Tạp chí	1859-1868

	Papillomavirus trên các tổn thương mụn cóc sinh dục nữ đến khám tại Bệnh viện Đại học Y Hải Phòng	Phương Mai, Phạm Thị Lý	Phương Mai				trong nước	
7.	Phân bố genotype của *Human papillomavirus* trên bệnh nhân ung thư cổ tử cung ở phía Bắc Việt Nam	Nguyễn Thị Phương Mai, Tạ Thành Văn	Nguyễn Thị Phương Mai	Nghiên cứu Y học	2014	1-8	Tạp chí trong nước	2354-0850
8.	Liên quan giữa genotype của *Human papillomavirus* và tổn thương mô bệnh trên bệnh nhân ung thư cổ tử cung ở phía Bắc Việt Nam	Nguyễn Thị Phương Mai, Tạ Thành Văn	Nguyễn Thị Phương Mai	Y học Việt nam	2014	1-4	Tạp chí trong nước	1859-1868
9.	Biểu thể E6, E7 của *Human papillomavirus* và tổn bệnh nhân ung thư cổ tử cung ở phía Bắc Việt Nam	Nguyễn Thị Phương Mai, Tạ Thành Văn	Nguyễn Thị Phương Mai	Y học thực hành	2019	423-426	Tạp chí trong nước	1859-1663
10.	Bước đầu đánh giá nồng độ kết hợp huyết thanh của bệnh nhân đái tháo đường typ 2 tại Bệnh viện Hữu nghị Việt Tiệp	Nguyễn Thị Phương Mai, Nguyễn Thị Tươi	Nguyễn Thị Phương Mai	Y học thực hành	2017	387-391	Tạp chí trong nước	1859-1663
11.	Đánh giá kết quả học tập môn Hóa sinh của sinh viên Y khoa hệ tín chỉ và nhận xét tại Trường Đại học Y Dược Hải Phòng, 2018	Nguyễn Thị Phương Mai, Nguyễn Thị Phương Thảo	Nguyễn Thị Phương Mai	Y học Việt Nam	2019		Tạp chí trong nước	1859-1868
12.	Bước đầu đánh giá	Nguyễn	Nguyễn	Nghiên cứu	2020	33-39	Tạp	2354-

	genotype của Human papillomavirus tại tỉnh ung thư âm hộ	Thị Phương Mai, Tạ Thanh Vân	Thị Phương Mai	Y học			chí trong nước	0803
13.	Phát hiện đột biến gen GLA ở một gia đình mắc bệnh Fabry tại Việt Nam	Nguyễn Thị Phương Thảo, Nguyễn Thị Phương Mai, Tạ Thanh Vân	Nguyễn Thị Phương Thảo,	Y học Việt Nam	2019	645-650	Tạp chí trong nước	1859-1868
14.	Hình ảnh siêu âm gan và hoạt độ AST, ALT, GGT huyết thanh của một số bệnh nhân mắc nhiễm loạn lipid máu tại bệnh viện Đại học Y Hải Phòng năm 2020	Nguyễn Thị Phương Mai	Nguyễn Thị Phương Mai	Y học Việt Nam	2021	1-7	Tạp chí trong nước	1859-1868
15.	Nghiên cứu nồng độ Procalcitonin và CRP huyết tương ở bệnh nhân bỏng mức nặng giai đoạn muộn sau	Đặng Quí Vương, Nguyễn Thị Phương Mai, Huỳnh Quang Thuần	Đặng Quí Vương	Tạp chí Y Dược	2021	106-109	Tạp chí trong nước	2734-9209
16.	Kết quả đào tạo liên tục kỹ năng dạy học cho giảng viên theo chương trình đổi mới giáo dục y khoa dựa trên năng lực của	Nguyễn Thị Phương Mai, Nguyễn Quang	Nguyễn Thị Phương Mai	Khoa học Sức khoẻ	2021	189-194	Tạp chí trong nước	2815-8203

	Trường Đại học Y Dược Hải Phòng	Anh						
17.	Bất hợp lý sử dụng thuốc cảm và một số yếu tố liên quan của sinh viên Y khoa năm nhất, Trường Đại học Y Dược Hải Phòng, năm 2024	Nguyễn Thị Phương Mai, Nguyễn Quang Anh	Nguyễn Thị Phương Mai	Khoa học Sức khoẻ	2024	18(3)	Tạp chí trong nước	2815-6293

13.2. Sách chuyên khảo, giáo trình – tài liệu dạy học:

- *Tên tài liệu: Sách/ Chương sách*
- *Loại hình: Chuyên khảo/ Tham khảo/ Giáo trình/ Tài liệu hướng dẫn*

TT	Tên tài liệu	Tên tác giả	Chủ biên/Đồng chủ biên	Nhà xuất bản	Năm xuất bản	Loại hình	ISBN
	Hoá sinh Đại cương	Nguyễn Thị Phương Mai, Phạm Thị Lý, Trương Thị An	Nguyễn Thị Phương Mai	Y học, Hà Nội	2021	Giáo trình	978-604-66-3869-8
1	Hoá sinh Đại cương	Nguyễn Thị Phương Mai, Nguyễn Thị Phương Thảo	Nguyễn Thị Phương Mai	Y học, Hà Nội	2024	Giáo trình	978-604-66-6824-4
2	Hoá sinh	Nguyễn Thị Phương Mai, Nguyễn Thị Phương Thảo	Nguyễn Thị Phương Mai	Y học, Hà Nội	2024	Giáo trình	978-604-66-6481-9
3	Phương pháp dạy học Y học cơ bản	Nguyễn Thị Phương Mai, Đào Thu Hồng, Vũ Mạnh Tân, Kỷ Thị Lan Anh, Nguyễn Thị Thanh Bình, Đặng Văn Minh	Nguyễn Thị Phương Mai, Đào Thu Hồng	Y học, Hà Nội	2024	Giáo trình	978-604-66-6480-2

14. Báo cáo Hội nghị - hội thảo khoa học

Ký yếu/ Tóm tắt/ Toàn văn

TT	Tên báo cáo	Tên tác giả	Tác giả chính	Tên hội nghị	Thời gian báo cáo (tháng/năm)	Ký yếu	ISBN
1	Liên quan giữa	Nguyễn	Nguyễn	Hội Nghị	9/2014	Tổng	

	genotype của Human papillomavirus và tổn thương mô bệnh học bệnh nhân ung thư cổ tử cung ở phía Bắc, Việt Nam	Thị Phương Mai, Tạ Thành Văn	Thị Phương	Khoa học thường niên lần thứ ba. Huế		Hội Y học Việt Nam	
7	Phân bố genotype của Human papillomavirus trên bệnh nhân ung thư cổ tử cung ở phía Bắc, Việt Nam	Nguyễn Thị Phương Mai, Tạ Thành Văn	Nguyễn Thị Phương	Hội nghị Khoa học Nghiên cứu sinh. Trường Đại học Y Hà Nội	2014	Hội nghị Khoa Nghiên cứu sinh	2354-080X
8	Đánh giá kết quả học tập môn Hóa sinh của sinh viên Y khoa hệ tín chỉ và chuẩn năng lực năm nhất tại Trường Đại học Y Dược Hải Phòng, 2018	Nguyễn Thị Phương Mai, Nguyễn Thị Phương Thảo	Nguyễn Thị Phương Mai	Hội Nghị Giáo dục Y học Toàn quốc lần thứ 3	2019	Hội Giáo dục Y khoa	1859-1868
9	Rối loạn lo âu, trầm cảm và một số yếu tố liên quan của sinh viên Y khóa năm nhất, Trường Đại học Y Dược Hải Phòng, năm 2024	Nguyễn Thị Phương Mai, Nguyễn Quang Anh	Nguyễn Thị Phương Mai	Hội nghị nhân kỷ niệm 45 năm thành lập Trường Đại học Y Dược Hải Phòng	2024	Tạp chí Khoa học tiên khoa	1859-1868

15. Bằng sở hữu trí tuệ đã được cấp

Liệt kê các văn bằng bảo hộ đối tượng sở hữu, giải pháp hữu ích, kiểu dáng công nghiệp, thiết kế bố trí, giống cây trồng...

TT	Tên và nội dung văn bằng	Số, Mã, Ký hiệu	Nơi cấp	Năm cấp
1				
2				
...				

16. Công trình KH&CN được ứng dụng, chuyển giao

TT	Tên công trình	Hình thức	Quy mô	Địa chỉ áp dụng	Giá trị	Thời gian
1						
...						

17. Nhiệm vụ KH&CN các cấp

- *Loại hình: Đề tài/ Dự án / Đề án*
- *Tình trạng nhiệm vụ: Đã nghiệm thu/ Chưa nghiệm thu/ Không hoàn thành*

17.1. Nhiệm vụ KH&CN đã và đang chủ trì

Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình *(nếu có)*	Tình trạng nhiệm vụ	Ngày			Kinh phí (triệu đồng)
					Phê duyệt	Đăng ký kết quả (nếu có)	Công nhận kết quả	

17.2. Nhiệm vụ KH&CN đã và đang tham gia

Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình *(nếu có)*	Tình trạng nhiệm vụ	Ngày			Kinh phí (triệu đồng)
					Ngày ký hợp đồng	Công nhận kết quả	Đăng ký kết quả	
Nghiên cứu sự thay đổi một số chỉ tiêu sinh miễn của bệnh nhân nội thận mạn tính và sau lọc máu tại Bệnh viện đa khoa Việt Tiệp, Hải Phòng		Đề tài cấp cơ sở	Trường Đại học Y Hải Phòng	Đã nghiệm thu	2019	Đạt	Đăng bảo	
Giá trị HbA1c mẫu trong chẩn đoán đái tháo đường tại Bệnh viện đa khoa Việt Tiệp, Hải Phòng		Đề tài cấp cơ sở	Trường Đại học Y Hải Phòng	Đã nghiệm thu	2019	Đạt	Đăng bảo	
Đánh giá hoạt độ γ-glutamyltransferase huyết thanh của bệnh nhân mắc một số bệnh gan, mật tại phòng khám đa khoa Bệnh viện Đại học Y Hải Phòng		Đề tài cấp cơ sở	Trường Đại học Y Hải Phòng	Đã nghiệm thu	2019	Đạt	Đăng bảo	

Hợp tác nghiên cứu tỷ lệ nhiễm và phân bố genotype của *Human papillomavirus* trên một số bệnh ung thư ở phía Bắc, Việt Nam		Đề tài cấp cơ sở	Trường Đại học Y Dược Hải Phòng, thuộc nhánh đề tài Hợp tác theo nghị định thư cấp Nhà nước	Đã nghiệm thu	2013	Đạt	Đăng bảo	3
Đặc điểm mang *Human papillomavirus* ở bệnh nhân nữ mắc u tiểu xinh đục tại Bệnh viện Đại học Y Hải Phòng		Đề tài cấp cơ sở	Trường Đại học Y Hải Phòng	Đã nghiệm thu	2012	Đạt	Đăng bảo	3
Phân bố genotype của *Human Papillomavirus* ở bệnh nhân mắc ung thư cổ tử cung tại Bệnh viện K Trung ương		Đề tài cấp cơ sở	Trường Đại học Y Dược Hải Phòng, thuộc nhánh đề tài Hợp tác theo nghị định thư cấp Nhà nước	Đã nghiệm thu	2013	Đạt	Đăng bảo	3
Liên quan giữa genotype của *Human papillomavirus* và tổn thương giải phẫu bệnh trên bệnh nhân mắc ung thư cổ tử cung tại bệnh viện K trung ương		Đề tài cấp cơ sở	Trường Đại học Y Dược Hải Phòng, thuộc nhánh đề tài Hợp tác theo nghị định thư cấp Nhà nước	Đã nghiệm thu	2014	Đạt	Đăng bảo	3
Đặc thể E6, E7 của *Human Papillomavirus* 16 trên bệnh nhân ung thư cổ tử cung ở phía bắc, Việt Nam		Đề tài cấp cơ sở	Trường Đại học Y Dược Hải Phòng, thuộc nhánh đề tài Hợp tác theo nghị định thư cấp Nhà nước	Đã nghiệm thu	2015	Đạt	Đăng bảo	
Phân bố genotype của *Human Papillomavirus* ở		Đề tài	Trường Đại học Y Dược Hải Phòng,	Đã nghiệm thu	2016	Đạt		3

bệnh nhân mắc ung thư âm hộ tại Bệnh viện K Trung ương		cấp cơ sở	thuộc nhánh đề tài Hợp tác theo nghị định thư cấp Nhà nước					
Biểu hiện E6, E7 của Human Papillomavirus 16 trên bệnh nhân ung thư âm hộ tại bệnh viện K Trung ương		Đề tài cấp cơ sở	Trường Đại học Y Dược Hải Phòng, thuộc nhánh đề tài Hợp tác theo nghị định thư cấp Nhà nước	Đã nghiệm thu	2017	Đại		1
Phát hiện đột biến gen GLA ở một gia đình mắc bệnh Fabry tại Việt Nam		Đề tài cấp cơ sở	Trường Đại học Y Hải Phòng	Đã nghiệm thu	2019	Đạt	Đồng bảo	1
Kết quả học tập môn Hóa sinh của sinh viên Y khoa theo hệ tín chỉ và, năng lực tiếp nhận tại Trường Đại học Y Dược Hải Phòng, năm 2018		Đề tài cấp cơ sở	Trường Đại học Y Dược Hải Phòng	Đã nghiệm thu	2019	Đạt	Đồng bảo	1
Hình ảnh siêu âm gan và hoạt độ AST, ALT, GGT huyết thanh của một số bệnh nhân mắc rối loạn lipid máu tại bệnh viện đại học Y Hải phòng, năm 2020		Đề tài cấp cơ sở	Trường Đại học Y Hải Phòng	Đã nghiệm thu	2020	Đạt	Đồng bảo	1
Bước đầu đánh giá tình trạng gan nhiễm mỡ ở bệnh nhân mắc đái tháo đường type 2 tại Bệnh viện Đại Học Y Hải Phòng		Đề tài cấp cơ sở	Trường Đại học Y Hải Phòng	Đã nghiệm thu	2021	Đạt		1
Kết quả đào tạo liên tục kỹ năng dạy học cho giảng viên theo chương		Đề tài cấp cơ sở	Trường Đại học Y Hải Phòng	Đã nghiệm thu	2022	Đạt	Đồng bảo	1

trình đổi mới giáo dục y khoa dựa trên năng lực của Trường Đại học Y Dược Hải Phòng								
hội tương quan giữa nồng độ Procalcitonin, C-reactive protein với tốc, creatinine và albumin trong huyết thanh của bệnh nhân nhiễm khuẩn thận mạn tắc nhân chu kỳ tại Bệnh viện Hữu nghị Việt Tiệp, năm 2023		Đề tài cấp cơ sở	Trường Đại học Y Hải Phòng	Đã nghiệm thu	2023	Đạt		6
Thực trạng rối loạn lo âu, trầm cảm và một số yếu tố liên quan của sinh viên Y khoa năm thứ, Trường Đại học Y Dược Hải Phòng, năm 2024		Đề tài cấp cơ sở	Trường Đại học Y Hải Phòng	Đã nghiệm thu	2024	Đạt	Đồng bảo	6

18. Giải thưởng về KH&CN trong và ngoài nước

TT	Tên giải thưởng	Hình thức khen thưởng	Cấp khen thưởng	Năm tặng thưởng
1				
2				
...				

19. Đào tạo sau đại học

- *Tại với hướng dẫn: hướng dẫn 1; hướng dẫn 2...*
- *Bậc đào tạo: Tiến sĩ/Thạc sĩ/BS Nội trú/CKII...*

TT	Họ tên học viên	Vai trò	Bậc đào tạo	Chuyên ngành	Nơi đào tạo	Năm cấp bằng

1	Đặng Quý Vương	Hướng dẫn 1	Thạc sĩ	Thạc sĩ Y sinh	Học viện Quân Y	2022

NHỮNG THÔNG TIN KHÁC VỀ CÁC HOẠT ĐỘNG KHOA HỌC VÀ CÔNG NGHỆ

(Tham gia các tổ chức hiệp hội nghề nghiệp; thành viên Ban biên tập các Tạp chí khoa học trong và ngoài nước; Thành viên các hội đồng quốc gia, quốc tế: ...)

Hải Phòng, ngày 7 tháng 4 năm 2023

XÁC NHẬN CỦA ĐƠN VỊ

TL. HIỆU TRƯỞNG

TRƯỞNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

TS. Nguyễn Hữu Ninh

NGƯỜI KHAI

(Họ tên và chữ ký)

NGUYỄN THỊ PHƯƠNG MAI

BỘ Y TẾ
Số: 002773/BYT-CCHN

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

CHỨNG CHỈ HÀNH NGHỀ KHÁM BỆNH, CHỮA BỆNH

BỘ Y TẾ

Căn cứ Luật khám bệnh, chữa bệnh;
Căn cứ Nghị định số 87/2011/NĐ-CP ngày 27/9/2011 của Chính phủ quy định chi tiết và hướng dẫn thi hành một số điều của Luật khám bệnh, chữa bệnh;
Căn cứ Thông tư số 41/2011/TT-BYT ngày 14/11/2011 của Bộ trưởng Bộ Y tế hướng dẫn cấp chứng chỉ hành nghề đối với người hành nghề và cấp giấy phép hoạt động đối với cơ sở khám bệnh, chữa bệnh;
Xét đề nghị của Cục trưởng Cục Quản lý Khám, chữa bệnh - Bộ Y tế,

CẤP CHỨNG CHỈ HÀNH NGHỀ KHÁM BỆNH, CHỮA BỆNH

Họ và tên: NGUYỄN THỊ PHƯƠNG MAI
Ngày tháng năm sinh: 09/12/1977
Giấy chứng minh nhân dân số: 050901840
Ngày cấp: 15/5/2010 Nơi cấp: Công an Hải Phòng
Chỗ ở hiện nay: Số 22/41/161 Cầu, phường Cầu Tiên, Quận Ngô Quyền, thành phố Hải Phòng
Văn bằng chuyên môn: Bác sỹ
Phạm vi hoạt động chuyên môn: Chuyên khoa Nội
Thời gian làm việc: 7h00 đến giờ hành chính

Hà Nội, ngày 19 tháng 8 năm 2014
KT. BỘ TRƯỞNG
THỨ TRƯỞNG

Người ký: Trần Thị Xuyên

SOCIALIST REPUBLIC OF VIETNAM
Independence - Freedom - Happiness

The President of
HANOI MEDICAL UNIVERSITY
has conferred
THE DEGREE OF
DOCTOR OF PHILOSOPHY
IN MEDICINE

Name: NGUYEN THI PHUONG MAI

Date of birth: [illegible]

Year of graduation: 2008

Given under the seal of
Hanoi Medical University
[illegible]

Reg. No: [illegible]

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

Hiệu trưởng
TRƯỜNG ĐẠI HỌC Y HÀ NỘI
cấp

BẰNG TIẾN SĨ
Y HỌC

Cho: NGUYỄN THỊ PHƯƠNG MAI

Ngày sinh: [illegible]

Năm tốt nghiệp: 2008

Hà Nội, ngày [illegible] tháng [illegible] năm 2008

Số hiệu: [illegible]
Số vào sổ cấp bằng: [illegible]

Tạp chí

KHOA HỌC SỨC KHỎE

JOURNAL OF HEALTH SCIENCES (JHS)

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TẬP 1, SỐ 1 - 2023

CHÀO MỪNG
KỶ NIỆM 68 NĂM NGÀY THẦY THUỐC VIỆT NAM
(27/02/1955 - 27/02/2023)

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Tạp chí

KHOA HỌC SỨC KHỎE

Journal of Health Sciences UHSI

Tập 1, số 1 - 2023

CHÀO MỪNG
KỶ NIỆM 68 NĂM NGÀY THẦY THUỐC VIỆT NAM
(27/02/1955 - 27/02/2023)

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

TẠP CHÍ KHOA HỌC SỨC KHOẺ
Journal of Health Sciences
Tập 1, số 1 – 2023

BAN BIÊN TẬP

TỔNG BIÊN TẬP
PGS.TS.BS. Phạm Văn Linh

PHÓ TỔNG BIÊN TẬP
GS.TS.BS. Phạm Minh Khuê

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TS. Cao Đức Tuấn
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TS.BS. Phạm Thanh Hải
TS.BS. Nguyễn Thanh Hải
TS.BS. Đinh Dương Tùng Anh
TS.BS. Đỗ Minh Tùng
TS.BS. Đỗ Quang Anh
TS.BS. Khâu Thị Song Hương

BAN THƯ KÝ

TS.BS. Nguyễn Thị Thu Hà
TS. Nguyễn Thị Thuý Hoài
CN. Nguyễn Mai Anh

CỘNG TÁC VIÊN

Hoàng Thị Bích Vân
Nguyễn Huy Thuận
Nguyễn Thu Trà
Nguyễn Văn Ngọc

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GS.TS.BS. Phạm Văn Thúc
PGS.TS.BS. Trần Quang Phục
GS.TS.BS. Nguyễn Ngọc Sáng
PGS.TS.BS. Phạm Văn Mạnh
PGS.TS.BS. Đinh Thị Thanh Mai
PGS.TS.BS. Nguyễn Văn Hùng
PGS.TS.BS. Lê Minh Quang
PGS.TS.BS. Đặng Văn Chức
PGS.TS.BS. Nguyễn Thị Dung
PGS.TS.BS. Phạm Văn Nhiên
PGS.TS.BS. Vũ Văn Tám
PGS.TS.BS. Phạm Văn Duyệt
PGS.TS.BS. Nguyễn Thanh Hồi
BSCKII. Trần Việt Phương
PGS.TS.BS. Vũ Quang Hưng
TS.BS. Nguyễn Thị Thảo
TS.BS. Nguyễn Thị Thu Hiền
PGS.TS.BS. Trần Thị Quỳnh Chi
TS.BS. Nguyễn Hùng Cường
TS. Bùi Ngọc Tân
TS. Bạch Thị Như Quỳnh

TRỤ SỞ TÒA SOẠN

T2A Nguyễn Bỉnh Khiêm, Đằng Giang, Ngô Quyền, Hải Phòng
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TẠP CHÍ KHOA HỌC SỨC KHOẺ
Journal of Health Sciences
Tập 1, số 1 – 2023

Tất cả các công trình nghiên cứu và thông tin in trong tạp chí Khoa học và sức khỏe đã được phản biện độc lập bởi 2 nhà khoa học

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Kết quả đào tạo liên tục kỹ năng dạy học cho giảng viên theo chương trình đổi mới giáo dục y khoa dựa trên năng lực của Trường Đại học Y Dược Hải Phòng

Nguyễn Thị Phương Mai [*], Nguyễn Quang Anh [*], Đào Thu Hằng [*]

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TÓM TẮT

Mục tiêu: Trên cơ sở thực hiện hoạt động của phương pháp dạy học dựa trên năng lực đáp ứng yêu cầu dạy học theo chuẩn năng lực, với khai triển đánh giá kỹ năng viết mục tiêu bài học tốt, phương pháp lượng giá khách quan, tổ chức đào tạo hợp lý cho các giảng viên khối khoa học cơ bản và Y học cơ sở đã tiến hành đào tạo Y khoa năm 3, năm 2 trong năm học 2020-2021, nghiên cứu này đã kết quả cải thiện kiến thức của 41 giảng viên tham gia đào tạo về phát triển phương pháp dạy học theo năng lực từ tháng 8 năm 2021 đến tháng 9 năm 2021. **Phương pháp:** Nghiên cứu mô tả, so sánh kết quả trước và sau can thiệp. **Kết quả** nghiên cứu: Kỹ năng viết mục tiêu bài học phát triển đạt SMART, với MCQ hiệu suất, có đáng phân biệt trong các trong dạy học và đạt học tốt với ngưỡng sau khóa đào tạo đã hoàn đã được có ý nghĩa thống kê, lần lượt ở mức 47,6%; 85,7%; 94,2%; 61,9%. Tuy nhiên, mẫu chỉ ra thể sửa mục tiêu bài học và hỗ trợ giảng của MCQ chưa có sự cải thiện. Khoảng 21,4% số đề cương duy trì phương pháp dạy học thuyết trình ở các buổi đầu. **Kết luận và khuyến nghị:** Cần có sự hỗ trợ về phương tiện không ngừng và thường để duy trì phương pháp dạy học tích cực trong đào học và tăng cường đối tượng huấn luyện kỹ năng viết mục tiêu bài học, MCQ có cải thiện đào tạo hợp mục.

Từ khóa: dạy học theo năng lực, dạy học tích cực, đào tạo.

Assessment of the continuous training results on teaching skills of teachers by innovation progress of competency-based medical education at Hai Phong University of Medicine and Pharmacy, 2019-2021

ABSTRACT: **Objectives:** Training course on developing competency-based teaching methods to meet teaching requirements according to competency standards. To assess the skill of well-written lesson objectives, objective evaluation methods, and effective teaching organization of the lecturers in Faculty of Basic Sciences and Faculty of Medical Fundamental (Biomedical) Sciences for 3rd and 2nd-year medical students in the academic year 2020-2021, an intervention study was conducted on 42 lecturers who participated in training on developing competency-based teaching methods from September 2021 to September 2021. **Methods:** Descriptive and comparative study design. **Study results:** Writing skills lesson objectives met SMART criteria, good MCQ, using

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interactive software in teaching and active studying right after the training course increased significantly by 47.8%; 36.3%; 64.2%; 62.2% respectively. However, the specific criteria of the lesson objectives and the syllabus errors of the MCQ have not been improved. About 71.4% of the subjects maintained the presented teaching method during the teaching sessions. Conclusions and suggestions: Smart rooms and internet are needed to maintain active teaching methods in teaching and increase training time in writing lesson objectives and MCQ in the next training courses.

Keywords: Competency-based education, active teaching, training

ĐẶT VẤN ĐỀ

Dạy học Y khoa dựa trên năng lực (Competency-based medical education. – CBME) đánh dấu một bước ngoặt trong thời kỳ đổi mới của Giáo dục Y khoa.

CBME "đề cập đến việc đảm bảo mỗi sinh viên đáp ứng năng lực hành nghề của bác sỹ Y khoa sau khi tốt nghiệp, đủ tự tin và khả năng làm việc trong môi trường chưa xác định, đặt đúng được yêu cầu đó, dạy học chuyển sang đạt hiệu quả cực với 7 nguyên tắc: học có mục đích, khảo sát thực tế nghề nghiệp, đặt vấn đề phức tạp, có tình huống, người học được phản ánh, tranh luận và đàm phán về mục tiêu, phương pháp, phương tiện dạy học [1]. Nguyên lý xây dựng liên kết (constructive alignment) với sự phù hợp giữa mục tiêu dạy học - chiến lược, phương pháp và công cụ đánh giá - tổ chức dạy học thích hợp [2].

Tính chuyên nghiệp và kỹ năng sư phạm là vấn đề nổi bật, giảng viên kết hợp với thiết kế giảng dạy tăng tác, tích cực và nhóm xã hội học cộng đồng vai trò quan trọng trong việc cải thiện năng lực của giảng viên [3]. Khả năng tự học, tự phát triển liên tục là quan trọng nhất, để đạt được điều đó, mỗi giảng viên phải thích ứng với sự phát triển của công nghệ trong sự liên kết các thời mực giảng dạy [4]. Đào tạo nội bộ có hiệu quả và là nền tảng năng lực sư phạm và nên được tổ chức thường kỳ [5].

Trước nhu cầu đổi mới dạy học, khoa đào tạo liên tục về "xây dựng và phát triển chương trình giáo dục Y khoa dựa trên năng lực" đã từng bước được tổ chức ở các khối giảng viên theo giai giảng dạy sinh viên Y khoa theo chương trình Đổi mới giáo dục Y khoa dựa trên năng lực, mà bắt đầu là khối giảng viên Y học cơ sở và Khoa học cơ bản. Nghiên cứu đánh giá hiệu quả của khoá đào tạo liên tục nhằm nâng cao hiệu quả các khoá tiếp theo và đồng thời là cơ sở để xây dựng theo đó sử dụng phương pháp dạy học tích cực ở các năm sau.

Mục tiêu: Đánh giá một số kỹ năng với mục tiêu bài học tốt, phương pháp lượng giá khách quan, tổ chức dạy học tích cực của giảng viên khối Y học cơ sở và Khoa học cơ bản cho sinh viên Y khoa năm 1, năm 2 trong năm học 2021-2022.

ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP

Đối tượng nghiên cứu

Đối chuẩn đợt chọn

Toàn bộ số giảng viên khối Khoa học cơ bản và Y học cơ sở của trường Đại học Y Dược Hải Phòng giảng dạy trong các module năm 1, năm 2 của chương trình đổi mới giáo dục Y khoa dựa trên năng lực, tham gia khoá đào tạo liên tục "Xây dựng chương trình và phát triển phương pháp dạy học theo năng lực" năm 2021.

Đối chuẩn loại trừ

Giảng viên giảng dạy trong các module năm 1, năm 2 của chương trình đổi mới giáo dục Y khoa dựa trên năng lực không tham dự khoá đào tạo liên tục.

Giảng viên tham gia khoá đào tạo liên tục không dạy cho đối tượng Y khoa theo chương trình đổi mới giáo dục Y khoa dựa trên năng lực.

Giảng viên tham gia khoá đào tạo liên tục và giảng dạy chương trình đổi mới không có lớp phiếu điều tra.

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Địa điểm và thời gian nghiên cứu:
Địa điểm: Trường Đại học Y Dược Hải Phòng.
Thời gian: từ tháng 9 năm 2021 đến tháng 9 năm 2022.
Thiết kế nghiên cứu: nghiên cứu mô tả cắt ngang
Cỡ mẫu: 42 giảng viên khối cơ sở của khoa và Y học cơ sở tham gia khóa tập huấn
Phương pháp thu thập số liệu: Hồi cứu thuật liệu có chủ đích
Giảng viên điền thông tin nghiên cứu tự đánh giá qua khảo sát online bằng Google forms.
Giảng viên (người đánh giá): đánh giá qua kết quả nhóm bài tập trước và sau mỗi buổi đào tạo (bài lượng giá thực hiện).
Ban viện: đánh giá giảng viên qua khảo sát online bằng Google forms
Chỉ số nghiên cứu
Chỉ số nhân xã hội học:
- Tuổi: ≤ 30; 31-40; >40
- Giới: nam, nữ
- Trình độ: Bác sỹ, Thạc sỹ, Bác sỹ chuyên khoa I, Tiến sỹ, Phó giáo sư
- Chức vụ quản lý: không; phó trưởng khoa/ bộ môn/ module; giám đốc bộ môn/ Phó hội module
- Năm công tác: < 5 năm; 5-10 năm; 10-15 năm; > 15 năm.

Tự đánh giá về mức độ cải thiện sau đào tạo liên tục: Không cải thiện, cải thiện rất ít, cải thiện: còn phải, cải thiện nhiều về việc mục tiêu bài học, MCQ và tổ chức dạy học tích cực.
Đánh giá mức độ cải thiện của giảng viên: mười sỹ sau buổi đào tạo lần hai, lượng giá giữa kỳ, cuối kỳ.
- Viết mục tiêu bài: (SMART, ABCD) được đề cập chi tiết
- Viết MCQ hiệu quả: phù hợp mục tiêu, về phạm lỗi
- Sử dụng phần mềm trong dạy: trước, trong và sau buổi dạy
- Tổ chức phương pháp dạy học tích cực: phù hợp với mục tiêu, đúng nguyên tắc

Đánh giá của sinh viên:
- Bài giảng có mục tiêu học tập
- Sinh viên được thảo luận
- Sử dụng phần mềm tương tác

Xử lý và phân tích số liệu: dùng phần mềm thống kê Y học để tính tỷ lệ phần trăm, giá trị trung bình.
Đạo đức nghiên cứu: giới bí mật thông tin người phản hồi và người được phản hồi. Đề tài đã được thông qua Hội đồng xét duyệt và phê duyệt đề tài cơ sở năm học 2021-2022 của Trường Đại học Y Dược Hải Phòng.

KẾT QUẢ

Qua nghiên cứu trên 42 giảng viên tham gia khoá đào tạo, chúng tôi thu được kết quả như sau:

Bảng 1 chỉ ra đa số (54,8% - 69%) giảng viên đều tự đánh giá khoá đào tạo đã cải thiện kỹ năng viết mục tiêu bài học theo tiêu chí SMART, viết câu hỏi trắc nghiệm MCQ tốt, sử dụng thường xuyên hệ thống và áp dụng phương pháp dạy học tích cực ở mức độ vừa. Tỷ lệ 16,7-28,6% tự nhận thấy mình vẫn đang cần tham dự dạy học.

Bảng 1: Tự đánh giá mức độ cải thiện sau đào tạo

Nội dung	Cải thiện ít		Cải thiện vừa		Cải thiện nhiều		Tổng số	
	n	%	n	%	n	%	n	%
Viết mục tiêu bài học	2	4,7	28	66,7	12	28,6	42	100
Viết MCQ	3	7,1	32	76,2	7	16,7	42	100
Sử dụng tương tác hệ thống	10	23,8	23	54,8	9	21,4	42	100
Tổ chức dạy học tích cực	6	14,3	29	69	7	16,7	42	100

Bảng 2 cho thấy độ tuổi 31-40 chiếm 2/3 (66,7%) số đối tượng nghiên cứu, hơn ¾ (78,6%) là nữ. Đa số (69%) ở trình độ Thạc sỹ và 2/3 số đối tượng nghiên cứu có thời gian giảng dạy 5-10 năm, không tham nhiệm chức vụ quản lý.

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Bảng 2: Các số nhân cá biệt học của đối tượng nghiên cứu

	Đặc số	Số lượng (%)	Trung vị (25%, 75%)
Tuổi	≤ 30	3 (7.1)	35 (33-41)
	31-40	28 (66.7)	
	≥ 41	11 (26.2)	
Giới	Nam	9 (21.4)	-
	Nữ	33 (78.6)	
Trình độ	Đại cử	3 (7.2)	-
	Thạc sỹ	28 (67)	
	Tiến sỹ	7 (16.6)	
	Bác sỹ chuyên khoa I	1 (2.4)	
	Phó Giáo sư	3 (4.8)	
Năm công tác	≤ 5 năm	5 (11.9)	10 (7-12.3)
	6-10	17 (40.5)	
	11-15	12 (28.6)	
	> 15	8 (19)	
Chức vụ	Không	37 (88.5)	-
	Giảm sự bộ môn/ Bộ môn/	12 (28.5)	
	Trưởng/ phó bộ môn/ module	33 (31)	

Bảng 3 cho thấy sau khoá đào tạo, số đối tượng nghiên cứu với mục tiêu đã tăng lên, giảm tối thiểu sự phù hợp với mục tiêu học phần, có ý nghĩa thống kê với p lần lượt 0,03; <0,001 (<0,05). Tỷ lệ đối tượng nghiên cứu với MCQ hiệu quả tăng lên, tỉ lệ mối tối thiểu sự tương đồng giữa các phương án lựa chọn (tương đồng), trong tập giữa phương án lựa chọn và câu hỏi (trùng lặp) giảm sau đào tạo có ý nghĩa thống kê với p< 0,001, Tỉ lệ mối tối việc phong với câu hỏi thiếu từ để lời luận chưa cụm từ gây thuộc "sau đây" chưa có sự khác biệt giữa trước và sau khoá đào tạo.

Sau đào tạo, 64,2% số đối tượng nghiên cứu đã sử dụng phần mềm trong tâm và 88% dạy học có thảo luận trong bài lượng giá nuối khoá nhưng chỉ còn 41,6% và 78,1% sử dụng trong các buổi dạy không có giảm sát. Các đối tượng nghiên cứu đã bỏ dạy học thuyết chỉ đơn thuần trong các bài lượng giá cuối khoá của khoá đào tạo nhưng trong quá trình dạy học tiếp tục duy trì hoạt động này.

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Bảng 2. Đánh giá của giảng viên và sinh viên sau đào tạo

Biến số		Đánh giá qua phiếu chấm			Đánh giá của sinh viên
		Trước tập huấn (Số lượng (%))	Sau tập huấn (Số lượng (%))	P	(Số lượng (%))
Viết mục tiêu bài học	Tốt	1 (2.4)	21 (50)	0,03	
	Thiếu yếu tố S	36 (85.7)	14 (33.3)	< 0,001	
	Thiếu yếu tố R	34 (97.1)	3 (7.2)		
	Thiếu yếu tố M	3 (7.1)	0		
Viết MCQ multi bài	Hiệu quả	1 (2.4)	16 (38.1)	<0,001	
	Cần tương đương	29 (69.2)	1 (2.4)	< 0,001	
	Cần tương tự	12 (31)	1 (2.4)	<0,001	
	Cần cân nhắc	12 (28.6)	12 (28.6)	0,104	
Sử dụng tương tác hệ thống		0	27 (64.3)	<0,001	27 (81,8)
Tổ chức dạy học tích cực	Thuyết trình	35 (83.3)	0	< 0,001	9 (21,4)
	Thảo luận	7 (16.7)	37 (88)	0,04	28 (78,1)
	Đa thức	0	5 (12)	0,04	

Nghiên cứu không tìm thấy mối liên quan giữa trình độ, số năm công tác, chức vụ đảm nhiệm với việc có thiết kế rõng với mục tiêu bài học, viết câu hỏi lượng giá MCQ, sử dụng hệ thống tương tác và phương pháp dạy học tích cực.

BÀN LUẬN

Phần lớn đối tượng nghiên cứu (78,6%) là nữ; độ số (60,7%) ở độ tuổi còn khá trẻ, 31-40 tuổi và đạt trình độ Thạc sỹ. Gần nửa số đối tượng (48,4%) có thời gian công tác từ 5-10 năm và không giữ chức vụ quản lý. Số đối tượng nghiên cứu có trình độ tương đương Tiến sỹ trở lên và thời gian công tác trên 10 năm chỉ chiếm gần 1/3 tổng số. Như vậy, đa số đối tượng nghiên cứu ở độ tuổi trẻ và thời gian công tác chưa dài, nên kinh nghiệm dạy học được tích lũy chưa nhiều, nhà lại, họ rất tiếp cận các kiến thức, kỹ năng mới. Yếu tố tuổi, thời gian công tác cũng ảnh hưởng tới kết quả các khoá đào tạo [3].

Đa số đối tượng nghiên cứu nhận thấy khoá đào tạo đã giúp họ cải thiện ở mức độ vừa, khoảng 16,28% tự thấy cải thiện nhiều và rất nhiều sự áng văn thực sẽ giảng dạy. Kết quả nghiên cứu của chúng tôi cũng tương tự như nghiên cứu của Nedia, đào tạo luôn luôn cải thiện năng lực của người học [3].

Qua khoá đào tạo, việc các thiện viết mục tiêu bài học đạt tiêu chí SMART có ý nghĩa thống kê với p = 0,03 (< 0,05) trong đó, tiêu chí tương thích với mục tiêu chuẩn đầu ra của module học phần thay đổi có ý

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nghĩa thống kê với p< 0,001. Trên 1/3 số đối tượng nghiên cứu cho việc mục tiêu bài học chưa đạt tiêu chí cụ thể. Việc xác định đối tượng, hành động cụ thể đã được cải thiện, tuy nhiên, tại cụ thể hoá số lượng hành động chưa được xác định. Hơn 1/3 số đối tượng với MCQ tốt so với trước khi đào tạo. Các lỗi tương đồng giữa các phương án lựa chọn, trong lớp giữa phương án lựa chọn và giữa thân cải thiện có ý nghĩa thống kê với p < 0,05. Lỗi vận phong - câu hỏi thiếu tỉ đồng từ để hỏi vẫn còn xuất hiện ở 28,6% số đối tượng nghiên cứu.

Phương pháp dạy học tích cực coi e dạy là sự tương tác giữa người dạy và người học có thay đổi đáng kể. Trước khoá đào tạo, chưa có đối tượng nghiên cứu sử dụng trong bài dạy, trong bài tương giá cuối khoá của khoá đào tạo, 2 phần mềm Poll Everywhere và Kahoot đã được 2/3 số đối tượng nghiên cứu (64,2%) sử dụng. Kết quả nghiên cứu của chúng tôi tương đồng với nghiên cứu của Nicita về sự cải thiện về sử dụng các phần mềm và phương tiện truyền thông trong dạy học [3]. Mặc dù chỉ có gần 1/3 số đối tượng (31,4%) nhận thấy sử điện thiết bị công nghệ sử dụng hệ thống tương tác và có khả năng tự áp dụng, nhưng trong thực tế 2/3 (61,6%) đối tượng nghiên cứu áp dụng vào các buổi dạy trên lớp. Có thể do học chỉ về mặt, sự sử việc thiết bị tăng (nếu có) và tự học giờ với tại giảng học và phần mềm miễn phí học chỉ người dùng cần tới việc sử dụng ứng dụng, tương tác thực tiễn. Phương pháp dạy học thuyết trình theo thuần phổ biến trước khi đào tạo (83,3%) đã được loại bỏ hoàn toàn khỏi buổi buổi tượng giá cuối kỳ, tuy nhiên khoảng 1/3 số đối tượng vẫn duy trì trong các buổi dạy. Sử dụng trì phương pháp dạy học tích cực sau đào tạo có lẽ do bởi rất nhiều người dạy học tích cực lâm tăng khá năng thuyết trình của cả người dạy và người học [8].

Nghiên cứu không tìm thấy mối liên quan giữa trình độ, số năm công tác, thực tế đào tạo với việc cải thiện khả năng viết mục tiêu bài học, câu hỏi lượng giá MCQ, sử dụng hệ thống tương tác và dạy học tích cực.

KẾT LUẬN

Sau khoá đào tạo về phát triển phương pháp dạy học, khả kỹ năng viết mục tiêu bài học đạt tiêu chí SMART, viết MCQ hiệu quả, tổ chức dạy học tích cực kết hợp tương tác hệ thống của giảng viên khối Y học cơ sở và Khoa học cơ bản cho sinh viên Y khoa năm 1, năm 2 trong năm học 2021-2022 cải thiện có ý nghĩa. Tuy nhiên, việc duy trì phương pháp dạy học tích cực vẫn còn sự hỗ trợ về an sử vật chất.

TÀI LIỆU THAM KHẢO

1. Barrett D. Active Learning. Leeds Metropolis TYD Support Project; 1989. p16.
2. Agustiyani D... Enhancing teacher's competencies through professional development program: Challenges and Benefits. Anxiety J. English Language pedagogy, Literature and Culture (JEC). 2020;5(1):29-38.
3. Bhaskara S, Gunawan MS, Suryadai IP. Faculty competency framework: towards a better learning profession. Procedia Computer Science. (2020);172:359-365.
4. Fadil A, Aryani IK. Improvement of creative ecological competence through technical training activities. Open Access Dinamika Journal Ilmiah Pendidikan Dasar. (2021);13(2):89-95.
5. Nicita R, Rizmaliza R., Yelfiadi S, et al. Teacher Quality Improvement Program: Empowering teachers to increasing a quality of Indonesian education. Procedia-Social and Behavior Sciences. (2015);169:1856-1861.
6. Afzal RM, Afzal R. Teaching and learning process in orthodontic teaching effectiveness: a literature review. International Journal of Humanities and Innovation. 2021;4(2):1-4.

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TRẦN THỊ CHI MAI

NGHIÊN CỨU NỒNG ĐỘ PREALBUMIN VÀ CRP HUYẾT TƯƠNG Ở BỆNH NHÂN BỆNH THẬN MẠN LỌC MÁU CHU KỲ

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TÓM TẮT

Ở bệnh nhân bệnh thận mạn mức (BTMT) có kèm với tình trạng suy dinh dưỡng thường là tình trạng viêm, các cytokine tiền viêm được xem là yếu tố cho đặc trưng mối liên quan giữa tình trạng suy dinh dưỡng với viêm và xơ vữa động mạch trong bệnh thận mạn tính. Trong đó, prealbumin máu có nồng độ thấp và thời gian bán hủy ngắn xem khi có sự thay đổi nhỏ của tình trạng dinh dưỡng cũng làm cho nồng độ prealbumin máu thay đổi theo; protein phản ứng C (protein cấp tính là chất chỉ dấu sinh học cổ điển của tình trạng viêm. Từ những lý do đó chúng tôi tiến hành nghiên cứu khảo sát nồng độ prealbumin và CRP huyết tương ở bệnh nhân bệnh thận mạn lọc máu chu kỳ. Đối tượng và phương pháp nghiên cứu mô tả cắt ngang trên 45 bệnh nhân BTMT lọc máu chu kỳ và 40 người người bình thường không mắc bệnh về thận tiết niệu từ tháng 11/2020 đến tháng 7/2021 tại khoa Thận tiết niệu và khoa Sinh hóa bệnh viện Quân y 103. Kết luận: - Nồng độ prealbumin ở nhóm bệnh (25,68 ± 8,10 mg/dL) thấp hơn so với nhóm chứng (30,52 ± 4,28 mg/dL)với p<0,05, nồng độ CRP của nhóm bệnh là phù hợp (25th: 7,8g/L; 8,78 (3,1; 12,5)) mg/L) cao hơn so với nhóm chứng (hàng là (25th; 75th): 1,9 (0,73; 2,85) mg/L) với p<0,05. chỉ số CRP trong nhóm bệnh có xu hướng tăng theo tuổi (tương quan thuận khi chết p<0,05) ngược lại chỉ số Prealbumin có xu hướng giảm theo sự tăng của tuổi (tương quan nghịch, p<0,05). Không có sự liên quan giữa giới tính với chỉ số CRP và Prealbumin. Prealbumin có tương quan thuận với chỉ số Creatinin (r=0,397; p =0,007), không có sự liên quan giữa chỉ số Ure, Creatinin với chỉ số CRP trong nhóm bệnh (p>0,05).

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SUMMARY

In chronic kidney disease (CKD) patients with malnutrition often associated with inflammation, proinflammatory cytokines have been implicated as a key factor in the association between malnutrition and inflammation and atherosclerosis arteries in (CKD) kidney disease. In which, blood prealbumin has low concentration and short half-life, so when there is a small change in nutritional status, blood prealbumin concentration also changes accordingly; C-reactive protein is known as the the classical biomarker of inflammation. For these reasons, we conducted a study to investigate the plasma concentrations of prealbumin and CRP in patients with chronic kidney disease on dialysis. Subjects and methods: a cross-sectional descriptive study on 45 dialysis patients and 40 normal people without kidney disease from November 2020 to July 2021 at the Department of Nephrology and Dialysis Biochemistry Military Hospital 103. Conclusion: Prealbumin concentration in the patient group (25.68 ± 8.10 mg/dL) was lower than that in the control group (30.52 ± 4.28 mg/dL) with p <0.05; CRP concentration of the disease group was positive (25th: 75th): 8.78 (3.1; 12.5)) mg/L) higher than that of the control group (median (25th; 75th): 1.9 (0.73; 2.85) mg/L) with p<0.05; CRP index in the group of diseases tends to increase with age (positive correlation is quite close, p<0.05), in contrast, prealbumin index tends to decrease with increasing age (inverse correlation, p<0.05). There was no relationship between gender and CRP and Prealbumin index. Prealbumin has a positive correlation with Creatinine index (r = 0.397; p = 0.007). There was no relationship between Ure, Creatinine index and CRP index in the disease group (p>0.05).

ĐẶT VẤN ĐỀ

Ở bệnh nhân bệnh thận mạn tính (BTMT) có kèm với tình trạng suy dinh dưỡng thường là tình trạng viêm, các cytokine tiền viêm được

xem là yếu tố chủ đạo trong mối liên quan giữa tình trạng suy dinh dưỡng với viêm và xơ vữa động mạch trong bệnh thận mạn tính. Trong đó, prealbumin máu có nồng độ thấp và thời gian bán hủy ngắn nên khi có sự thay đổi nhỏ của tình trạng dinh dưỡng cũng làm cho nồng độ prealbumin máu thay đổi theo problem phản ứng C (Lacy bước đầu là chất chỉ điểm sinh học có liên quan tình trạng viêm. Ngoài ra, yếu tố liên quan các rối loạn nội tiết, nồng độ hs-CRP còn liên quan đến nguy cơ tiến triển nhanh của bệnh lý thận mạn và giảm mức lọc cầu thận ở bệnh nhân bệnh thận mạn. Nhiều nghiên cứu cho thấy yếu tố viêm, suy dinh dưỡng ảnh hưởng rõ rệt đến các biến cố tim mạch và tử vong ở bệnh nhân bệnh thận mạn tính, đây là vấn đề thời sự mà các nhà lâm học cần quan tâm trong quá trình theo dõi điều trị bệnh nhân. Từ những lý do đó chúng tôi tiến nghiên cứu đề tài nồng độ prealbumin và CRP huyết tương ở bệnh nhân bệnh thận mạn lọc máu chu kỳ.

ĐỐI TƯỢNG, PHƯƠNG PHÁP NGHIÊN CỨU

1. Đối tượng, thời gian, địa điểm nghiên cứu

1.1. Đối tượng nghiên cứu

Chúng tôi thực hiện nghiên cứu trên 2 nhóm:

Nhóm bệnh: 40 bệnh nhân BTMT lọc máu chu kỳ.

Nhóm chứng: 40 người khỏe mạnh không mắc bệnh về thận.

Đối tượng nghiên cứu đều đồng đều về các tiêu chuẩn lựa chọn và loại trừ của nghiên cứu.

1.2. Thời gian nghiên cứu

Thời gian nghiên cứu: Từ tháng 11/2020 đến tháng 1/2021.

1.3. Địa điểm nghiên cứu

Khoa Thận lọc máu và khoa Sinh hóa bệnh viện Quân y 103.

2. Phương pháp nghiên cứu

2.1. Thiết kế nghiên cứu

Nghiên cứu mô tả cắt ngang có so sánh với nhóm chứng.

Chọn cỡ mẫu thuận tiện.

2.2. Các kỹ thuật áp dụng trong nghiên cứu

2.2.1. Định lượng Prealbumin:

- Nguyên lý:

Prealbumin được định lượng bằng phương pháp miễn dịch đo độ đục.

Độ đục của mẫu đo sự kết hợp giữa kháng nguyên prealbumin trong huyết thanh bệnh nhân và kháng thể kháng prealbumin trong thuốc thử khi phản ứng với kháng nguyên (prealbumin) cần xác định. Nồng độ prealbumin trong mẫu thử tỷ lệ thuận với độ đục đo được bởi hệ thống máy sinh hóa tự động.

2.2.2. Định lượng CRP

- Nguyên lý:

CRP được định lượng bằng phương pháp miễn dịch đo độ đục.

Kháng thể kháng CRP trong thuốc thử sẽ kết hợp với CRP trong mẫu bệnh phẩm tạo thành phức hợp miễn dịch kháng nguyên - kháng thể. Phức hợp này sẽ làm tăng độ đục. Nồng độ CRP trong mẫu thử tỷ lệ thuận với độ đục do phức hợp miễn dịch kháng nguyên - kháng thể tạo ra.

3. Máy và hóa chất

- Phương tiện: máy xét nghiệm Au680, tại khoa Hóa sinh, Bệnh viện Quân y 103. Hóa chất được cung cấp bởi hãng Beckman Coulter.

- Công thức máu được thực hiện bằng máy đếm tự động Sysmex XN1000. Dịch EDTA, lưng bản tại khoa Huyết học Bệnh viện Quân y 103.

4. Xử lý số liệu

Theo phương pháp thống kê Y học chương trình SPSS 22.0.

KẾT QUẢ NGHIÊN CỨU

1. Đặc điểm chung của đối tượng nghiên cứu

1.1. Đặc điểm về tuổi của đối tượng nghiên cứu

Bảng 1. Đặc điểm về tuổi, giới của đối tượng nghiên cứu

Chỉ số / nhóm	Nhóm bệnh	Nhóm chứng
	n = 40	n = 40
Tuổi ($\bar{x} \pm SD$)	56,33 ± 13,84	46,58 ± 7,97
Nhỏ nhất – lớn nhất	25 – 89	33 – 68
Giới: Nam n (%)	30 (37,5)	23 (28,7)
Nữ n (%)	10 (62,5)	18 (37,5)

Có sự khác biệt có ý nghĩa thống kê với p < 0,05.

1.2. Các chỉ số sống

Bảng 2. Kết quả một số chỉ số của đối tượng

Chỉ số	Nhóm bệnh (n=40)	Nhóm chứng (n=40)	p
	$\bar{x} \pm SD$	$\bar{x} \pm SD$	
[illegible]	7,04 ± 2,4	7,25 ± 1,84	>0,05
[illegible]	3,00 ± 0,98	4,91 ± 0,91	<0,05
[illegible]	87,1 ± 29,6	94,03 ± 13,1	>0,05
CRP	64,68 ± 7,89	4,52 ± 0,89	<0,05
[illegible]	364,83 ± 262,28	78,33 ± 13,24	<0,05
[illegible]	21,98 ± 3,94	39,12 ± 4,12	<0,05
[illegible]	30,56 ± 4,37	40,71 ± 3,74	<0,05

- Không có sự khác biệt giữa các chỉ số hồng cầu, hemoglobin ở nhóm chứng so với nhóm bệnh với p > 0,05. Chỉ số hồng cầu, hemoglobin ở nhóm chứng cao hơn nhóm bệnh, sự khác biệt này có ý nghĩa thống kê (p < 0,05).

2. Nồng độ Prealbumin, CRP của đối tượng nghiên cứu

Bảng 3. Nồng độ Prealbumin máu (mg/dL) của BN trong nghiên cứu.

Chỉ số	Nhóm bệnh (n=40)		Nhóm chứng (n=40)		p
	Nam	Nữ	Nam	Nữ	
Prealbumin	26,09 ± 6,48	23,47 ± 7,24	30,2 ± 5,87	31,36 ± 7,26	
Chung	25,09 ± 6,73		30,54 ± 6,68		<0,05

- Trong nhóm bệnh nồng độ Prealbumin máu của nam cao hơn của nữ.

- Chỉ số Prealbumin máu của nhóm bệnh thấp hơn của nhóm chứng sự khác biệt này có ý nghĩa thống kê (p<0,05).

Bảng 4. Nồng độ CRP máu (mg/L) của BN trong nghiên cứu.

Chỉ số	Nhóm bệnh (n=40)				Nhóm chứng (n=40)			p
	Thấp nhất	Trung vị (KTPVTP)	Tứ phân vị	Thập phân vị	Trung vị (KTPVTP)	Cao nhất		
CRP	0,12	6,78 (2,1 – 72,89)	19,8	42,0	1,8 (0,15 – 3,48)	6,8		<0,05

Nồng độ CRP ở nhóm bệnh và nhóm chứng khác biệt có ý nghĩa thống kê với p < 0,05.

Bảng 5. Tương quan chỉ số CRP, Prealbumin máu với tuổi, giới.

Chỉ số	Nhóm chứng		Nhóm bệnh	
	CRP	Prealbumin	CRP	Prealbumin
Tuổi	r= -0,099 p= (0,86)	r=0,007 p = 0,966	r=0,467 p=0,001	r= 0,454 p = 0,001
Giới	r=0,014 p=0,918	r= 0,016 p = 0,943	r= 0,287 p=0,096	r= 0,017 p = 0,915

- Chỉ số CRP có xu hướng tăng theo tuổi (tương quan thuận mức độ), r= 0,463, p<0,05) ngược lại chỉ số Prealbumin có xu hướng giảm theo sự tăng của tuổi (tương quan nghịch, r= -0,454, p<0,05) ở bệnh nhân.

Bảng 6. Tương quan chỉ số CRP, Prealbumin với Ure, Creatinin.

Chỉ số	Nhóm chứng		Nhóm bệnh	
	CRP	Prealbumin	CRP	Prealbumin
Ure	r=0,141 p=0,384	r= 0,140 p = 0,390	r= -0,114 p= 0,488	r= 0,234 p = 0,153
Creatinin	r=0,047 p=0,724	r= -0,008 p = 0,964	r= -0,225 p=0,218	r=0,097 p = 0,557

- Không có sự tương quan giữa chỉ số Creatinin với CRP. Chỉ số Creatinin có tương quan thuận với chỉ số Prealbumin (r=0,097, p =0,021) trên bệnh nhân BTMT.

BÀN LUẬN

1. Đặc điểm chung của đối tượng nghiên cứu.

1.1. Tuổi và giới

Trong nghiên cứu này, tuổi trung bình nhóm bệnh là 64,23 ± 13,81 tuổi thấp nhất 25, cao nhất 80. Nhóm chứng là 46,88 ± 7,80, thấp nhất là 31, cao nhất là 59 tuổi. Tuổi trung bình của nhóm bệnh cao hơn so với nghiên cứu của các tác giả trong nước như trong nghiên cứu của Trần Văn Vũ tuổi trung bình là 45[1] (19 – 92 tuổi).

Tuổi trung bình bệnh nhân trong nghiên cứu này không khác biệt nhiều so với tuổi trung bình bệnh nhân trong nghiên cứu của các tác giả nước ngoài như Arzaki Khusmaseth và cs là 47[1] là 72 (48 tuổi). Yasui S. và cs (a) là 68 ± 9 tuổi.

Trong nhóm bệnh, nam có tỷ lệ 67,8% (n = 89), nữ là 42,2% (n = 78). Tỷ lệ nam/nữ là 1,5, tỷ lệ này cao hơn so với nghiên cứu của Trần Văn Vũ [1] (1,93). Tuy nhiên, tỷ lệ này thấp hơn so với nghiên cứu của Yasui S. và cs là (2,3). Điều này cho thấy tỷ lệ giới tính bệnh nhân BTMT trong hầu hết các nghiên cứu của các tác giả trong nước cũng như các tác giả trên thế giới. Tuy nhiên, sự khác nhau về tỷ lệ giới tính có thể do cách chọn mẫu nghiên cứu khác nhau.

1.2. Đặc điểm cận lâm sàng

1.2.1. Các chỉ số huyết học

Trong nghiên cứu chúng tôi nồng độ Hb: 87,7 ± 19,4 (g/L) BC với nhóm bệnh và 140,9 ± 12,3(g/L) đối với nhóm chứng, sự khác biệt có ý nghĩa thống kê (với p < 0,05). Trong nghiên cứu này chúng tôi có nồng độ Hb thấp hơn so với khuyến cáo của KDIGO về tương lượng nhóm có mức giảm dưới 90 (g/L) chiếm tỷ lệ 65,5%.

Kết quả này thấp hơn so với một số nghiên cứu trong nước như: năm 2020, tác giả Vũ Thanh Hưng, nghiên cứu 9 bệnh nhân BTMT đang lọc máu chu kỳ (LMCK), ghi nhận nồng độ Hb là 97 ± 19 (g/L) [5]. Năm 2014, Kuragano Takehiro và cộng sự, nghiên cứu mối liên quan giữa hemoglobin, ferritin và các biến chứng tử vong ở bệnh nhân BTM đang LMCK, nghiên cứu được thực hiện 1286 bệnh nhân BTM

đang LMCK giá nhận rộng đồ Hct trung bình là 108 ± 10 (g/L).

1.2.2. Các chỉ số sinh hoá máu.

- Nồng độ ure máu

Nồng độ ure máu (mmol/L) ở nhóm bệnh là 24,08 ± 7,68 mmol/L và nồng độ ure HT ở nhóm chứng là 4,62 ± 0,88 mmol/L, sự khác biệt này có ý nghĩa thống kê (với p < 0,05).

Năm 2020 Võ Thanh Hồng nghiên cứu tình trạng suy dinh dưỡng và nồng độ albumin huyết thanh ở bệnh nhân bệnh thận mạn đang lọc máu chu kỳ và lọc màng bụng liên tục (LMBLT) ngoại trú nhận thấy nồng độ ure máu (mmol/L) ở bệnh nhân BTMT đang LMCK là 23,64 ± 5,10 mmol/L và nồng độ ure máu ở bệnh nhân BTMT đang LMBLT ngoại trú là 16,02 ± 5,33 mmol/L có sự khác biệt có ý nghĩa thống kê (với p < 0,05) [5].

Chúng tôi nghĩ rằng độ ure máu phụ thuộc vào rất nhiều yếu tố như: hiệu quả lọc máu lần trước đó, tình trạng dinh dưỡng của từng bệnh nhân và chế độ ăn hàng ngày của bệnh nhân. Điều này nó còn phụ thuộc vào trọng lượng của cơ thể giữa các lần lọc và thời gian lọc máu trước đó.

- Nồng độ creatinin máu

Kết quả nghiên cứu của chúng tôi nhận thấy creatinin máu nhóm bệnh là 904,59 ± 194,39 µmol/L. Năm 2020 Võ Thanh Hồng nghiên cứu ở bệnh nhân bệnh thận mạn đang lọc máu chu kỳ và lọc màng bụng liên tục ngoại trú nhận thấy nồng độ creatinin HT là 947,37 ± 217,49 µmol/L nhóm bệnh nhân LMCK và 851,12 ± 340,58 µmol/L nhóm bệnh nhân LMBLT ngoại trú. Kết quả này cho thấy có sự khác biệt giữa nhóm LMCK và LMBLT ngoại trú có ý nghĩa thống kê (với p < 0,05) [5].

- Nồng độ protein máu

Nồng độ protein máu (g/L) trên bệnh nhân trong nghiên cứu của chúng tôi là 71,77 ± 5,84 g/L. Kết quả nghiên cứu của chúng tôi tương phù hợp với kết quả của Võ Thanh Hồng nhận thấy nồng độ protein máu (g/L) của hai đối tượng lần lượt là 74,72 ± 5,32 g/L và 66,82 ± 5,66 g/L có ý nghĩa thống kê với nhóm LMCK và LMBLT ngoại trú.

- Nồng độ albumin máu

Trong số các protein nội tạng, albumin là chỉ số được sử dụng nhiều nhất trong các nghiên cứu ở bệnh nhân thận nhân tạo (TNT). Nhiều nghiên cứu cho thấy tương quan giữa nồng độ albumin và tỉ lệ tử vong, thời gian nằm viện và chất lượng cuộc sống ở rất bệnh nhân TNT và bệnh nhân BTMT chưa lọc máu. Tuy nhiên, nồng độ albumin không nhạy lắm đánh giá các yếu tố dinh dưỡng mà còn ảnh hưởng đến tình trạng nhiễm trùng, phản ứng viêm, tình trạng thoát mạch, mất albumin qua đường tiểu và kiềm lượng toàn thân máu. Nồng độ albumin máu cũng ảnh hưởng bởi một số yếu tố như: khẩu phần ăn ít chất dinh dưỡng có thể ảnh hưởng nồng độ albumin huyết tương tới một mức độ nhất định (khoảng 3,5 g/dL, nhưng khi nồng độ albumin máu rất thấp (< 2,5 g/dL) được cho là sự có mặt của viêm mất albumin qua nước tiểu, đường tiêu hóa, suy tạo hoặc suy gan. Trong nghiên cứu này, chúng tôi gặp 6,9% bệnh nhân có giá trị albumin máu từ 35 - 36 g/L, điều này có thể được giải thích do trong điều trị hiện nay, các bệnh nhân đều được khi trong trong vấn đề cung cấp dinh dưỡng phù hợp làm giảm đáng kể tỉ lệ suy dinh dưỡng.

Qua các nghiên cứu trên cho thấy nồng độ albumin HT là yếu tố rất quan trọng đối với quá trình hoạt động của cơ thể. Nếu nồng độ albumin HT giảm thấp sẽ làm tăng nguy cơ tử vong đối với bệnh nhân BTMT giai đoạn cuối [1].

2. Nồng độ Prealbumin, CRP của đối tượng nghiên cứu

2.1. Nồng độ Prealbumin máu

Prealbumin là một protein mang retinol gắn protein và thyroxin, công dụng sử dụng trong đánh giá tình trạng dinh dưỡng (TTDD) ở bệnh nhân TNT vừa và rất hiệu trong đánh giá dinh dưỡng khi so sánh với albumin. Prealbumin có thời gian bán hủy từ 2 đến 3 ngày, khiến cho xét nghiệm định lượng nồng độ prealbumin trong máu là một test nhạy hơn trong phát hiện những thay đổi nhỏ trong protein nội tạng, và nó có thể được sử dụng như một marker đặc biệt của SDD khi so sánh với các chỉ số sinh học khác của TTDD ở những bệnh nhân BTMT và TNT.

Một số nghiên cứu đánh giá tình trạng dinh dưỡng ở bệnh nhân lọc máu hay thẩm phân phúc mạc cho thấy định lượng prealbumin HT là những số đánh giá có độ nhạy cao do có thời gian bán hủy ngắn và có thể sử dụng như là chỉ số tiên lượng kết quả lâm sàng. Nghiên cứu của Dickenstein P và cộng sự [3] trên 89 bệnh nhân lọc máu cho thấy định lượng prealbumin HT có tương quan với định lượng albumin HT (r = 0,48; p <0,001), đồng thời tương quan nghịch với các chỉ số đánh giá dinh dưỡng khác cholesterol HT, creatinine HT, amoi toàn so với định lượng albumin HT (p <0,001). Sự suy giảm của prealbumin HT < 15mg/dL có liên quan đến sự gia tăng nguy cơ tử vong với nguy cơ tương đối (RR = 4,48 (p <0,01). Tuy nhiên, cần có đánh giá tỉnh trạng dinh dưỡng của định lượng prealbumin HT trong cộng đồng bệnh nhân BTMT là giới hạn bởi những nghiên cứu cho thấy nồng độ prealbumin HT tăng cao hơn ở bệnh nhân sup

trên so với người khỏe mạnh, nguyên nhân được cho là do giảm chuyển hóa và thải trừ prealbumin qua thận.

Nghiên cứu của Fabbri H và cộng sự [10] trên hơn 110 bệnh nhân BTM (sau gồm bệnh nhân đang được điều trị bảo tồn, bệnh nhân sau mổ, bệnh nhân ghép thận) và mười mươi là người khỏe mạnh. Nồng độ prealbumin HT xác định trong khoảng giới hạn bình thường ở những bệnh nhân suy thận mạn và có dấu hiệu chứng của EDD khi đánh giá bằng các phương pháp khác. Tuy nhiên, prealbumin HT có liên quan chặt chẽ với chỉ số BMI, người ta nhận bệnh nhân có nồng độ prealbumin HT < 30mg/dL được xác định có nguy cơ EDD cao hơn (OR = 4,82, KTC 95%: 1,76 – 13,2, p = 0,003). Khi nghiên cứu được thực hiện trên đối tượng bệnh nhân lọc máu đã chứng minh rằng mức độ prealbumin trong HT < 30 mg/dL có liên quan với sự gia tăng nguy cơ tử vong. Đồng thời đánh giá EDD với ngưỡng định lượng prealbumin HT < 34 mg/dL tương quan tốt với các chỉ số đánh giá khác [2]. Khuyến cáo của KDOQI (năm 2000) cho thấy prealbumin HT được coi là thông số hữu ích cho việc đánh giá tình trạng dinh dưỡng ở những bệnh nhân lọc máu. Những bệnh nhân BTM (bệnh lọc máu hoặc sơ tình trạng chức năng thận ổn định có thể sử dụng prealbumin HT để giám sát tình trạng dinh dưỡng. Khuyến cáo nên đưa ra mức độ prealbumin HT mục tiêu là ≥ 30 mg/dL. Ở bệnh nhân BTM, theo dõi xu hướng tăng hay giảm nồng độ prealbumin HT để xem là đánh giá nồng độ prealbumin HT tại một thời điểm.

Nồng độ prealbumin máu ở bệnh nhân trong kinh trong nghiên cứu này là 26,86 ± 5,11 mg/dL tương đương với kết quả trong nghiên cứu của Tsezo S. và cs [9] 25,4 ± 5,1 mg/dL thấp hơn so với kết quả trong nghiên cứu của các tác giả khác như Tiên Yên và [7] 25,6 ± 6,6 mg/dL Ngô Thị Khánh Trang [8] nồng độ prealbumin HT trung bình ở BN lượng TMT là 0,31 ± 0,09 g/l.

Prealbumin được thải qua thận nên nồng độ prealbumin HT có xu hướng tăng cao khi chức năng thận suy giảm. Điều này giải thích sự thay đổi của nồng độ prealbumin theo diễn biến của BTM. Trong nghiên cứu của chúng tôi khi phân tích mối tương quan giữa nồng độ prealbumin máu với nồng độ creatinin thấy có sự tương quan thuận có ý nghĩa thống kê với r= 0,367 và p = 0,007. Khi phân tích mối tương quan giữa nồng độ prealbumin máu với tuổi của mỗi bệnh chúng tôi thấy rằng có sự tương quan nghịch có ý nghĩa thống kê với r= -0,484 và p = 0,001.

3.2. Nồng độ CRP máu

C-reactive protein (CRP) là một protein phản ứng pha cấp có tương quan nghịch với nồng độ các protein nội tạng. Trong quá trình viêm có sự giải phóng các cytokine, làm tăng tổng hợp ở gan các protein phản ứng pha cấp như CRP và ức chế tổng hợp các chất như albumin. Suy nhược nặng thận có thể thúc đẩy gây ra tăng các dấu ấn sinh học của viêm thông qua cơ chế tăng kích hoạt suy thoái dẫn đến tích tụ các sản phẩm chuyển hóa đầu cuối của glycation (AGEs). Nồng độ các chất này tăng khi mức lọc cầu thận giảm gây ra hoạt hoá kích cầu đáp ứng và tổng hợp các cytokin tạo gồm CRP.

Định lượng CRP nhạy là một xét nghiệm được sử dụng nhiều để xác định mức độ có và tăng cho các bệnh lý tim mạch, đầu tiên là đột quỵ. Ở BN BTM thì CRP nên là một yếu tố nguy cơ tử vong do bệnh lý tim mạch. Tỉ lệ tắc tim mạch MI và mạng tăng phương ngừa kiểm soát kém tỉ lệ tử đã đưa ra những nhóm có nguy cơ như sau: Nguy cơ thấp: khi CRP < 1,0 mg/dL, nguy cơ trung bình: khi CRP từ 1,0 đến 3,0 mg/dL, nguy cơ cao: khi CRP > 3,0 mg/dL.

Viêm xuất hiện sớm trong bệnh lý thận mạn và thúc đẩy quá trình tích nhanh xơ hóa động mạch. Sự gia tăng nồng độ các dấu ấn sinh học của viêm trong bệnh lý thận mạn có thể dự đoán tổng hợp, giảm thành thể hoặc cả hai có thể kém

Trong nghiên cứu của chúng tôi nồng độ CRP máu của nhóm bệnh có phản phải không theo sát phân phối chuẩn, với giá trị trung bình là 8,50 ± 3,90 mg/L (trung vị (25th; 75th) là: 8,78 (5,1; 10,50) mg/L) cao hơn có ý nghĩa thống kê so với nhóm chứng 1,96 ± 1,41 mg/L (trung vị (25th; 75th) là: 1,8 (0,75; 2,95) mg/L) với p = 0,00 (bảng 4).

Điều này phản ánh tình trạng viêm mạn tính ở bệnh nhân BTMT giai đoạn cuối TNT luôn có một ở nhóm đối tượng này và ảnh hưởng tới TTTDD. Mối liên hệ giữa viêm và tăng tỉ lệ tử vong.

Về tương quan giữa nồng độ CRP với tuổi ở bệnh nhân bệnh thận mạn, kết quả nghiên cứu của chúng tôi cho thấy có sự tương quan thuận có ý nghĩa thống kê giữa nồng độ CRP với tuổi ở nhóm bệnh. Về tương quan giữa nồng độ CRP với giới tính ở đối tượng nghiên cứu, kết quả nghiên cứu ở bảng 7 cũng cho thấy không có sự tương quan giữa nồng độ CRP với giới tính ở cả nhóm bệnh và nhóm chứng. Ở trong nước tác giả Nguyễn Văn Tuấn nghiên cứu trên bệnh nhân bệnh thận mạn cũng cho thấy không có sự khác biệt về nồng độ CRP huyết thanh giữa nam và nữ với (5).

Ở bệnh nhân ĐTNT, nồng độ CRP có tương quan nghịch và mật với nồng độ albumin, prealbumin. Điều này phù hợp với kết quả nghiên cứu của chúng tôi thể hiện ở bảng 3.15: nồng độ CRP có tương quan nghịch và chặt với nồng độ albumin (r = -0,31; p = 0,008), prealbumin (rT (r = -0,637; p <0,001).

KẾT LUẬN

- Nồng độ prealbumin ở nhóm bệnh (25,88 ± 8,16 mg/dL) thấp hơn so với nhóm chứng (30,02 ± 6,58 mg/dL) với p<0,05.

- Nồng độ CRP của nhóm bệnh ở thường vị (25/6; 7/6%): 8,79 (3,1; 12,56) mg/L cao hơn so với nhóm chứng (trung vị 23/m; Tứng 1,3 (0,75; 2,85) mg/L) sự khác biệt này có ý nghĩa thống kê (p<0,05)

Chỉ số CRP có xu hướng tăng theo tuổi (tương quan thuận khi chặt, p<0,05) ngược lại chỉ số Prealbumin có xu hướng giảm theo xu tăng của tuổi (tương quan nghịch, p<0,05), không có sự liên quan giữa chỉ số Urê, Creatinine với chỉ số CRP trong nhóm bệnh (p > 0,05) ở nhóm bệnh nhân.

TÀI LIỆU THAM KHẢO

1. **Trần Văn Hà** (2015), Đánh giá tình trạng dinh dưỡng ở bệnh nhân bệnh thận mạn, Luận án Tiến sĩ Y học, Đại học Y dược Thành phố Hồ Chí Minh.

2. **Razeq H., Khaker L., Hamdan Z.** et al. (2015), "Prevalence of malnutrition in hemodialysis patients: A single-center study in Palestine", Saudi J Kidney Dis Transpl", 26(1): 93A-946.

3. **Arbeit K., Majid H., Jafri L.,** et al. (2016), "Assessing Nutritional Status Of Dialysis Patients Using Serum Prealbumin Levels", J Acute Med Civil Abbottabad, 5(02):170-181.

4. **Fadzi S., Shirai Y., Tashiaura M.** et al. (2016), "Prevalence of protein-energy wasting (PEW) and evaluation of diagnostic criteria in Japanese maintenance hemodialysis patients", Asia Pac J Clin Nutr, 25(2): 292-299.

5. **Nguyễn Văn Tuấn** (2015), Nghiên cứu nồng độ TSP-2/sCD7 và hs-CRP huyết thanh ở bệnh nhân lọc máu chu kỳ, Luận án tiến sỹ y học, Trường Đại học Huế.

6. **Võ Thành Hưng** (2020), Nghiên cứu biến đổi một số chỉ số dinh dưỡng và viêm ở bệnh nhân suy thận mạn đang lọc máu chu kỳ và khả năng can thiệp của một số giải pháp, Luận án tiến sỹ y học, Trường Đại học Huế.

7. **Cranfield G.M., Eckert H., Law N.L.** et al. (2000), "Prealbumin is an important as albumin in the nutritional assessment of hemodialysis patients", Kidney Int, 58(6): 2512-2517.

8. **Ngô Thị Mỹ Hạnh, Trang** (2017), Nghiên cứu đặc điểm rối loạn lipid máu của bệnh nhân suy thận mạn có hội chứng thận hư và đánh giá một số giải pháp can thiệp, Luận án Tiến sĩ Y học, Đại học Y dược Huế.

9. **Goldwasser P., Michel MA.** et al. (1993), "Prealbumin and transferrin as nonalbumin predictors of hemodialysis mortality", Am J Kidney Dis, 22, pp. 715 - 722.

10. **Fahim H., Gindzi S.** et al. (2008), "Is serum hemoglobin a reliable marker of nutritional status in patients with end-stage renal disease?", Clin Biochem, 41(7-8), pp. 493 - 497.

ĐẶC ĐIỂM LÂM SÀNG, CẬN LÂM SÀNG Ở CÁC BỆNH NHÂN NHIỄM ĐỘC GIÁP TẠI BỆNH VIỆN BẠCH MAI

NGUYỄN THỊ NHƯ QUỲNH, NGUYỄN KHOA DIỆU VÂN

Trường Đại học Y Hà Nội

TÓM TẮT:

Bệnh nhân đến khám bệnh vì khám với bất thường gặp. Mức quá cảm giác tăng nồng độ kích thích trong máu, gây ra những rối loạn về mặt cơ chuyển hóa. Tuy nhiên ở nhiễm chất yếu nghiên cứu về Basedow - một trong những nguyên nhân gây nhiễm độc giáp và chưa có nghiên cứu về các đặc điểm cận lâm sàng nhiễm độc giáp.

Mục tiêu nghiên cứu: Mô tả đặc điểm lâm sàng, cận lâm sàng của các bệnh nhân nhiễm độc giáp tại Bệnh viện Bạch Mai.

Đối tượng nghiên cứu: 130 bệnh nhân lần đầu được chẩn đoán nhiễm độc giáp tại Bệnh viện Bạch Mai từ tháng 10/2020 đến tháng 6/2021. Phương pháp nghiên cứu: mô tả cắt ngang.

Kết quả: Độ tuổi trung bình của BN là 42,36 ± 14,41. Tỉ lệ nữ/nam = 1,8/1 (p < 0,01). Các triệu

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Tạp chí

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BƯỚC ĐẦU ĐÁNH GIÁ GENOTYPE CỦA HUMAN PAPILLOMAVIRUS TẠI MÔ UNG THƯ ÂM HỘ

Nguyễn Thị Phương Mai[1], Trần Văn Khánh[2],
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Đặt vấn đề: Ung thư âm hộ là một bệnh ác tính hiếm gặp, tỷ lệ mắc khoảng 1-2/100.000 phụ nữ. Nhiễm Human papillomavirus (HPV) được xác định là nguyên nhân chính gây ung thư âm hộ. Nghiên cứu về genotype của HPV và tỷ lệ nhiễm HPV trong mô bệnh học có ý nghĩa quan trọng trong chẩn đoán và điều trị ung thư âm hộ. Mục tiêu: Nghiên cứu mô tả cắt ngang được tiến hành trên 34 bệnh nhân ung thư âm hộ được điều trị phẫu thuật tại Bệnh viện Phụ sản Trung ương và Bệnh viện Phụ sản Hà Nội từ tháng 10/2015 đến tháng 10/2016. Kết quả: Tỷ lệ nhiễm HPV trong mô UTAH là 82,4% và tỷ lệ nhiễm HPV trong mô UTBH là 33,3%. Genotype HPV thường gặp nhất là HPV16 (chiếm 64,3%), tiếp theo là HPV18 (chiếm 14,3%). Kết luận: Tỷ lệ nhiễm HPV trong mô UTAH cao hơn nhiều so với mô UTBH. Genotype HPV thường gặp nhất là HPV16. Xét nghiệm HPV có ý nghĩa trong chẩn đoán và tiên lượng ung thư âm hộ.

Từ khóa: Human Papillomavirus, genotype, ung thư âm hộ

I. ĐẶT VẤN ĐỀ

Theo báo cáo của Trung tâm HPV thế giới tại Việt Nam, ung thư âm hộ (UTAH) xuất hiện với tần suất tại Mỹ, ước chừng 3-4 / 5-9 bệnh nhân/100.000 phụ nữ mắc hàng năm [1]. Khác với ung thư cổ tử cung, tỷ lệ Human papillomavirus (HPV) phân lập được tại các mô ung thư rất có sự dao động từ 80-90%, thì tại các mô UTAH, tỷ lệ HPV chỉ khoảng 30 - 60% [2, 3].

HPV - virut lây truyền qua quan hệ tình dục, được cấu tạo bởi 8 đoạn gen mã hóa tạo thành chuỗi xoắn kép DNA kích thước khoảng 8 kb. Các gen mã hóa các ung thư E6, E7 tổng hợp các protein tác động vào gen ức chế ung thư và quá trình phân bào của tế bào chủ. Gen mã hóa L1 tổng hợp protein L1 có đoạn mang nhiều kháng nguyên nhất trong bộ gen của HPV, do đó gen L1 được sử dụng để xác định typ của HPV. HPV được chia làm 2 nhóm: nhóm nguy cơ cao (HPV16, 18, 31, 33, 35, 39, 45, 51, 52, 53, 56, 58, 66, 68, 73, 82,...) và nhóm 2 nguy cơ (HPV6, 11, 40, 42, 43, 54, 61, 70, 72, 81 ...) [4].

Các nghiên cứu trên thế giới đã ra tỷ lệ nhiễm HPV tại mô UTAH dao động từ 34% – 82%, trong đó nhiễm HPV 16 là phổ biến [3] - 5]. Các typ HPV nguy cơ cao khác thường gặp không tương đồng giữa các nghiên cứu, như HPV31 tại Hồ Lan, HPV58 tại Thái Lan và không thấy sự xuất hiện của HPV18 [4, 6]. Sự phân bố genotype của HPV tại mô UTAH tương như khác biệt với sự phân bố HPV tại ung thư cổ tử cung [7, 8]. Các nghiên cứu trên thế giới cũng chỉ ra tổn thương mô bệnh học loại ung thư biểu mô vảy thường gặp nhất trong số các UTAH. Các nghiên cứu về ung thư biểu mô đệm ung thư rất hiếm hơn và thường được công bố

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với số mẫu tạm chấp nhận là 1 đến 2 bệnh nhân (từ 8 – 12). Cho tới hiện nay, tại Việt Nam, chưa có nghiên cứu nào công bố tỉ lệ nhiễm HPV ở mô UTAH kèm cũng như kỹ thuật thường mô bệnh học UTAH. Dựa vào kit Cervarix phòng chống HPV16, 18 và Gardasil phòng chống HPV6, 11, 16, 18 có hiệu quả trong công tác phòng nhiễm HPV tại mô âm hộ. Vì vậy, nghiên cứu của chúng tôi nhằm bước đầu đánh giá genotype của HPV và tổn thương mô bệnh học tại mô UTAH kèm để góp phần vào hoạch định chiến lược phòng nhiễm HPV âm hộ.

II. ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP

1. Đối tượng

Tiêu chuẩn lựa chọn

Là bệnh nhân sau khi được chẩn đoán UTAH bởi bác sĩ chuyên khoa Giải Phẫu Bệnh và có chỉ định phẫu thuật điều trị từ 01/2018 – 10/2018 tại bệnh viện Phụ sản Trung ương và bệnh viện Ung bướu thành phố Hồ Chí Minh sẽ được mời tham gia và đầy đủ các tiêu chuẩn nghiên cứu.

Tiêu chuẩn loại trừ

Các bệnh nhân UTAH sẽ phẫu nếu chưa thuật hoặc đã xạ trị sẽ không mời vào tham gia nghiên cứu.

2. Phương pháp

Thu thập và bảo quản mẫu nghiên cứu

Mẫu mô UTAH sau phẫu thuật sẽ cắt có 0,2 x 0,2 x 0,2 cm đầu tiên được đưa trong ống nghiệm có nắp vặn chặt, bảo quản trong nitơ lỏng phục vụ cho công tác phân tích gen. Mẫu mô tiếp theo được bảo quản ngay trong dung dịch formaldehyd 5% đệm đủ dài để trong vòng 48 giờ phục vụ công tác chẩn đoán mô bệnh học. 04 mẫu mô làm lượng ung thư khối sau chẩn đoán các định UTAH bằng phương pháp mô bệnh học được lựa chọn, đã hoà tan, được tách gen tại Trung tâm Nghiên cứu Gen và Protein tại Trường Đại học Y Hà Nội.

Kỹ thuật phân tích

Tách DNA

DNA của HPV được tách từ 2lượng mô UTAH bởi công nghệ DNA Minprep kit (Sigma-Aldrich). Dựa trên hướng dẫn của nhà sản xuất, lấy DNA sạch và nồng độ DNA sau khi tách được đo ở bước sóng 260 và 280 nm trên máy Nanodrop 100 spectrophotometer (Mỹ). Những mẫu DNA tạo ở tỉ số OD từ 1.8 đến 1.96 được lựa chọn cho giai đoạn khuếch đại gen L1 của virus HPV.

Xác định HPV

Khuếch đại đoạn gen HPV L1 bởi cặp mồi GP5+/6+ sử dụng enzym chịu nhiệt Taq polymerase Gold. Mẫu DNA âm tính với cặp mồi GP5+/6+ tiếp tục được khuếch đại bởi cặp mồi bổ sung. Các cặp mồi gồm GP5+/6+ GP5+/6- bổ sung để tham gia nghiên cứu trước khuếch đại thành công [8, 9]. Trình tự mồi (5'-3') được mô tả cụ thể ở bảng 1.

3. Xử lý số liệu

Sử dụng phần mềm thống kê y học để mô tả tỉ phần trăm của các biến số.

Bảng 1. Trình tự của các mồi GP5+/ 6+ cặp mồi bổ sung

Cặp mồi	Trình tự	Kích thước (bp)
GP5+	thgtaaatactgtccttcagttaatgc	40
GP6+	gaaaaataaactgtaaatcatatc	28
GP5+/M1	ttttactcgtcgtcgtcatttttc	33
GP6+/M2	tgtaccattgttgctgtccccac	31

Cặp mồi	Trình tự	Kích thước (Bp)
GP5+/M2	[illegible]	35
GP6+/M1	[illegible]	29
GP5+/M2	[illegible]	35
GP6+/M1	[illegible]	33

(GP5+: mồi xuôi; GP6+: mồi ngược; R: C hoặc T; W: A hoặc T; Y: A hoặc G)

Thể tích phản ứng khuếch đại 50 µl gồm: 2,5 µl rõ DNA (100-200 ng); 10 nmol mỗi cặp mồi; 2,5 mmol MgCl2; 800 µmol dNTP và 1,5 U enzym Hot start Taq DNA Gold. Phản ứng được tiến hành trên máy Biometra T Professional Thermocycler theo quy trình: biến tính ở 94°C trong 10 phút; 45 chu kỳ cho mỗi giai đoạn: 94°C/ 60 giây, 48°C/ 4 giây, 58°C/30 giây, 42°C/45 giây, và gắn ở 74°C/60 giây; kéo dài 72°C/10 phút; 45 chu kỳ cho mồi bổ sung gồm 94°C/30 giây, 48°C/30 giây, gắn 74°C/30 giây; kéo dài 74°C/10 phút.

Sản phẩm khuếch đại được kiểm tra bằng phương pháp điện di. Giám băng kích thước 140 bp sudt kết hợp nhuộm gel agarose 2% nhuộm màng ethidium bromide và soi dưới đèn UV. Những mẫu kiểm phẩm tương ứng với băng dương tính sử dụng một trong hai cặp mồi trên được xác nhận nhiễm HPV, âm tính với tất cả các mồi được xác nhận không nhiễm HPV.

4. Đạo đức nghiên cứu

Nghiên cứu đã được chấp thuận bởi Hội đồng đạo đức Trường Đại học Y Dược Hải Phòng (số 703/GCN-HĐĐ) chấp thuận ngày 03 tháng 7 năm 2017).

III. KẾT QUẢ

Tuổi trung bình của đối tượng nghiên cứu trong [illegible] là 55,9 ± 12,5; hầu hết bệnh nhân trên 55 tuổi, thấp nhất có 31 bệnh nhân ở độ tuổi 41 – 45 tuổi.

Kết quả mô bệnh học cho thấy 22/29 (33,01) bệnh nhân mắc UTMT dạng tế bào vảy. 01 bệnh nhân sản ung thư tế bào đáy (4,2%) và 01 ung thư tế bào hộc (0 (4,2%). Không có bệnh nhân nào mắc ung thư tế bào tuyến.

Từ 24 mẫu mô UTMT [illegible], chúng tôi phát hiện được HPV tại 3 mẫu bệnh phẩm, trong đó, 2 trường hợp dương tính HPV ngoài các [illegible] và 1 trường hợp đồng nhiễm cả HPV nguy cơ cao (HPV58) và nguy cơ thấp (HPV11, 61). Chi tiết được mô tả trong bảng 2.

Bảng 2.Genotype của HPV tại mô UTMT

Nhiễm HPV	Số lượng (N = 24)	Tỉ lệ phần trăm (%)
HPV âm tính	21	87,5
HPV dương tính	3	12,5
HPV genotype		
HPV16	2	66,7
HPV 11, 58, 61	1	33,3

Trong số 24 bệnh nhân mắc UTMT, [illegible] có [illegible] nhiễm HPV đều có tổn thương ung thư tế bào vảy và tế thấp 3/22 các bệnh nhân mắc ung thư âm hộ tế bào đáy, tế bào hộc đã hoàn toàn

không miễn HPV) như rất tại bảng 3.

Bảng 3. Liên quan giữa tình trạng nhiễm HPV và tổn thương mô bệnh học tại cổ UTAH

Loại tổn thương	HPV dương tính	HPV âm tính	Tổng	
			Số	%
Ung thư tế bào vảy	3	19	22	59,5
Ung thư tế bào đệm	0	1	1	4,2
Ung thư tế bào hỗn hợp	0	1	1	4,2
Ung thư tế bào tuyến	0	0	0	0
Tổng số	3	21	22	100

IV. BÀN LUẬN

Kết quả của nghiên cứu cho thấy độ tuổi trung bình của bệnh nhân mắc UTAH là 55,8 tuổi, cao hơn so với nhóm bệnh nhân tại Thái Lan (47,8 tuổi). Đặc biệt ở tuổi nhạy thấp hơn so với tuổi (72,8 tuổi [2, 3, 5]). Tuy nhiên, cũng giống như kết quả của chúng tôi, hầu hết bệnh nhân đều ở độ tuổi mãn dục. Điều đó có thể được lý giải khi tìm hiểu nhiễm HPV hầu hết ở phụ nữ trong độ tuổi hoạt động tình dục, sau từ 8 -12 tháng gây tổn thương mô, nếu hết HPV tự loại trừ bởi hệ thống miễn dịch [13, 14]. HPV nhiễm ngày càng các chuẩn khác sự suy giảm hệ thống miễn dịch, tồn tại dai dẳng, tổn thương tiến triển ác tính và tiếp hợp có tính thường bệnh khoảng sau 15 năm nhiễm HPV [15]. Trong khi đó, đa số bệnh nhân mắc ung thư cổ tử cung bắt đầu bước sang tuổi sau giảm hoạt động tình dục [7]. Có lẽ yếu tố nguy cơ của UTAH không phải là HPV, vẫn nhiều bệnh nhân mắc bệnh ở độ tuổi muộn hơn so với ung thư cổ tử cung.

Nếu như tổn thương mô bệnh học tại một ung thư cổ tử cung chủ yếu là ung thư tế bào vảy, tiếp theo đến tuyến là ung thư tế bào tuyến, ung thư hỗn hợp tuyến vảy, ung thư tế bào kém biệt hóa thì UTAH, các dạng tổ bào ung thư lần lượt gồm: ung thư tế bào vảy, ung thư tế bào đệm và ung thư tế bào hỗn tế. Không có bệnh nhân ung thư tế bào tuyến [1]. Cũng như nghiên cứu của Gulesian H và Phuen C, ung thư tế bào vảy và ung thư tế bào hỗn tế bào hỗn hợp thường gặp [9, 10]. Do mẫu có vị trí cấu tạo giải phẫu và mô học hoạt đặc điểm miễn dịch của các tế bào đây mà các tác nhân gây ung thư khi có thể xâm nhập vào tế bào đây của ấm tử, thậm chí, với tế bào cơ như ung thư cổ tử cung không có ung thư tế bào đệm [7]. Tuy nhiên, cũng tương tự như bệnh nhân ung thư tế bào đệm trong nghiên cứu của Kenesi C, ung thư xuất hiện ở độ tuổi rất trẻ: 28 tuổi, bệnh nhân ung thư tế bào đệm của nghiên cứu cũng ở độ tuổi 29 [11]. Tác nhân rất quá ung thư tế bào đệm, mặc dù ung thư tế bào hỗn tế chiếm tỷ lệ rất thấp: khoảng 2% so với các ung thư ấm tử cung thường xuất hiện ở phụ nữ đang ở độ tuổi mãn dục [2, 10]. Kết quả về độ tuổi của nhóm UTAH tế bào hỗn tế hoàn toàn tương tự với kết quả của nghiên cứu: bệnh nhân mắc ung thư tế bào hỗn tế ở độ tuổi 53. Có thể các yếu tố về hormon cũng liên quan tới ung thư tế bào hỗn tế. Cần có nghiên cứu về các yếu tố dịch tễ khác liên quan tới UTAH ngoài yếu tố HPV.

Tỷ lệ nhiễm HPV ở của nghiên cứu chỉ có 12,5%. Thấp hơn rất nhiều so với các nghiên cứu của Ehsani S. (66%), Monica H. (65,4%), Hadwig K và cộng sự N. (94,5%), Suwiwat S. (82%)

[2 - 5]. Cũng như các nghiên cứu trên thế giới, tỷ lệ nhiễm và nhiễm HPV16 vẫn là týp phổ biến ở bệnh nhân UTMH. Tuy nhiên, kết quả về genotype của HPV đứng thứ 2 sau HPV16 lại có sự khác nhau, tại Hà Lan là HPV33 và tại Thái Lan là HPV58. Trong khi đó, kết quả của nghiên cứu là sự đồng nhiễm cả HPV nguy cơ thấp – HPV11, lẫn cả HPV nguy cơ cao - HPV35. Tương tự như các công bố trên thế giới, tỷ mẫu UTMH tuần tính ít, nhưng nghiên cứu cũng chỉ ra rằng, nhiễm HPV16 phổ biến ở UTMH, thứ đến HPV35. Có thể do hai khác biệt về địa lý dẫn đến sự khác biệt về tỷ lệ nhiễm HPV genotype của HPV ở Việt Nam so với các nước khác sẽ có tỷ lệ các tác nhân gây UTMH tại Việt Nam khác biệt so với các nước trên.

Trong số 24 bệnh nhân mắc UTMH, toàn bộ 02 bệnh nhân nhiễm HPV đều có tổn thương ung thư tế bào vảy với tỷ mẫu 3/22 các bệnh nhân mắc ung thư ác tính tế bào đáy tế bào nền tế bào gai không nhiễm HPV. Tương tự như các nghiên cứu trên thế giới, vấn đề trong phân tập chưa HPV có ung thư tế bào đáy và tế bào nền là đã gợi ý yếu tố liên quan đến CC sau tổn thương này nhất không phải là yếu nhiễm HPV. Với độ tuổi mắc dục ở bệnh nhân mắc ung thư tế bào nền tế bào gai và tế bào nền tế bào gai yếu tố nào khác mà hoàn toàn không liên quan đến HPV.

Cũng như kết quả nghiên cứu của Pham C và Annen C, ung thư tế bào đáy xuất hiện với tần suất rất thấp với bệnh nhân đang độ tuổi sinh đẻ, nhưng không phân lập được HPV từ mô tổn thương của bệnh nhân [12, 13]. Trong khi hầu hết các nghiên cứu trước đó đều chỉ ra rằng, ung thư tế bào đáy ảnh hưởng xuất hiện ở phụ nữ có độ tuổi trung bình 70 tuổi [14]. Điều thần, tại từ ngoài không tác động đến sùng sa âm hộ đã có thể gây nên thương tế bào đáy như ung thư điển hình [15]. Có mô tả trong các nghiên cứu ung thư tế bào đáy qua 4 nên vẫn yếu tố dịch tễ liên quan chưa được khẳng định. Các công bố trước đây cũng chưa khẳng yếu tố nguy cơ của ung thư tế bào đáy [16, 17]. Cần có các nghiên cứu về dịch tễ học để phát hiện yếu tố liên quan đến ung thư tế bào đáy âm hộ.

Ung thư tế bào vảy thường gặp nhất ở những bệnh nhân mắc UTMH với tỷ nhiễm HPV từ 18 - 75% tùy từng vùng địa lý khác nhau [17]. Như vậy kết quả nhiễm HPV 2/22 (13,6%) ở mô UTMH tế bào vảy của nghiên cứu cũng thấp hơn so với các công bố trước đó. Có lẽ yếu tố liên quan tới ung thư tế bào vảy ảnh hưởng khác biệt thực sự bị ảnh hưởng bởi yếu tố địa lý, tập quán của từng vùng miền.

V. KẾT LUẬN

Khảo sát một mẫu trong nghiên cứu của chúng tôi thấy có nhiễm HPV nhưng cũng đã chỉ ra: Tỷ suất mắc UTMH khá cao, ung thư tế bào đáy, ung thư tế bào vảy nhiễm đa số và các tế bào ung thư vảy đã nhiễm HPV hơn ung thư tế bào đáy và tế bào nền là HPV16 là týp phổ biến nhất tại UTMH, tiếp đến HPV35. HPV không phải là tác nhân chính liên quan đến ung thư âm hộ.

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TÀI LIỆU THAM KHẢO

1. Human Papillomavirus and related diseases report. www.hpvcentre.net on 27 July 2017.

2. Elham N, Yasin S, Lena M et al (2016),

vulvar and vaginal cancer, vulvar intraepithelial neoplasia 3 and vaginal intraepithelial neoplasia 3): experience of a referral institute. IMAJ. 16

3. Monica H, Heikki S, Nicolaus W et al (2006). Effect of Human papillomavirus vaccines on vulvar, vaginal and anal intraepithelial lesions and vulvar cancer. J. Clin. & Oncol. 169 (8)

4. Hedwig P van de N, Louw C.L, T van H, Joan A de H et al (2005). The biologic role of HPV in vulvar squamous cell carcinoma. Int. Cancer Control Gynaecol Pract. 18 (1)

5. Sunralee S, Jongkolnee S, Kamkamed S et al (2014). HPV detection and genotyping in vulvar squamous cell carcinoma in Northern Thailand. Asian Pac J Cancer Prev. 15 (8): 3717 – 3719.

6. de Villiers E.M, Fauquet C, Broker T.R et al (2004). Classification of papillomaviruses. J Virol. 324: 17-27.

7. Nguyễn Thị Phương Mai, Phạm Văn Thức, Nhiễm khuẩn và ung thư (2013). Phân bố genotype của human papillomavirus trên bệnh nhân ung thư cổ tử cung ở phía Bắc. Việt Nam. Tạp chí Nghiên cứu Y học. 83 (6): 1-10.

8. Nguyễn Thị Phương Mai, Nguyễn Phi Hùng, Nguyễn Hưng Cường và cs (2014). Liên quan giữa genotype của Human papillomavirus và tổn thương mô bệnh học bệnh nhân ung thư cổ tử cung ở phía Bắc Việt Nam. Tạp chí Y học Việt Nam. 423: 1-4.

9. Golanian H, Siamanoglu A, Purim T et al (2008). Primary malignant melanoma of the vagina: a case report and review of the current treatment options. Eur J Obs Gyne. Reprod Biol. 621: 345-349.

10. Pisani C, Poggiali S, De Padova L, et al., (2006). Basal cell carcinoma of the vulva. J. Eur Acad. Dermatol. Venereol. 20: 440–442.

11. Annes CF, Jacqueline M, Teresa D (2010). Nevoid basal cell carcinoma in a 23 year-old: a case report and review of the literature. J Gynec Oncol Reprod 8: 58-61.

12. De Giorgi V, Salvini C, Massi D, et al (2008). Vulvar basal cell carcinoma: retrospective study and review of literature. J Gynecol Cancer 97: 192–194.

13. Delpiori M.B, Martyn P, Phillip E.C, et al (2010). Predictors of human papillomavirus persistence among women with equivocal and mildly abnormal cytology. Inter J. Canc. 126: 994-01.

14. Phillip EC, Sukymore D, Schiffman M et al (2005). Human papillomavirus type 16 and 2-year absolute risk of cervical precancer among women with equivocal and mild cytology abnormalities. J. Nat Can Inst. 98 (14): 1055-1071.

15. Michael JH, Phillip EC, Attila TL, et al (2006). The substantial 10-year risk of cervical precancer and cancer in women with human papillomavirus (HPV) type 16 or 18 and the possible utility of type-specific testing in clinical practice. J. Nat Can Inst. 97 (14): 1072-1079.

16. Shuin DA, Goff BA, Lowe R, et al (2008). Factors affecting risk of mortality in women with vaginal cancer. J. Obstet Gynecol 113: 1039-1048.

17. Rakkestrea R, Sanz A, Sierra A, et al (2017). Role of the Human papillomavirus in vulvar cancer. J. Adv Anti Pathol. 34 (4): 201-216.

Summary

PRELIMITARY ESTIMATION OF HUMAN PAPILLOMAVIRUS GENOTYPE IN VULVAR CANCER TISSUES

Vulvar cancer is a rare genital cancer with the highest histology prevalent belongs to squamous cell carcinoma and the prevalence of human papillomavirus (HPV) infection in vulvar cancer tissue is various worldwide. The objective of this study was to identify HPV genotype and histology in fresh vulvar cancer tissue. This cross-sectional study was conducted on 24 patients with vulvar cancer by convenient collection method from the National Hospital of Obstetrics and Gynecology and Ho Chi Minh City Oncology Hospital. The results of HPV genotype by reverse dot blot technique was 3/24 of vulvar cancer tissue and 3/23 of squamous cell carcinoma infected with HPV, of which 2/3 of these were infected with HPV16. HPV was not isolated from basal cell carcinoma and melanoma. We observed that HPV is not the main factor related to vulvar cancer.

Keywords: Human papillomavirus, genotype, vulvar cancer.

Thực trạng trầm cảm, lo âu, căng thẳng và một số yếu tố liên quan của sinh viên Y khoa năm nhất Trường Đại học Y Dược Hải Phòng năm 2024

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TÓM TẮT

Lo âu, căng thẳng và trầm cảm là các yếu tố ảnh hưởng đến sức khỏe tâm thần của sinh viên. Nghiên cứu nhằm mô tả thực trạng trầm cảm, lo âu, căng thẳng và một số yếu tố liên quan ở sinh viên Y khoa năm 1 của trường Đại học Y Dược Hải Phòng, năm 2024. Nghiên cứu cắt ngang mô tả được tiến hành từ tháng 4 đến tháng 8/2024 trên 400 sinh viên Y khoa năm 1. Kết quả cho thấy tỷ lệ sinh viên có dấu hiệu trầm cảm, lo âu, căng thẳng lần lượt là 37,3%; 20% và 43,3%. Dấu hiệu trầm cảm liên quan tới nguy cơ cuộc hoặc đã cuộc học phần, không đủ thời gian tự học, khó khăn về tài chính của nhà, có mối quan hệ xung đột trong gia đình và những ngày có thời gian giải trí trung bình ngoài việc học ≥ 6 tiếng/ ngày. Dấu hiệu lo âu liên quan đến không đủ thời gian tự học, khó khăn về tài chính. Dấu hiệu căng thẳng liên quan tới ngày có cuộc hoặc đã từng cuộc học phần, không đủ thời gian tự học, khó khăn về tài chính, thời gian ngủ ít hơn 6 tiếng/ ngày, có mối quan hệ xung đột.

Từ khóa: trầm cảm, lo âu, căng thẳng, yếu tố liên quan

Depression, anxiety, stress status and some related factors of the first year medical students at Hai Phong University of Medicine and Pharmacy, in 2024.

Depression, anxiety, stress are influenced by many factors. This study was aimed to describe the rate of anxiety, stress, and depression in the first-year medical students of Hai Phong University of Medicine and Pharmacy, in year of 2023-2024 and some related factors. This descriptive cross-sectional study conducted from April to August 2024, among 400 first-year medical students. The results showed that the incidence of anxiety, stress, and depression of the students was respectively 37.3%, 20% and 43.3%. Depression related to the risk of failing or having failed courses, not having enough time to self-study, financial difficulties, family conflicts, and study time < 6 hours/day and stress among those outside of studying > 6 hours/day. Anxiety related to insufficient time for self-study, financial difficulties. Stress are affected by the risk of failing or having failed a course, not having enough time to self-study, financial difficulties, studying time before exams < 6 hours/day, relationship conflicts.

Keywords: depression, anxiety, stress, related factors

ĐẶT VẤN ĐỀ

Theo Tổ chức Y tế thế giới, sức khỏe tâm thần là trạng thái cân bằng và hòa hợp với môi trường xung quanh, là sự phối hợp giữa các thể chất, tâm lý, xã hội, cảm xúc, tinh thần... Sự thay đổi và thích nghi, cảm xúc, hành vi, lối sống, tính trong lựa chọn cho bản thân là những tiêu chí đánh giá sức khỏe tâm thần [1]. Theo thống kê của Bệnh viện Tâm thần Trung ương, tỷ lệ mắc tất toàn tâm thần thường gặp trong năm 2018 là 34,2% và rối loạn trầm cảm là 5,49% [1]. Rối loạn lo âu, sang thương và trầm cảm là những rối loạn tâm lý được phân loại theo Phân loại bệnh quốc tế lần thứ 11 (International Classification of Diseases-11) (ICD-11) và Cẩm nang Chẩn đoán và Thống kê Rối loạn Tâm thần phiên bản thứ 5 (Diagnostic and Statistical Manual of Mental Disorder - V (DSM-5) [2].

Theo nghiên cứu của Nguyễn Thị Minh Ngọc và cộng sự, tỉ lệ trầm cảm ở sinh viên Khoa Y Dược Trường Đại học Y Dược Hải Phòng năm 2018 loại theo chương trình tín chỉ là 37% và cũng cao hơn so với tỉ lệ 30,6% [3]. Ngay cả trầm cảm các mức (71,6%) các loại từ 440,2%) và có sự khác biệt có ý nghĩa thống kê với p<0,05 giữa trầm cảm và sang (p bị lo âu (OR=9,17), sang ở nhà trọ (OR=4,73), tác chính không ổn (OR=2,8), khả khẩu của học sinh (OR=2,784), khó khăn trong tham gia hoạt động (OR=2,511), tăng áp lực học tập (OR=3,91), tới nhiều tiết học (OR=2,21) [3]. Năm 2019, tỉ lệ trầm cảm của sinh viên y khoa của Trường Đại học Y Dược Hải Phòng là 40,8% (V2 -54,6%, V4 – 89,1% và V6 34,8%) và có mối liên quan với giới tính, khối học, nơi sống, mối quan hệ với bạn bè, áp lực học tập [4]. Theo kết quả nghiên cứu của Lê Thị Vũ Huyền, trong năm học 2020-2021, 32,9% sinh viên y khoa năm 4 của trường Đại học Y Hà Nội có dấu hiệu trầm cảm và các yếu tố sống có mối liên quan giữa trầm cảm với khó khăn về tài chính, lập thời điểm, sang thời gian học sang phòng, giao tiếp khoa học, chán nhường đơn sang, một thành viên trong gia đình bị bệnh nặng. Điều học không như mong đợi, thích nghi với việc học ở trường đại học [5].

Hiện nay môi trường đại học cũng thay đổi, cách tiếp nhận tiếp cận mới trong học tập mới, với nhiều mối quan hệ mới, quy định, nội quy mới, phương pháp học tập cho đúng. Và đó có phải sự khách định kế hoạch tài chính, thời gian sinh hoạt của cá nhân. Đặc biệt sinh viên Y khoa đang theo học chương trình đào tạo đặc trên nặng hơn đòi hỏi tính cao đẳng học tập cũng như cách học thực tiễn có cao. Liệu các đề tài chính, thời gian bị ảnh hưởng, thời gian và kế hoạch học tập của sinh viên Y khoa như thế nào có liên quan đến tình trạng trầm cảm, lo âu, căng thẳng sau sinh viên Y khoa năm thứ nhất K69 năm học 2023-2024 và một số yếu tố liên quan để từ đó có những hỗ trợ, can thiệp hợp lý cho sinh viên.

PHƯƠNG PHÁP NGHIÊN CỨU

Đối tượng nghiên cứu

Đối tượng sinh viên Y đa khoa K69 năm thứ nhất năm học 2023-2024

Tiêu chuẩn lựa chọn: sinh viên tình nguyện tham gia nghiên cứu

Tiêu chuẩn loại trừ: sinh viên không có mặt tại thời điểm thu thập số liệu

Địa điểm và thời gian nghiên cứu: Trường Đại học Y Dược Hải Phòng, tổ 4-6/2024

Thiết kế nghiên cứu: nghiên cứu cắt ngang mô tả

Cỡ mẫu

$$n = \frac{Z^2_{1-\alpha/2}\, p(1-p)}{d^2} \times \frac{\text{[illegible]}}{\text{[illegible]}} = 340$$

Trong đó:

n là cỡ mẫu tối thiểu

Z(1-α/2) là giá trị tới hạn phân bố chuẩn (tính toán với α, ý nghĩa thống kê 95%, và giá trị là 1,96

p là tỉ lệ ước tính, lấy tỉ nghiên cứu của Vũ

Tổng thuyết là 52,8% [3].

Kết luận: tỷ lệ mắc viêm tai giữa mủ mạn tính (VTGMMTCH) chiếm 5% có ý nghĩa 0,01

Số mẫu được tối thiểu được tính là 464

Chọn mẫu: chọn mẫu thuận tiện

Biến số nghiên cứu

Biến phụ thuộc: là tỷ suất viêm tai giữa mủ mạn tính, bị đa, cộng thông (Không, có nếu có viêm các mức độ nhẹ, vừa, nặng, rất nặng theo DASS.21)

Biến độc lập: yếu tố liên quan gồm nhóm, nhóm người mẹ đã từng mang thai phát (có không); thời gian tại học (không đi học; mù chữ; tiểu học; trung học cơ sở; trung học phổ thông; trình độ cao đẳng trở lên); thời gian ngủ trung bình (< 6 tiếng; 6-8 tiếng; > 8 tiếng); thời gian sử dụng smartphone (< 5 tiếng; ≥ 5 tiếng)

Công cụ, quy trình thu thập số liệu

Công cụ thu thập số liệu: phiếu điều tra bao gồm các thông tin về tuổi, giới, trình độ học vấn, nghề nghiệp, thời gian học tập và phân bố thời gian ngủ, tự học và sử dụng smartphone. Phiếu sử dụng thang đo DASS.21 để sàng lọc các triệu chứng trầm cảm, lo âu, căng thẳng của đối tượng nghiên cứu. Thang đo gồm 21 câu hỏi, chia làm 3 phần tương ứng với 3 loại rối loạn. Điểm số mỗi câu đạt được từ 0-3 điểm, càng điểm càng đó thể hiện càng rõ (x4). Tổng điểm thang đo được nhân 2 và sắp theo mức độ rối loạn tương ứng của nó (bảng 2.1). Điểm mỗi thang đo càng cao mức độ rối loạn càng nặng [5].

Bảng 2. Thang điểm đánh giá rối loạn trầm cảm, lo âu, căng thẳng

Mức độ	Trầm cảm	Lo âu	Căng thẳng
Bình thường	0-9	0-7	0-14
Nhẹ	10-13	8-9	15-18
Vừa	14-20	10-14	19-25
Nặng	21-27	15-18	26-33
Rất nặng	≥ 28	≥ 20	≥ 34

Quy trình thu thập số liệu: phiếu điều tra được phát cho đối tượng nghiên cứu khi tiến đến trường gửi cuối cùng của năm học 2023-2024. Số liệu sau khi thu thập sẽ được làm sạch và lưu trữ trên phần mềm Excel.

Phân tích số liệu: sử dụng tỷ lệ Tabulate để tính tỷ lệ mắc và tỷ lệ phần trăm của các biến định tính. Tính CC của phần mềm STATA 16.0 để tính OR - liên quan giữa yếu tố.

Đạo đức nghiên cứu: Nghiên cứu đã được thông qua Hội đồng xét duyệt Đề tài sơ sở năm học 2024-2025 của Trường Đại học Y Dược Hải Phòng. Đối tượng nghiên cứu được cung cấp đầy đủ thông tin về mục đích, nội dung của nghiên cứu, tự nguyện tham gia trong suốt các nhiệm vụ liên hoàn thuận tham gia nghiên cứu, không bắt cứ đối tượng tham gia nghiên cứu hoàn toàn được giữ bí mật. Nếu đối tượng từ chối, hoặc ngừng giữa chừng thì không bắt kỳ đối tượng tham gia nghiên cứu.

KẾT QUẢ

Đặc điểm chung của đối tượng nghiên cứu

Trong tổng số 513 sinh viên Y khóa năm thứ K45, chúng tôi lựa được phiếu của 464 sinh viên đủ các tiêu chí để phục vụ nghiên cứu. Tỷ lệ đối tượng nghiên cứu là nữ giới chiếm 51,3% và có độ tuổi trung bình 19,5 ± 0,3 năm dao động từ 19-21 tuổi.

Thực trạng trầm cảm, lo âu, căng thẳng của đối tượng nghiên cứu

Bảng 3. Tỷ lệ sinh viên có triệu chứng trầm cảm, lo âu, căng thẳng

	Biến số		Số lượng (n=444)	Tỉ lệ phần trăm (%)
Tiền căn	Không		231	52,1
	Có		213	48,0
		Nhẹ	131	29,5
		Trung bình	73	16,4
		Nặng	9	2,1
Lo âu	Không		246	55,4
	Có		174	39,2
		Nhẹ	110	24,8
		Vừa	56	12,7
Căng thẳng	Không		371	83
	Có		63	14
		Nhẹ	49	11,0
		Vừa	12	2,7
		Nặng	2	0,5

Tỉ lệ viêm võ đầu hạch trên cơn ác cơ cộng thẳng: cao đồng ở 29 (chiếm 16%, trong đó chủ yếu là mức độ nhẹ, mức độ nặng chiếm tỉ lệ thấp nhất với 3,3 % – 10 mắc viêm, cộng thẳng là 1,2% – 6 mắc viêm).

Một số yếu tố liên quan đến sản hiện trầm cảm ở sinh viên

Bảng 3. Một số yếu tố liên quan đến sản hiện trầm cảm

Yếu tố		Trầm cảm	Không trầm cảm	OR (95% CI)	p
Giới	Nữ (n= 258)	133 (47,3)	125 (52,2)	1,10 (0,78-1,61)	0,401
	Nam (n= 236)	148 (44,7)	126 (53,8)		
Đã từng hoặc có ngưng tưởng hoặc hành vi tự tử	Có (n=132)	109 (82,5)	63 (49,1)	**2,07 (1,39-3,18)**	**0,001**
	Không (n=132)	44 (33,3)	66 (66,7)		
Thời gian ngủ hàng đêm	Không đủ (n=270)	88 (62,0)	49 (38,0)	**2,40 (1,63-5,76)**	**<0,001**
	Đủ (n=310)	133 (39,7)	202 (60,3)		
Nhận biết sức khỏe bản thân	Không đủ (n=45)	21 (60,0)	14 (31,1)	**2,89 (1,49-5,98)**	**0,001**
	Đủ (n=439)	192 (43,4)	237 (56,6)		
Mối quan hệ ảnh hưởng đến cá nhân	Có (n=339)	261 (98,5)	128 (45,5)	**1,82 (1,22-2,73)**	**0,005**
	Không (n= 145)	37 (25,6)	97 (64,1)		
Thời gian sử học ngày	< 4 tiếng (n= 227)	144 (56,1)	163 (69,9)	**1,81 (1,2-2,73)**	**0,005**
	≥ 4 tiếng (n= 135)	69 (51,1)	69 (61,3)		
Thời gian ngủ khi đủ thời ngày	< 6 tiếng (n=149)	75 (47,7)	70 (32,3)	1,11 (0,75-1,64)	0,602
	≥ 6 tiếng (n=353)	242 (68,5)	153 (54,9)		
Thời gian sử dụng mạng người vào học ngày	< 3 tiếng (n=334)	192 (68,6)	135 (51,1)	**1,88 (1,02-2,55)**	**0,04**
	≥ 3 tiếng (n= 236)	44 (36,1)	78 (63,9)		

Yếu tố liên quan đến điều hiện trầm cảm có ý nghĩa thống kê bao gồm: đã từng hoặc có ngưng tưởng hoặc hành vi tự tử (OR = 2,07; độ tin cậy 95% dao động trong khoảng 1,36-3,16); thời gian ngủ hàng đêm không đủ (OR = 2,40; độ tin cậy 95% dao động trong khoảng 1,63-5,76); nhận thức

tiếp hàng ngày không đủ (OR = 2,98; độ tin cậy 95% dao động trong khoảng 1,49-5,98), tuổi quan hệ giữ phải khác đến sự chậm (OR = 1,82; độ tin cậy 95% dao động trong khoảng 1,52-2,777), thời gian tự học trong ngày chưa 4 tiếng (OR = 1,81; độ tin cậy 95% dao động từ 1,5-2,7) và thời gian sử dụng mạng người (trên 8ao trong một ngày trên 3 tiếng (OR = 1,25; độ tin cậy 95% dao động trong khoảng 0,10-2,23) với p< 0,05.

Bảng 4. Một số yếu tố liên quan đến đầu hiệu bỏ học

Yếu tố		Có bỏ học (%)	Không bỏ học (%)	OR (95%CI)	p
Giới	Nữ (n= 220)	93 (36,2)	187 (61,8)	1,07 (0,76-1,53)	0,737
	Nam (n= 326)	93 (36,7)	145 (63,3)		
Hỗ trợ hoàn cảnh người thân gia đình	Có (n= 352)	130 (36,3)	322 (63,8)	1,29 (0,84-1,97)	0,242
	Không (n= 113)	44 (35,5)	88 (66,7)		
Thời gian tự học	Không đủ (n= 256)	62 (48,1)	97 (51,9)	**1,84 (1,25-2,79)**	**0,004**
	Đủ (n= 193)	112 (51,4)	223 (66,6)		
Mức tiền chi tiêu hàng ngày	Không đủ (n=48)	24 (55,3)	21 (46,7)	**2,89 (1,1-5,86)**	**0,023**
	Đủ (n=419)	130 (35,8)	289 (64,2)		
Mức quan hệ anh hưởng đến cá nhân	Có (n: 319)	125 (36,6)	196 (61,4)	1,16 (0,77-1,74)	0,481
	Không (n: 145)	51 (35,2)	94 (64,8)		
Thời gian tự học ngủ	< 4 tiếng (n= 151)	83 (55,8)	92 (67,2)	0,73 (0,69-1,16)	0,184
	> 4 tiếng (n=327)	128 (38,4)	198 (61,5)		
Thời gian ngủ lên ăn mỗi ngày	< 6 tiếng (n= 140)	59 (40)	80 (60)	1,14 (0,78-1,78)	0,518
	> 6 tiếng (n: 338)	131 (38,5)	209 (61,5)		
Thời gian sử dụng mạng (ngoài việc học ngày	> 3 tiếng (n= 190)	150 (58,8)	207 (41,2)	1,22 (0,8-1,86)	0,327
	< 3 tiếng (n =280)	43 (34,1)	83 (65,9)		

Thời gian tự học, mức chi tiêu hàng ngày không đủ liên quan đến đầu hiệu bỏ học có ý nghĩa thống kê với p <0,05 (OR lần lượt 1,84 và 2,89) độ tin cậy 95% dao động trong khoảng 1,25-2,79 và 1,1-5,86).

Bảng 5. Một số yếu tố liên quan đến việc học cùng nhóm

Yếu tố		Cùng nhóm (%)	Không cùng nhóm (%)	OR (95%CI)	p
Giới	Nữ (n= 256)	93 (22,2)	163 (77,8)	1,33 (0,84-2,11)	0,219
	Nam (n= 256)	40 (17,3)	186 (82,7)		
Hỗ trợ hoàn cảnh người thân gia đình	Có (n=322)	76 (23,6)	236 (87,1)	**2,81 (1,3-3,55)**	**0,019**
	Không (n=132)	17 (12,9)	115 (87,1)		
Thời gian tự học	Không đủ (n: 129)	11 (11,8)	99 (76,2)	**2,54 (1,58-6,87)**	**<0,001**
	Đủ (n= 319)	92 (13,8)	261 (64,1)		
Mức tiền chi tiêu hàng ngày	Không đủ (n: 43)	17 (17,8)	78 (82,2)	**2,74 (1,63-9,36)**	**0,002**
	Đủ (n=419)	76 (18,1)	343 (81,9)		
Mức quan hệ anh hưởng đến cá nhân	Có (n: 319)	77 (24,1)	242 (85,9)	**2,87 (3,44-6,58)**	**0,001**
	Không (n= 145)	16 (11,0)	129 (89,0)		
	< 3 tiếng (n= 92)	65 (16,9)	267 (83,1)	0,97 (0,58-	0,158

Thời gian tự học ≥ 4 tiếng/ngày	≥ 4 tiếng (n=135)	29 (21,6)	106 (78,4)	0,56 (0,30-1,03)	
Thời gian ngủ khi đi thi/ ngày	< 6 tiếng (n=340)	38 (35,5)	111 (74,5)	0,62 (0,39-0,99)	0,041
	≥ 6 tiếng (n=111)	89 (17,6)	260 (82,4)		
Thời gian sử dụng mạng người/ ngày	< 3 tiếng (n=108)	78 (28,1)	200 (71,9)	1,71 (1,09-2,97)	0,03
	≥ 3 tiếng (n=126)	23 (18,3)	103 (81,7)		

Yếu tố liên quan đến điều kiện sống không học giấc: Ăn sáng buổi có nguy cơ tránh học giấc (OR=2,01) độ tin cậy 95% dao động trong khoảng 1,1-3,51), thời gian tự học không đủ (OR=2,34) độ tin cậy 95% dao động trong khoảng 1,39-4,07), ngủ chỉ từ 4 tiếng/ ngày không đủ (OR= 2,74) độ tin cậy 95% dao động trong khoảng 1,35-5,26), mối quan hệ giữa thời gian sử dụng điện thoại (OR) 3,57 độ tin cậy 95% dao động trong khoảng 1,91-4,58) và thời gian ngủ trong một giấc ấn thì ít hơn 6 tiếng trong một ngày (OR= 1,65) độ tin cậy 95% dao động trong khoảng 1,01-2,59) và ý nghĩa thống kê với p <0,05.

BÀN LUẬN

Nghiên cứu của chúng tôi chỉ ra rằng: sinh viên Y khoa năm 1 có tỷ lệ cao nhất (45,9%), tiếp theo là (37,5%) và cùng thấp (20%). Khi so sánh giữa có dấu hiệu ở mức độ thấp, có sinh viên có dấu hiệu mức độ nặng chiếm tỷ lệ rất thấp (1,2 và 2,1%). Tỷ lệ sinh viên có dấu hiệu trầm cảm trong nghiên cứu của chúng tôi khá tương đồng với nghiên cứu của Lê Thị Vũ Huyền tại trường Đại học Y Hà Nội với tỷ lệ trong sinh viên Y khoa năm 1 (52,9%) [3]. Cũng như nghiên cứu của chúng tôi, Lê Thị Vũ Huyền sử dụng thang đo DASS để đánh giá tình trạng trầm cảm. Tuy nhiên, đối tượng nghiên cứu của Lê Thị Vũ Huyền đang theo học chương trình đào tạo tín chỉ, nhóc độ tự học và tính hợp chưa cao nhưng tỷ lệ trầm cảm lại gần Huyền thu thập số liệu đang vào đại dịch Covid-19. Điều đó cũng được khẳng định khi tác giả Lê Thị Vũ Huyền đã tìm thấy mối liên quan giữa trầm cảm và tình trạng căng thẳng của bản thân và gia đình [3]. Có 11,6% là 2 yếu tố khiến nhóc kết quả của Lê Thị Vũ Huyền thấp tương đồng với kết quả của nghiên cứu. Hơn nữa, tỷ lệ sinh viên Y khoa năm thứ nhất có dấu hiệu trầm cảm trong nghiên cứu của chúng tôi cao hơn kết quả nghiên cứu của Nguyễn Thị Minh Ngọc (36,9%) trên đối tượng sinh viên Y khoa năm 1, Nguyễn Thị Thắm (46,9%) trên sinh viên Y khoa năm 2 của trường Đại học Y Dược Hải Phòng sử dụng thang đo DASS21 và cao hơn tỷ lệ nhiều so với nghiên cứu của Ngô Phương Thảo (2,9%) trên sinh viên Y khoa năm 2 tại Trường Đại học Y Dược Cần Thơ [4] sử dụng thang đo PHQ-9 [5, 6, 7]. Sự khác biệt về tỷ lệ trầm cảm ở những nghiên cứu sử dụng thang đo DASS có lẽ do bởi chỉ số chương [illegible] là cao nhất trong các công cụ sàng lọc trầm cảm. Công cụ của nước ta hiện nay chưa đưa ra kết quả về tỷ lệ trầm cảm khác nhau. Độ nhạy thang đo DASS và PHQ có sự tương quan khá mạnh đánh giá trầm cảm, tuy nhiên, tỷ lệ trầm cảm sử dụng thang đo PHQ thấp hơn so với thang đo DASS [8]. Khi sử dụng thang đo DASS-42, khoảng 9 đến 45% và tỷ lệ có điểm biểu hiện trầm cảm thông thường ở sinh viên Nội và Phẫu thuật Y khoa năm 1 học theo chương trình tín chỉ tại Nepal (59,3% và 65,1%) cao hơn của nghiên cứu chúng tôi (tương đương với 40%) [9]. Sự khác nhau về tỷ lệ có thể do sự khác nhau giữa kết quả của nghiên cứu và bệnh lý, [illegible] [1].

Phân tích đơn biến cho thấy sinh đã bỏ qua bữa, kế hoạch học tập cũng như mối quan hệ cá nhân ảnh hưởng rõ rệt đến tình trạng trầm cảm của sinh viên, ở các mức độ khác nhau. Việc điều

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[illegible] [illegible] [illegible] [

KHUYẾN NGHỊ

Cần có các giải pháp [illegible] sinh viên, giảm áp lực trong quá trình học tập của sinh viên, góp phần nâng cao chất lượng đào tạo của nhà trường.

TÀI LIỆU THAM KHẢO

1. [illegible]
2. Daniel Grisaberry. The [illegible] depression' a sample's symptom list (MSI-V) and BDI-II. Australian [illegible] (2010), tuổi 16, p144-150.
3. Nguyễn Thị Minh Ngọc, Nguyễn Thị Thu Thảo, Nguyễn Thị Mai và cộng sự. Trầm cảm và một số yếu tố liên quan ở sinh viên [illegible] trường Đại học Y Dược Hải Phòng năm 2019. Tạp chí Y học dự phòng, [illegible] tập [illegible], số 10 (187), trang 193-200.
4. Nguyễn Văn Thiết, Phan Thu Lệ Hằng, Nguyễn Hoàng Việt Hưng và cộng sự. Ngữ cảm nhận của sinh viên về yếu tố liên quan đến một số triệu chứng trầm cảm của sinh viên trường Đại học Y Dược Hải Phòng, năm 2019. Tạp chí Y học dự phòng, 2021, số 10, tập [illegible], số 11 (155), trang 85-91.
5. Lê Văn Việt Thuần, [illegible] (DASS-21) ở sinh viên hệ bác sĩ đa khoa năm thứ nhất trường Đại học Y Hà Nội năm học 2020-2021 và một số yếu tố liên quan. Tạp chí Y học Việt Nam, 2021, tập 508, số 2, trang 140-145.
6. Lovibond S.H., Lovibond, P.F., Manual for the depression, anxiety & stress scales. (2nd Ed.) Sydney: Psychology Foundation. 1995. p154-159.
7. Ngô Phương Thảo, Nguyễn Văn Phong, Nguyễn Thị Nam và cộng sự. Nghiên cứu một số [illegible] trầm cảm và một số yếu tố liên quan ở sinh viên [illegible] năm 2018-2019. Tạp chí Y Dược Cần Thơ, 2021, số 40, trang 99-106.
8. Tetteh L., Pruitt A., Andrzejewski E. et al. Comparison of DASS-21, PHQ-9, and GAD-7 in a virtual behavioral health crisis setting. Heliyon, 2021 Mar; 7(3): e06419.
9. Saleh F., Saghazadeh A., Gilbert A. Depression, anxiety and stress among first-year medical students in a Turkish Cave Hospital: A Descriptive Cross-sectional Study. JNMA J Nepal Med Assoc, 2021; 59(238): e1346-1349.
10. Nguyen D.T.T., Wang H.J., Lee T.Y. et al. Relationships of excessive internet use with depression, anxiety, and sleep quality among

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Tạp chí

Y HỌC VIỆT NAM

Năm thứ sáu mươi hai

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CÔNG TRÌNH NGHIÊN CỨU KHOA HỌC TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

TỔNG HỘI Y HỌC VIỆT NAM
HỘI HÔ HẤP VIỆT NAM

HÌNH ẢNH SIÊU ÂM GAN VÀ HOẠT ĐỘ AST, ALT, GGT HUYẾT THANH CỦA MỘT SỐ BỆNH NHÂN RỐI LOẠN LIPID MÁU TẠI BỆNH VIỆN ĐẠI HỌC Y HẢI PHÒNG NĂM 2020

Nguyễn Thị Phương Thảo*, Nguyễn Thị Phương Thảo*, Nguyễn Quang Anh*

TÓM TẮT

Rối loạn lipid máu (RLLM) là bệnh [illegible] phổ biến trong cộng đồng ở mọi lứa tuổi và là nguyên nhân chính của [illegible]. Nghiên cứu [illegible] nhằm [illegible] hình ảnh siêu âm gan và [illegible] AST, ALT, GGT huyết thanh [illegible] rối loạn lipid máu [illegible] tại Bệnh viện Đại học Y Hải Phòng năm 2020. Nghiên cứu [illegible] trên 100 bệnh nhân [illegible] RLLM [illegible] tại Bệnh viện Đại học Y Hải Phòng từ [illegible] đến [illegible]. Kết quả cho thấy, tỷ lệ [illegible] nhiễm mỡ [illegible] trên siêu âm [illegible] RLLM [illegible] có ý nghĩa thống kê với p < 0,01. Hoạt độ AST, ALT, GGT [illegible] nhiễm mỡ có ý nghĩa thống kê với p < 0,05. Hoạt độ AST, ALT, GGT [illegible] nhiễm mỡ ở nhóm [illegible] RLLM.

Từ khóa: Rối loạn lipid máu, gan nhiễm mỡ

SUMMARY

LIVER ULTRASOUND RESULTS AND ACTIVITY OF SERUM AST, ALT, GGT AMONG HYPERLIPIDEMIA PATIENTS

[illegible]

*Trường Đại học Y Dược Hải Phòng

Chịu trách nhiệm chính: Nguyễn Thị Phương Thảo

Email: [illegible]

Ngày nhận bài: 30.3.2021

Ngày phản biện khoa học: 15.4.2021

Ngày duyệt bài: 24.5.2021

JN HAI PHONG MEDICAL UNIVERSITY HOMEPAGE 2020

[illegible]

I. ĐẶT VẤN ĐỀ

Rối loạn lipid máu (RLLM) là bệnh [illegible] thường gặp trong cộng đồng ở mọi lứa tuổi. Tại Mỹ, cứ [illegible] có [illegible] người [illegible] RLLM [illegible] [illegible] [illegible]

[illegible]

II. ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU

2.1. Đối tượng nghiên cứu: gồm 178 bệnh nhân được chẩn đoán và điều trị tại Khoa Tai Mũi Họng Bệnh viện Đa khoa Y Dược Hải Phòng.

Tiêu chuẩn lựa chọn

Bệnh nhân đồng ý tham gia nghiên cứu.

Có đủ hồ sơ bệnh án.

Tiêu chuẩn loại trừ:

Bệnh nhân bị viêm mũi xoang mạn, nghi ngờ ung thư, bệnh lý miễn dịch, suy giảm miễn dịch, bệnh lý về máu, rối loạn đông máu.

Bệnh nhân không đồng ý tham gia.

Địa điểm và thời gian nghiên cứu

Tìm hiểu về phân bố mầm bệnh tại Khoa Tai Mũi Họng, Bệnh viện Đa khoa Y Dược Hải Phòng, từ 1/1/2016 đến 31/12/2019.

2.2. Phương pháp nghiên cứu

Thiết kế nghiên cứu: mô tả cắt ngang.

Phương pháp chọn mẫu: lấy mẫu thuận tiện.

Phương tiện nghiên cứu: hồ sơ bệnh án.

Vật liệu và trang thiết bị sử dụng trong nghiên cứu: Máy phân tích tự động API 20E để xác định các chủng Pseudomonas Cowchii (Oxidase dương), máy xét nghiệm Vitek-compact P31 (Pháp) (Note)

Phương pháp phân tích

Thống kê mô tả, phân tích theo chương trình thống kê y học và phương pháp đối chứng.

Xác định tỷ lệ % theo đối tượng bệnh lý Tai Mũi Họng.

Xác định tỷ lệ % các chủng phân lập được theo bệnh lý Tai Mũi Họng, so sánh giữa các nhóm.

III. KẾT QUẢ NGHIÊN CỨU

Trong 371 bệnh án Tai Mũi Họng nghiên cứu có 178 bệnh án (chiếm 47,9%) có kết quả nuôi cấy dịch mũi xoang. Kết quả nghiên cứu cho thấy tỷ lệ 2,2 chủng/bệnh án. Trong đó tỷ lệ vi khuẩn gram dương chiếm 61,2% và gram âm chiếm 38,8%. Trong nhóm vi khuẩn gram dương thì tỷ lệ tụ cầu vàng chiếm 18,5% và liên cầu chiếm 42,7%. Trong nhóm vi khuẩn gram âm thì tỷ lệ Klebsiella pneumoniae chiếm 13,5% và Pseudomonas aeruginosa chiếm 25,3%. Tỷ lệ vi khuẩn kháng thuốc trong nhóm gram dương chiếm 27,4%.

Bảng 1: Liên quan giữa mức độ tăng trưởng của hạt nhân và các chủng vi

Mức độ tăng trưởng của hạt nhân	Độ pha loãng			Tổng số n (%)
	0	1	2	
Nhẹ (1,2,3 mm/24 h)	4	10	3	17 (11,2%)
Vừa (2,4,5,6 mm/24 h)	32	26	14	72 (47,3%)
Rất mạnh (7,8 mm/24 h)	30	13	37	80 (52,7%)
Tổng số: n %	67 (39,4%)	51 (45,2%)	44 (28,4%)	178 (100%)

Mức độ gia tăng của vi khuẩn không liên quan tới nồng độ (p>0,05) tuy nhiên với p<0,05. Tại thời điểm nhiễm sau 48 giờ có tới 80 vi khuẩn gram dương có khả năng gia tăng số lượng (p<0,05).

Chỉ số	Kỳ giao khoán sau			F
	n (n=67)	1 (n =81)	2 (n=82)	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

[illegible]

3. Kết luận

[illegible]

SỞ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

BIÊN BẢN
NGHIỆM THU ĐỀ TÀI KHCN CẤP CƠ SỞ NĂM 2023

Tên đề tài: Mối tương quan giữa nồng độ Prealbumin, C-reactive protein với urea, creatinine và albumin trong huyết thanh của bệnh nhân mắc bệnh thận mạn kỳ cuối chu kỳ tại Bệnh viện Hữu nghị Việt Tiệp, năm 2023

Chủ nhiệm đề tài: Nguyễn Thị Phương Mai

Thành viên tham gia: Dương Thị Minh Thúy

Giảng viên hướng dẫn (nếu có): .....

Đơn vị: Bộ môn Hóa sinh

Căn cứ Quyết định số: 2219/QĐ - YDHP ngày 08 tháng 12 năm 2023 của Hiệu trưởng trường Đại học Y Dược Hải Phòng về việc thành lập Tiểu ban Khoa học công nghệ nghiệm thu đề tài nghiên cứu khoa học cấp cơ sở năm 2023; Tiểu ban đã tiến hành họp để đánh giá nghiệm thu đề tài vào hồi 15 giờ ngày 27 tháng 12 năm 2023 tại trường Đại học Y Dược Hải Phòng.

Các thành viên có mặt:

PGS. TS. Bùi Thị Thanh Mai

TS. Phạm Văn Phương

TS. Nguyễn Thị Thùy Linh

TS. Nguyễn Đức Tân

.....

Thư ký hành chính: ThS. Phạm Thị Thương Thảo

Các thành viên vắng mặt:

.....

.....

NỘI DUNG NGHIỆM THU:

1. Đọc quyết định thành lập Tiểu ban: **TS. Nguyễn Thị Thùy Linh**
2. Trưởng Tiểu ban điều hành buổi nghiệm thu.
3. Chủ nhiệm đề tài trình bày tóm tắt các nội dung kết quả đề tài (có được câu hỏi của thành viên Tiểu ban)
4. Các thành viên Tiểu ban nhận xét, góp ý và đưa ra [illegible]

5. Các thành viên trong Tiểu ban và những người tham dự buổi nghiệm thu trao đổi về nội dung, phương pháp, kết quả nghiên cứu của đề tài, và thống nhất một số ý kiến sau:

Kết quả đạt và vượt mức đề ra; đề tài có tính thực tiễn cao

6. Đánh giá kết quả:

6.1. Ban kiểm phiếu gồm:

- **TS. Nguyễn Thị Thúy Linh**
- **ThS. Phạm Thị Phương Thảo**

6.2. Tiểu ban đã bỏ phiếu đánh giá kết quả như sau:

Tổng số phiếu phát ra : 10 phiếu
Tổng số phiếu thu vào : 10 phiếu
Số phiếu hợp lệ : 10 phiếu
Số phiếu không hợp lệ : 0 phiếu

6.3. Kết quả đánh giá:

Xuất sắc : 09 phiếu
Khá : 01 phiếu
Đạt : 0 phiếu
Không đạt : 0 phiếu

Kết quả đề tài đạt loại: Xuất sắc

7. Kết luận:

Đề tài đạt yêu cầu về nội dung và hình thức

Hải Phòng, ngày 10 tháng 1 năm 2023

Trưởng Tiểu ban
(Ký và ghi rõ họ tên)

Trần Thị Thanh Mai

Thư ký
(Ký và ghi rõ họ tên)

TS. Nguyễn Thị Thúy Linh

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

BIÊN BẢN
NGHIỆM THU ĐỀ TÀI SHCN CẤP CƠ SỞ NĂM 2022

Tên đề tài: Đánh giá kết quả đào tạo liên tục kỹ năng dạy học của giảng viên theo chương trình đổi mới giáo dục y khoa dựa trên năng lực của Trường Đại học Y Dược Hải Phòng, năm 2021-2022.

Chủ nhiệm đề tài: TS. Nguyễn Thị Phương Mai

Đơn vị: BM. Hóa sinh

Căn cứ Quyết định số: 2783/QĐ – YDHP ngày 19 tháng 12 năm 2022 của Hiệu trưởng trường Đại học Y Dược Hải Phòng về việc thành lập Hội đồng Khoa học nghiệm thu đề tài NCKH cấp cơ sở năm 2022, Hội đồng đã tiến hành họp để đánh giá, nghiệm thu đề tài vào hồi 07h30 ngày 29 tháng 12 năm 2022 tại trường Đại học Y Dược Hải Phòng.

Các thành viên Hội đồng có mặt:

1. PGS.TS. Trần Quang Phục	- Chủ tịch Hội đồng
2. PGS.TS. Phạm Văn Duệ	- Ủy viên
3. PGS.TS. Dương Thị Hương	- Ủy viên
4. PGS.TS. Đặng Văn Chức	- Ủy viên
5. TS. Vũ Mạnh Tân	- Ủy viên
6. TS. Vũ Quang Hưng	- Ủy viên

Thư ký: CN. Đồng Thị Phương Thảo

Các thành viên Hội đồng vắng mặt: Không

Các cán bộ được giữ theo biên chế: *Đào Thu Hằng, Lê Thị Tiến, Nguyễn Thị Hồng Liên, Nguyễn Thị Tươi, Phạm Thị Yến*

NỘI DUNG NGHIỆM THU:

1. Đọc quyết định thành lập Hội đồng: *CN. Đồng Thị Phương Thảo*

2. Chủ tịch hội đồng điều khiển buổi nghiệm thu

3. Chủ nhiệm đề tài trình bày tóm tắt bản báo cáo tổng kết đề tài (nội dung của mẫu biên bản này).

4. Các phản biện đọc bản nhận xét (có bản nhận xét kèm theo).

5. Các thành viên trong hội đồng và những người tham dự tiến nghiệm thu đề tài đóng góp ý kiến về nội dung, phương pháp và kết quả nghiên cứu của đề tài. Hội đồng thống nhất một số ý kiến sau:

- Kết quả nghiên cứu rõ, bám sát nội dung và mục tiêu

6. Hội đồng đã bỏ phiếu đánh giá kết quả như sau:

Ban kiểm phiếu của Hội đồng gồm:

1. TS. Vũ Đình Tân
2. CN. Đặng Thị Phương Thúy

Tổng số phiếu phát ra : 06 phiếu

Tổng số phiếu thu vào : 06 phiếu

Số phiếu hợp lệ : 06 phiếu

Số phiếu không hợp lệ : 0 phiếu

Kết quả đánh giá:

Xuất sắc : 05 phiếu

Khá : 0 phiếu

Đạt : 01 phiếu

Không đạt : 0 phiếu

Kết quả đề tài được loại: Xuất sắc

7. Kết luận của Hội đồng: Nghiệm thu đề tài

Hải Phòng, ngày 28 tháng 12 năm 2022

CHỦ TỊCH HỘI ĐỒNG
(Ký và ghi rõ họ tên)

PGS. TS. Trần Quang Phục

THƯ KÝ HỘI ĐỒNG
(Ký và ghi rõ họ tên)

CN. Đặng Thị Phương Thúy

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

BIÊN BẢN
NGHIỆM THU ĐỀ TÀI KHCN CẤP CƠ SỞ NĂM 2021

Tên đề tài: Bước đầu đánh giá tình trạng giảo nhiễm mỡ ở bệnh nhân mắc đái tháo đường type 2 tại Bệnh viện Đại học Y Hải Phòng

Chủ nhiệm đề tài: Nguyễn Thị Phương Mai

Đơn vị: Bộ môn Hóa sinh

Căn cứ Quyết định số: 1781/QĐ - YDHP ngày 10 tháng 12 năm 2021 của Hiệu trưởng trường Đại học Y Dược Hải Phòng về việc thành lập Hội đồng Khoa học nghiệm thu đề tài NCKH cấp cơ sở năm 2021, Hội đồng đã tiến hành họp để đánh giá, nghiệm thu đề tài vào hồi 14h30 ngày 17 tháng 12 năm 2021 tại trường Đại học Y Dược Hải Phòng.

Các thành viên Hội đồng có mặt:

1.	PGS.TS. Trần Quang Phục:	Chủ tịch Hội đồng
2.	PGS.TS. Dương Thị Hương	Thành viên
3.	PGS.TS. Phạm Văn Nhiên	Thành viên
4.	TS. Vũ Quang Hưng	Thành viên

Thư ký: ThS. Hoàng Thị Thuận

Các thành viên Hội đồng vắng mặt: 0

Các cán bộ tham gia thực hiện chính: Nguyễn Thị Phương Mai,

Nguyễn Thị Phương Thảo

NỘI DUNG NGHIỆM THU:

1. Đọc quyết định thành lập Hội đồng: ThS. Hoàng Thị Thuận
2. Chủ tịch hội đồng điều khiển buổi nghiệm thu.
3. Chủ nhiệm đề tài trình bày tóm tắt báo cáo tổng kết đề tài *(có bản cứng kèm theo)*.
4. Các phản biện đọc bản nhận xét *(có bản nhận xét kèm theo)*.
5. Các thành viên trong hội đồng và những người tham dự buổi nghiệm thu đã trao đổi về nội dung, phương pháp và kết quả nghiên cứu của đề tài; Hội đồng thống nhất một số ý kiến sau:

   - Đề tài có tính mới, phương pháp nghiên cứu rõ ràng, nội dung nghiên cứu phù hợp với mục tiêu
   - Kết quả nghiên cứu có ý nghĩa trên lâm sàng

6. Hội đồng đã bỏ phiếu đánh giá kết quả như sau:

Ban kiểm phiếu của Hội đồng gồm:

1. TS. Vũ Quang Hưng
2. ThS. Hoàng Thị Thuận

Tổng số phiếu phát ra : 4 phiếu

Tổng số phiếu thu vào : 4 phiếu

Số phiếu hợp lệ : 4 phiếu

Số phiếu không hợp lệ : 0 phiếu

Kết quả đánh giá:

Xuất sắc : 2 phiếu

Khá : 2 phiếu

Đạt : 0 phiếu

Không đạt : 0 phiếu

Kết quả đề tài đạt loại: **Xuất sắc**

7. Kết luận của Hội đồng: Nghiệm thu đề tài.

Hải Phòng, ngày 17 tháng 12 năm 2021

CHỦ TỊCH HỘI ĐỒNG

PGS.TS. Trần Quang Phục

THƯ KÝ HỘI ĐỒNG

ThS. Hoàng Thị Thuận

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

BIÊN BẢN
NGHIỆM THU ĐỀ TÀI KHCN CẤP CƠ SỞ NĂM 2020

Tên đề tài: *Hoá dịch nhu đơn gan, hoạt độ AST, ALT, GGT huyết thanh của một số bệnh nhân mắc nội hoạn lý tại Bệnh viện Đại học Y Hải Phòng năm 2020*

Chủ nhiệm đề tài: ThS. Nguyễn Thị Phương Mai

Đơn vị: BM. Hóa sinh

Căn cứ Quyết định số: 1723/QĐ - YDHP ngày 03 tháng 12 năm 2020 của Hiệu trưởng trường Đại học Y Dược Hải Phòng về việc thành lập Hội đồng Khoa học nghiệm thu đề tài NCKH cấp cơ sở năm 2020. Hội đồng đã tiến hành họp để đánh giá nghiệm thu đề tài vào hồi 15h00 ngày 20 tháng 12 năm 2020 tại trường Đại học Y Dược Hải Phòng.

Các thành viên Hội đồng có mặt:

1. GS.TS. Phạm Văn Thức	Trưởng Tiểu ban
2. PGS.TS. Nguyễn Ngọc Sáng	Ủy viên
3. PGS.TS. Phạm Văn Liệu	Ủy viên
4. PGS.TS. Vũ Văn Sâm	Ủy viên
5. PGS.TS. Trịnh Thị Lý	Ủy viên
6. TS. Phạm Văn Thương	Ủy viên

Thư ký: CN. *Nguyễn Thị Hoa*

Các thành viên Hội đồng vắng mặt: PGS.TS. Vũ Văn Tâm

Các cán bộ tham gia thực hiện chính: Nguyễn Thị Phương Thảo

NỘI DUNG NGHIỆM THU:

1. Đọc quyết định thành lập Hội đồng: CN. *Nguyễn Thị Hoa*
2. Chủ tịch hội đồng điều khiển buổi nghiệm thu.
3. Chủ nhiệm đề tài trình bày tóm tắt báo cáo tổng kết đề tài *(có bản sao tóm tắt kèm theo)*
4. Các phản biện đọc bản nhận xét *(có bản nhận xét kèm theo)*
5. Các thành viên trong hội đồng và những người tham dự buổi nghiệm thu đã trao đổi về nội dung, phương pháp và kết quả nghiên cứu của đề tài; Hội đồng thống nhất một số ý kiến sau:
   - Nhan đề đề tài phù hợp với nội dung nghiên cứu.
   - Đề tài có tính khả thi

6. Hội đồng đã bỏ phiếu đánh giá kết quả như sau:

Ban kiểm phiếu của Hội đồng gồm:

1. PGS.TS. Nguyễn Ngọc Sáng
2. CN. Nguyễn Thị Hoa

Tổng số phiếu phát ra : 06 phiếu

Tổng số phiếu thu vào : 06 phiếu

Số phiếu hợp lệ : 06 phiếu

Số phiếu không hợp lệ : 0 phiếu

Kết quả đánh giá:

Xuất sắc : 01 phiếu

Khá : 05 phiếu

Đạt : 0 phiếu

Không đạt : 0 phiếu

Kết quả đề tài đạt loại: **Khá**

7. Kết luận của Hội đồng: **Nghiệm thu đề tài**

Hải Phòng, ngày 28 tháng 12 năm 2020

CHỦ TỊCH HỘI ĐỒNG
(Ký và ghi rõ họ tên)

PGS.TS. Phạm Văn Thức

THƯ KÝ HỘI ĐỒNG
(Ký và ghi rõ họ tên)

CN. Nguyễn Thị Hoa

XÁC NHẬN CỦA
CƠ QUAN QUẢN LÝ ĐỀ TÀI

ĐỒNG THỨC
BẢN SAO ĐÚNG VỚI BẢN CHÍNH
01 -05- 2021
TRƯỞNG PHÒNG ĐÀO TẠO

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

PHÓ HIỆU TRƯỞNG

TS. Phạm Văn Thức

PHÓ CHỦ TỊCH

Bùi Thị Thanh Hải

LÝ LỊCH KHOA HỌC

1. Họ và tên:	NGUYỄN BÁO TRÂN
2. Năm sinh:	1974 **3. Giới tính:** Nam
4. Nơi sinh:	Bình Định
5. Nguyên Quán:	Tây Sơn, Bình Định
6. Địa chỉ liên hệ:	Điện thoại: NR..... Mobile..... Fax:..... Email: nbtran@hpmu.edu.vn
7. Học hàm, học vị:	Năm được công nhận TS: 2018 Nơi cấp bằng: Học viện Quân Y Năm được phong GS/PGS: ..... Nơi phong:.....
8. Cơ quan công tác:	Tên cơ quan: Trường Đại học Y Dược Hải Phòng Khoa/Phòng, Bộ môn, Trung tâm: Bộ môn Giải Phẫu Địa chỉ cơ quan: 72A Nguyễn Bỉnh Khiêm, Đằng Giang, Ngô Quyền Hải Phòng Điện thoại: ..... Fax: ..... Email: .....

9. Quá trình đào tạo

Bậc đào tạo	Nơi đào tạo	Chuyên ngành/Tên khóa luận, luận văn, luận án	Năm tốt nghiệp
Đại học	Đại học Y Hải Phòng	Bác sỹ đa khoa	2000
Thạc sĩ	Học viện Quân Y	Thạc sĩ y học	2006
Tiến sĩ	Học viện Quân Y	Tiến sĩ Khoa học Y Dược	2018
TSKH			

10. Các khoá đào tạo khác (nếu có)

Văn bằng	Tên khoá đào tạo	Nơi đào tạo	Thời gian đào tạo

11. Trình độ ngoại ngữ

Tên ngoại ngữ	Văn bằng/Chứng chỉ	Năm
Tiếng Anh	C	2000

12. Quá trình công tác *(trước khi về Trường và sau khi về Trường)*

Thời gian (Từ năm ... đến năm...)	Vị trí công tác	Cơ quan công tác	Địa chỉ cơ quan
2000 - 2009	Giảng viên	Bộ môn Giải phẫu Đại học Y Hải Phòng	TDA Nguyễn Bỉnh Khiêm, Hải Phòng
2009 – 2019	Phó Trưởng phụ trách Bộ môn	BM Giải phẫu, Đại học Y Dược Hải Phòng	TDA Nguyễn Bỉnh Khiêm, Hải Phòng
2019	Trưởng Bộ môn	BM Giải phẫu, Đại học Y Dược Hải Phòng	TDA Nguyễn Bỉnh Khiêm, Hải Phòng

13. Các công trình khoa học đã công bố

13.1. Bài báo khoa học:

- *Tên tác giả: tên của tác giả của bài báo*
- *Tác giả chính: là Tác giả thứ nhất (first author) hoặc Tác giả liên hệ (corresponding author)*
- *Danh mục: WoS/Scopus hoặc Tạp chí trong nước thuộc HĐGSNN tính điểm*

TT	Tên bài báo	Tên tác giả	Tác giả chính	Tạp chí	Ngày XB	Số, trang	Danh mục	ISSN (DOI)
1	Khảo sát đặc điểm lâm sàng, hình thái polyp qua nội soi của bệnh nhân polyp dạ dày tại Hải Phòng	Nguyễn Văn Tiến, Nguyễn Thị Phương Thảo	x	Y học Việt Nam	8/2023	236-239		1859-1868
2	Construct validity of the vietnamese version of medical burnout inventory-general survey	Nguyen Thi Thu Huong, Kamiya Kimiko, Khue Minh Pham, Ngoc Thi Minh Nguyen, Tran Bao Nguyen, Huong Thi Thu Pham, Cuong Hong Nguyen, Linh		Scientific Journal	9/2023			DOI: 0.191 84/sjl .v9i3. 2963

		Van Pham; Hai Thanh Pham						
8	Association Between Patient Satisfaction and the Willingness to Return for Rehabilitation—A Pilot Study	Nguyen Thi Thu Thao; Trieu Thanh Xuan; Nguyen Duc Tuan; Bui Thi Hoang; Nguyen Tuan Anh; Nguyen Quang Dao; Nguyen Thi Ngoc Thuy; Nguyen Thi Thanh Xuan; Nguyen Thi Hong Ngan; [...]Nguyen Thi Minh Ngoc;		The Open Public Health Journal	1/1/2021			13(1), 18-21, 74138, 74564, 10211, 40168, 13
9	Chromium, Cadmium, Lead, and Arsenic Concentrations in Water, Vegetables, and Seafood Consumed in a Coastal Area in Northern Vietnam	Nguyen Thi Minh Ngoc; Nguyen Van Chuyen; Nguyen Thi Thu Thao; Nguyen Quang Duc; Nguyen Thi Thu Trang; Nguyen Thi Thanh Xuan; Hoang Cao Ba; Nguyen Bao Tuan; Nguyen Van Ba; Nguyen Van Khai; Ha Anh Son; Pham Van Hai; Elizabeth F Wattenberg; Hiroyuki Hakamata;		Environmental Health Insights	1/1/2020			DOI: 10.11777/1630230241 0

		Phan Văn Thoa #						
6	Đặc điểm lâm sàng và kinh nghiệm xử trí polyp đại trực tràng u tuyến và tăng sản	Nguyễn Bảo Trân, Nguyễn Thị Phương Thảo	x	Việt Nam Y học	8/2019	214-218		1859-1868
7	Đặc điểm của mức nhạy vị thể rung ở người	Nguyễn Bảo Trân, Đỗ Minh Trung, Nguyễn Duy Bắc, Nguyễn Việt Trung, Trần Hải Anh, Phạm Văn Trần, Trần Ngọc Anh	x	Y dược học Quân sự	9/2017	115-120		1859-0748
	Xác định đặc điểm sinh lực rung ở người	Nguyễn Bảo Trân, Đỗ Minh Trung, Nguyễn Duy Bắc, Nguyễn Việt Trung, Trần Hải Anh, Phạm Văn Trần, Trần Ngọc Anh	x	Y học Việt Nam	11/2014	208-214		1859-1868

11.2. Sách chuyên khảo, giáo trình – tài liệu dạy học:

- *Tên tài liệu: Sách/ Chương sách*
- *Loại hình: Chuyên khảo/ Tham khảo/ Giáo trình/ Tài liệu hướng dẫn*

TT	Tên tài liệu	Tên tác giả	Chỉ tiêu/Đề tài chủ trì	Nhà xuất bản	Năm xuất bản	Loại hình	ISBN

1							

14. Báo cáo Hội nghị - Hội thảo khoa học

Kỹ yếu: Tóm tắt/ Toàn văn

TT	Tên báo cáo	Tên tác giả	Tác giả chính	Tên hội nghị	Thời gian báo cáo (Tháng/năm)	Kỷ yếu	ISBN
			x				

15. Bằng sở hữu trí tuệ đã được cấp

Liệt kê các văn bằng bảo hộ: độc quyền sáng chế, giải pháp hữu ích, kiểu dáng công nghiệp, thiết kế bố trí, giống cây trồng...

TT	Tên và nội dung văn bằng	Số, Mã, Ký hiệu	Nơi cấp	Năm cấp
1				

16. Công trình KH&CN được ứng dụng, chuyển giao

TT	Tên công trình	Hình thức	Quy mô	Địa chỉ áp dụng	Giá trị	Thời gian
1						
...						

17. Nhiệm vụ KH&CN các cấp

- *Loại hình: Đề tài/ Dự án/ Đề án*
- *Tình trạng nhiệm vụ: Đã nghiệm thu/ Chưa nghiệm thu/ Đang thực hiện*

17.1. Nhiệm vụ KH&CN đã và đang chủ trì

Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình (nếu có)	Tình trạng nhiệm vụ	Ngày			Kinh phí
					Phê duyệt	Đăng ký/ kết quả (nếu có)	Công nhận kết quả	
Điều tiết bệnh đạo ôn và một số yếu tố ngoại sinh bệnh đạo tại khu vực Tây Nguyên	KC.10.41/16-20	Đề tài nhánh cấp Nhà nước	Bộ Khoa học Công nghệ	Đã nghiệm thu			02/12/2020	
Nghiên cứu ảnh hưởng của cây tác nhân hoá	KC.10.06/16-20	Đề tài nhánh cấp Nhà nước	Bộ Khoa học Công nghệ	Đã nghiệm thu			06/12/2018	

Bức xã sinh học kỹ sản Khoá công đồng khu chế biến thuỷ sản vực biển miền Bắc								
Nghiên cứu thiết kế và chế tạo thiết bị IoT và xây dựng phần mềm ứng dụng thu nhận thông tin nhịp tim và huyết áp của người bệnh tim mạch tại Hải Phòng	ĐT.YD.2021.018	Đề tài cấp Thành phố	UBND TP Hải Phòng	Đang thực hiện	5/11/2021			1,8 tỷ đồng

12.2. Nhiệm vụ KH&CN đã và đang thực hiện

Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình (nếu có)	Tình trạng nhiệm vụ	Ngày			Kinh phí
					Nghiệm thu	Công nhận kết quả	Đăng ký/ kết quả	

13. Giải thưởng về KH&CN trong và ngoài nước

TT	Tên giải thưởng	Hình thức khen thưởng	Cấp khen thưởng	Năm tặng thưởng
1	Giải thưởng Nguyễn Bỉnh Khiêm về Khoa học và công nghệ năm 2021		UBND TP Hải Phòng	2021

2				
...				

18. Hướng dẫn sau đại học:

- *Đối với hướng dẫn: hướng dẫn 1/ hướng dẫn 2*
- *Bậc đào tạo: Tiến sĩ/Thạc sĩ/BSNT/Bác sĩ CKII/...*

TT	Họ tên học viên	Vai trò	Bậc đào tạo	Chuyên ngành	Nơi đào tạo	Năm cấp bằng
	Nguyễn Thị Phương Thảo	Hướng dẫn 2	Bác sĩ CKII	Nội khoa	Đại học Y Dược Hải Phòng	2023

NHỮNG THÔNG TIN KHÁC VỀ CÁC HOẠT ĐỘNG KHOA HỌC VÀ CÔNG NGHỆ

(Tham gia các tổ chức hiệp hội ngành nghề, thành viên Ban biên tập của Tạp chí khoa học trong và ngoài nước; Thành viên các hội đồng quốc gia, quốc tế; ...)

Ủy viên Ban chấp hành Hội Hình thái học Việt Nam

_____, ngày ... tháng ... năm .....

XÁC NHẬN CỦA ĐƠN VỊ

HIỆU TRƯỞNG

PGS.TS. Trần Thị Thanh Hương

NGƯỜI KHAI

(Họ tên và chữ ký)

Nguyễn Bảo Tuấn

SOCIALIST REPUBLIC OF VIETNAM

THE MILITARY MEDICAL UNIVERSITY

confers

THE DEGREE OF DOCTOR OF PHILOSOPHY

IN MEDICINE

Upon: Mr. Nguyen Bao Tuan

Born on: January 6, 1974 in Ninh Binh

Graduated from the Institute of the Military Medical University

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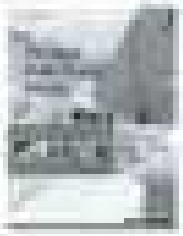

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RESEARCH ARTICLE

Association between Patient Satisfaction and the Willingness to Return for Rehabilitation- A Pilot Study

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Abstract:

Background:

Patient satisfaction has started an important role in the development of health systems. However, the information on patient satisfaction and the reviewing of the patients' rehabilitation is limited. This study aims to explore the role of different domains in patient satisfaction with the willingness to return for further examinations.

Methods:

The cross-sectional study was conducted among 281 [illegible] patients who were treated at different departments and received a rehabilitation with rehabilitation at Cantho hospital, Haiphong city. The Patient Satisfaction Index (PSI)-Questionnaire was applied to record the average score of satisfaction. Multivariate logistic regression was used to determine the association between each domain of the PSI and the return for rehabilitation treatment.

Results:

Among the PSI scale, the strongest correlation was observed between the attitude of medical staff and the equipment and infrastructure of the hospital (r=0.837). The factor regression model indicated that patient satisfaction was associated significantly with the willingness to return for further rehabilitation (OR=10.442). There were significant associations between the accessibility, equipment and infrastructure, quality of care and treatment, and cost of treatment with the reviewing for treatment of the patients.

Conclusion:

The patient satisfaction regarding both client domains should be considered in more detail in order to enhance the rehabilitation treatment of patients after discharging from the hospital.

Keywords: Patient satisfaction, Willingness to return, Accessibility, Quality of care, Infrastructure, Treatment cost, Rehabilitation.

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1. INTRODUCTION

Despite being used commonly, the concept of patient satisfaction seems not to have a rigorous theoretical definition [1]. Patient satisfaction is known as a combination of a cognitive evaluation and an emotional reaction to healthcare providers [2], which partly expresses the patient's perception of treatment effectiveness [3]. The assessment of patient satisfaction is also important information for evaluating and developing services quality in the healthcare system. According to the World Health Organization (WHO), patient's satisfaction evaluation can also address the reliability, responsiveness and security of services as well as the courtesy of providers. The WHO also stated that specific factors should be considered as the dimension of patient's satisfaction, including the accessibility of services, the hospital and cost of treatment, staff

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communication, information resources, and time spent with a counselor [8]. Moreover, the infrastructure of the hospital was found to be correlating with patient satisfaction [7, 8]. Previous studies indicated that a decrease in the satisfaction of patients may lead them to change their health services providers [7]. Besides that, patient's satisfaction has been proven to affect healthcare utilization, the patient's appreciation of providers to others [8], and the willingness to return to the hospital for future requirements [9].

There has been an increase in studies on the assessment of patient satisfaction. The Ministry of Health of Vietnam has created a Patient Satisfaction Index (PSI) Questionnaire, which is permitted to conduct facilities for self-assessment and quality improvement [10]. So far, some studies have been conducted widely among patients who had been treated within the main department of hospital to demonstrate the interaction between the patients and health workers and health services at the time of treatment [11 - 13]. There are no studies that describe the relationship between the patient's satisfaction and the willingness to return for further receiving and treatment of medical. Patients with different diseases who have a combination of treatment with rehabilitation are special subjects who need the same care and support as patients who are only officially treated at a rehabilitation department. However, no studies have been conducted to evaluate the effect of patient's satisfaction on the willingness to go back to the rehabilitation department for future services. Our study was conducted among this special population to evaluate the association between satisfaction and the willingness to return for the future rehabilitation.

2. MATERIALS AND METHODS

2.1. Study Population

A cross-sectional study was conducted at the Rehabilitation Department of Vinmec Hospital, the largest hospital in Haiphong city, from 1st December 2019 to 30th April 2020. All of the inpatients who received rehabilitation treatment services while living officially admitted to departments other than rehabilitation, including the Internals and Surgery, were invited to participate in the study. The eligibility criteria included 1) being an inpatient at the time of collecting data; 2) using services at the Rehabilitation Department for at least 1 week; 3) the ability to respond to the questions of the interviewers, and 4) need for rehabilitation after discharge from the hospital (according to the doctor's opinion).

2.2. Procedure

We approached a total of 161 patients who met the selection criteria, and none of them refused to participate in the study (response rate 100%). To limit any chance which can reduce the reliability of patients' answers due to the time of interview [14], we made an appointment for each participant to have an interview at their last days of using service at the Rehabilitation Department. On the days of appointments, after patients finished their treatment at Rehabilitation Department, we invited them to the private room for interviews. These interviews were done by persons who did not involve in any activity related to the Rehabilitation Department as well as medical providers to avoid the psychological phenomena' bias [15]. Finally, nine returning (four (4) patients were analyzed.

2.3. Patient's Satisfaction Assessment

The Patient Satisfaction Index Scale (PSI scale), which was proposed and approved by the Ministry of Health of Vietnam, was utilized in this study [10]. It was modified to apply to patients for determining their satisfaction with healthcare services for their rehabilitation experience in the hospital. The PSI scale contains a total of eleven questions under the following six domains of satisfaction: Accessibility, Information transparency, Equipment and infrastructure, Attitude of medical staff, Quality of care and treatment, and Cost of treatment. This scale prompted patients to rate their experiences using the 5-point Likert scale (completely dissatisfied =1, dissatisfied =2, neutral =3, satisfied =4, and completely satisfied =5). The score will be assessed for each domain and where the scale in which the higher score indicates the higher satisfaction of the patients. Cronbach's α for the total questionnaire and each domain of the scale was more than 0.71 to 0.8.

2.4. Outcome

The main outcome was the patients' intention of returning to receive further rehabilitation services after discharge from the hospital. This was evaluated with the question 'Are you willing to return to the rehabilitation department to continue your rehabilitation treatment after you are discharged from the hospital?' Patients who answered "Yes" were classified as the willingness to return patients and patients who gave the answer "No" or "Not sure" were classified as the unwillingness to return patients.

2.5. Other Variables

Other information collected on the participants comprised age, gender, living location, occupation, living location, type of rehabilitation therapy, and the department where they received treatment, including Orthopedics, Neurology, Surgery, Geriatrics, and others.

2.6. Statistical Analysis

Data was examined for the normal distribution before choosing the appropriate test. Mann-Whitney U test was applied to compare the different average scores of PSI scale and six domains between the willingness to the return patient group and the unwillingness to the return patient group. Confounding variables were age, sex, occupation, living location, faculty treatment, having health insurance, and type of rehabilitation therapy. The OR(s), Ratio (OR) and 95% Confidence Intervals (CIs) of each domain of the PSI scale were calculated using multivariate linear regression models with adjustments for potential confounding factors in order to assess the association between PSI domains and the willingness to return for further rehabilitation treatment. Analyses were performed using R software. The significance of differences was set at $p < 0.05$ for all analyses.

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Table 3. The difference between PSS domains' scores between the willingness to return patient group and unwillingness to return patient group.

	Unwillingness to Return Patient Group (n= 19) Mean (SD)	Willingness to Return patient Group (n = 114) Mean (SD)	p
Accessibility	3.83 (0.45)	4.47 (0.58)	0.000
Information transparency	4.16 (0.28)	4.28 (0.38)	0.000
Equipment and infrastructure	3.82 (0.47)	4.18 (0.47)	0.000
Attitude of medical staff	3.88 (0.34)	4.01 (0.52)	0.001
Quality of care and treatment	3.83 (0.72)	4.13 (0.57)	0.000
Cost of treatment	3.42 (0.57)	3.76 (0.73)	0.000
Total PSS	3.89 (0.333)	4.21 (0.43)	0.000

Table 4. Odds ratio (95% CI) for the willingness to return for further rehabilitation according to the domains of patient satisfaction index.

Domains	aOR (95% CI)*	p
Accessibility	3.044 (1.056, 11.241)	0.002
Information transparency	1.216 (0.191, 1.033)	0.035
Equipment and infrastructure	4.980 (1.908, 13.329)	0.000
Attitude of medical staff	1.197 (0.381, 1.946)	0.000
Quality of care and treatment	3.999 (1.855, 16.619)	0.000
Cost of treatment	2.865 (1.342, 9.705)	0.000
Total PSS	29.660 (6.668, 821.270)	0.000

*Adjusted for age, gender, residency, living district, educational background, marriage status, employment, administrative division

The study results in Table 3 showed that the group of patients who were not willing to return for further rehabilitation treatment had a lower mean score of satisfaction (3.89 ± 0.333) than the group of return patients (4.21 ± 0.21). However, the difference was not statistically significant. No significantly lower scores in 2 out of 6 domains were observed in the non-return patients group except for the domain of information transparency.

Results of logistic regression models demonstrated that patient satisfaction was associated significantly with the need for ongoing for further rehabilitation of patients with OR (95%CI) of 29.442 (4.149-851.277). Among the domains the odds ratio of ongoing for rehabilitation related to the accessibility, equipment and infrastructure, quality of care and treatment, and cost of treatment domains were 4.895 (1.999-37.243), 4.986 (1.555- 15.079), 9.545 (1.851- 16.403) and 2.867 (1.068- 5.765), respectively. The information on transparency and the attitude of medical staff was not significantly associated with the return of patients (Table 4).

4. DISCUSSION

Our research suggests a significant association between the willingness to return for future rehabilitation and patient's satisfaction, especially with four domains including accessibility, infrastructure, the mode of treatment, and cost of treatment. To the best of our knowledge, this is the first study in Vietnam to demonstrate the influence of patient's satisfaction and the willingness to return for further rehabilitation treatment.

Patient's satisfaction is a very important index to evaluate services and improve the quality of the health system, including facilities and personnel. Consistent with the previous finding among patients undergoing total hip replacement [9], this study revealed a strong positive association between PSS score and the willingness to return for further treatment of patients. Although measuring patient's satisfaction, these results were not representative of the same construct of satisfaction.

This study indicated that people who were satisfied with accessibility were more likely to return to rehabilitation. A study of Japanese's satisfaction with medical services quality at Dack Mai Hospital, a Boston Vietnamese hospital, showed that more than 90% of patients were satisfied with the ability to access information at the hospital [17]. Moreover, it was found that overall satisfaction scores as well as domains related to care accessibility and hospital facilities [11]. In addition, the difficulty of accessibility to different facilities could hinder the satisfaction of patients [18]. However, these studies did not show whether accessibility is related to a patient's ability to return for treatment. The results of this study suggested that the easier it was to access the facilities, the more likely it that patients are willing to return for rehabilitation.

On the other hand, the results also showed that the satisfaction with equipment and infrastructure was positively associated with the willingness of the patients to return. The previous study suggested that the development of the hospital, such as beautiful hospital decorating, modern examination facilities, and the design of reasonable examination areas would lead to higher patient satisfaction [19]. In addition, the satisfaction with the pre-procedural waiting area in the hospital was associated with the willingness to return for repeat medical services [20]. It has been proposed that because patients cannot

reliably differentiate positive experiences with the physical environment from positive experiences with respect to improved patient-centered hospital environment with features such as reducing the noise, increasing natural light, visitor-friendly facilities, well-decorated rooms, and hotel-like amenities would lead to higher satisfaction of patients [39]. The need for improving and upgrading the physical environment of the hospitals thus should not be overlooked.

This study clearly showed that the quality of care and treatment and the cost of treatment were significantly associated with the willingness to return for rehabilitation. Our finding was in line with the previous results, which suggested the association between patients' willingness to return for future treatment and treatment outcomes [21, 22]. Furthermore, patients who were considered to be suffering no complications after being discharged are more likely to return to the hospital for further treatment [24]. The results of treatment may reflect partly the professional qualification of the doctors and the quality of care of the nurses in this hospital, as highly qualified manpower is one of the decisive factors in the ranking of the hospital as well as patient satisfaction. Rehabilitation therapy requires long-term and continuous treatment as well as much time of contact between patients and medical staff; therefore, patient supervision is essential. This is related to the concern and encouragement of the medical staff at the hospital. Research on both expressive and signature suggested that the "health workers' attitude" and "care and treatment" contributed to the highest satisfaction scores [25]. Another previous study also demonstrated that a patient's positive experience with health workers during their stay in the hospital was strongly correlated with the patient's assessment of the quality of medical care [21 - 25]. Beyond medical expertise, an adequate time that the physician spent for maintaining continuity of care and satisfaction for each patient was vital [7]. In addition, the literature on this topic emphasized the importance of professionalism and dedication to the profession of doctors and nurses on the perception of patients on care quality [17, 18]. This suggested that, in order to enhance the patient's satisfaction level, it is necessary to improve the factors related to the expertise and communication skills of medical staff [26]. Treatment cost is one of the factors that many people considered when choosing a hospital for treatment. Our finding was different from the suggestion of no relationship between patient satisfaction and out-of-pocket payment of rehabilitation services in China [27, 28]. Another retrospective study using data collected from a large hospital also did not result in a significant correlation between patient satisfaction and cost [29]. Nevertheless, a study conducted among Taiwanese showed that more participants indicated satisfaction with treatment in the group paying less [30]. The evidence of an influence of paying on the willingness to return for treatment, especially among patients with poor health and lower socioeconomic status, was demonstrated [31]. A cost study predicting factors affecting willingness to return for the treatment showed the correlation between the explanation of billing procedure and the willingness to recommend/return to the hospital [11]. Although the majority of patients in our study viewed that health insurance, most of them are elderly and retired. This may explain the role of the cost of treatment among possibly factors influencing the ability to return for treatment.

Meanwhile, waiting duration, transparency of information did not show a significant statistical difference in the willingness to return for rehabilitation. One of the reasons to explain this finding was the ease of access to the information via the internet, media, and telephones, instead of previous times when the patient could only get information from hospital staff. The behavioral attitude of medical staff was also not a factor affecting the patient's decision to return in our study. Previous studies have also shown that the elderly tend to be satisfied more easily than younger people [31, 32]. Research in Canada about healthcare satisfaction in older and younger patients with cancer revealed that older patients with cancer had higher levels of satisfaction with care, in part due to a lower theoretical number of care, and satisfaction with care did not change over time post-treatment in multivariable analysis [33]. The population in our study was mainly elderly, which could provide a possible explanation for the findings.

5. LIMITATIONS

This initial cross-sectional study does not permit the assessment of causality owing to the uncertain temporality of the association. Because this study focused on a targeted patient group in one hospital with small sample size, it may affect the results of statistical analyses and the generalizability of the results. Moreover, the PSS scales have been modified due to limited evidence of reliability and validity. In addition, this study did not follow up with patients or stakeholders after return. Therefore, this study cannot eliminate the bias in the answers of the patients. Further follow-up studies with larger numbers of participants should be considered to provide clearer findings.

CONCLUSION

The willingness to return for further rehabilitation treatment was associated with patient satisfaction, especially with the accessibility, equipment and infrastructure, quality of care and treatment, and cost of treatment. The patient satisfaction regarding both these domains should be considered in more detail in order to enhance the rehabilitation treatment of patients after discharging them from the hospital.

AUTHORS' CONTRIBUTIONS

Conceptualization: Nguyen T.T.T; Nguyen H.T; Nguyen T.A; Nguyen T.M.N; Data curation: Trinh T.S; Nguyen T.A; Nguyen Q.D; Formal analysis: Nguyen T.T.T; Investigation: Bui T.N; Nguyen T.A; Nguyen Q.D; Nguyen T.T.T; Nguyen T.T.T; Nguyen D.N.H; Nguyen T.B; Methodology: Nguyen T.T.T; Nguyen D.T; Nguyen V.A; Supervision: Nguyen T.M.N; Writing – original draft: Nguyen T.T.T; Trinh T.S; Writing – review & editing: Nguyen T.M.N: All authors read and approved the final manuscript.

LIST OF ABBREVIATIONS

PSS	=	Patient Satisfaction Scales
RR	=	Rehabilitation

OR = Odd Ratio

CI = Confidence interval

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The procedure for this study was approved by the ethics committee of Bahir Dar University College of Medicine and Pharmacy (Code: [illegible]).

HUMAN AND ANIMAL RIGHTS

No animals were used in this research. All human research procedures followed were in accordance with the ethical standards of the committee responsible for human experimentation (institutional and national), and with the Helsinki Declaration of 1975, as revised in 2013.

CONSENT FOR PUBLICATION

All participants were given an explanation of the aims and objectives of the study before oral consent was conducted.

STANDARD OF REPORTING

STROBE guidelines and methodology were followed.

FUNDING

None.

AVAILABILITY OF DATA AND MATERIALS

The data supporting the findings of the article is available in the Zenodo Repository at [illegible].

CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

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REFERENCES

1. [illegible]
2. [illegible]
3. [illegible]
4. World Health Organization. Workbook 4 (Base satisfaction questionnaire) 2000.
5. [illegible]
6. [illegible]
7. [illegible]
8. [illegible]
9. [illegible]
10. [illegible]
11. [illegible]
12. [illegible]
13. [illegible]
14. [illegible]
15. [illegible]
16. [illegible]
17. [illegible]
18. [illegible]
19. [illegible]
20. [illegible]

[11] Kinsella S.M., Bowen R.M., Bell C., Maynard L., Rafferty A.M., Griffiths P. Patient satisfaction with hospital care and nurses in England: an observational study. BMJ Open. 2015; 5: [e007256].
[DOI: 10.1136/bmjopen-2015-007256] [PMID: 26377503]

[12] Anderson E., Maltby A., Goldman S. "Mind reading" report. A cross-sectional survey of how well clinicians understand patient satisfaction. J Adv Pract Oncol. 2017; 8(3): 255–61.
[PMID: 28845318]

[13] Chen W., Hicks W.E., Hicks W.E., Fanning K., Kong J., Tao Q. Interaction, work, job stress, and patient satisfaction of rehabilitation services in Shandong. J Heal. Health Policy Adm. 2015; 37(1): 3–14.
[https://doi.org/10.1016/j.ajhpa.2008.09.001] [PMID: 25918833]

[14] Costantini E., Hu C.C., Nelson R., et al. Cost of care for outpatient visits in children's eyebrow ophthalmology. Arch Ophthalmol. 1999; 117(11): 1504–12.
[https://doi.org/10.1177/1078390311421690] [PMID: 22241974]

[15] Hendel S., Tabibzadeh S., Hicks W., et al. Treatment satisfaction, willingness to use, and quality of life in Japanese patients with psoriasis. J Dermatol. 2011; 43(2): [e2].
[DOI: 10.1016/j.jaad.2010.04.014] [PMID: 21094559]

[16] Andrew N.E., Kilpatrick M.G., Kalb S.M. What matters to the patients' voice? A cross-sectional descriptive study. Int J Nurs Stud. 2014; 51(2): 306–14.
[https://doi.org/10.1136/bmjopen-2014-006007] [PMID: 25007814]

[17] Barrington T.E., Thomas H.M., Chu E., Thompson M.J. Understanding patient willingness to recommend and return: a strategy for prioritizing improvement opportunities. N Engl J Med. 1999; 353(4): 1–7.
[https://doi.org/10.1016/S0735-1097(02)02444-8] [PMID: 12031347]

[18] Hartman C., Hendel S.C., Eisen M.B., et al. Healthcare satisfaction in older and younger patients with asthma. J Allergy Clin Immunol Pract. 2016; 1(1): 1–6.
[https://doi.org/10.1016/j.jaip.2015.10.001] [PMID: 28716394]

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CONSTRUCT VALIDITY OF THE VIETNAMESE VERSION OF MASLACH BURNOUT INVENTORY-GENERAL SURVEY

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Keywords:
burnout;
nurse;
validity;
Vietnam

ABSTRACT

Burnout is a state of emotional, physical, and mental exhaustion caused by excessive and prolonged stress. The purpose of this study is to validate the Vietnamese version of Maslach Burnout Inventory-General Survey (MBI-GS) for burnout measuring in Vietnam. Methods using cross-sectional study, factorial validity of MBI-GS was tested by exploratory factor analysis then continued by confirmatory factor analysis. Pearson's correlation is used to check criterion-related validity. The model of three factors structure without item 8 and 9 was suggested as the best fit model with chi-square (X) = 285.13; P <0.001), root mean square error of approximation (RMSEA = 0.07), comparative fit index (CFI = 0.92), goodness of fit index (GFI = 0.91). The construct validity of Vietnamese version of Maslach Burnout Inventory-General Survey is acceptable for use in future investigation regarding burnout.

BACKGROUND

Globally, numbers of job stress measures have been available such as General Health Questions (GHQ; Goldberg, 1978) which used to detect psychological issue such as depression or anxiety. Another scale namely Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) developed by Radloff in USA is designed to measure current depression in general population. This scale is helpful for epidemiologic studies accompanied by depression. The Zung Self-Rating Depression Scale was designed by William W.K Zung to assess depression disorder. The Zung Self-Rating Depression Scale is a short self-administered survey to quantify the depressed status of a patient (Zung, 1965).

The concept of burnout materialized in 1970s (Schaufeli et al., 2009) was defined as a multidimensional syndrome that is experienced in response to chronic job stressor. The Maslach Burnout Inventory (MBI) (Maslach, 1996) is considered to be the primary burnout measure that most widely used. There are three version of MBI which is known as MBI(human Service Survey (MBI-HSS), a second version of the MBI was adapted to people working in educational setting (MBI-Education Survey or MBI-ES) and the third, general version of the MBI was developed offered the increasing interest in burnout within occupations (Kitaoka et al., 2006). MBI-GS is mostly used in general object such as medical staff, teachers or workers (Maslach, 1996) therefore, our research are more interested in this scale.

For the particular case of MBI-GS, the three-factor structure including exhaustion, cynicism and professional efficacy of the MBI-GS was validated through multinational samples in Sweden (Schutte, Toppinen, Kalimo, & Schaufeli, 2000), in Japan (Kitaoka et al., 2004) in Romania (Maria et al., 2014) in Iran (Zeiber et al., 2018). Although the confirmation of three-factor structure for MBI-GS

were popular in burnout research but there has been raised some argument in term of number of factors. In the history of burnout, instead of combining three dimensions of burnout into a single one, an approach has introduced to reduce burnout to just one dimension namely exhaustion. The concept of exhaustion refers to feeling of overextended emotion and physical resources. Thus, people who suffer from experience of burn[2]. *VietnamLaw Journal* Vol. 6 No. 1 Mar 2021: 31-31

out, they seemed to gain experience exhaustion (Pick & Leiter, 1991). Other disagreement of two factors reported that, inefficacy in some dimension can be a function of either exhaustion or cynicism. The feeling of exhaustion or cynicism would produce lack of professional efficacy. It is difficult to gain accomplishment if people experienced feeling of exhaustion so that combination of two is suggested (Lee & Ashforth, 1996). Due to the lack of agreement on factor structure, it recommended that the development of MBI-GS is still necessary. Another reason for conducting research on MBI-GS measure is that though validation of Vietnamese version of MBI-GS was introduced but it only utilized exploratory factor analysis which is insufficient to get deeper and clearer understanding involving measurement's validity (Nguyen et al., 2018). In order to make further progress on burnout research in Vietnam, the confirmatory factor analysis is applied in this study. Therefore, the aim of this research is to offer contribution on multi-dimensional burnout construct by implementing of reliability, factorial and criterion-related validities.

METHODS

A cross-sectional study was used to carry out the survey. Participants were clinical nurses working in different departments at three public hospitals in Hai Phong, Vietnam: one general hospital and two specialty hospitals (a children's hospital and an obstetric hospital). There were 480 clinical nurses in total of these hospital, about 300 self-administered questionnaires were delivered to clinical nurses at three hospitals using random sampling. Due to the number of nurses at each hospital, 200 questionnaires were sent to the general hospital, 50 to the children's hospital, and 150 to the obstetrics hospital. Overall, 440 questionnaires were returned (general hospital, N = 214; children's hospital, N = 8; obstetrics hospital, N = 128) with a response rate of 88.8% (general hospital, 90.8%; children's hospital, 88.8%; obstetrics hospital, 86.0%). However, among 440 responses, there were 13 invalid responses with the same answer given for the entire scale or where there was missing data for some questions. Therefore, we obtained a final sample size of 430 nurses (general hospital, N = 210; children's hospital, N = 78; obstetrics hospital, N = 122) for statistical analysis.

We administered three sets of questionnaires: 1) a demographic questionnaire; 2) an MBI-GS questionnaire (Maslach, Jackson & Leiter, 1996); and 3) an Areas of Worklife Scale (AWS) questionnaire (Leiter & Maslach, 2011) which already validated and translated in Vietnamese version (Nguyen, Klinkka, Sokkpan, & Thai, 2018).

The demographic questionnaire related to sex, age, marital status, children, age of children, years of nursing work, work place, nursing position, on-duty work schedule and education level. The MBI-GS consists of three scales totaling 16 items: exhaustion is defined through five items which presents like "I feel emotionally drained from my work", cynicism also concludes five items, one of them is "I have become less interested in my work since I started this job", and professional efficacy with six items that represented as "I can effectively solve the problems that arise in my work". Each item is scored using a 7-point Likert scale (never, a few times a year, once a month, a few times a month, once a week, a few times a week, and daily) ranging from 0 to 6. The translation process entailed two phases: 1) forward translation, involving translation of the MBI-GS from English to Vietnamese by a bilingual researcher; and 2) back-translation, involving two independent bilingual translators, both of whom majored in English teaching and translation. Afterward, two researchers carefully compared the back translation to the original English version item by item to maintain conceptual equivalence. The 28-item AWS questionnaire consists of six key domains: workload (5 items), control (5), rewards (4), community (5), fairness (5), and value (4). Each scale contains both a positive word item (e.g., "I have enough time to do what's important in my job" [workload]) and a negative word item (e.g., "I do not get recognized for my

contributions at work" (reverse). Subjects indicated their degree of agreement with these statements using a 5-point Likert scale ranging from 1 (strongly disagree) to 3 (hard to decide) to 5 (strongly agree). Scoring for the negative word item is reversed.

To indicate internal consistency of the MBI-GS and AWS subscales, we used Cronbach's alpha. The construct validity of each model of MBI-GS was first tested by exploratory factor analysis. In term of factor analysis, we used principal component analysis for extraction method and Promax with Kaiser Normalization for rotation method. The next, confirmatory factor analysis was conducted to perform construct validity. We used indicators for fit model like root mean square error of approximation (RMSEA), comparative fit index (CFI), goodness of fit index (GFI), normed fit index (NFI) and Akaike's information criterion (AIC) to perform result. Then, Pearson's correlation is applied to check criterion-related validity among dimension of burnout and work-life area.

RESULTS

Characteristics of Participants

Shows participants' characteristics. Many more nurses were female (88.1%) than male (11.9%). Average age of participants was 31.64 years (SD = 6.72). Most nurses were already married (78.8%) with children under 11 years of age (75.3%). As for job factors, average years of nursing work was 8.6 years (SD = 6.48), working year group from 1 to 5 years had the highest percentage of 41.9 %. Conversely, group over 15 years of working was 13.8%. The most common on-duty work schedule was two days per week (81.5%), and the majority of nurses had a two-year nursing diploma (61.3%).

Factorial Validity

Shows factor loading of the Vietnamese MBI-GS. Initially, four factors with an eigen value over one were presented. However, in the original MBI-GS version, exploratory factor analysis showed three factors. Therefore, we selected three factors for rotation. After rotation, factor 1 was identified as exhaustion, factor 2 as professional efficacy, and as exhaustion, factor 3 as professional efficacy, and factor 3 as cynicism. Loading of all items indicated a sufficient value greater than 0.4. In the original version, item 8 and 9 are located in cynicism, but according to factor loading in this study, these two items moved to exhaustion subscale. Therefore, based on these results, we continued to carry out confirmatory.

The confirmatory analysis pointed out the fit indices of hypothesis models. The result of model fit (model of three factors structure without item 8 and 9) was recommend as the best fit model with chi-square (X2 = 385.13, P <0.001), root mean square error of approximation (RMSEA = 0.07), comparative fit index (CFI = 0.92), goodness of fit index (GFI = 0.91), normed fit index (NFI = 0.90) and Akaike's information criterion (AIC = 349.13). These results meet criteria for model fit (Hayes, Stanland, Cronin, & Dullard, 1993). Figure 1 is final model. In of factorial measure for the MBI-GS and covariance are significant at p <0.001.

Internal Consistency and Criterion-Related Validity

The Cronbach's alpha of exhaustion, professional efficacy, and cynicism reached values of 0.80, 0.88, and 0.77, respectively. The Vietnamese version of AWS already validated in previous study. Regarding AWS subscales, value of alpha is 0.74 for workload, 0.62 for control, 0.68 for community, and 0.77 for fairness. Alpha of research and value dimension are 0.71 and 0.81 respectively.

Indicated relation between burnout and area of work life, the correlation was dramatically significant with p <0.01 that supported evidence of criterion-related validity.

DISCUSSION

The aim of this study is to investigate the factorial validity of MBI-GS among clinical nurses in Vietnam which is the first confirmatory validation of the MBI-GS performed on Vietnamese sample. In general, the study meets the factorial and criterion-related validity as well as its internal consistency. Before conducting the confirmatory factor analysis, we present exploratory factor analysis. The construct validity evaluation supported a three-factor structure. However, our analysis suggested that items 8,9 of the scale should be moved to the exhaustion rather than cynicism subscale in comparison with original scale. Then, confirmatory factor analysis results suggested that the three factors model excluding item 8 and 9 was supposed to be the most appropriate model as it satisfies the criteria of model fit. At last the model without item 8 and 9 is selected. This model suggested improvement of modification indices

after deleting two items that improved fit model indicated by RMSEA.

Our results are congruent with the Malaysian version when their findings also stated that item 8 and 9 should locate in the exhaustion instead of cynicism dimension (Chen et al., 2014). The item 8 and 9 respectively refer to "I have become less interested in my work since I started this job" and "I have become less enthusiast to about my work". This may link to the feeling of exhaustion as Vietnamese nurses most stated in their responses. This matter mainly suggested the result of differences in cultural knowledge and experience (Chen et al., 2014). Besides, factorial validity of Romanian version supported theoretical structure of MBI-GS without item 13 of the cynicism scale as it cross-loaded both on exhaustion and professional efficacy scale. Other study performed that, the item 13 an indicator of the cynicism dimension suggested reconsideration due to its factor loading, after removing this item the three factorial structure indicated a significant improved fit (Jose, Salanova, Alicia, & Irene, 2016). However, both of Japanese and Chinese versions (Kitaoka et al., 2004; Wu et al., 2007) have supported the original version with retaining of 16 items.

In term of criterion-related validity, the results stated the three factors of job burnout were correlated with six dimensions of area of work life. Workload had positive correlation with exhaustion and cynicism but positive correlation with professional efficacy. There were numerous studies using different measurement scales to examine the relation between burnout and work life like work engagement (were burnout and work life (i.e. work engagement or job demands (Jose, Salanova, Alicia, & Irene, 2016; Maria, Florina, Adriana, & Dan, 2014). But some of dimensions are similar such as workload in Romanian version studied among healthcare professionals. Romanian version performed workload and emotional demands are related positively with exhaustion and cynicism and negatively with professional efficacy. By contrast, other finding showed positive correlation between professional efficacy and work engagement (Jose, Salanova, Alicia, & Irene, 2016). In summary, the current result of this study recommended the evidence of adequate criterion-related validity for Vietnamese version of MBI-GS.

Strengths and Limitations of the Study

The first study on burnout in Vietnam only used exploratory factor analysis not confirmatory factor analysis. Although exploratory factor analysis of first study satisfied basic validity, several items on the Vietnamese MBI-GS did not meet factorability criteria. As this is the second study provides additional explanation on these items. However, the number of burnout studies in Vietnam still limited that was unavailable for comparison or reference. Further recommendation for comparison or reference. Further investigation is needed to have overview of Vietnamese burnout. All study participants were clinical nurses, other types of participants is necessary to have a multi-dimensional view of burnout in Vietnam.

CONCLUSION

Based on our findings, the reliability and validity of the Vietnamese MBI-GS is acceptable for use in future investigations. Our factorial validity results suggest various factors of area of work life leading to burnout. According to these results, some solutions or interventions can be applied for burnout prevention, such as consideration of more nurses and appropriate work schedule to reduce workload among nurses. In order to limit exhaustion and increase professional efficacy, intervention program should be recommended to clinical nurses in Vietnam.

REFERENCES

Chen, W.S., Hamdi, J., Sias, S.C., Seet, W., Leh, F.S., Jamil, A.H.M. et al. 2014. Translation, Cross-cultural Adaptation and Validation of the Malay Version of Maslach Burnout Inventory (MBI) in Malaysia. International Journal of Social Science Studies 2(2). doi: 10.11114/ijsss.v2i2.309.

Goldberg D. 1978. Manual of the General Health Questionnaire. Windsor: NFER Nelson.

Jose, M.T., Salanova, H.L.S., Alicia, A.A. & Irene, T. 2016. Validation of the Maslach Burnout Inventory-General Survey on a Representative Sample of Dominican teachers: Normative Data. The Spanish Journal of Psychology, 19, 1-9.

Kitaoka, K., Nakagawa, H., Hoshuyama, T., Ishizaki, M., Miura, K., Yamada, Y., et al. 2004.

Construct validity of the Maslach Burnout Inventory-General Survey. Stress and Health, 20(3), 245-260.
Lee, R.T. & Ashforth, B.E. 1996. A meta-analytic examination of the correlates of the three dimensions of job burnout. Journal of Applied Psychology, 81(2), 123-133.
Leiter, M.P. & Maslach, C. 2011. Areas of Worklife Survey Manual, 5th ed. Menlo Park, CA: Mind Garden.
Maslach, C., Jackson, S.E. & Leiter, M.P. 1996. Maslach Burnout Inventory Manual. 3rd ed. Menlo Park, CA: Mind Garden.
Mara, B., Florina, S., Adriana, B., & Dan, L.D. 2014. Maslach Burnout Inventory - General Survey: Factorial validity and invariance among Romanian healthcare professionals. Burnout Research, 1(3), 103-111.
Nguyen, H.T.T., Kitaoka, K., Inokgara, M., & Tran, A.L. 2018. Burnout Study of Clinical Nurses in Vietnam: Development of Job Burnout Model Based on Leiter and Maslach's Theory. Asian Nursing Research, 12(1), 42-49.
Pisk, D., & Leiter, M.P. 1993. Nurse's perceptions of the nature and causes of burnout: a comparison of self-reports and standardized measures. Canadian Journal of Nursing Research, 25(3), 35-48.
Radloff, L.S. 1977. The CES-D scale: A self report depression scale for research in the general population. Applied Psychological Measurement, 1, 385-401.
Schaufeli, B.W., Arnold, B.B., & Willam, V.R. (2008).

How changes in job demands and resources predict burnout, work engagement & sickness absenteeism. Journal of organization behaviour, 38(7), 893-917.
Sylvain, N., Tuppinen, S., Kalimo, R., & Schaufeli, W. (2000). The factorial validity of the Maslach Burnout Inventory-General Survey (MBI-GS) across occupational groups and nations. Journal of Occupational and Organizational Psychology, 73(1), 53-66.
Taylor, A., Shortland, A., Cronin, J. & Holland W. (1995). Recreational Service Quality in the International Setting. International Journal of Service Industry Management, 6, 68-86.
Wu, S., Zhu, W., Wang, Z., Wang, M. & Lan, Y. (2007). Relationship between burnout and occupational stress among nurses in China. Journal of Advanced Nursing, 59, 233-239.
Zung, W. W. (1965). A self-rating depression scale. Archives of General Psychiatry, 12(1), 63-70.

Chromium, Cadmium, Lead, and Arsenic Concentrations in Water, Vegetables, and Seafood Consumed in a Coastal Area in Northern Vietnam

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ABSTRACT

BACKGROUND: Heavy metal contamination and related risks for the environment and human health are matters of increasing concern.

METHODS: Fifty levels of 4 heavy metals (Cr, Cd, Pb, and As) were evaluated in 2 water types (surface and well), 4 types of seafood (tiger shrimp, spotted snail, sweet lead fish, and catfish), and 27 types of vegetables (12 leafy vegetables, 4 pod plants, 4 other vegetables, and 7 herbs) that are commonly consumed in northern coastal Vietnamese cuisine in Vietnam. Atomic absorption spectrometry was employed for quantification.

RESULTS: The mean concentrations of heavy metals detected in water, seafood, and vegetable samples complied with the national permissible limit and World Health Organization (WHO) recommendations, except for all tested Cr (VI), Cd, and Pb tests, and in well but not surface water, vegetables, and seafood samples, respectively. The concentrations of all 4 heavy metals detected in seafood samples were higher than the standards. The levels of heavy metals decreased with increasing distance between the sample collection point and the pollution source.

CONCLUSIONS: This is the first report of heavy metal contamination of common sources of food and water in the northern coastal area of Vietnam. Significantly, the concentrations of heavy metals detected in study samples exceeded the regulatory limits. These results underscore the importance of continued monitoring and the development of intervention measures to ensure that the quality of food and water meets established standards and protects the health of the local population.

KEYWORDS: Heavy metals, pollution, water, food, vegetables, coastal, commune, Red River, Vietnam

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Introduction

Environmental pollution is one of the major challenges facing modern human society.[1] One of the major threats to ecological and human health is environmental contamination and pollution by heavy metals.[2,3] Rapid industrialization and urbanization have resulted in contamination of the environment by heavy metals; the rates of mobilization and transport of heavy metals in the environment have greatly accelerated since the 1900s.[4,5] While some metals are essential for human health at trace concentrations due to their role as coenzymes (eg, Fe and Cu), others are toxic at any concentration level (eg, Pb and Cd).[6] Chromium (Cr VI), cadmium (Cd), lead (Pb), and arsenic (As) have been recognized as water, soil, and sediment pollutants in many places in the world.[7,8] As and other heavy metals have even been detected in soil and sediment from remote areas in remote locations.[9,10] Metals can show severe toxicity to humans, depending on the concentration, the exposure pathway, and the duration of exposure. It is thus critical to conduct substantial assessment of heavy metal contamination of the environment and to develop strategies to monitor the concentrations and control factors and ecological health.[11]

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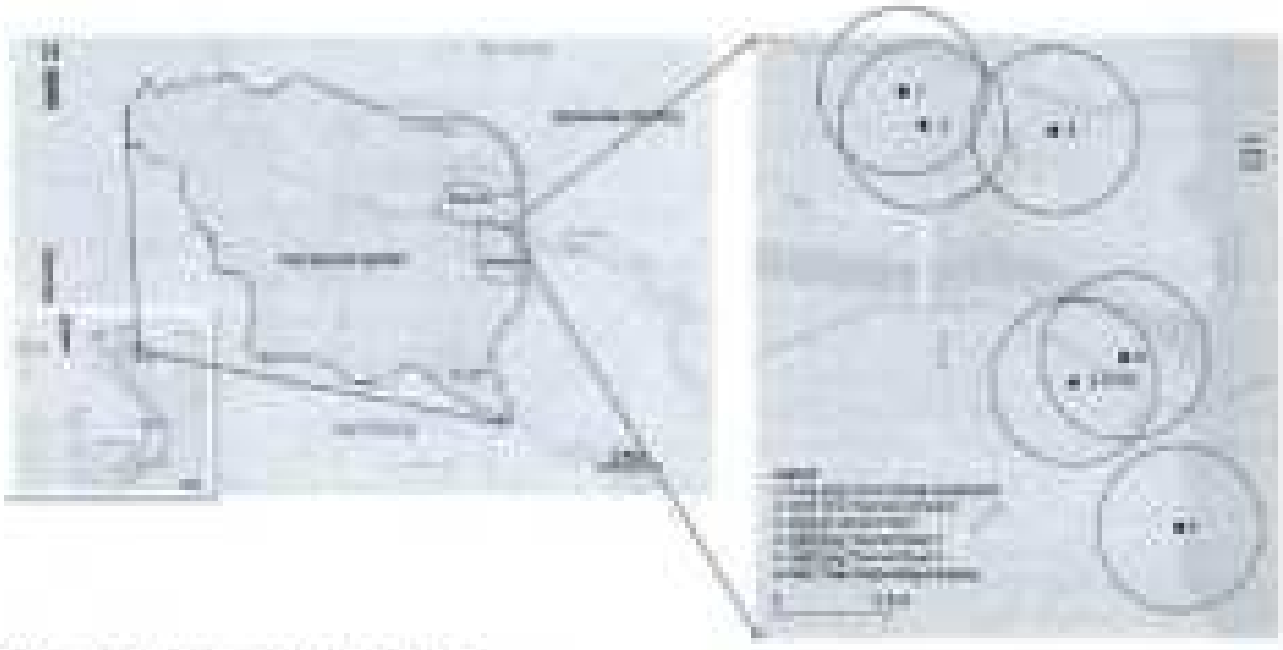

Figure 1. Map showing the location of the sampling areas.

The toxicity of heavy metals such as Cd, Pb, Cr(VI) and As to humans is widely recognized and documented.[10,11] For example, the International Agency for Research on Cancer (IARC) classifies As, Cd, and Cr as Group 1 Carcinogens to Humans.[12] Food consumption accounts for up to 80% to 90% of the daily doses of As, Cr, Cd, and Pb to which humans are exposed.[13] Vegetables, which are an important part of the diet in Vietnam, can take up heavy metals when they are grown in contaminated environments; substantial amounts of heavy metals accumulate in the leaves, and therefore, consumption of vegetables may account for a substantial fraction of total exposure to Cd, Pb, and As.[14,15] Likewise, seafood, also an important component of the diet in Vietnam, can accumulate high concentrations of heavy metals when aquaculture is conducted in contaminated areas.[16] This indicates that the consumption of vegetables and seafood may be a major source of exposure to heavy metals. Currently, limited data on the levels of heavy metal contamination in food, especially heavy metal contamination in vegetables and seafood in Vietnam, are available.[17]

Located on the eastern margin of the Indochinese peninsula bordering the Gulf of Thailand and the South China Sea, including Gulf of Tonkin, Vietnam has a long coastline of 3260 km, even including its 3000 islands that are dispersed along its entire length.[18] A major environmental disaster occurred in the coastal area of Central Vietnam in 2016 when toxic wastewater containing heavy metals was accidentally or perhaps illegally discharged to the coast, causing several billions of dollars of damage.[19] The people and the Government in Vietnam are now well aware of the risk of wastewater discharge to the coastal areas, including estuarine areas. This study aims to determine the concentrations of Cd, Cr, Pb, and As in water and evaluate heavy metals in local vegetables and seafood cultivated in 2 coastal communes in Northern Vietnam.

Methods

Study areas

The study was conducted in Tien Hung and Minh Duc communes, 2 coastal areas that belong to the Thuy Nguyen district of Hai Phong city located in the north of Vietnam, 123 km West of Hanoi capital (Figure 1). The study communes cover an area of 23.12 km², the population in 2016 was 19 506. The per capita income of 2 communes in 2016 was VND41 800 000 (US$1840).[20,21]

A program for monitoring metal concentration in water and food (vegetables and seafood) was set up in the Minh Duc and Tien Hung communes, Thuy Nguyen district, Hai Phong city in North Vietnam (Figure 1). Industrial production activities that involve wastewater release into the surrounding environment have been operating in this area since the late 1970s. Use of potentially contaminated ocean water may enhance the heavy metal concentrations in vegetables and seafood produced near the industrial production areas. Water, vegetable, rice, and seafood samples were taken from crop fields and aquafarms cultivated by local households at 4 industrial sites including site 1—Trang Kenh steel making corporation (20°57'42.8"N 106°44'21.3"E), site 2—DAP-Do chemical company (20°57'39.1"N 106°44'17.9"E), site 3—Chemical cement plant (20°57'34.0"N 106°44'09.2"E), site 4—Hai Phong thermal power 1 plant (20°56'48.5"N 106°45'14.4"E), site 5—Hai Phong thermal power 2 plant (20°56'21.6"N 106°45'21.8"E), and site 6—Hyundai shipbuilding company (20°55'19.2"N 106°49'43.6"E).

Sampling

Seafood, vegetable, and water samples were collected in areas within a radius of 500 m, 500 to 1000 m, and 1000 to 1500 m

from factories and companies in December 2016. Immediately after the collection, all samples were contained in an airtight insulating box, stored at ~4C, and transported to the Military Hygiene Laboratory, Vietnam Military Academic University for analysis.

Water samples. A total of 10 surface water samples (2 samples were taken at each designated position distance from each of the 5 industrial sources of pollutants) and 220 drinking (well) water samples were collected. The well water samples were collected from households who responded to a survey (administered to 1000 residents) that they use well water. The samples at each position were stored in a plastic bottle, and a sample of 1 L was stored in a polyethylene bottle. Water samples were acidified with nitric acid to pH = 2 after collecting and transferred on ice to the laboratory for analysis. 10 mL of each sample were filtered through a 0.45 μm Whatman pore-size disposable cellulose filter before elemental determination. Surface water and drinking water samples were collected following the regulations for general guidance on water sampling and quality control from the Ministry of Agriculture and Rural Development, Ministry of Health.[17]

Vegetable samples. Samples were collected and processed directly for analysis within 1 to 3 days. Only the edible parts were used for the analysis. Samples included 12 leafy vegetables, 4 pea plants, 6 tuber vegetables, and 7 herbs, which are among the most commonly grown and consumed vegetables in Northern Coastal Vietnam. With 3 replicates per species, a total of 135 samples were collected. Plant samples were collected approximately after 40 to 45 days of sowing.

Seafood samples. A total of 40 seafood samples (10 for each seafood [tiger shrimp, mullet mullet, snake head fish, and carfish]) were collected at the 2 biggest open markets and the northern fish ports in the study area. Immediately after the collection, all samples were placed in an airtight insulating box and transported to the Military Hygiene Laboratory, Military Academic University, Hanoi, Vietnam. Seafood samples were collected by following the regulations on general guidance on food sampling for inspection, quality control, hygiene and safety food published in the Circular No. 14/2011/TT-BYT of the Ministry of Health.[17]

Sample preparation

Sample preparation and digestion methods for vegetables and seafood followed Anh TK Bui et al[18] and P Ghosh[19] with some modifications. Only edible parts of each seafood and vegetable type were used for the analysis. Any spoiled or damaged parts were removed before preparation as a simulation of the real food preparation for human consumption. Fresh samples were weighed and then cut into small portions for drying in an oven at 105°C. Complete drying of the samples was achieved within 72 to 96 hours. Samples are considered dry when they attained the stable weight. Dry samples were ground in a SecuriM coffee grinder and stored in a 0.4 mm mesh. The fresh weight (fw) and dry weight (dw) were recorded to calculate moisture content. Trace element concentrations of vegetables and seafood were determined on a dw basis and converted to a fw basis for comparison with the MLs for consumption and stored in foods. The samples were then stored in a pre-labeled polyethylene bag for digestion.

After grinding, vegetable and seafood samples (400 mg per each) were digested with 5 mL H_2O_2 (30%, Perox p.a.; purchased from Merck, Germany), 5 mL HF (40%, Parin p.a., purchased from Merck, Germany), and 5 mL HNO_3 (65%, Parin p.a.; purchased from Merck, Germany) using the MLS-ethos (900 (Anton Paar) microwave. The microwave was set to 5 minutes for ramping up the temperature to 175°C and then hold at that temperature for 10 minutes. The microwave was then set to 15 minutes ramping up to 180°C and then allowed to cool at room temperature. The digested samples were analyzed for As, Cu, Cd, and Pb using atomic absorption spectrophotometry (AAS/MoAS: AP2000, Hitachi, Japan). Prepared reagent blanks and digests of the reference material were analyzed in parallel with each type of assay method and equipment. The AAS system was calibrated using at least 5 standard solutions for external calibration of each metal. Heavy metal concentrations were expressed as milligrams per liter (mg/L) for water samples and as milligrams per kilogram (wet) weight (mg/kg fw) for vegetable and fish tissues samples. The standard reference material for heavy metals in spinach leaves (NIST 1570a) and in fish (DORM-4) was obtained from the National Institute of Standard and Technology (NIST), USA and the National Research Council of Canada (NRCC), respectively, and standard reference solutions of 1000 mg/L were used for As, Pb, Cr, and Cd from Merck, Germany.

Quality control of the chemical analysis. The blank method was used to implement the quality control of the chemical analysis, performed through the complete preparation and analytical procedure. The blank spike duplicate (BSD) was performed in duplicate to determine to confirm the procedure was working within established control limits.

Great care was taken during sampling and laboratory analysis to prevent sample contamination and to ensure the reliability, quality and accuracy of the analysis. We avoided the use of metallic tools wherever possible. All glass and plastic ware was washed with soap and rinsed with Sterilin-cream (30 g $K_2Cr_2O_7$ mix to 100 mL H_2SO_4 98%) and then rinsed thoroughly with distilled and deionized water before use, to ensure there was no contamination of the laboratory supplies and tools, these procedures were conducted to work the guidelines, standards, and protocols of the National Institute of Standards & Technology (NIST).

One calibration blank (1%NO, 1%) was used to establish the analytical curve. Method blanks were used to check possible contamination from the sample preparation procedure. The blanks and the standard samples were analyzed. The spike

Table 1. Heavy metal concentrations (mg/L) in water samples (n = 276).

METAL	SURFACE WATER (n = 114)		WELL WATER (n = 162)	
	MEAN (RANGE)	TIMES EXCEEDED VIETNAM STANDARD (%)	MEAN (RANGE)	TIMES EXCEEDED VIETNAM STANDARD (%)
Cd	0.02 (0.00–0.08)	0 (0.0%)	0.00 (0.00–0.05)	1 (0.6%)
Pb	0.17 (0.03–0.30)	0 (0.0%)	0.0 (0.01–0.40)	1 (0.6%)
As	0.16 (0.01–0.45)	5 (4.4%)	0.05 (0.01–0.40)	4 (2.5%)
Cr	0.08 (0.00–0.48)	1 (0.9%)	0.03 (0.00–0.80)	3 (1.9%)

Abbreviation: WHO, World Health Organization. Allowable limits of Cd, Pb, As, and Cr in surface water recommended by the WHO guideline 2008 and National Standards (QCVN 08:2008/BTNMT) are 0.01, 0.05, 0.05, and 0.05 mg/L, respectively. Allowable limits of Cd, Pb, As, and Cr in well water recommended by the WHO guideline 2004[27] and National Standards (QCVN 09:2008/BTNMT) are 0.003, 0.01, 0.05, and 0.05 mg/L, respectively.

method was done to each analysis. Cadmium, lead, arsenic, and chromium levels in the blank samples were lower than limit of detection (LOD). The LOD was calculated by multiplying the SD of minimum values from 7 times repetition running by 3.

Continuing calibration verification was used to determine whether the sample analysis was within control limits (a close linear correlation between the concentration of the standard solutions and the absorbances, with a correlation coefficient $r = 0.9990$).

The recovery rates were 93.08% to 93.03%, 88.81% to 97.19%, 83.42% to 94.28%, and 93.82% to 94.18% for Cd, Pb, As, and Cr, respectively.

Statistical analysis. Descriptive statistics including mean and standard deviation (SD) were calculated. Differences in the concentration of heavy metals among places were assessed using a one-way analysis of variance (one-way analysis of variance [ANOVA]) with Tukey honestly significant difference (HSD) post hoc test. The statistical significance was set at $P < .05$. All the statistical analyses were done with the IBM SPSS statistics (version 19.0).

Ethical considerations. The protocol of this study was approved by the Scientific and Ethical Committee in Biomedical Research, Hai Phong University of Medicine and Pharmacy. Local consensus authorities were asked for their permission, and all households were asked for their consent before collecting samples.

Results

Levels of Cd, Pb, As, and Cr in water samples

The levels of Cd, Pb, As, and Cr in the surface water and well water detected in the current study are presented in Table 1. The average concentrations of Cd, Pb, As, and Cr detected in surface water collected from 2 coastal communes in Northern Vietnam ranged between 0.0 and 0.05, 0.03 and 0.30, 0.05 and 0.45, and 0.02 and 4.30 mg/L, respectively, while the concentrations of Pb, Cd, As, and Cr in well water ranged from 0.01 to 0.40, 0.0 to 0.15, 0.01 to 0.40, and 0.02 to 0.80 mg/L, respectively (Table 1). In brief, Cr was detected at the highest concentrations, followed by Pb, and then Cd.

The highest mean concentrations of metals detected in both surface and well water were for Cr and the lowest concentrations were observed for Cd. The concentrations of As was higher than Pb in surface water, while the reverse result was found in drinking water (well water). The maximum limits (MLs) for Cd, Pb, As, and Cr in surface water according to the Vietnam standards (QCVN 08:2008/BTNMT) are 0.01, 0.05, 0.05, and 0.50 mg/L, respectively. These results indicate that the concentrations of all 4 heavy metals in surface water samples were 2- to 5-fold higher than national standards. The concentrations of all 4 heavy metals in well water samples were 5- to 13-fold higher than WHO guidelines and national standards, as the MLs of Cd, Pb, As, and Cr in well water according to the Vietnam standards (QCVN 01:2009/BYT) are 0.003, 0.01, 0.05, and 0.05 mg/L, respectively.

The heavy metal concentrations in water by distance between the sampling sites and the pollution sources are shown in Figure 2. The concentrations of Pb, As, and Cr in surface water samples were statistically reduced as accordance to longer distances between the sampling sites and the pollutants sources ($P < .01$). Cd concentrations in surface water (>1000 m from pollution source) were statistically lower than the samples (closer to the pollution source). No difference in Cd concentrations was found in surface water (<100 m from the location and 100 to 1000 m distance from pollution source) ($P = .094$).

A statistically significantly lower concentration in As was detected in well water from sampling sites located at longer distances from the pollution source ($P = .001$). The concentration of Pb, Cd, and Cr in well water samples from locations near the pollution source (<500 m) was higher than locations that were 500 to 1000 m from the pollution source ($P < .001$); however, there was no difference in the 3 heavy metals in wells located at 100 to 1000 m and >1000 m from the pollution source ($P = .928$, $P = .996$, $P = .866$ respectively; Figure 2).

Heavy metal in seafood from aquaculture in sampling sites in Thuy Nguyen district, Hai Phong city

Heavy metal concentrations detected in seafood samples are shown in Table 3. The concentration of Cd was higher than

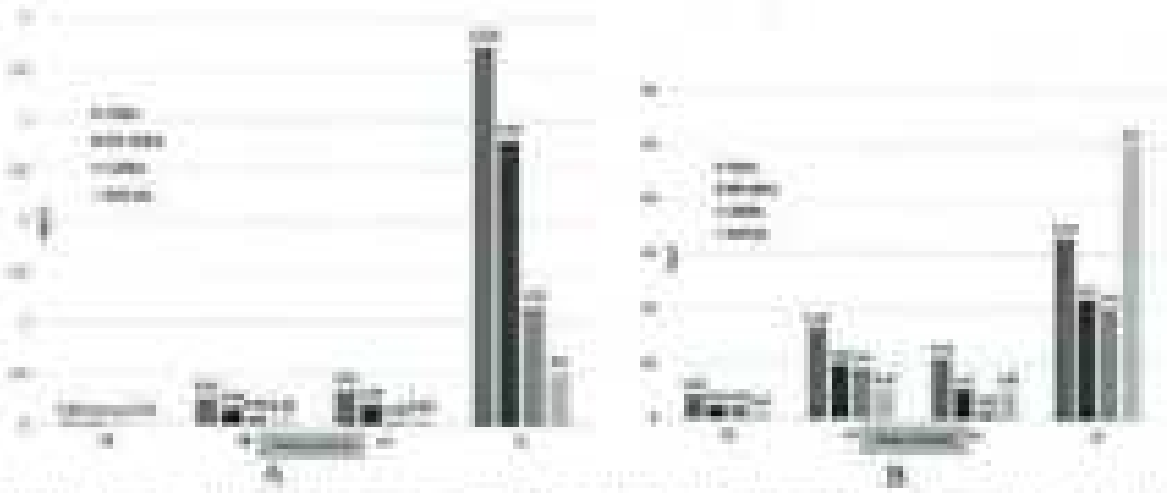

Figure 2. Heavy metal concentrations in water by dimensional treatment time sampling areas and the pollution exceeded (>) (%). (A) Surface water and (B) Well water. WHO (a), indicates World Health Organization maximum value.

Table 3. Heavy metal concentration (mean ± SD, mg/kg) in seafood samples.

Sample	Pb	Cd	Cu	As
Tiger shrimp	1.34 ± 0.44*	1.62 ± 0.34*	5.46 ± 0.26	0.93 ± 0.24
Stuffed snails	0.13 ± 0.04*	0.35 ± 0.07*	5.69 ± 0.49	1.83 ± 0.21
Snakehead fish	0.08 ± 0.01	0.03 ± 0.01	0.12 ± 0.10	0.06 ± 0.004
Catfish	0.10 ± 0.03	0.08 ± 0.04	0.26 ± 0.15	1.68 ± 0.08

Abbreviations: WHO, World Health Organization; FAO, Food and Agriculture Organization. Allowable limits of Pb, Cd, Cu, and As in seafood recommended by the WHO/FAO, Codex and Vietnam National Technical Regulations are 0.2 mg/kg for Pb and Cd in tiger shrimp, 1.0 and 0.5 mg/kg in stuffed snails, respectively.
*The heavy metal concentrations are higher than permitted standards.

those of the other 3 species in seafood samples except catfish, in which the concentration of Cu exceeded that of the other 3 metals. The concentrations of metals detected in tiger shrimp and stuffed snail samples were the highest for Cd, followed by Pb and Cu.

In contrast to the other types of seafood, in snakehead fish, the order of the heavy metal concentrations was Cd > Cu > As > Pb. The concentrations of Pb and Cd in fourteen kinds seafood (shrimp and snail) were detected at levels higher than National permissible values and Food and Agriculture Organization (FAO)/(WHO)[9] allowable concentrations, indicating that consuming these seafood products may pose a risk to human health.

Level of heavy metal in vegetable grown in sampling plot in Hung Nguyen district, Nghe Province

The concentrations of Pb, Cu, Cd, and As (mg/kg fw) in local vegetables collected from the 6 study sites ranged between 0.11 and 1.96, 0.68 and 1.47, 0.0 and 3.27, 0.17 and 1.70 mg/kg fw, respectively (Table 4). The concentrations of Pb, Cu, and Cd detected in 100% of the vegetable samples were higher than permitted standards. The concentrations of As in the vegetables samples were lower than the permitted standard except water spinach of Xuan Dai's Region, green beans, and French bean; and amaranth, and water bamboo (rau dong, Lakka leaves, Perilla, and Lettuce). The concentrations of heavy metals across Phuoc vegetable samples were the highest for Pb, followed by Cd, As, and then Cu, while the order of heavy metal concentrations in these vegetable samples was As > Pb > Cu > Cd except baby's fingers, for which the levels of Cd were higher than Cu. The order of concentrations of heavy metals in amaranth was Cd > As > Pb > Cu but in this case Pb was the highest, followed by As and Cd, and then Cu.

The highest concentrations of Pb and Cd (mg/kg fw) were found in mustard greens (1.20 and 1.23, respectively; Table 5). The highest concentrations of As (mg/kg fw) were identified in green beans and French beans (1.26).

Figure 3 shows that the average concentrations of As and Pb in vegetables grown farther from the sources of pollution (those were statistically lower than vegetables grown nearer to the sources of pollution ($P < .001$). Cd concentrations in samples from >1000 m distance from the pollution sources were lower than those from <100 m distance from the pollution sources ($P < .004$). The Cu concentrations in vegetable grown at >500 m from pollution sources were statistically different from vegetables grown farther away, 500 to 1000 m ($P < .006$).

Table 3. Concentration of heavy metal (mg/kg) in green vegetables (n = 120, 5 samples/species).

Local name	Pidgin name	Latin name	Pb	Hg	Cd	As
Water lettuce			0.007 (0.11-1.66)	0.04* (0.02-0.61)	0.02* (0.02-0.23)	0.07 (0.01-1.70)
Ede ku ukong			0.78*	0.02	0.10*	0.15
Ede ku ukem	Mustard green	Brassica juncea	1.05*	0.70*	1.05*	0.69*
Ede ugot	Kale	Brassica oleyrifera	0.20*	0.19*	0.43*	0.43
Ede usem	Broad mustard	Brassica juncea	0.20*	0.20*	0.28*	0.05
Jon ati	Red amaranth	Amaranthus paniculatus	0.84*	0.03*	1.01*	1.01*
Jon eto	Amaranth		0.76*	0.40*	0.60*	0.67
Jon usem	Green amaranth	Amaranthus viridis	0.98*	0.28*	0.80*	0.77
Mong ose	Vine spinach	Basella alba	0.70*	0.55*	0.81*	0.77
Rau ubog			1.66*	0.42*	0.20*	1.25*
Rau dipi	Jute mallow	Corchorus olitorius	0.42*	0.03*	0.66*	1.03*
Rau ieog	Sweet potato leaf	Ipomoea batatas	0.19*	0.01*	1.01*	0.19
Rau nsofog	Water spinach	Ipomoea aquatic	0.30*	0.03*	1.3*	0.66
Ebo ikpi	Lady's finger	Abelmoschus esculentus	0.07*	0.08*	0.60*	1.68*
Ebo ose	Common bean	Phaseolus vulgaris	0.09*	0.60*	0.69*	4.24*
Ebo ubo	Asparagus bean	Vigna unguiculata	0.73*	0.73*	0.42*	0.83
Ebo nkig	Dragon head	Peucedanum senegalensis	0.68*	0.84*	0.82*	0.68
Mvop	Sponge gourd	Luffa aegyptiaca	0.93*	0.40*	1.42*	0.66
Ce ibo	Long purple eggplants	Solanum melongena	0.79*	0.19*	0.60	0.87
Ebe ibo	Cucumber	Cucumis sativus	0.89*	0.67*	1.00*	0.83
Whol ayua	Bitter melon	Momordica charantia	0.69*	0.71*	0.82*	0.88
Usip ok	Fluted pumpkin	Telfairia occidentalis	0.67*	0.66*	0.76*	0.76
Hong ndip	Indian borage	Plectranthus amboinicus	0.67*	0.44*	1.00*	0.93
Hong ayo*	Basil	Ocimum basilicum	0.84*	0.49*	0.99*	0.79
Lat ibi	Little pepper	Piper nigri	0.70*	0.67*	0.79*	0.80
Rau rore	Lactuca lettuce	Rorippa sylvestris	0.93*	0.63*	1.78*	1.62*
Ifa ifi	Parsley	Petalia thalictrifolia	1.24*	0.89*	0.62*	1.11*
Ke ekot	Lettuce	Lactuca sativa	1.13*	0.60*	0.98*	1.56*

Abbreviations: WHO, World Health Organization; FAO, Food and Agriculture Organization; Acronyms in Pb, Hg, Cd, and As in vegetables recommended by the WHO, FAO, Codex, and Nigerian National Standard Regulation are 0.3, 0.1, 0.1, and 1.0 mg/kg in fw, respectively.
*The heavy metal concentrations are higher than permitted standards.

and >1000 m (P< .005); however, no difference was seen in vegetables grown 500 to 1000 m and >1000 m from the source of pollution (P> .345). The concentrations of Cr, Cd, and Pb in vegetables were 3 to 19-fold higher than MLs within a 1.5 km radius from pollution source. Except <100 m distance from pollution source, As was observed below the ML.

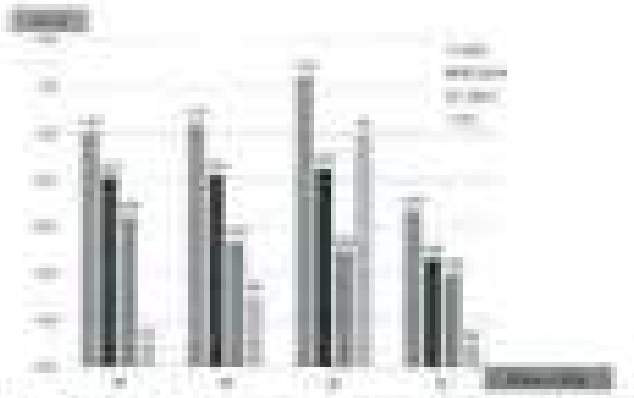

Figure 3. Heavy metal contamination in vegetable samples by distance between sampling sites and industrial sources (n = 126).

Discussion

Pirrone et al[29] reported that industrial activities, especially plastic, chemical industries, and metal smelting, are major sources of heavy metals in water. These results led us to measure the levels of 8 heavy metals in water, seafood, and vegetables at a coastal site in North Vietnam where 4 industrial plants are located. Our results indicate that the industrial plants may affect the drinking water quality in this region. Our results also suggest that the stream used as irrigation water for vegetable crop production and seafood aquaculture was contaminated by wastewater from industrial production activities, resulting in elevated heavy metal concentrations in vegetables and seafood from the receiving areas. Altogether, our results indicate that suitable wastewater treatment programs should be used to protect the health of local residents.

The levels of heavy metals in water samples

The detection of heavy metals in water samples from Vietnam has some similarities and differences to the results from studies of heavy metals conducted in other areas. For example, the findings from Table 1 show that in surface water, Cr was detected at the highest concentration, followed by As, and then, Pb and Cd are similar to recent results in Taiwan, which was conducted in surface water in environment near a coastal coal-fired power plant.[30] Like surface water, in well water, Cr was detected at the highest concentration and Cd was detected at the lowest concentration. However, the concentration of Hg in well water was higher than the concentration of As. These results are consistent with results of a previous study conducted in the southeast coast of India, which reported a similar trend with Pb and Cd. Although the concentration of Cd and Pb measured in the present study were much higher than those reported in the previous study both pre-monsoon and post-monsoon.[31] Likewise, studies conducted in Iran and China also found that Cr was present in the highest concentration, although the concentration of Cr in water samples from Vietnam are higher.[32,33] By contrast, studies conducted in Thailand, India, Malaysia, and Bangladesh detected Pb at higher concentrations than Cr drinking water.[34–37] The As concentration detected in this study is higher than that detected in Mekhan province—a hot spot of arsenic in underground water in Vietnam, which ranged from 0 to 179 ppb (mean 10.9 ppb), equivalent to 0.000 to 0.179 mg/L, mean 0.011 mg/L.[38]

Heavy metal in seafood from aquaculture in sampling sites

Heavy metals, which have adverse effects on human health, can accumulate in fish and shrimp tissues, which are generally found in the last rows of the aquatic food chain. Metals are usually taken up from food and water in fish and shrimp, distributed by circulation and eventually accumulate in target organs.[39] The lower concentration of Cr detected in shrimp in this study is similar to that observed in the research of Bansod et al who conducted a study in southwest coast of India, whereas the concentrations of Cd was higher than the concentration of Pb. In this study, the reverse was observed in studies of other coastal regions in Asia, India, Turkey, and Taiwan.[31,32,40] The As levels in seafood in this study were higher than those presented in other studies, which reported levels ranging from 0.001 to 0.06 μg/g and from 0.001 to 0.008 μg/g in common carp.[41]

The trend of As levels being higher than Pb levels in fish tissues in our study is consistent with results reported from Bangladesh, which showed the mean concentration of As and Pb to be 1.19 and 1.13 mg/kg in summer and 1.01 and 1.49 mg/kg in winter, respectively.[42] Interestingly, Peshut et al[43] found that arsenic in marine organisms is present mainly in nontoxic organic forms, such as arsenobetaine, arsenolipids, and arsenosugars, which are efficiently excreted.

The present study results, which found the order of heavy metal concentrations to be Cr > As > Pb > Cd, are different from the findings from Le Quang Dung et al,[31] which reported the order of heavy metal concentration in oysters along the Hai Phong–Ha Long coast was As > Cd > Pb > Cr with concentrations of 10.19 to 19.33, 3.13 to 13.74, 0.79 to 6.23, and 0.61 to 4.47 mg/kg dry wt, respectively.

Heavy metal in vegetables in sampling sites

Heavy metal concentration in vegetable samples is presented in Table 3. Levels of Pb in mustard greens in this study were higher than in other studies.[44,45,46,47] Pb-Zn mining activities could be contamination of soil and irrigation water.[48] Fertilizers and other agrochemicals, atmospheric deposition, and irrigation with contaminated water have also been implicated in Pb contamination of crops.[49]

Statistically high Cd concentrations were found in leafy vegetables sampled at Bahnofen river[47] and in Bac Kan.[46] Other studies have found lower[44] and higher[47,48] Cd concentrations in vegetables compared to those found in our study.

The highest concentration of As (mg/kg dw) were identified in green beans and French beans (1.26). These have been very few studies that explored As content in vegetables, and our

results were much higher than those reported in another study conducted in Phuoc Binh District, Ninh Thuan Province[9] but much lower than those found in the study carried out in Bac Kan, Vietnam.[8]

Figure 3 shows the trace element concentration in vegetable samples by distance between sampling sites and pollution sources. Only the As concentration in vegetables grown at a distance >500 m from the pollution source is lower than HL. It is important to consider the health risks from heavy metal contamination of vegetables in the local community because these vegetables are the most favorite foods consumed in Vietnam, especially in the North.

Limitations of the study

To the best of our knowledge, this is the first study to measure heavy metal concentrations in water, seafood, and vegetables collected from coastal communities in Northern Vietnam. However, the current data represented only a cross-sectional snapshot. We did not consider the change of daily weather during sampling period to avoid the possible bias in the analysis. Moreover, the present study did not include a health risk assessment to predict the population health problems related to environmental factors. Further studies are needed to investigate the impact of the heavy metals in water, vegetables, and seafood on human health.

Conclusions

In summary, our results indicate that water sources (surface, drinking) and food (vegetables, seafood) are contaminated with heavy metals (arsenic, lead, cadmium, chromium). The concentrations of heavy metal in water and food samples decreased with the distance between where the samples were collected and the pollution sources, especially for arsenic and lead. The research results show that the use of water and food grown near the pollution sources may increase public health risks due to heavy metals.

Recommendations

Considering all available evidences, we do not recommend field cultivation and consumption of vegetables grown close from the sources of pollution. Further studies need to be conducted not only to calculate the risks, especially the cancerous risk resulting from consumption of contaminated water, food, and seafood, but also to apply appropriate measures to ensure the quality of food and water sources to protect the health of the local community.

Acknowledgments

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Author Contributions

NTDN, NVC, PTH, HAH, and PVT conceived and designed the study, agreed with the results and conclusions, and came up with arguments for the manuscript. NTDN, NVC, HCA, NQD, and NBT collected data and samples in the field. NTTThao, NTTB, NTTTrang, and NQD analyzed the data. NTDN, NVC, NTTTHao, NQD, PVW, and HH wrote the first draft of the paper. All the authors read, made revisions, and agreed on the final version of manuscript. NTDN, NTTThao, and PVT reviewed and approved the final manuscript for submission.

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REFERENCES

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]
7. [illegible]
8. [illegible]
9. [illegible]
10. [illegible]
11. [illegible]
12. [illegible]
13. [illegible]
14. [illegible]
15. [illegible]

[1] Craig L, Pau Ca N, Ana Ambrosetti T. Assessment of Immune Status Markers and Radiation Cancer risk. Plenary. 1999. doi:10.1002/9780470744383.ch1.

[2] Alexandra M-A, Jorge-Daniel A, Aurelio Ortiz H, Arcelia V. Cisneros Robles A. Contribution of the consumption of heavy metals exposure in women of childbearing age from a Petrochemical complex (Spain). Publ Chem Environ. 2008;4:1-5. [link]. log id: 20101130-2007-12-01.

[3] World Zinc Conference Punjab Committee. Review report on the needs of single-evening tests in Africa [in Environment].

[4] Cao Hong Commerce Punjab Committee. Review report on the needs of single-evening tests in Africa [in Environment].

[5] 上海市环境科学研究院. National Technical Regulations on Field Experiments Protocol for Acceptance for Recycling Fuel Safety of Petroleum and Packing. http://www.shanghai.gov.cn/shanghai/Shanghai/20_0000.type=1.news=1.org=1.pdf. Accessed December 13, 2019.

[6] 环境科. 国家环境保护总局关于印发《饮用水水源保护区污染防治管理规定》的通知. http://www.mep.gov.cn/gkml/hbb/bgg/201711/t20171101_423041.htm. Accessed December 13, 2019.

[7] 上海市环境科学研究院. [In] Various national technical regulations on the basis of international recommendations in field. http://www.shanghai.gov.cn/shanghai/Shanghai/20_0000.type=1.news=1.org=1.pdf. Accessed December 13, 2019.

[8] Ahmadi M, Pla R, Montazeri A-H, Bakhtar F, Ghaisari J. 2018. Determination of heavy metals recovery, catalysts, health risk and overall cost in the coal-oil-shale industry. Risk assessment for the consumers. Environ Int. 2018;119:87-97. doi:10.1016/j.envint.2018.05.039.

[9] WHO. Guidelines for Drinking-Water Quality: 4th ed. Geneva, Switzerland: World; 2008.

[10] 国家环境保护总局. General standard for contaminants and toxins in food and feed (Limits Rate 1995-2005). J Biol Molecules. 2007;2:59-61. doi:10.1007/978-0-387-09703-9_1.

[11] Ahmad M, Ahmad SS, Dolgaleva A-A, Taimoorova M-I. Heavy metals concentration in blood of Ghazi Barotha Hydropower Project area. https://www.researchgate.net/publication/329...Heavy_metals_concentration_in_blood_of_Ghazi_Barotha_Hydropower_Project_area. Published 2018. Accessed March 30, 2020.

[12] Kim SC, Wilson MV, Nash P-C, Chang J-W, Yang J-H, Yu J-J-S. A discovery of poisoning: Lessthan some elements in the uptake concentration over a covered sandblast green plant in Taiwan. Environ Health Perspect. 2010;118:1-6. doi:10.1289/ehp.0901557. doi:10.1177/1744806910390928.

[13] Marcus MPD, Nordstrom D, Skyrabin K, et al. Heavy metal concentrations and soil reclamation from United Arab countries (Eastern central region, northeast region of India). Environ Int Health. 2004;30:1-6. doi:10.1177/1744806910390928.

[14] Papadopoulos E, Lee S, Zhang S, Rochlenski B, Ba H-J. 2018. Drinking contaminant pollution of heavy metals in water, sediment, fish and oyster from the Meiliang Bay of Taihu Lake in China. Chemosphere. 2018;196:434-439. doi:10.1016/j.chemosphere.2017.12.179.

[15] Hilaire JR, Tremblay-Jung MR, Scott-Denton LEtcyshk R, Rittenhouse T, Rosenstock TS, Delgado M. Health risk assessments of arsenic and other heavy metal exposure in drinking water in northern Iran. Environ Health Prev Med. 2019;24:49. doi:10.1186/s12199-019-0803-z.

[16] Wenggeneva R, Ganzorig K, Sukhsaruu B-O, Bolorsuv M. Heavy metal content of livestock products in commercial and drinking water from drinking-water wells in an agricultural area in Ulaan-Baatarkhot province. Mongolia Environ Geochem Health. 2019;41:647-661. doi:10.1007/s10653-018-0174-6.

[17] Rana MD, Kumar S, Singh S, Yadav RK, Tripathi RM. Uranium and other heavy metal elements in the drinking water samples of SW Punjab, India. J Radioanal Nucl Chem. 2015;303:1745-1751. doi:10.1007/s10967-014-3556-x.

[18] Ahmad N, Jamil MN, Ahadhi MM. Study of water contamination and toxic elements (containing coal mining) and its implications in Tangail, Punjab, Pakistan. J Health Res Impl Sci. 2019;8:204-209. doi:10.1016/j.envres.2019.04.026.

[19] Hafiz H, Ashmore MR, Ahmad MM, Zhou B-J, Ajaz MN, Khan MI. Industrial metal pollution in water and groundwater environment of Chakwal marble city. J Environ Manage. 2019;248:109-114. doi:10.1016/j.jenvman.2019.07.025.

[20] May TW, Wiedmeyer RH, Johnson JE, Pigozzo-Paul SE. Accompanying health risk due to exposure to arsenic in drinking water in Tunisia province. Ecotoxicol Env J Bioindic Risk Health Assess. 2004;6:1-11. doi:10.1016/j.ecoenv.2004.07.011.

[21] Gunduz S, Dogan R, Yavuz O, Ak O, Nadar H, Aydogan Y. Concentration and health risk assessment of heavy metals in tissues of the shrimp and fish species from the Yumurtalık coast of Eastern Levant Turkey. Environ Sci Pollut Res Int. 2019;26:14-21. doi:10.1007/s11356-018-3566-z.

[22] Kabir I-I, Rahim Matin K. Assessment of natural contamination in water, sediments, and wastes of Asian Waterbodies Bab Khan Int. Risk Res Assoc of Women and the potential Human Risk to Humans. Environ Int Water Res Int. 2019;28:1-10. doi:10.1016/j.envint.2019.104963.

[23] Ward R, Ward D, Cohen M, Kleinfeld E, Gandy O, Rotunda M. Blood poisoning of heavy metals in the Gulf, the Persian Arctic. Environ Health Assoc Int. 2007;1:1-10. doi:10.1007/s10967-007-0611-x.

[24] Ali MM, Ali ML, Rashid IS, et al. Heavy metal concentrations in commercially valuable fishes with health hazard inference from the capital fleet, Bangladesh. Ecotoxicol Environ Saf. 2019;171:932-937. doi:10.1016/j.ecoenv.2019.01.034.

[25] Richard PJ, Thornton EJ, Brooks RH. Arsenic speciation in marine fish and shellfish. Anal Bioanal Chem. 2007;387:2351-2361. doi:10.1007/s00216-006-0986-y.

[26] Zhang LQ, Lee WW, Ye YY. Determination of heavy metal accumulation in soil-water and water-based food. Environ Int Environ pollut agric Environ Environment. 2019;34:1-10.

[27] Chang CC, Li HT, Chu CJ, Li PH, Chang HM, Lee CH. Accumulation of heavy metals in fish ingestion from agricultural water and consumed products, soils in the Pearl River Delta, South China. Environ Monit Assess. 2004;100:1-17. doi:10.1007/s10661-005-3966-z.

[28] Ozcan MDH, Kara AH, Akcay HT, Akcay AOA. Levels of iron, copper, cadmium, and lead in fruits and vegetables grown and consumed in Some Region, South Anatolia, Environ Monit Assess. 2019;191:1-10. doi:10.1007/s10661-019-7464-8.

[29] Zhang H, Zou R, Li FY, Li AA. Heavy metal contamination in soils and food crops around Dabaoshan mine in Guangdong, China: implication for human health. Environ Geochem Health. 2006;28:103-113. doi:10.1007/s10653-005-9014-9.

[30] Ko JY, Kim JH, Kim S, Park S, Kim S, Kim H, Lee J, Kim J, Kim H, Lee J, Kim J, Kim H, Lee J, Kim J

ĐẶC ĐIỂM CẤU TRÚC SIÊU VI THỂ CỦA MÀNG ỐI NGƯỜI

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TÓM TẮT

Mục tiêu: xác định đặc điểm siêu vi thể của màng ối và quần thể tế bào màng ối. Phương pháp: màng ối sau khi thu thập, xử lý và làm sạch được đánh giá về một cấu trúc bằng kính hiển vi điện tử. Kết quả: các tế bào biểu mô màng ối thường là tế bào biểu mô đơn lớn nối với nhau bằng hệ thống nếp gấp không nhiều, dễ phân biệt bằng kỹ thuật.

* Từ khóa: Màng ối; Tế bào gốc; Tế bào biểu mô màng ối.

Ultrastructural Characteristics of the Human Amniotic Membrane

Summary

Objectives: To study the ultrastructural characteristics of the human amnion membrane. Methods: After collecting and cleaning in phosphate buffered saline (PBS) and then fixed in 3% glutaraldehyde fixative for electron microscopy, amniotic membrane was assessed the ultrastructural. Results: The epithelium is formed of one layer of cuboidal cells which are attached with the underlying tissue by hemidesmosomes. These cells are isolated by hyaline cavity.

* Keywords: Amniotic membrane; Ultrastructure; Amniotic Epithelial cells.

ĐẶT VẤN ĐỀ

Màng ối được hình thành từ lá phôi ngoài có nguồn gốc từ khối nội bào vào ngày thứ 8 sau thụ tinh. Màng ối được cấu tạo bởi 3 màng chính: màng biểu mô đơn (single epithelial layer), màng nền dày (basement membrane) và màng vô mạch (avascular mesenchyme). Màng ối không có thần kinh, mạch máu hay bạch huyết, nằm ngay sát khoang ối (amniotic cavity) và các tế bào lá phôi (trophoblast cell), có thể dễ dàng phân tách khỏi màng đệm (chorion), nằm ngay dưới đó. Màng ối được nuôi dưỡng bằng dinh dưỡng và oxy từ dịch ối bao xung quanh và mạch máu của thai.

Màng ối là một sản phẩm thường bỏ đi trong quá trình sinh nở, là một nguồn cung cấp màng sinh học và cung cấp nguồn tế bào gốc lý tưởng. Sử dụng màng tế bào gốc màng ối không gặp phải những vấn đề về đạo đức, xã hội. Các tế bào gốc phân lập từ màng ối có tính sinh miễn dịch thấp, không có khả năng ung thư hóa, có khả năng biệt hóa thành nhiều loại tế bào khác nhau. Đặc biệt, màng ối được xem như một nguồn cung cấp mô hay tế bào phù hợp trong cấy ghép đưa đến hiệu quả chống viêm và tính sinh miễn dịch thấp [3].

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** Học viện Quân y
*** Bệnh viện Quân y 103
Người phản hồi (Correspondingl): Nguyễn Bảo Trân (bttran@hpmu.edu.vn)
Ngày nhận bài: 23/07/2017; Ngày phản biện đánh giá bài báo: 20/08/2017
Ngày bài báo được đăng: 28/09/2017

Dhập màng ối đã được sử dụng thành công ở những bệnh nhân (BN) bị rỉ tật biểu mô khó lành, những BN không đáp ứng với điều trị y khoa. Màng ối có khả năng làm liền vết thương, được sử dụng như một giá thể cho nuôi cấy tế bào. Chúng tôi nghiên cứu đề tài này nhằm: Xác định một số đặc điểm giải vi thể của màng ối và quần thể tế bào màng ối.

ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU

1. Đối tượng nghiên cứu.

Màng ối được thu nhận từ sản phụ mổ đẻ, bảo đảm tiêu chuẩn xét nghiệm sàng lọc, âm tính với HIV, HBV, HCV và giang mai. Màng ối thu nhập đặt vào trong bình bảo quản đến tiêu vô trùng và chuyển về trung tâm nghiên cứu.

2. Phương pháp nghiên cứu.

* Chuẩn bị màng ối

Nhau thai thu nhận sau ca mổ đẻ đặt vào trong bình bảo quản vô trùng có chứa PBS hoặc môi trường RPMI-1640 lạnh, vận chuyển về trung tâm nghiên cứu trong điều kiện nhiệt độ lạnh khoảng 4°C.

Tiến hành bóc tách màng ối trong trong phòng sạch không quá 4 giờ kể từ khi thu nhập. Cắt lọc, rửa sạch nhiều lần bằng dung dịch PBS 1X cho tới khi màng ối trở nên trong suốt.

* Nghiên cứu đặc điểm giải phẫu vi thể màng ối bằng kính hiển vi điện tử quét (SEM)

Cố định mẫu trong glutaraldehyd 2,5% 12 giờ (để qua đêm), ở 4°C. Sau đó, rửa mẫu bằng đệm cacodylat, 2 lần x 10 phút/lần. Cố định bổ sung bằng axit osmic 1% trong 4 - 6 giờ, ở 40°C. Rửa lại mẫu bằng đệm cacodylat 0,3M, 3 lần x 10 phút/lần. Khử nước các mẫu theo quy trình bằng cồn ethanol. Tiến hành làm khô mẫu làm khô tại điểm tới hạn với các bước chính sau:

- Ngâm mẫu trong isoamyl acetate, thay thế isoamyl acetate bằng CO_2 lỏng lâm bay hơi CO_2 lỏng ở điểm tới hạn.

- Mạ phủ mẫu: mạ phủ mẫu bằng vàng trên máy JFC-1200, JEOL (Nhật Bản) với thời gian 45 - 60 giây để soi trên SEM.

* Nghiên cứu đặc điểm giải phẫu vi thể màng ối bằng kính hiển vi điện tử truyền qua (TEM):

Nhà mẫu mô thành các mảnh nhỏ có kích thước 1 x 1 x 1 mm. Cố định mẫu trong glutaraldehyde 2,5% trong 2 giờ. Rửa mẫu bằng đệm cacodylat 0,3M 3 lần x 10 phút/lần. Cố định mẫu bằng axit osmic 1% trong đệm cacodylat trong 2 giờ. Rửa lại mẫu bằng đệm cacodylat 0,3M 3 lần x 10 phút/lần. Khử nước các mẫu bằng cồn ethanol, khử cồn ethanol bằng propylen oxide. Đúc mẫu bằng chất đúc epoxy, để tủ ấm 35°C trong 24 giờ, sau đó 45°C trong 24 giờ và 60°C trong 24 giờ.

Sử dụng lưỡi dao loại 300 mắt lưới. Tạo mảng lưới của lưới bằng màng formvar. Cắt tiêu bản siêu mỏng sau gợt trên máy ultramicrotom.

Nhuộm tiêu bản siêu mỏng bằng thuốc nhuộm uranyl acetat 15 phút, chì citrate trong 15 phút và quan sát trên TEM.

KẾT QUẢ NGHIÊN CỨU VÀ BÀN LUẬN

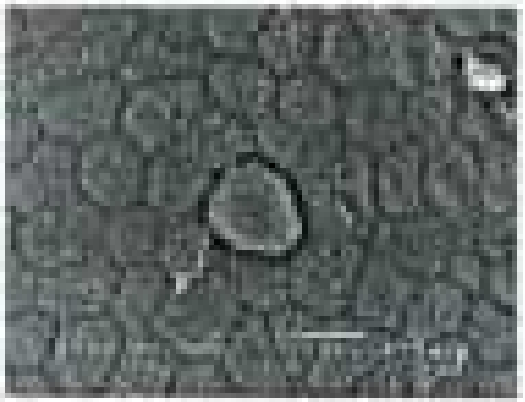
1. Đặc điểm hình thái siêu vi thể của màng ối quan sát dưới SEM.

Quan sát dưới kính hiển vi điện tử, chúng tôi nhận thấy các tế bào biểu mô màng ối có hình dạng khác nhau, từ dạng trụ, đa diện đến hình cầu, đa số sắp xếp tạo thành một lớp tế bào trên màng đáy.

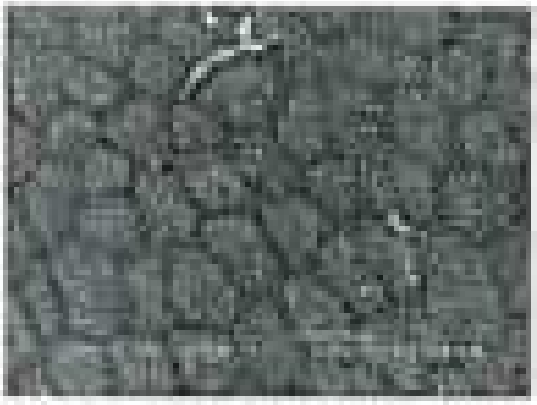
Mô tự do của các tế bào biểu mô có nhiều vi nhung mao, bờ bên các vi nhung mao này phân nhánh hoặc kết hợp với nhau tạo thành các kênh gian bào. Sự đa dạng về hình thái của tế bào biểu mô màng ối có thể do ảnh hưởng của tuổi có thai trong quá trình chuẩn bị mẫu, tương tự như nhận định của Benirschke [1].

Trên màng đáy, các tế bào biểu mô sắp xếp theo bốn dạng mô hình chính thức tạng chuyển tiếp giữa các mô hình

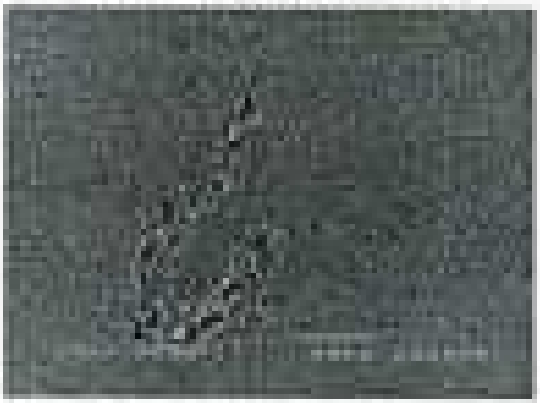
Mô hình 1: Tế bào biểu mô màng ối có hình đa giác sắp xếp trên một mặt phẳng. Thỉnh thoảng có thể nhìn thấy các kênh gian bào ở góc của tế bào biểu mô.



Mô hình 2: Phần lớn các tế bào sắp xếp như mô hình 1. Tuy nhiên có nhiều kênh gian bào hơn ở mô hình, đồng thời rải rác có những tế bào hình tiêu dục, tròn hơn và ngăn cách với tế bào xung quanh bởi các kênh được tạo bởi các sợi tế bào chất mỏng.

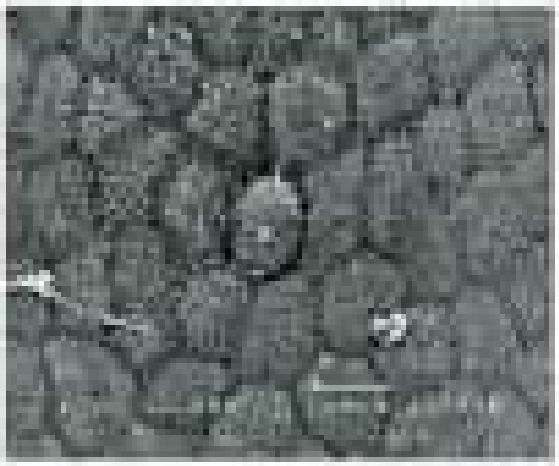


Mô hình 3: Mô hình này hay gặp nhất, gồm những mảng tế bào hình đa giác khá dài, có xu hướng nằm song song với nhau. Rải rác có những tế bào tròn lồng phẳng, đơn độc hoặc tập trung thành một nhóm. Trong mô hình này, khó nhìn thấy các kênh gian bào.



Mô hình 4: Xuất hiện bất thường một mảng tế bào hình tròn, ngăn cách với tế bào xung quanh bằng những khe sâu, dưới đáy khe có các sợi lưới. Ở một số vị trí là nhóm tế bào hình đa giác, không phải hình tròn. Ngoài ra còn quan sát thấy một số vị trí không có tế bào, chỉ là màng đáy đơn thuần.

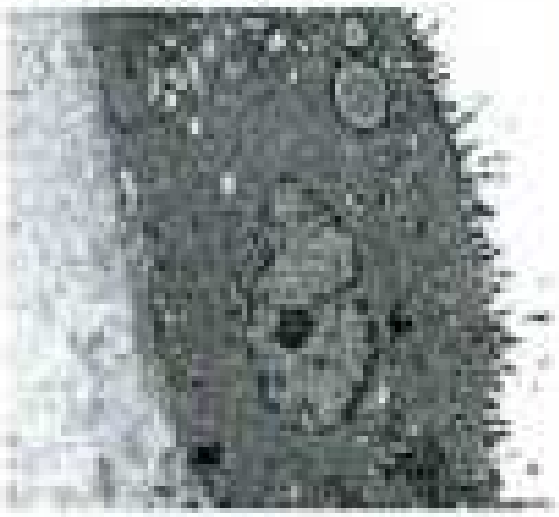
Hình 1: Các mô hình sắp xếp tế bào màng ối.



Hình 2: Một số kiểu thái tế bào (SEM x5.000)

Trong nghiên cứu của chúng tôi, khi quan sát dưới SEM, thỉnh thoảng quan sát được một số tế bào có hình thái khác thường: (A) tế bào có bề mặt tăng phồng và (B) tế bào có hình bầu dục, nằm ngăn cách với xung quanh bởi những khoảng trống và nối với tế bào xung quanh bằng sợi tế bào chất.

2. Đặc điểm giải phẫu vi thể của màng ối quan sát bằng TEM.



Hình 3: Tế bào biểu mô màng ối (TEM x2.000)

Quan sát dưới TEM thấy các tế bào biểu mô màng ối có những đặc điểm chung: tế bào biểu mô màng ối thường là tế bào biểu mô đơn, có hình khối hoặc hình trứ với nhiều vi nhung mao ở đỉnh. Nhân tế bào có kích thước tương đối nổi bật đỉnh. Tuỳ nhiên, màng nhân không đều, hình dáng thay đổi, mủi nhà hoặc cuộn lại. Chất nhân có đậm độ điện tử không đều. Ở đỉnh của tế bào biểu mô màng ối nhiều vi nhung mao hình thành từ bề tự do hướng về dịch ối của tế bào biểu mô.

Hình 4: Liên kết giữa tế bào biểu mô và màng đáy (TEM x10.000)

Cực đáy tế bào liên kết với màng đáy bởi các liên kết dạng bán liên kết không liên tục, trong mỗi liên kết này chỉ có hình ảnh rõng đậm độ điện tử phía tế bào biểu mô. Màng đáy đi theo đường viền bề mặt tế bào biểu mô màng ối như hình dạng mỏm chân. Với kiểu liên kết này nên tế bào dễ bị phân hủy bởi trypsin.

Hình 6: Liên kết giữa hai tế bào biểu mô màng ối (TEM x10.000).

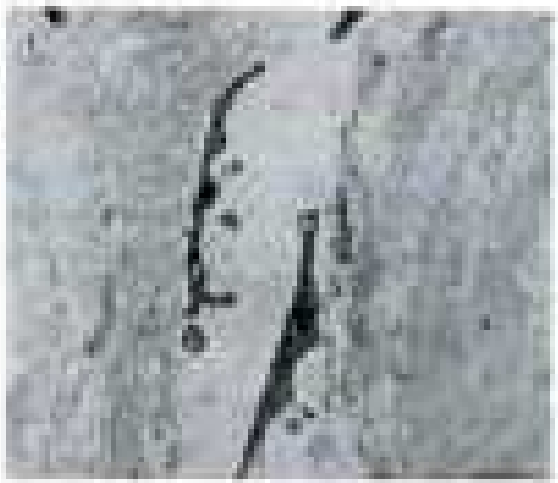
Cạnh bên tế bào tương đối phức tạp với các tiên kết dạng cầu nối gian bào tại vị trí tiên kết có tăng đậm độ điện tử, nhưng không có tơ trương lực như tiên kết desmosom và không có tiên kết sinh.

Hình 8: Hai tế bào biểu mô màng ối có đậm độ điện tử khác nhau (TEM x1.500).

Quan sát qua SEM và xuyên TEM thấy cả hai bề mặt đỉnh và đáy của tế bào biểu mô màng ối đang hoạt động khi vận chuyển các chất hòa tan và nước theo từng tế bào tương cực. Như vậy, màng ối có cấu trúc phù hợp với chuyển giao nhiều chất tan qua con đường cạnh bào (paracellular) - qua khe gian bào và con đường xuyên bào.

Đặc biệt, chúng tôi quan sát có hai loại tế bào với tế bào chất có đậm độ điện tử khác nhau: đậm hoặc nhạt hơn như hai tế bào (1) và (2). Tuy nhiên, các nghiên cứu về mặt hình thái học chưa thể xác định sự khác biệt về mật độ điện tử này có nguyên nhân từ đâu, do đó chỉ tồn tại một loại tế bào biểu mô duy nhất ở màng ối. Sự khác biệt giữa các tế bào trong màng ối là do vị trí tồn tại, mức độ thoái hóa hay các tác nhân tác động từ bên ngoài.

Quan sát màng ối dưới TEM, chúng tôi nhận thấy màng nền dày và có cấu trúc từ các sợi collagen. Theo Al-Yahya và Cs, màng nền là một trong những màng dày nhất trong các mô ở người [1].



Hình 7: Lớp trung mô và các tế bào trung mô màng ối (TEM x2.500).

Lớp trung mô vô mạch của màng ối được tạo từ các sợi collagen và có tế bào trung mô. Theo Hu Jinghwei và CS, Pasquinelli và CS, các tế bào trung mô màng ối người có đặc điểm cấu hình sáu

cấu trúc tế trung - biểu mô: biểu mô biểu mô có vi nhung mao đặc ở bề mặt, khoang tế bào chất được sắt bởi vi nhung mao và có liên kết gian bào. Biểu hiện tế bào trung mô có tuổi nội chất ít phát triển, các ổ sợi có tuổi phát triển (4, 5). Nghiên cứu của Mendez và Savagner cho thấy quá trình chuyển dạng của tế bào biểu mô thành tế bào trung mô và ngược lại. Quá trình chuyển dạng của tế bào biểu mô thành tế bào trung mô là quá trình thay đổi đáng kể về hình dạng và khả năng di động của tế bào. Tế bào mất tính phân cực đỉnh - đáy, mất liên kết với tế bào xung quanh và màng đáy. Ngược lại, hiện tượng chuyển dạng tế bào trung mô thành tế bào biểu mô cũng được ghi nhận với hiện tượng giảm di động và biểu hiện với đặc điểm của tế bào biểu mô. Hiện tượng chuyển dạng này gắn liền với thay đổi vimentin như Mendez và Cs đã mô tả (6) và có liên quan đến Cdc-5 (7). Tuy nhiên, do điều kiện nghiên cứu, chúng tôi không đánh giá quá trình chuyển dạng tế bào này.

Lớp trung mô vỉ mạch cũng có thể chia nhỏ thành 3 lớp: lớp đệm, lớp nguyên bào sợi và lớp xốp. Lớp đệm chứa các bó sợi collagen, sợi đàn hồi nằm rải rác. Lớp nguyên bào sợi là mạng lưới các nguyên bào sợi. Ranh giới giữa hai lớp này tương đối không rõ ràng. Nằm trong cùng là lớp xốp, thành phần gồm các bó sợi lưới và mucin. Chính vì vậy, khó bắt màu trong nhuộm HE.

KẾT LUẬN

Xác định được cấu trúc tế thành phần của màng ối. Màng ối có các lớp tế bào biểu mô và trung mô. Tế bào biểu mô màng ối thường là tế bào biểu mô đơn. Nhân tế bào có kích thước tương đối tăng đơn, tuy nhiên màng nhân không đều, hình dạng thay đổi: méo, vỡ hoặc cuộn lại. Chất nhân có đậm độ điện tử không đều. Trên màng đáy, tế bào biểu mô sắp xếp theo kiểu dạng mô hình liên kết với màng đáy theo dạng tiếp liên kết không hoàn toàn nên dễ bị phân tách bởi trypsin.

TÀI LIỆU THAM KHẢO

1. AL-Yatama' M.K., Mahboub M.M. Characterization of the human amniotic membrane: histological, immunohistochemical and ultrastructural studies. Life Science Journal. 2013; 4, p.10.

2. Benirschke K., Burton J.G. Baergen R.N. Pathology of the human placenta. Sixth edition ed. Springer; 2012.

3. Hao Y., Ma D.H., Hwang D.G. et al. Identification of antiangiogenic and antiinflammatory proteins in human amniotic membrane. Cornea. 2000; 19 (3); pp.348-352.

4. Hu J., Cai Z., Zhou Z.W. Progress in studies on the characteristics of human amnion mesenchymal cells. Progress in Natural Science. 2008; 18 (5); pp.1047-1053.

5. Pessumeli B., Tavoni P., Ricci P. et al. Ultrastructural characteristics of human mesenchymal stromal (stem) cells derived from bone marrow and term placenta. Ultrastructural pathology. 2007; 31 (1); pp.23-31.

6. Mendez M.G., Kojima S., Goldman R.D. Vimentin induces changes in cell shape, motility, and adhesion during the epithelial to mesenchymal transition. The FASEB Journal. 2010; 24 (5); pp.1838-1851.

7. Savagner P. The epithelial-mesenchymal transition (EMT) phenomenon. Annals of Oncology. 2010; 21 (suppl 7); pp.vii89-vii92.

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

CỘNG HOÀ XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

BIÊN BẢN
HỌP HỘI ĐỒNG KHOA HỌC VÀ CÔNG NGHỆ
Nghiệm thu đề tài nhánh thuộc đề tài cấp Nhà nước KC10.41/16-20

I. NHỮNG THÔNG TIN CHUNG

1. Tên đề tài nhánh:

Đề tài: **"Đặc điểm bệnh đại và một số yếu tố nguy cơ bệnh đại tại khu vực Tây Nguyên"**

Đồng chủ nhiệm đề tài: BS. Lê Văn Tuấn, Bệnh viện 16, Bộ Quốc phòng
TS. Nguyễn Bảo Tiến, Trường ĐH Y Dược Hải Phòng

Thuộc đề tài cấp Nhà nước theo Chương trình KC10.41/16-20 *"Nghiên cứu đặc điểm dịch tễ học bệnh dại và dịch tễ học phân tử vi rút dại - đề xuất chủng vi rút dại để sản xuất vắc xin"* - Chủ nhiệm đề tài: PGS.TS. Nguyễn Văn Khải

2. Đơn vị chủ trì: Trường Đại học Y Dược Hải Phòng

3. Hội đồng Khoa học và công nghệ nghiệm thu đề tài trên được thành lập theo Quyết định số: 1503/QĐ-YDHP ngày 02/11/2020 của Hiệu trưởng Trường Đại học Y Dược Hải Phòng.

Danh sách thành viên Hội đồng:

1. PGS. TS. Phạm Văn Hán	- Chủ tịch Hội đồng
2. PGS.TS. Phạm Ngọc Châu	- UV phản biện 1
3. TS. Vũ Tùng Sơn	- UV phản biện 2
4. PGS.TS. Đinh Thị Thanh Mai	- Ủy viên
5. PGS.TS. Nguyễn Ngọc Sáng	- Ủy viên

Thư ký: CN. Nguyễn Thị Hòa

4. Địa điểm: Phòng Hội đồng, tầng 2, Trường Đại học Y Dược Hải Phòng
Thời gian họp Hội đồng: 11h00, ngày 10 tháng 11 năm 2020

5. Số thành viên Hội đồng có mặt trên tổng số thành viên: 05/05

6. Đại biểu dự buổi nghiệm thu:

- Đại diện Phòng Quản lý khoa học
- Ban chủ nhiệm đề tài nhánh KHCN và nhóm nghiên cứu

II. NỘI DUNG LÀM VIỆC CỦA HỘI ĐỒNG

1. Thư ký Hội đồng công bố Quyết định số 1504/QĐ-YDHP ngày 03/11/2020 của Hiệu trưởng Trường Đại học Y Dược Hải Phòng về việc thành lập Hội đồng khoa học và công nghệ nghiệm thu đề tài nhánh thuộc KC10.41/16-20.

2. PGS.TS. Phạm Văn Hán - Chủ tịch Hội đồng điều khiển phiên họp

3. Báo cáo kết quả nghiên cứu đề tài nhánh:

TS. Nguyễn Hữu Trần, đại diện nhóm nghiên cứu trình bày kết quả nghiên cứu:

Đề tài: "Đặc điểm bệnh dại và một số yếu tố nguy cơ bệnh dại tại khu vực Tây Nguyên"

4. Các ý kiến phát biểu, nhận xét, đánh giá của các thành viên Hội đồng

4.1. PGS.TS. Phạm Ngọc Châu

- Bệnh dại là một bệnh do vi rút, lây truyền từ động vật sang người; 99% trường hợp, chó nhà là nguyên nhân truyền vi rút dại cho người.

Đề tài nghiên cứu về đặc điểm bệnh dại và một số yếu tố nguy cơ bệnh dại tại khu vực Tây Nguyên, nơi vẫn còn nhiều điều kiện khó khăn, tập trung đào tạo nhiều nữ, nhiều tập tục khác biệt; do vậy, đây là là đề tài có tính thực tiễn cao khi tỷ lệ tử vong do dại vẫn tiếp tục có xu hướng tăng, đa dạng đối tượng mắc trong những năm gần đây.

- Phương pháp nghiên cứu chặt chẽ, kết quả nghiên cứu phù hợp với mục tiêu đề ra.

- Báo cáo đề tài đáp ứng yêu cầu.

- Một số góp ý:

+ Cần bổ sung thêm đặc điểm điều kiện tự nhiên; các yếu tố nguy cơ đặc thù ở khu vực tự nhiên và văn hoá, tập quán của quần thể nghiên cứu.

4.2. TS. Vũ Tăng Sơn

- Đề tài có tính cấp thiết và thực tế khi bệnh dại vẫn là một trong những vấn đề sức khoẻ, bệnh truyền lây từ động vật sang người gây gánh nặng cao ở Việt Nam và nhiều nước đang phát triển.

- Báo cáo đáp ứng các yêu cầu và mục tiêu nghiên cứu.

- Một số góp ý:

+ Chỉnh sửa lại một số lỗi chính tả trong báo báo cáo kết quả.

4.3. PGS.TS. Đinh Thị Thanh Mai

- Nghiên cứu có ý nghĩa thực tiễn. Bệnh dại vẫn là một trong những vấn đề sức khoẻ cộng đồng thường gặp ở khu vực nông thôn nước ta.

- Phương pháp nghiên cứu chặt chẽ, phù hợp

- Báo cáo và kết quả nghiên cứu trình bày logic, khoa học và tin cậy

- Một số góp ý:

+ Nên đưa ra một số đề xuất phù hợp từ kết quả và kết luận của đề tài

4.4. PGS.TS. Nguyễn Ngọc Sông

- Bệnh dại là một trong những bệnh nhiệt đới bị lãng quên (NTD) nhà yếu ảnh hưởng đến các nhóm dân cư nghèo và dễ tổn thương, sống ở vùng nông thôn hẻo lánh. Khoảng 80% trường hợp mắc bệnh ở người xảy ra ở các vùng nông thôn. Bệnh dại vẫn là một trong những bệnh truyền nhiễm nguy hiểm từ động vật sang người, phổ biến ở một số khu vực đặc thù nước ta

- Phương pháp nghiên cứu khoa học và phù hợp.

- Nội dung và kết quả nghiên cứu đầy đủ, có độ tin cậy cao.

- Một số góp ý:

+ Rà soát và chỉnh sửa một số lỗi chính tả

+ Phần bàn luận nên bổ sung và tham khảo thêm các kết quả nghiên cứu cập nhật ở nước ta và các khu vực có đặc điểm tương tự

4.5. Chủ tịch Hội đồng

- Kết quả nghiên cứu đề tài có ý nghĩa thực tiễn cao, góp phần vào việc đề xuất các biện pháp quản lý và dự phòng bệnh dại ở khu vực Tây Nguyên.

- Cần rà soát chỉnh sửa lỗi chính tả

4.6. Trả lời của Chủ nhiệm đề tài và nhóm nghiên cứu

Chủ nhiệm đề tài trả lời các câu hỏi của Hội đồng đặt ra; cảm ơn và tiếp thu những ý kiến góp ý của Hội đồng.

5. Kết quả bỏ phiếu đánh giá

Hội đồng tiến hành bỏ phiếu nghiệm thu đề tài nhánh

Hội đồng bầu Ban kiểm phiếu với các thành viên sau:

Trưởng Ban: PGS.TS. Đinh Thị Thanh Mai

Ủy viên: TS. Vũ Tăng Sơn

Tổng số phiếu phát ra: 05 phiếu

Tổng số phiếu thu về: 05 phiếu

Số phiếu hợp lệ: 05 phiếu

Kết quả đánh giá:

Đồng ý nghiệm thu đề tài nhánh: 05/05 phiếu

Đánh giá ở mức Đạt: 05/05 phiếu

Đánh giá mức Không đạt: 0/05 phiếu

6. Kết luận của Hội đồng

Đề tài nhánh "*Đặc điểm bệnh dại và một số yếu tố nguy cơ bệnh dại tại khu vực Tây Nguyên*" đạt yêu cầu. Tuy nhiên, cần chỉnh sửa và bổ sung theo ý kiến hội đồng.

Đề nghị chủ nhiệm đề tài sửa và nộp lại 1 tuần sau nghiệm thu.

Cuộc họp kết thúc 14h45 cùng ngày.

THƯ KÝ	**CHỦ TỊCH HỘI ĐỒNG**
(Họ, tên và chữ ký)	*(Họ, tên và chữ ký)*
CN. Nguyễn Thị Hoa	PGS.TS. Phạm Văn Hảo

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Năm thứ sáu mươi mốt

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ĐẶC ĐIỂM LÂM SÀNG VÀ HÌNH ẢNH NỘI SOI POLYP ĐẠI TRỰC TRÀNG U TUYẾN VÀ TĂNG SẢN

Nguyễn Bảo Trân[1], Nguyễn Thị Phương Thảo[2]

TÓM TẮT

Mục tiêu: Mô tả triệu chứng lâm sàng và đặc điểm nội soi của polyp đại trực tràng u tuyến và tăng sản.

Đối tượng: Nghiên cứu được tiến hành trên 99 bệnh nhân, tuổi ≥ 18.

Phương pháp: Nghiên cứu mô tả cắt ngang.

Kết quả và kết luận:

- Triệu chứng lâm sàng hay gặp nhất của nhóm polyp u tuyến là đại tiện phân có máu tươi, đại tiện xen kẽ lỏng – táo. Triệu chứng lâm sàng hay gặp nhất của nhóm polyp tăng sản là đại tiện phân có máu tươi, đau bụng.

- Đặc điểm nội soi: Nhóm polyp u tuyến chủ yếu là polyp đơn độc, không cuống, kích thước từ 1cm – 2cm, sần và loét. Nhóm polyp tăng sản chủ yếu là polyp đơn độc, có cuống, kích thước < 1cm, nhẵn.

Từ khóa: nội soi đại trực tràng, polyp đại trực tràng.

SUMMARY

THE CLINICAL SYMTOMS AND ENDOSCOPIC CHARACTERISTICS OF ADENOMATOUS ANB HYPERPLASIA COLORECTAL POLYPS

Objective: The purpose of this study is description the clinical symtoms and endoscopic characteristics of adenomatous and hyperplasia colorectal polyps.

Materials and methods: A prospective, cross-sectional study was conducted on patients who underwent colonoscopy at the Viet-Czech Friendship Hospital. The data was obtained from 99 patients older than 18 years old.

Results and conclusions:

On the adenomatous colorectal polyp cases, the common symptoms are bloody defecation and alternating loose defecation and constipation. On the hyperplasia colorectal polyps, the most common symptoms are bloody defecation and abdominal pain.

The endoscopic characteristics of the adenomatous colorectal polyps are solitary, sessile, 1-2cm in size, vegetation and ulcer. The endoscopic characteristics of the hyperplasia colorectal polyps are solitary, stalk, size less than 1cm and smooth.

Key words: colonoscopy, colorectal polyps.

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I. ĐẶT VẤN ĐỀ

Polyp đại trực tràng là khối u lồi vào lòng đại trực tràng, được tính thành tỉ lệ trong tổng số quá mức của niêm mạc đại trực tràng. Polyp đại trực tràng được chú ý nhiều vì là loại hay gặp, diễn biến trong đó phức tạp, có loại lành tính nhưng có loại có nguy cơ ác tính cao.

Trong những năm gần đây, nhờ sự phát triển mạnh mẽ của nội soi ống mềm đã giúp ích rất nhiều cho việc chẩn đoán các bệnh lý đường tiêu hóa trong đó có polyp đại trực tràng. Qua nội soi không những có thể thấy được tổn thương mà còn cho phép thực hiện một số kỹ thuật giúp chẩn đoán và điều trị như

sinh thời để làm chẩn đoán mô bệnh học, còn polyp hoặc tăng sản nữa,...

Chúng tôi tiến hành nghiên cứu "Triệu chứng lâm sàng và đặc điểm nội soi polyp đại trực tràng u tuyến và tăng sản" nhằm mục tiêu:

1. Mô tả triệu chứng lâm sàng của polyp đại trực tràng u tuyến và tăng sản.

2. Nhận xét đặc điểm nội soi của polyp đại trực tràng u tuyến và tăng sản.

II. ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU

Đối tượng nghiên cứu: Nghiên cứu được tiến hành trên 99 bệnh nhân, không phân biệt giới tính, tuổi ≥ 18, đến khám bệnh và được nội DTT tại Phòng nội soi của Bệnh viện Hữu nghị Việt Tiệp.

Phương pháp nghiên cứu: Mô tả cắt ngang.

Phương pháp xử lý số liệu: Tất cả các dữ liệu thu thập được qua bệnh án nghiên cứu được xử lý trên phần mềm thống kê y học SPSS 16.0.

III. KẾT QUẢ NGHIÊN CỨU VÀ BÀN LUẬN

Triệu chứng lâm sàng của bệnh nhân nhóm polyp u tuyến và polyp tăng sản

Triệu chứng cơ năng

Bảng 1: Triệu chứng cơ năng

Loại polyp / Triệu chứng	Nhóm polyp u tuyến n = 41		Nhóm polyp tăng sản n = 58	
	n	Tỷ lệ %	n	Tỷ lệ %
Đau bụng	19	46,3	21	36,2
Đại tiện lỏng	4	9,7	11	19,0
Đại tiện táo	6	14,6	18	31,0
Đại tiện xen kẽ lỏng – táo	23	56,1	17	29,3
Phân có máu tươi	27	65,8	27	46,6
Phân có máu nhầy đen	6	14,6	8	13,8

Về lâm sàng ở bệnh nhân polyp ĐTT: nhiều tác giả đều thừa nhận rằng các dấu hiệu lâm sàng rất nghèo nàn, đa số bệnh nhân chỉ đi khám khi có các triệu chứng như đau bụng, đại tiện ra máu hoặc rối loạn phân,...

Bảng 1 cho thấy ở cả hai nhóm polyp đều triệu chứng đại tiện ra máu tươi là hay gặp nhất (chiếm 65,8% và 46,6%), tiếp đó là triệu chứng đau bụng và các triệu chứng khác. Theo nghiên cứu của Đinh Đức Anh cho thấy 86,3% số bệnh nhân polyp TT và ĐT ngoài nội phát đều máu. Theo Phạm Văn Nhân: triệu chứng này chiếm 88,0%, theo Cuella và Cs thì tỷ lệ này là 91,3%.

Triệu chứng đại tiện phân lẫn máu ở những bệnh nhân trong nghiên cứu của chúng tôi đa phần xuất hiện không thường xuyên, lâu rồi lại không chung thường là lý do chính khiến bệnh nhân đi khám và cũng rất có giá trị định hướng cho các thầy thuốc cần phải cho bệnh nhân nội soi ĐT.

Dấu hiệu thực thể

Thiếu máu:

Trong nghiên cứu của chúng tôi không gặp bệnh nhân nào thiếu máu. Kết quả này tương tự kết quả của Phạm Văn Nhân nghiên cứu 44 bệnh nhân polyp TT và ĐT

người đều không gặp bệnh nhân nào có triệu chứng. Theo chúng tôi, bệnh nhân có polyp ĐTT thường không thấu mắc vì mức độ nhỏ nên ít và không tắc nghẽn.

Đau bụng xuất hay tiêu ra máu:

Trong nghiên cứu của chúng tôi không gặp bệnh nhân nào có triệu chứng này. Điều trên liên tiêu ra máu xảy ra gặp vì triệu chứng này thường xuất hiện ở những bệnh nhân có polyp kích thước lớn hoặc có ung thư ĐTT kèm theo.

Thăm trực tràng thấy u:

Chúng tôi tiến hành thăm trực tràng bằng ngón tay cho tất cả bệnh nhân trước khi nội DT và phát hiện thấy có 21 bệnh nhân nghi ngờ có polyp chiếm 21,21% tổng số bệnh nhân, những bệnh nhân này sau khi nội DT và được làm sinh thiết nhận được mô bệnh học đều được xác định là polyp.

Kết quả này tương tự nghiên cứu của Tống Văn Lược cho thấy tỷ lệ phát hiện thấy polyp bằng thăm trực tràng chiếm 22,68% nhưng thấp hơn của Phạm Văn Nhâm 65,9%. So sánh với một số nghiên cứu nước ngoài thì tỷ lệ này lại thấp hơn các tác giả Việt Nam: Shinozawa I và Cs thấy có 13,3% bệnh nhân có thể sờ thấy polyp, theo Dong P.H thì tỷ lệ này là 6,3% . Theo chúng tôi, sự khác biệt này có thể do ở nước người việc thăm trực tràng là động tác khám thường quy được thực hiện ở nhiều đối tượng bệnh nhân trong khi đó ở Việt Nam chỉ thăm trực tràng ở bệnh nhân có triệu hiệu bệnh lý ĐTT do vậy tỷ lệ phát hiện thấy polyp bằng thăm trực tràng ở Việt Nam thấp hơn. Đây là một việc làm cần thiết có thể tiến hành ở mọi cơ sở khám chữa bệnh, vì vậy đòi hỏi các thầy thuốc trong khi khám cho bệnh tỷ sẽ ĐTT.

Đặc điểm nội soi của polyp đại trực trùng:

Hình dạng polyp

Bảng 2: Số lượng polyp

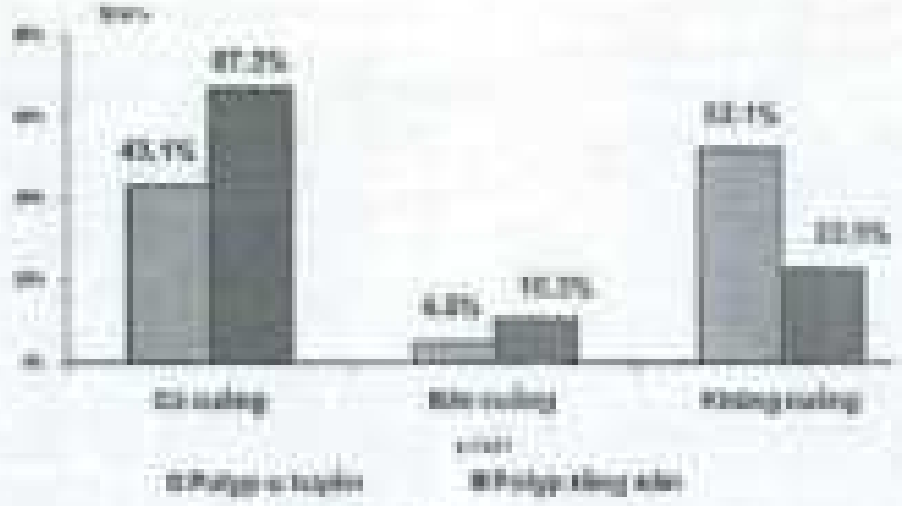
Loại polyp / Số lượng	Polyp u tuyến		Polyp tăng sản	
	n	Tỷ lệ %	n	Tỷ lệ %
Polyp đơn độc	34	82,9	34	93,1
Đa polyp	7	17,1	4	6,9
Tổng	41	100	38	100
p	< 0,01		< 0,01	

Theo bảng 2, ở cả hai nhóm polyp đa số đều gặp là đơn polyp đặc biệt ở nhóm polyp tăng sản tỷ lệ đơn polyp chiếm 93,1% (p < 0,05).

Theo kết quả nghiên cứu của chúng tôi, có sự khác nhau về hình dạng giữa hai nhóm polyp u tuyến và polyp tăng sản. Ở nhóm polyp u tuyến polyp không cuống chiếm tỷ lệ cao nhất (52,1%) và ngược lại ở nhóm polyp tăng sản polyp có cuống chiếm tỷ lệ cao nhất (97,3%).

Theo Trần Văn Huy, polyp u tuyến có hình dạng không cuống chiếm đa số và polyp tăng sản hoàn toàn có hình dạng không cuống chiếm tới 60%. Điều này cũng phù hợp với nhiều tác giả khác thấy rằng các polyp không cuống hoặc liền cuống có nguy cơ ung thư hóa cao hơn các polyp có cuống, do vậy đây cũng là điều các bác sỹ làm nội soi cần chú ý trong quá trình soi.

Polyp đơn độc có khả năng ung thư thấp hơn đa polyp hoặc bệnh polyp, do vậy kết quả này cũng giảm lo sự lo ngại cho các bệnh nhân có polyp ĐTT.



Biểu đồ 1: Đặc điểm hình dạng polyp

Theo kết quả nghiên cứu của chúng tôi, có sự khác nhau về hình dạng giữa hai nhóm polyp u tuyến và polyp tăng sản. Ở nhóm polyp u tuyến polyp không cuống chiếm tỷ lệ cao nhất (33,1%) và ngược lại ở nhóm polyp tăng sản polyp có cuống chiếm tỷ lệ cao nhất (87,2%).

Theo Trần Văn Huy, polyp u tuyến có hình dạng không cuống chiếm đa số và polyp ống thì hình có hình dạng không cuống chiếm tới 80%. Điều này cũng phù hợp với nhiều tác giả khác thấy rằng các polyp không cuống hoặc bán cuống có nguy cơ ung thư hóa sau lớn các polyp có cuống, do vậy đây cũng là điều các bác sỹ lâm sàng nên chú ý trong quá trình soi.

Kích thước polyp

Bảng 3: Đặc điểm kích thước polyp

Loại polyp / Kích thước	Polyp u tuyến		Polyp tăng sản	
	n	Tỷ lệ %	n	Tỷ lệ %
< 1 cm	19	46,3	43	74,1
1cm – 2 cm	20	48,9	14	24,1
> 2 cm	2	4,8	1	1,8
Tổng	41	100	58	100
p	< 0,01		< 0,01	

Từ kết quả ở bảng 3 cho thấy ở nhóm polyp u tuyến, polyp có kích thước < 1cm và polyp có kích thước từ 1cm – 2cm gần tương đương nhau nhưng ở nhóm polyp tăng sản polyp có kích thước < 1cm chiếm tỷ lệ 74,4%, cao hơn hẳn so với các kích thước khác (p < 0,01). Kết quả của chúng tôi cũng phù hợp với nghiên cứu của Quách Trọng Hiếu, Nguyễn Bảo Trung, Li S.E và Ch (Trung Quốc) chọn thấy rằng polyp ngày càng có tỷ lệ tăng dần theo kích thước. Do vậy, trước một bệnh nhân có polyp ĐTT có kích thước lớn hơn 2cm cần phải cắt bỏ như đề nghị chẩn đoán trình sang thư hóa.

Đặc điểm hình thái polyp:

Bảng 4: Đặc điểm hình thái polyp

Loại polyp / Hình thái	Polyp u tuyến		Polyp tăng sản	
	n	Tỷ lệ %	n	Tỷ lệ %
Nhẵn	17	41,5	49	84,5
Sùi	14	34,1	5	8,6
Loét	10	24,4	4	6,9
Tổng	41	100	58	100
p	< 0,05		< 0,01	

*Nhận xét:

Ở nhóm polyp u tuyến, hình thái chiếm chiếm 41,5%, sùi chiếm 34,1%, thấp nhất là hình thái loét chiếm 24,4% (p > 0,05).

Ở nhóm polyp tăng sản, đa số là hình thái nhẵn chiếm 84,5%, cao hơn hẳn so với hình thái sùi và loét (p < 0,01).

Kết quả nghiên cứu của chúng tôi có sự khác nhau giữa nhóm polyp u tuyến và polyp tăng sản. Đối với nhóm polyp u tuyến, gặp cả 3 hình thái nhẵn, sùi và loét với tỷ lệ lần lượt là 41,5%, 34,1% và 24,4% (p > 0,05). Đối với nhóm polyp tăng sản, hình thái nhẵn chiếm tỷ lệ 84,5% cao hơn hẳn so với hình thái sùi và loét (p < 0,01). Kết quả này phù hợp với nghiên cứu của Đinh Đức Anh cho thấy polyp u tuyến đầu hết polyp u tuyến thường có bề mặt gồ ghề và polyp tăng sản thường có bề mặt nhẵn nhưng có khác so với kết quả nghiên cứu của Trần Văn Huy và Nguyễn Đức Trung cho thấy đa số polyp tuyến đều có bề mặt trơn láng, mức độ nhẵn. Theo chúng tôi sự khác biệt này có thể do ở mỗi nghiên cứu có cách phân loại khác nhau và sự nhận định chủ quan của bác sỹ nội soi về hình thái polyp.

V. KẾT LUẬN

- Triệu chứng lâm sàng hay gặp nhất của nhóm polyp u tuyến là đại tiện phân có máu mươi: 65,8%, đại tiện mót 3# lần – thay 56,1%; đau bụng: 46,3%; thăm trực tràng thấy polyp: 26,83%; các triệu chứng khác hiếm gặp.

- Triệu chứng lâm sàng hay gặp nhất của nhóm polyp tăng sản là đại tiện phân có máu tươi: 46,6%; đau bụng: 36,2%; đại tiện mót kê lỏng – táo: 29,3%; thăm trực tràng thấy polyp: 17,2%; các triệu chứng khác hiếm gặp.

- Đặc điểm nội soi:

+ Nhóm polyp u tuyến: chủ yếu là polyp đơn độc: 82,9% (p < 0,01); không cuống: 82,9% (p < 0,01); kích thước từ 1cm – 2cm: 48,8% (p < 0,01); sùi và loét: 58,5% (p < 0,05.

+ Nhóm polyp tăng sản: chủ yếu là polyp đơn độc: 93,1% (p < 0,01); có cuống: 87,2% (p < 0,01); kích thước < 1cm: 74,1% (p < 0,01); nhẵn: 84,5% (p < 0,01).

TÀI LIỆU THAM KHẢO

1. **Đinh Đức Anh (2008)** "Nghiên cứu đặc điểm lâm sàng, hình ảnh nội soi, mô bệnh học của polyp trực tràng – đại tràng sigma và kết quả cắt bỏ bằng điện nhiệt nội soi", Luận án tiến sĩ Y học, Học viện Quân Y, Hà Nội.

2. **Trần Văn Huy, Thái Thị Hoài (2007)**, "Nghiên cứu đặc điểm lâm sàng, nội soi và mô bệnh học của polyp đại trực tràng ở Bệnh viện Trường Đại học Y Hải ", Y học thực hành – số 9/2007.

3. **Phạm Văn Nhân (2008)**, "Nghiên cứu chẩn đoán lâm sàng, cận lâm sàng bệnh polip đại trực tràng và đại trực tràng nhọt ở Bệnh viện Việt Tiệp Hải phòng", Luận án tiến sĩ Y học, Học viện Quân Y, Hà Nội.
4. **Cocks M, Fenoglio, Prüner et al (2003)**, "Non-hereditary adenomatous polyposis and hereditary leiomyomatosis syndromes", Gastrointestinal Pathology, pp.1 – 22.
5. **Celestino A, Castillo T, Castaneda C (1994)**, "Therapeutic colonoscopy in patients with colonic and rectal polyps", Rev. Gastroenterol Peru 1994, Sep – Dec, 14 (3), pp. 181 – 187.
6. **Ding P.R (1996)**, "A retrospective study of colorectal polyps in Malaysian patients", Asian pacific congress of gastroenterology, Yokohama, Japan, pp. 442.
7. **Prabhu R, Thara B.R, Vaipheí K, Singh K (1998)**, "Colonic polyps: Experience of 136 Indian children", Gastroenterol, 93 (4), pp. 928 – 931.
8. **Shimomura I. (1996)**, "Evaluation of patients with colorectal polyp in our department for the past five year", Asian pacific congress of gastroenterology, Yokohama, Japan, pp. 442.

BIẾN ĐỔI NHỊP ALPHA Ở THÙY CHẨM VÀ THETA Ở THÙY TRÁN THIỂN ĐIỆN NÃO ĐỒ BỆNH NHÂN TÂM THẦN PHÂN LIỆT

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TÓM TẮT

Mục tiêu: Phân tích sự biến đổi các chỉ số của nhịp alpha ở thùy chẩm và các chỉ số của nhịp theta ở thùy trán trên điện não đồ bệnh nhân tâm thần phân liệt (TTPL). **Phương pháp nghiên cứu:** So sánh sự khác nhau về năng lượng, biên độ và tần số của nhịp alpha ở thùy chẩm hai bên và nhịp theta ở thùy trán hai bên giữa 233 bệnh nhân TTPL được điều trị tại Khoa tâm thần, Bệnh viện Quân y 103 với 66 người trưởng thành khỏe mạnh. **Kết quả:** Năng lượng và biên độ của nhịp alpha ở thùy chẩm ở nhóm bệnh nhân TTPL thấp hơn có ý nghĩa thống kê so với nhóm chứng ở điện não đồ nền, sau nghiệm pháp tăng thông khí và nghiệm pháp kích thích ánh sáng trong khí năng lượng và biên độ của nhịp theta ở thùy trán ở nhóm bệnh nhân TTPL là các hơn so với nhóm bệnh ở nghiệm pháp nền mở và nghiệm pháp kích thích ánh sáng. Không có sự khác biệt tần số nhịp alpha ở thùy chẩm và tần số nhịp theta ở thùy trán giữa nhóm bệnh và nhóm chứng. **Kết luận:** Kết quả nghiên cứu này đưa ra bằng chứng về sự biến đổi nhịp theta ở thùy trán và nhịp alpha ở thùy chẩm trên bệnh nhân tâm thần phân liệt.

Từ khóa: TTPL, nhịp alpha và nhịp theta, thùy chẩm và thùy trán.

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SUMMARY

CHANGES OF ALPHA-BAND OSCILLATIONS IN THE OCCUPITAL LOBE AND THETA-BAND

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KHẢO SÁT ĐẶC ĐIỂM LÂM SÀNG VÀ HÌNH THÁI ĐẠI THỂ POLYP DẠ DÀY QUA NỘI SOI TẠI HẢI PHÒNG

Nguyễn Bảo Trân[1], Nguyễn Thị Phương Thảo[2]

TÓM TẮT

Mục tiêu: Khảo sát triệu chứng lâm sàng và đặc điểm hình thái của polyp dạ dày qua nội soi. *Đối tượng:* Nghiên cứu được tiến hành trên 98 bệnh nhân được nội soi chẩn đoán có polyp dạ dày tại Bệnh viện Hữu Nghị Việt Tiệp. *Phương pháp:* Nghiên cứu mô tả cắt ngang. *Kết quả và kết luận:* Tỷ lệ bệnh polyp tăng dần theo lứa tuổi, ít bị nhiễm hơn nam. Các triệu chứng của bệnh polyp dạ dày nghèo nàn và không đặc hiệu. Vị trí polyp tập trung chiếm nhất ở vùng thân vị 58,2% và giảm dần theo cả hai hướng về phía tâm vị và môn vị. Đa số polyp có kích thước nhỏ hơn 10mm, kích thước trung bình là 5,09 ± 2,76 mm, chủ yếu là polyp không cuống (86,8%), đa số polyp có bề mặt nhẵn (71,5%) và viêm (17,5%).

Từ khóa: nội soi dạ dày, polyp dạ dày

SUMMARY

SURVEYING CLINICAL SYMPTOMS AND ENDOSCOPIC MORPHOLOGICAL CHARACTERISTICS OF GASTRIC POLYPS IN HAI PHONG

Objective: The purpose of this study is description the clinical symptoms and endoscopic characteristics of gastric polyps. *Materials:* The study was conducted on 98 patients diagnosed with gastric polyps by endoscopy at the Viet-Czech Friendship Hospital. *Methods:* A descriptive cross-sectional study. *Results and conclusions:* The rate of gastric polyps increases with age; women are more affected than men; Symptoms of gastric polyps are poor and nonspecific. The most common localizations of polyps were corpus (58.2%) and gradually decreased in both directions towards the cardia and pylorus. Most polyps are less than 10mm in size, the average size was 5.09 ± 2.760 mm, mainly sessile polyps (86.8%), most polyps had smooth surfaces (71.5%) and inflammation (17.5%).

Keywords: Gastroscopy, gastric polyps.

I. ĐẶT VẤN ĐỀ

Polyp dạ dày là những khối phát triển bất thường nhô vào trong lòng dạ dày, có thể có ở tất cả các phần của dạ dày. Trong các loại bệnh lý polyp dạ dày, polyp tăng sản và polyp u tuyến có khả năng gây ung thư hóa tăng lên rõ. Đặc biệt polyp tăng sản dạ dày có nguy cơ ung thư ngay và lớn có kích thước nhỏ hơn 10 mm [1].

Cùng với sự phát triển và ứng dụng rộng rãi của kỹ thuật nội soi ống mềm, các polyp dạ dày đã được phát hiện thường xuyên hơn. Khoảng 90% không có triệu chứng, nhưng khi có kích thước lớn, các triệu chứng có thể xuất hiện bao gồm là chảy máu, thiếu máu, tắc nghẽn đường tiêu hóa hoặc đau bụng.

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Cho đến nay, ở Việt Nam nói chung cũng như ở Hải Phòng nói riêng, chưa có một nghiên cứu cập nhật về bệnh lý polyp dạ dày, sau khi có các nghiên cứu của nước ta và sự thay đổi về kích thước và vị trí xuất hiện của polyp dạ dày do tình trạng nhiễm Helicobacter pylori và sử dụng thuốc ức chế bơm proton (PPI) kéo dài [2]. Chính vì vậy nên tiến nghiên cứu chẩn đoán, xử trí và điều trị nhằm chẩn đoán sớm polyp dạ dày của bệnh nhân được quan tâm đúng mức và có thái độ xử trí thích hợp.

Xuất phát từ thực tế trên, chúng tôi tiến hành nghiên cứu với mục tiêu sau: *Nhận xét đặc điểm lâm sàng, hình thái polyp qua nội soi của bệnh nhân polyp dạ dày tại Bệnh viện Đại Học Kỹ Thuật Y Tế Hải Phòng từ tháng 10/2021 đến tháng 8/2022.*

II. ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU

2.1. Đối tượng nghiên cứu

Đối tượng: Tất cả các BN được chẩn đoán có polyp dạ dày tại khoa Thăm dò chức năng của Bệnh viện Đại học Kỹ Thuật Y Tế trong thời gian từ tháng 10 năm 2021 đến tháng 8 năm 2022.

Tiêu chuẩn lựa chọn: gồm những BN được nội soi dạ dày tá tràng có kính ánh polyp dạ dày trên nội soi và được chẩn đoán mô bệnh học xác định là polyp.

2.2. Thiết kế nghiên cứu

Nghiên cứu mô tả cắt ngang

2.3. Cỡ mẫu và phương pháp chọn mẫu

Chọn mẫu thuận tiện, không xác suất, tất cả các BN đủ tiêu chuẩn trong thời gian nghiên cứu. Chúng tôi thu thập được 98 bệnh nhân đủ điều kiện nghiên cứu.

2.4. Phương pháp xử lý số liệu

Dữ liệu thu thập được qua bệnh án nghiên cứu được xử lý trên phần mềm SPSS 22.0

III. KẾT QUẢ NGHIÊN CỨU

3.1. Đặc điểm chung của các bệnh nhân nghiên cứu

Bảng 3.1: Tuổi

	19-Jul	20-29	30-39	40-49	50-59	≥ 60	Total
Số lượng	2	4	14	14	24	40	98
Tỷ lệ	2.0	4.1	14.3	14.3	24.5	40.8	100.0
Tuổi trung bình (năm)	57.66 ± 13.33						

Nhận xét: bệnh nhân nhỏ tuổi nhất là 18 tuổi và cao nhất là 75 tuổi, tỷ lệ bệnh nhân tăng lên theo lứa tuổi.

Bảng 3.2: Giới

Giới	Số lượng	Tỷ lệ %
Nam	24	24,5
Nữ	74	75,5
Total	98	100 %

3.2. Đặc điểm lâm sàng

Bảng 3.1: Đặc điểm lâm sàng

Đặc điểm		Số BN	Tỷ lệ %
Đau thượng vị	Không	60	61,9
	Có	58	38,1
Buồn nôn	Không	81	82,7
	Có	17	17,3
Dấy chứng khó tiêu	Không	51	52,0
	Có	47	48,0
Ợ nóng ợ chua	Không	93	94,8
	Có	5	5,1

3.3. Hình thái polyp dạ dày qua nội soi

Chúng tôi thực hiện nội soi dạ dày cho các bệnh nhân nghi ngờ có bệnh lý ở thực quản, dạ dày, tá tràng. Trong quá trình nội soi phát hiện polyp dạ dày chúng tôi tiến hành đánh giá, nhận xét các đặc điểm đại thể của polyp về số lượng, vị trí, kích thước, hình dạng, màu sắc, hình thái và tổn thương phối hợp nếu có.

Bảng 3.4: Số lượng polyp

	1	2-8	9-15	>15	Total
Số BN (n)	55	40	2	1	98
Tỷ lệ %	56,1	40,8	2,0	1,0	100,0

Bảng 3.5: Vị trí polyp

	Tâm vị	Đáy vị	Thân vị	Hang vị	Môn vị	Tổng
n	5	22	56	13	2	98
Tỷ lệ %	5,1	22,4	57,1	13,3	2,0	100%

Nhận xét: Tỷ lệ polyp xuất hiện nhiều nhất ở vùng thân vị chiếm tỷ lệ 57,1%, giảm dần về hai phía tâm vị và môn vị của dạ dày.

Bảng 3.6: Phân loại theo hình dạng polyp

	Có cuống	Không cuống	Không cuống	Phẳng	Total
n	4	6	87	1	98
Tỷ lệ %	4,1	6,1	88,8	1,0	100,0

Bảng 3.7: Phân loại theo kích thước polyp

	< 5 mm	5 mm – 10 mm	> 10 mm	Tổng
n	50	34	8	98
Tỷ lệ %	51,1	34,7	8,2	100,0

Nhận xét: Kích thước trung bình polyp 7,08 ± 2,760 mm.

Bảng 3.8: Phân loại theo hình thái bề mặt polyp

	Nhẵn	Bề mặt	Loét	Viêm	Total
n	72	1	8	17	98
Tỷ lệ %	73,5	1,0	8,2	17,3	100%

Bảng 3.9: Đối chiếu giữa kích thước và hình dạng polyp

Kích thước		Hình dạng polyp				Tổng
		Có cuống	Bán cuống	Không cuống	Phẳng	
≤ 5 mm	n	1	2	53	1	56
	%	1,0%	2,0%	55,2%	1,0%	57,1%
5 mm - ≤ 10 mm	n	1	3	30	0	34
	%	1,0%	3,1%	30,9%	0,0%	34,7%
> 10 mm	n	2	1	3	0	8
	%	2,0%	1,0%	3,1%	0,0%	8,2%
Tổng	**n**	**4**	**6**	**87**	**1**	**98**
	%	**4,1%**	**6,1%**	**88,8%**	**1,0%**	**100%**
Fisher's Exact Test		<0,05				
Cramer's V		0,266				

Nhận xét: Trong nghiên cứu của chúng tôi, polyp không cuống kích thước nhỏ hơn 5mm chiếm tỷ lệ 55,1%. Bên cạnh đó, không thấy xuất hiện các polyp dạng đẹt có kích thước lớn hơn 5mm.

Bảng 3.10: Đối chiếu giữa kích thước và vị trí polyp

Kích thước		Vị trí polyp					Tổng
		Tâm vị	Đáy vị	Thân vị	Hang vị	Môn vị	
≤ 5 mm	n	2	17	34	3	0	56
	%	2,0%	17,3%	34,7%	3,1%	0,0%	57,1%
5 mm - 10 mm	n	3	5	16	8	2	34
	%	3,1%	5,1%	16,3%	8,2%	2,0%	34,7%
> 10 mm	n	0	0	6	2	0	8
	%	0,0%	0,0%	6,1%	2,0%	0,0%	8,2%
Tổng	**n**	**5**	**22**	**56**	**13**	**2**	**98**
	%	**5,1%**	**22,4%**	**57,1%**	**13,3%**	**2,0%**	**100%**
Fisher's Exact Test		< 0,05					
Cramer's V		0,12					

Nhận xét: Trong 57,1% polyp vùng thân vị thì đa số có kích thước nhỏ hơn 5mm và tỷ lệ giảm dần khi kích thước polyp tăng lên.

Bảng 3.11: Liên quan giữa hình dạng và vị trí polyp

Vị trí polyp		Hình dạng polyp				
		Có cuống	Bán cuống	Không cuống	Dạng đẹt	Tổng
Tâm vị	n	0	0	5	0	5
	%	0,0%	0,0%	5,1%	0,0%	5,1%
Đáy vị	n	1	1	20	0	22
	%	1,0%	1,0%	20,4%	0,0%	22,4%
Thân vị	n	2	3	50	1	56
	%	2,0%	3,1%	51,0%	1,0%	57,1%

Hang vị	n	3	2	10	0	12
	%	1,0%	2,0%	10,3%	0,0%	13,3%
Mũi vị	n	0	0	2	0	2
	%	0,0%	0,0%	2,0%	0,0%	2,0%
Tổng	**n**	**4**	**6**	**87**	**1**	**98**
	%	**4,1%**	**6,1%**	**88,8%**	**1,0%**	**100%**
Fisher's Exact Test				> 0,05		

Nhận xét: Không có mối tương quan giữa kích thước với vị trí polyp trong nghiên cứu của chúng tôi với p > 0,05.

IV. BÀN LUẬN

4.1. Đặc điểm chung của các bệnh nhân nghiên cứu

Trong nghiên cứu của chúng tôi, tuổi trung bình của bệnh nhân là 52,68 ± 13,25, bệnh có thể gặp ở mọi lứa tuổi, tỷ lệ mắc bệnh tăng dần theo lứa tuổi, trong đó tỷ lệ bệnh nhân từ trên 50 tuổi có sự khác biệt có ý nghĩa. Kết quả này cũng tương tự như các tác giả Argandoña [3], Olmos và cộng sự [4].

Tỷ lệ bị polyp dạ dày ở nữ (70,33%) nhiều hơn nam (29,69%) và tỷ số nam/nữ là 1:2,36. Kết quả chúng tôi gần với kết quả của Wei Guo và cs nghiên cứu trên bệnh nhân Trung Quốc cho tỷ lệ nam/nữ là 1:2,16 [5]. Các tác giả nước ngoài cũng ghi nhận tỷ lệ bị bệnh nữ nhiều hơn nam như Argandoña và cs (62% nữ) [3]. Nhìn chung, các nghiên cứu trên thế giới đều nhận định nữ giới là polyp dạ dày nhiều hơn nam giới.

Tóm lại, các tiền bệnh nghiên cứu có cỡ mẫu lớn hơn, thực hiện trong thời gian dài và chủ yếu trong cộng đồng để làm rõ hơn nữa các đặc điểm dịch tễ của bệnh polyp dạ dày.

4.2. Đặc điểm lâm sàng bệnh nhân polyp dạ dày

Theo kết quả nghiên cứu, đa số bệnh nhân vẫn có đi kiểm soát bình, không có triệu chứng bước sớm. Một khác, bệnh nhân đến khám có thể có triệu chứng đau thượng vị (35,3%) và đầy chướng khó tiêu (49,8%). Kết quả này khác với các tác giả đã công bố như Alhuyraki [6], Wei Guo và cs [5], mà nhiều các tác giả đều chung nhận định là các triệu chứng này không có ý nghĩa. Theo chúng tôi những điều luận có thể là triệu chứng do các bệnh phối hợp vì khi nội soi chúng tôi đều phát hiện có bệnh kèm viêm dạ dày và tổn thương viêm khác ở thực quản hoặc tá tràng.

Về tuổi trung đại tiện, tỷ lệ đại tiện bình thường chiếm tỷ lệ rất cao 78,8%. Theo chúng tôi, có một số ít bệnh nhân có triệu chứng đại tiện bất thường là do tuổi trung cao lớn không ổn định và có thể do các tình trạng bệnh lý phối hợp.

Nhìn chung, không có mối tương thiểu mối rõ ràng trong nghiên cứu của chúng tôi. Tình trạng thiếu máu, chảy máu chỉ có thể xảy ra ở bệnh nhân có polyp lớn, nhận định này tương tự như các tác giả khác trên thế giới.

Tóm lại, các triệu chứng của bệnh polyp dạ dày thường nghèo nàn và có thể là do tình trạng bệnh lý phối hợp ở đường tiêu hóa trên.

4.3. Hình thái polyp dạ dày qua nội soi

Số lượng polyp

Tiến hành nội soi dạ dày trên 98 bệnh nhân, kết quả nhận được có 56,1% bệnh nhân có polyp đơn độc, có 40,8% bệnh nhân có có lượng từ 2-5 polyp chiếm tỷ lệ 39,8%

và một bệnh nhân có số lượng polyp là 21. Tỷ lệ này thấp hơn các nghiên cứu của tác giả khác trong nước như Quách Trọng Đức: polyp đơn độc 84,8% [7], Trịnh Tuấn Dũng: polyp đơn độc 86,78% [8]. So với các tác giả nước ngoài khác đã công bố trong thời gian qua cũng có sự khác biệt. Olmez và cs hồi cứu bệnh polyp dạ dày trong khoảng thời gian 2005 - 2011 cho kết quả 73,4% có polyp đơn độc trong dạ dày [4]. Argandín và cs công bố có 48,1% có polyp đơn độc [1]. Sự khác biệt về số lượng polyp trong các nghiên cứu theo chúng tôi tùy thuộc vào vùng địa lý nghiên cứu, hoặc tùy thuộc vào thiết kế nghiên cứu và cỡ mẫu của nghiên cứu. Một nhận xét của Goddard cũng rất đáng lưu ý khi cho rằng tính trung bình polyp đơn độc hay đa polyp trong dạ dày của tùy thuộc vào loại polyp nào [9].

Vị trí polyp

Theo nghiên cứu của chúng tôi, polyp xuất hiện ở tất cả các vùng của dạ dày kết quả như sau: polyp ở vùng thân vị 50,3%, ở đáy vị 21,2%, ở hang vị 18,8%, ở tâm vị 4,5% và vùng môn vị 2,1%. Kết quả nghiên cứu của chúng tôi khác với kết quả các tác giả Việt Nam đã công bố trước đây: Trần Ngọc Anh 68,88% hang vị, 17,61% thân vị, 1,14% đáy vị, 8,81% tâm vị [10]. Quách Trọng Đức: 62,8% ở hang vị, 27,1% ở thân vị, 7,1% ở đáy vị và 2,9% ở tâm vị [7]. Trần Tuấn Dũng: 69,88% hang vị, 17,61% thân vị, 8,81% tâm vị [8]. Bên cạnh đó các tác giả nước ngoài cũng có kết quả khác nhau: Mashlofer và cs: 41,0% hang vị, 31,2% thân vị, 2,8% đáy vị, 5,0% tâm vị [11], Garcia-Alonso và cs: 39,5% ở thân vị, 34,8% ở hang vị và 25,9 % ở đáy vị [12], Costa và cs: 46,2% ở thân vị và 34,5% ở hang vị [1]. Wei Guo và cs: 47,8% ở thân vị, 26,3% ở hang vị và 19,3% ở đáy vị [5].

Điều rất đáng quan tâm trong quá trình so sánh số liệu về vị trí từ các nghiên cứu trong và ngoài nước là sự thay đổi tỷ lệ xuất hiện polyp ở vùng thân vị và đáy vị. Trong thời gian gần đây, tỷ lệ polyp ở vùng thân vị đã có sao lưu ở vùng hang vị, ngược lại với các nghiên cứu cách đây 10 năm thì tỷ lệ polyp ở vùng hang vị rất cao.

Hình dạng polyp

Tại 98 bệnh nhân tìm thấy trong quá trình nghiên cứu của chúng tôi, polyp không cuống chiếm tỷ lệ cao nhất 89,8%, polyp có cuống 4,1%, bán cuống 6,1% và polyp dạng dẹt 1%. Theo Quách Trọng Đức và cs cho thấy tỉ lệ polyp không cuống 82,85% và polyp có cuống 17,15% [7], theo Garcia – Alonso và cs thì polyp không cuống chiếm tỷ lệ 86,8% [12]. Kết quả nghiên cứu chúng tôi nhìn chung đều như các tác giả khác trên thế giới là tỷ lệ polyp không cuống chiếm đa số, điều này có ý nghĩa rất lớn trong việc chuẩn bị cho quá trình cắt polyp vì kỹ thuật cắt các polyp không cuống sẽ tạo cuống giả để đẩy polyp lên mặt lớp niêm mạc khối lớp cơ niêm, sau đó đốt cắt cho tới khi polyp được rời ra.

Kích thước polyp

Trong nghiên cứu của chúng tôi, kích thước trung bình của polyp 5,69 ± 2,360 mm. Olmez và cs thu nhận kết quả kích thước polyp trung bình: 11,0 ± 8,4 mm [4]. Costa và cs nghiên cứu từ 33.605 ca cho kết quả: 8,3 ± 4,9 mm [1].

Bằng thử, chúng tôi thu nhận kết quả có 81,8% bệnh nhân có kích thước dưới 10mm.

Kết quả nghiên cứu polyp có kích thước dưới 10mm của Quách Đặng Đức là 84,3% [7], kết quả của Garcia và cs là 82,1% [12], kết quả của Arguello và cs là 83,8% [3], theo Anantaprohar và cs là 84,8% [13].

Tóm lại kích thước trung bình của polyp thay đổi theo các nghiên cứu của các tác giả khác nhau. Sự khác biệt có thể do tính kế nghiệm nhỏ và cũng có thể do lựa hành các loại polyp khác nhau trong mẫu nghiên cứu của mỗi tác giả. Bên cạnh đó, tất cả các nghiên cứu đều ghi nhận tỷ lệ cao các polyp có kích thước dưới 10mm. Do các polyp càng nhỏ thì nguy cơ chảy máu càng thấp và vì vậy sẽ có tiên lượng tốt hơn cho các nhà lâm sàng tiến hành cắt polyp.

Hình thể bề mặt của polyp

Trong quá trình nội soi, chúng tôi quan sát đánh giá hình thái bề mặt polyp và thu nhận được kết quả: 73,9% có bề mặt nhẵn, 17,3% viêm xung huyết, 8,2% loét và 1% có bề mặt sù sì. Kết quả này thấp hơn nhiều so với tác giả Trịnh Tuấn Dũng: 90,03% số polyp có bề mặt nhẵn, 9,37% số polyp có bề mặt sần sùi như [3], tuy nhiên những thông tin này có giá trị không cao vì phụ thuộc nhiều vào cảm quan của người tiến hành thủ thuật.

Mối liên quan giữa kích thước và hình dạng, vị trí polyp dạ dày qua nội soi

Theo bảng 3.8, tỷ lệ các loại polyp không cuống đa số có kích thước nhỏ hơn 5mm chiếm tỷ lệ 53,1% và giảm dần khi kích thước tăng lên, polyp không cuống có kích thước từ 5 đến 10mm chiếm 30,6% và có kích thước lớn hơn 10mm chiếm tỷ lệ 8,2%. Một khác tỷ lệ polyp có cuống và bán cuống tăng dần khi có kích thước lớn hơn 5mm. Kết quả kiểm định Fisher chính xác cho thấy có mối liên quan giữa hình dạng và kích thước của polyp với $p = 0,05$. Tuy nhiên giá trị Cramer's V là $0,204 < 0,3$ cho thấy mối tương quan giữa 2 chỉ số này chỉ ở mức độ vừa phải.

Về mối liên quan giữa vị trí và kích thước của polyp, từ kết quả được trình bày trong bảng 3.10, chúng tôi nhận thấy các polyp có kích thước nhỏ hơn 5mm có xu thế tập trung nhiều hơn ở mức trên dạ dày từ thân vị đến tâm vị. Trong khi các polyp có kích thước lớn hơn 5mm tập trung chuẩn ở ở mức dưới dạ dày từ thân vị trở xuống. Mối liên quan giữa vị trí và kích thước của polyp không có ý nghĩa thống kê với $p = 0,05$ trong kiểm định Fisher chính xác.

Đối chiếu giữa hình dạng và vị trí polyp, đa số polyp không cuống tập trung ở vùng thân vị và giảm dần về hai phía của dạ dày.

V. KẾT LUẬN

Khảo sát trên 98 bệnh nhân được phát hiện và cắt đốt polyp dạ dày qua nội soi tại Bệnh viện Hữu nghị Việt Tiệp Hải Phòng, chúng tôi rút ra một số kết luận như sau:

Có sự thay đổi về vị trí xuất hiện của polyp ở dạ dày so với các nghiên cứu khác cách đây 10 năm, tập trung nhiều nhất ở vùng thân vị 58,2% và giảm dần theo cả hai hướng về phía tâm vị và môn vị.

Tỷ lệ bệnh polyp tăng dần theo tuổi, nữ bị nhiều hơn nam. Các triệu chứng của bệnh polyp dạ dày nghèo nàn và không đặc hiệu.

Kích thước polyp đa số nhỏ hơn 10mm, trung bình 5,68 ± 2,760 mm, chủ yếu là polyp không cuống (88,8%), đa số polyp có bề mặt nhẵn (73,9%) và viêm (17,3%).

TÀI LIỆU THAM KHẢO

1. **Conrad J E, et al,** Management patterns of gastric polyps in the United States. Frontline gastroenterology (2019).10 (1), p.18-23.
2. **Yasugi K, et al,** Disappearance of gastric hyperplastic polyps after the discontinuation of proton pump inhibitor in a patient with liver cirrhosis. Case Reports in Gastroenterology (2021).15 (1), p.202-208.
3. **Argüello Viudez L, et al,** Gastric polyps: Retrospective analysis of 41,253 upper endoscopies. Gastroenterologia y hepatologia (2017).40 (8), p.507-514.
4. **Ohana S, et al,** Evaluation of patients with gastric polyps. Northern clinics of Istanbul (2018).5 (1), p.41-46.
5. **Gao W, et al,** The clinicopathological characteristics of gastric polyps and the relationship between fundic gland polyps, Helicobacter pylori infection, and proton pump inhibitors. Annals of Palliative Medicine (2021).10 (2), p.2108-2114.
6. **Alboyrak Y.Demiryakman İ and Yılmaz S,** Frequency of various types of gastric polyps. Cumhuriyet Medical Journal (2011).33 (2), p.209-214.
7. **Quách Trọng Hiếu, et al,** Đặc điểm nội soi và mô bệnh học của polyp dạ dày. Tạp chí Khoa học của Hội Việt Nam (2007).Tập II-số 7 p.109-102.
8. **Trịnh Tuấn Dũng,** Nghiên cứu đặc điểm lâm sàng, nội soi và phân loại polyp dạ dày trên bệnh nhân nhiễm vi khuẩn Hp và hiệu quả miễn dịch. Y Học Thành Phố Hồ Chí Minh (2019).18 p.4.
9. **Goddard A F, et al,** The management of gastric polyps. Gut (2011).60 (9), p.1270-1276.
10. **Trần Ngọc Ánh and Đào Văn Long,** Ứng dụng xoắy Argon Plasma Coagulation trong điều trị polyp dạ dày thể nặng. Tạp chí Nghiên cứu Y học (2016).76 p.45-52.
11. **Muehldorfer S, et al,** Diagnostic accuracy of forceps biopsy versus polypectomy for gastric polyps: a prospective multicentre study. Gut (2002).50 (4), p.465-470.
12. **Garcia-Alonso F J, et al,** Gastric polyps: analysis of endoscopic and histological features in our center. Revista espanola de enfermedades digestivas : organo oficial de la Sociedad Espanola de Patologia Digestiva (2011).103 (8), p.416-423.
13. **Amanpreetkaur A B, et al,** Histomorphological analysis of gastric polyps. Indian journal of pathology & microbiology (2021).64 (Supplement), p.169-172.

ỦY BAN NHÂN DÂN **THÀNH PHỐ HẢI PHÒNG**	**CỘNG HOÀ XÃ HỘI CHỦ NGHĨA VIỆT NAM** **Độc lập - Tự do - Hạnh phúc**
Số: 3688 /QĐ-UBND	*Hải Phòng, ngày 7 tháng 11 năm 2023*

QUYẾT ĐỊNH

Về việc phê duyệt Thuyết minh nhiệm vụ nghiên cứu khoa học và phát triển công nghệ cấp thành phố: "Nghiên cứu thiết kế, chế tạo thiết bị IoT và xây dựng phần mềm ứng dụng thu nhận thông tin nhịp tim và huyết áp của người bệnh tim mạch tại Hải Phòng"

ỦY BAN NHÂN DÂN THÀNH PHỐ HẢI PHÒNG

Căn cứ Luật Tổ chức chính quyền địa phương ngày 19/6/2015;

Căn cứ Luật Sửa đổi, bổ sung một số điều của Luật Tổ chức Chính phủ và Luật Tổ chức chính quyền địa phương ngày 22/11/2019;

Căn cứ Luật Khoa học và Công nghệ ngày 18/6/2013;

Căn cứ Nghị định số 98/2014/NĐ-CP ngày 27/01/2014 của Chính phủ quy định chi tiết và hướng dẫn thi hành một số điều của Luật Khoa học và Công nghệ;

Căn cứ Quyết định số 2048/2015/QĐ-UBND ngày 21/12/2015 của Ủy ban nhân dân thành phố về việc ban hành Quy chế quản lý các nhiệm vụ khoa học và công nghệ có sử dụng ngân sách nhà nước thành phố Hải Phòng;

Căn cứ Quyết định số 3185/QĐ-UBND ngày 29/9/2022 của Ủy ban nhân dân thành phố về việc phê duyệt Danh mục nhiệm vụ nghiên cứu khoa học và phát triển công nghệ cấp thành phố năm 2022;

Xét đề nghị của Sở Khoa học và Công nghệ tại Tờ trình số 113/TTr-SKHCN ngày 26/10/2023.

QUYẾT ĐỊNH:

Điều 1. Phê duyệt Thuyết minh nhiệm vụ nghiên cứu khoa học và phát triển công nghệ cấp thành phố với những nội dung sau:

1. Tên Đề tài: Nghiên cứu thiết kế, chế tạo thiết bị IoT và xây dựng phần mềm ứng dụng thu nhận thông tin nhịp tim và huyết áp của người bệnh tim mạch tại Hải Phòng.

2. Mã số: DT.YD.2022.918.

3. Cơ quan chủ trì: Trường Đại học Y Dược Hải Phòng.

4. Chủ nhiệm Đề tài: Tiến sĩ Nguyễn Đức Trân - Trường Đại học Y Dược Hải Phòng.

Đồng Chủ nhiệm: Tiến sĩ Bùi Quốc Thắng - Bệnh viện Chợ Rẫy, thành phố Hồ Chí Minh.

5. Mục tiêu khoa học:

- Thiết kế, chế tạo chế tạo thiết bị IoT ghi nhận các thông số áp lực vòng bít và các chỉ số sinh hiệu bao gồm nhịp tim và huyết áp.

- Xây dựng phần mềm ứng dụng thu nhận và quản lý thông tin từ thiết bị IoT.

- Xây dựng và thử nghiệm mô hình ứng dụng thiết bị IoT và hệ thống thu nhận thông tin nhịp tim và huyết áp từ xa nhằm hỗ trợ quản lý và điều trị bệnh nhân tim mạch tại Hải Phòng.

6. Nội dung và quy mô nghiên cứu:

6.1. Tổng quan về vấn đề nghiên cứu.

6.2. Nghiên cứu phân tích tổng hợp các thông số quan trọng liên quan tới chức năng tim và chức năng thành mạch thông qua đặc biệt thiên của áp lực vòng bít

- Nghiên cứu phân tích và tổng hợp các thông số thông qua đặc biệt thiên của áp lực vòng bít để đo các giá trị huyết áp theo thời gian thực.

- Nghiên cứu phân tích và tổng hợp các thông số thông qua đặc biệt thiên của áp lực vòng bít để đo nhịp tim theo thời gian thực.

- Nghiên cứu tổng hợp những thông số có giá trị sử dụng để theo dõi người bệnh tim mạch.

6.3. Nghiên cứu thiết kế và chế tạo thiết bị IoT

6.3.1. Nghiên cứu thiết kế thiết bị IoT

- Nghiên cứu xây dựng giải thuật đo lường các thông số chính của tín hiệu vòng bít phù hợp nhằm giảm thiểu sai số đo đạc.

- Thiết kế hệ thống van xả hơi vòng bít của thiết bị phù hợp với các thông số và thời điểm đo đạc.

- Nghiên cứu thiết kế hệ thống cơ khí máy bơm.

- Nghiên cứu thiết kế hệ thống cảm biến và mạch thu thập thông số từ cảm biến.

- Nghiên cứu thiết kế board mạch điều khiển của thiết bị.

- Nghiên cứu thiết kế các module liên quan truyền tải thông tin không dây.

- Nghiên cứu phương thức hiển thị, nút bấm đầu cuối thông tin.

- Nghiên cứu thiết kế các module liên quan: màn hình hiển thị, hệ thống pin sạc.

- Nghiên cứu thiết kế các module nhận diện người dùng bằng sóng vô tuyến RFID hoặc vân tay.

- Hoàn thiện bản thiết kế và các thông số của thiết bị.

6.3.2. Nghiên cứu chế tạo phần cứng của thiết bị

- Chế tạo hệ thống cơ khí máy bơm, hệ thống van xả hơi của thiết bị.

- Chế tạo hệ thống cảm biến của thiết bị

- Chế tạo hệ thống mạch thu thập thông số từ cảm biến

- Chế tạo board mạch điều khiển của thiết bị

- Chế tạo các module truyền tải thông tin không dây.

- Xây dựng các module mã hóa đầu cuối truyền dữ liệu.

- Chế tạo các module liên quan nhận diện người bệnh: vân tay hoặc thẻ RFID.

- Chế tạo các module màn hình hiển thị, hệ thống pin sạc.

- Hoàn thiện thiết bị, thiết kế đóng gói vỏ hộp bằng công nghệ in 3D.

- Lập trình phần cứng thiết bị đo và lấy thông tin.

- Lập trình phần mềm tự động hóa để điều khiển thiết bị.

- Tiến hành thử nghiệm, đánh giá hiệu quả, độ chính xác mô hình thiết bị theo hướng dẫn của TCVN 8LVN 541:2020.

- Xây dựng quy trình đảm bảo chất lượng, bảo dưỡng thiết bị; tài liệu hướng dẫn vận hành thiết bị.

6.4. Xây dựng phần mềm quản lý các thông số nhịp tim, huyết áp đo từ thiết bị IoT nhằm quản lý và hỗ trợ điều trị các bệnh tim mạch tại Hải Phòng

- Đánh giá nhu cầu, nghiệp vụ và quy trình xử lý hỗ trợ điều trị bệnh tim mạch để thiết kế xây dựng cơ sở dữ liệu các thông số nhịp tim, huyết áp đo từ thiết bị IoT nhằm quản lý và hỗ trợ điều trị bệnh tim mạch.

- Thiết kế cấu trúc hệ thống của phần mềm quản lý và hỗ trợ điều trị bệnh tim mạch tại Hải Phòng.

- Thiết kế các thuộc tính của phần mềm quản lý và hỗ trợ điều trị bệnh tim mạch tại Hải Phòng.

- Thiết kế các chức năng của phần mềm quản lý và hỗ trợ điều trị bệnh tim mạch tại Hải Phòng.

- Thiết kế model thu nhận và quản lý dữ liệu huyết áp.

- Thiết kế module thu nhận và quản lý dữ liệu nhịp tim.

- Thiết kế modul xử lý và cảnh báo các tình huống có nguy cơ của bệnh nhân.

- Thiết kế giao thức giao tiếp giữa thiết bị đã chế tạo với hệ thống.

- Xây dựng phần mềm ứng dụng Web/mobile cung cấp giao diện cho người dùng để theo dõi và kiểm soát các thiết bị IoT, xem dữ liệu và thực hiện hành động từ xa.

- Xây dựng phần mềm Ứng dụng nền (backend application): Xử lý dữ liệu, gửi lệnh điều khiển đến thiết bị, lưu trữ dữ liệu vào cơ sở dữ liệu và cung cấp API cho giao tiếp giữa các phần mềm khác nhau.

- Xây dựng giao diện lập trình ứng dụng (API): để các ứng dụng khác có thể tương tác với thiết bị IoT và dữ liệu của chúng.

- Lập trình phần mềm quản lý cơ sở dữ liệu theo thiết kế, quản lý các thông số nhịp tim, huyết áp đo từ thiết bị IoT nhằm quản lý và hỗ trợ điều trị các bệnh tim mạch tại Hải Phòng.

- Xây dựng module quản lý phân quyền truy cập cho người dùng, thiết bị và ứng dụng.

- Thiết kế giải pháp giám sát mạng và hệ thống để phát hiện các hoạt động không bình thường. Khi phát hiện được sự tấn công, hệ thống phải có khả năng phản ứng tự động hoặc thông báo cho người quản trị.

6.5. Xây dựng và thử nghiệm mô hình ứng dụng thiết bị IoT và hệ thống thu nhận thông tin nhịp tim và huyết áp từ xa nhằm hỗ trợ quản lý và điều trị bệnh nhân tim mạch tại Hải Phòng.

6.5.1. Xây dựng mô hình ứng dụng

- Tiêu chuẩn lựa chọn bệnh nhân, cơ sở y tế để triển khai ứng dụng.

- Xây dựng quy trình theo dõi, thu nhận thông tin từ xa.

- Xây dựng quy trình đánh giá, xử lý thông tin, hỗ trợ quản lý và điều trị.

- Xây dựng bộ công cụ thu thập số liệu đánh giá một số yếu tố hiệu quả của ứng dụng thiết bị IoT và hệ thống thu nhận thông tin nhịp tim và huyết áp từ xa hỗ trợ quản lý và điều trị bệnh nhân tim mạch tại Hải Phòng.

- Đề xuất mô hình ứng dụng.

6.5.2. Thử nghiệm mô hình

- Đánh giá số liệu thu thập từ thiết bị IoT trên đối tượng nghiên cứu.

- Đánh giá số liệu thu thập từ thiết bị đã thông qua kiểm định hiện dạng và dùng trên đối tượng nghiên cứu.

- Phân tích số liệu, đánh giá giá trị làm sàng của sự biến thiên thông số áp lực vòng bít từ thiết bị IoT đã chế tạo trong việc chẩn đoán, theo dõi, điều trị và dự phòng bệnh lý tim mạch.

6.5.3. Đánh giá kết quả thử nghiệm và hoàn thiện mô hình

- Tính toán chi phí ứng dụng.

- Đánh giá chi phí hiệu quả bằng chỉ số QALY.

- Hoàn thiện mô hình ứng dụng ứng dụng thiết bị IoT và hệ thống thu nhận thông tin nhịp tim và huyết áp từ xa hỗ trợ quản lý và điều trị bệnh nhân tim mạch.

6.6. Đề xuất một số giải pháp nhằm ứng dụng thiết bị IoT và hệ thống thu nhận thông tin nhịp tim và huyết áp từ xa hỗ trợ quản lý và điều trị bệnh nhân tim mạch

- Đề xuất các giải pháp đối với các cơ quan quản lý.

- Đề xuất các giải pháp đối với các cơ sở y tế.

- Đề xuất các giải pháp đối với bệnh nhân.

(Nội dung và quy mô nghiên cứu cụ thể theo Thuyết minh được duyệt)

7. Sản phẩm khoa học:

- Thiết kế phần cứng thiết bị IoT ghi nhận các thông số áp lực vòng bít và các chỉ số sinh hiệu bao gồm nhịp tim và huyết áp.

- 05 thiết bị bị IoT ghi nhận các thông số áp lực vòng bít và các chỉ số sinh hiệu bao gồm nhịp tim và huyết áp.

- Phần mềm điều khiển thiết bị và tài liệu hướng dẫn sử dụng.

- Phần mềm ứng dụng thu nhận và quản lý thông tin từ thiết bị IoT hỗ trợ quản lý và điều trị bệnh nhân tim mạch.

- Mô hình ứng dụng thiết bị IoT và hệ thống thu nhận thông tin nhịp tim và huyết áp từ xa nhằm hỗ trợ quản lý và điều trị bệnh nhân tim mạch tại Hải Phòng.

- Các giải pháp triển khai ứng dụng thiết bị IoT và hệ thống thu nhận thông tin nhịp tim và huyết áp từ xa nhằm hỗ trợ quản lý và điều trị bệnh nhân tim mạch tại Hải Phòng.

8. Thời gian thực hiện: từ tháng 11/2023 đến tháng 10/2025.

9. Kinh phí thực hiện:

Tổng kinh phí thực hiện: 1.808.800.000 đồng. Trong đó:

- Ngân sách khoa học - công nghệ thành phố cấp: 1.625.800.000 đồng *(Một tỷ, sáu trăm hai mươi lăm triệu, tám trăm nghìn đồng)*.

- Tự có, khác: 183.000.000 đồng *(Một trăm tám mươi ba triệu đồng)*.

(Có Dự toán chi tiết kèm theo)

Điều 2. Chánh Văn phòng Ủy ban nhân dân thành phố, Giám đốc các Sở: Khoa học và Công nghệ, Tài chính; Cơ quan chủ trì, Chủ nhiệm Đề tài và các ngành, đơn vị liên quan căn cứ Quyết định thi hành./.

Nơi nhận:
- Như Điều 2;
- CT, PCT Hoàng Minh Cường;
- CVP, PCVP Trần Huy Kiên;
- Phòng VX;
- CVP KHCN;
- Lưu VT.

TM. ỦY BAN NHÂN DÂN
KT. CHỦ TỊCH
PHÓ CHỦ TỊCH

Hoàng Minh Cường

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Số: 1124/QĐ-YDHP

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

Hải Phòng, ngày 30 tháng 12 năm 2016

QUYẾT ĐỊNH
Về việc giao nhiệm vụ chủ nhiệm đề tài nhánh thuộc đề tài cấp nhà nước KC10.06/16-20

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Căn cứ Quyết định số 08/1999/QĐ - TTg ngày 25/01/1999 của Thủ tướng Chính phủ về việc thành lập Trường Đại học Y Hải Phòng;

Căn cứ Quyết định số 2153/QĐ - TTg ngày 21/11/2013 của Thủ tướng Chính phủ về việc đổi tên Trường Đại học Y Hải Phòng thành Trường Đại học Y Dược Hải Phòng;

Căn cứ Quyết định số 3569/QĐ-BKHCN ngày 17/10/2016 của Bộ trưởng Bộ Khoa học và Công nghệ về việc phê duyệt danh mục tổ chức, cá nhân chủ nhiệm, kinh phí, phương thức khoán chi và thời gian thực hiện nhiệm vụ KHCN cấp Quốc gia bắt đầu thực hiện năm 2016 thuộc Chương trình "Nghiên cứu ứng dụng và phát triển công nghệ tiên tiến phục vụ bảo vệ và chăm sóc sức khỏe cộng đồng", mã số KC.10/16-20;

Căn cứ Hợp đồng số 06/2016/HĐ-ĐTCT-KC.10/16-20 của Bộ Khoa học và Công nghệ và Trường Đại học Y Dược Hải Phòng về việc thực hiện đề tài khoa học và công nghệ;

Xét đề nghị của chủ nhiệm đề tài và Trưởng phòng Quản lý khoa học.

QUYẾT ĐỊNH

Điều 1. Giao nhiệm vụ chủ nhiệm đề tài nhánh thuộc đề tài "Nghiên cứu thực trạng ô nhiễm một số yếu tố hóa học, sinh học trong môi trường ảnh hưởng đến sức khỏe cộng đồng ven biển, hải đảo miền Bắc và đề xuất giải pháp can thiệp", mã số KC10.06/16-20 cho các cá nhân và đơn vị (*có danh sách kèm theo*).

Điều 2. Chủ nhiệm các đề tài nhánh có trách nhiệm thực hiện các nội dung nghiên cứu đúng như đề cương đã đăng ký.

Thời gian thực hiện: từ tháng 12 năm 2016 đến tháng 03 năm 2019.

Điều 3. Chủ nhiệm đề tài nhánh chấp hành chế độ quản lý đề tài: đăng ký, kiểm tra, báo cáo định kỳ đúng tiến độ, nghiệm thu kết quả nghiên cứu và các chế độ báo cáo quyết toán tài chính đúng quy định.

Điều 4. Các Ông, Bà: Trưởng phòng QLKH, Tổ chức cán bộ, Tài chính Kế toán, và các cá nhân có tên trong điều 1 có trách nhiệm thi hành quyết định này./.

Nơi nhận:
- Như điều 4;
- Ban chủ nhiệm đề tài;
- Lưu QLKH, VT.

KT. HIỆU TRƯỞNG
PHÓ HIỆU TRƯỞNG

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Phạm Văn Hán

DANH SÁCH ĐỀ TÀI NHÁNH

(Kèm theo Quyết định số 1134/QĐ-HVQP ngày 10/12/2014 của Hội trường Trường Đại học Y Dược Hải Phòng)

TT	Tên đề tài	Đồng chủ nhiệm đề tài
1.	Nghiên cứu ảnh hưởng của các yếu tố nhân khẩu học và xã hội học tới các khía cạnh cộng đồng liên quan nghiện các chất gây nghiện	GS.TS. Phạm Văn Thọ, Trường ĐH Y Dược Hải Phòng Bích TS. Nguyễn Văn Ba, Đại học Quốc tế
2.	Nghiên cứu ảnh hưởng của các yếu tố nhân khẩu học và xã hội học tới các khía cạnh cộng đồng liên quan trong thực hành và hiểu biết về	TS. Đinh Thị Thúy Hằng, Trường ĐH Kỹ thuật Y tế Hải Dương PGS.TS. Phạm Thị Quyên, Trường ĐH Y Dược Hải Phòng
3.	Nghiên cứu ảnh hưởng của các yếu tố nhân khẩu học và xã hội học tới các khía cạnh cộng đồng liên quan đến hiểu biết và thực hành về	PGS.TS. Hoàng Cao Sơn, Bệnh viện Đa khoa TP. Hòa Bình ThS. Nguyễn Hải Triều, Trường ĐH Y Dược Hải Phòng
4.	Nghiên cứu ảnh hưởng của các yếu tố nhân khẩu học và xã hội học tới các khía cạnh cộng đồng liên quan của cộng đồng	PGS.TS. Phạm Văn Linh, Trường ĐH Y Dược Hải Phòng TS. Đinh Thị Thanh Mai, Trường ĐH Y Dược Hải Phòng
5.	Nghiên cứu ảnh hưởng của các yếu tố nhân khẩu học và xã hội học tới các khía cạnh cộng đồng liên quan tới	TS. Nguyễn Văn Khôi, Trường ĐH Y Dược Hải Phòng GS.TS. Phạm Văn Thọ, Trường ĐH Y Dược Hải Phòng
6.	Mối tương quan và tác động của các yếu tố nhân khẩu học, xã hội học với [illegible]	PGS.TS. Nguyễn Ngọc Lanh, Trường ĐH Y Dược Hải Phòng TS. Hoàng Ngọc Hưng, TT Dự phòng và kiểm soát bệnh tật [illegible]
7.	Mối liên quan và tác động của các yếu tố nhân khẩu học, xã hội học với [illegible]	PGS.TS. Phạm Văn Hoành, Trường ĐH Y Dược Hải Phòng TS. Hoàng Thị Thanh Huyền, Đ/ Phụ sản Trung Ương

KT. HIỆU TRƯỞNG
PHÓ HIỆU TRƯỞNG

Phạm Văn Hiến

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

Số: 4994/QĐ-YDHP

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

Hải Phòng, ngày 18 tháng 11 năm 2019

QUYẾT ĐỊNH
Về việc thành lập Hội đồng khoa học và công nghệ nghiệm thu đề tài nhánh thuộc đề tài cấp Nhà nước KC10.09/16-20

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Căn cứ Quyết định số 86/TTG/QĐ-TTg ngày 25/01/1999 của Thủ tướng Chính phủ về việc thành lập Trường Đại học Y Hải Phòng;

Căn cứ Quyết định số 2153/QĐ-TTg ngày 21/11/2013 của Thủ tướng Chính phủ về việc đổi tên Trường Đại học Y Hải Phòng thành Trường Đại học Y Dược Hải Phòng;

Căn cứ Thông tư số 11/2014/TT - BKHCN ngày 30/5/2014 của Bộ Khoa học Công nghệ ban hành quy định đánh giá và nghiệm thu đề tài khoa học và công nghệ;

Căn cứ Hợp đồng số 06/2016/HĐ-ĐTCT-KC.10/16-20 của Bộ Khoa học và Công nghệ và Trường Đại học Y Dược Hải Phòng về việc thực hiện đề tài khoa học và công nghệ;

Xét đề nghị của Trưởng phòng Quản lý khoa học và ban chủ nhiệm đề tài.

QUYẾT ĐỊNH

Điều 1. Thành lập Hội đồng Khoa học & công nghệ đánh giá kết quả nghiên cứu 04 đề tài nhánh thuộc đề tài cấp Nhà nước "*Nghiên cứu thực trạng ô nhiễm một số yếu tố hóa học, sinh học trong môi trường ảnh hưởng đến sức khỏe cộng đồng ven biển, đề xuất một số giải pháp can thiệp*", mã số KC10.09/16-20.

(Có danh mục kèm theo)

Hội đồng gồm các Ông/ Bà có tên sau đây:

1. PGS.TS. Phạm Văn Hán, Trường ĐH Y Dược Hải Phòng	- Chủ tịch Hội đồng
2. PGS.TS. Đỗ Mạnh Cường, TT Y tế dự phòng Hải Phòng	- Ủy viên NX1
3. PGS.TS. Võ Thị Kim Loan, Trường ĐH Y Dược Hải Phòng	- Ủy viên NX2
4. PGS.TS. Nguyễn Văn Mùi, Trường ĐH Y Dược Hải Phòng	- Ủy viên
5. PGS.TS. Dương Thị Hương, Trường ĐH Y Dược Hải Phòng	- Ủy viên

Thư ký Hội đồng: ThS. Phạm Tuấn Việt, Phòng Quản lý khoa học

Điều 2. Hội đồng có nhiệm vụ đánh giá kết quả nghiên cứu của đề tài trên theo quy định đánh giá và nghiệm thu các đề tài khoa học công nghệ do Bộ Khoa học và Công nghệ ban hành.

Điều 3. Quyết định này có hiệu lực kể từ ngày ký. Hội đồng sẽ giải thể sau khi hoàn thành các nhiệm vụ.

Điều 4. Các Ông, Bà Trưởng các đơn vị: Phòng QLKH, Phòng Tổ chức cán bộ, Phòng Tài chính Kế toán, và các cá nhân có tên trong điều 1 có trách nhiệm thi hành quyết định này./.

Nơi nhận:
- Như điều 4;
- Ban chủ nhiệm đề tài;
- Lưu: QLKH, VT.

KT. HIỆU TRƯỞNG
PHÓ HIỆU TRƯỞNG

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Phạm Văn Mạnh

DANH MỤC ĐỀ TÀI NHÁNH

(Kèm theo Quyết định số 1014/QĐ-YDHP ngày 06 / 11/2018
của Hiệu trưởng Trường Đại học Y Dược Hải Phòng)

TT	Tên đề tài	Đồng chủ nhiệm đề tài
1.	Nghiên cứu ảnh hưởng của các tác nhân hóa học và sinh học tới sức khỏe cộng đồng khu nuôi trồng thủy sản ven biển miền Bắc	TS. Đinh Thị Diệu Hằng, *Trường ĐH Kỹ thuật Y tế Hải Dương* PGS.TS. Phạm Hạp Quyền, *Trường ĐH Y Dược Hải Phòng*
2.	Nghiên cứu ảnh hưởng của các tác nhân hóa học và sinh học tới sức khỏe cộng đồng khu chế biến thủy sản ven biển miền Bắc	PGS.TS. Hoàng Cao Sơn, *Bệnh viện Đa khoa TP. Nam Định* TS. Nguyễn Bảo Trân, *Trường ĐH Y Dược Hải Phòng*
3.	Nghiên cứu ảnh hưởng của các tác nhân hóa học và sinh học tới sức khỏe cộng đồng khu vực cư sống miền Bắc	PGS.TS. Phạm Văn Linh, *Trường ĐH Y Dược Hải Phòng* PGS.TS. Đinh Thị Thanh Mai, *Trường ĐH Y Dược Hải Phòng*
4.	Nghiên cứu ảnh hưởng của các tác nhân hóa học và sinh học tới sức khỏe cộng đồng khu vực hải đảo miền Bắc	PGS.TS. Nguyễn Văn Khải, *Trường ĐH Y Dược Hải Phòng* GS.TS. Phạm Văn Thức, *Trường ĐH Y Dược Hải Phòng*

KT. HIỆU TRƯỞNG
PHÓ HIỆU TRƯỞNG

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Phạm Văn Mạnh

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

CỘNG HOÀ XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

BIÊN BẢN
HỌP HỘI ĐỒNG KHOA HỌC VÀ CÔNG NGHỆ
Nghiệm thu đề tài nhánh thuộc đề tài cấp Nhà nước KC10.06/16-20

A. NHỮNG THÔNG TIN CHUNG

1. Tên đề tài nhánh:

Đề tài: *"Nghiên cứu ảnh hưởng của các tác nhân hóa học và sinh học tới sức khỏe cộng đồng khu chế biến thép nên vùng biển miền Bắc"*

Đồng chủ nhiệm đề tài: PGS.TS. Hoàng Cao Sơn
TS. Nguyễn Bảo Trân

Thuộc đề tài cấp Nhà nước theo Chương trình KC10.06/16-20 *"Nghiên cứu thực trạng ô nhiễm một số yếu tố hóa học, sinh học trong môi trường ảnh hưởng đến sức khỏe cộng đồng ven biển, hải đảo miền Bắc và đề xuất giải pháp can thiệp"* - Chủ nhiệm đề tài: GS.TS. Phạm Văn Thức

2. Đơn vị chủ trì: Trường Đại học Y Dược Hải Phòng

3. Hội đồng Khoa học và công nghệ nghiệm thu đề tài trên được thành lập theo Quyết định số: 1094A/QĐ-YDHP ngày 06/11/2018 của Hiệu trưởng Trường Đại học Y Dược Hải Phòng.

Danh sách thành viên Hội đồng:

1. PGS.TS. Phạm Văn Hán – Chủ tịch Hội đồng
2. PGS.TS. Đỗ Mạnh Cường – Ủy viên nhận xét 1
3. PGS.TS. Vũ Thị Kim Loan – Ủy viên nhận xét 2
4. PGS.TS. Nguyễn Văn Mùi – Ủy viên
5. PGS.TS. Dương Thị Hương – Ủy viên

Thư ký: TS. Phạm Tuấn Việt

4. Địa điểm: Phòng Hội đồng, tầng 2, Trường Đại học Y Dược Hải Phòng

Thời gian họp Hội đồng: 15h00, ngày 22 tháng 11 năm 2018

5. Số thành viên Hội đồng có mặt trên tổng số thành viên: 05/05

6. Đại biểu dự buổi nghiệm thu:

- Đại diện Phòng Quản lý khoa học
- Ban chủ nhiệm đề tài nhánh KHACN và nhóm nghiên cứu

II. NỘI DUNG LÀM VIỆC CỦA HỘI ĐỒNG

1. Thư ký Hội đồng công bố Quyết định số 1094A/QĐ-YDHP ngày 06/11/2018 của Hiệu trưởng Trường Đại học Y Dược Hải Phòng về việc thành lập Hội đồng khoa học và công nghệ nghiệm thu đề tài nhánh thuộc KC10.06/16-20.

2. PGS.TS. Phạm Văn Hán - Chủ tịch Hội đồng điều khiển phiên họp

3. Báo cáo kết quả nghiên cứu đề tài nhánh:

PGS.TS. Hoàng Cao Sa, đại diện nhóm nghiên cứu trình bày kết quả nghiên cứu

Đề tài: *"Nghiên cứu ảnh hưởng của các tác nhân hóa học và sinh học tới sức khỏe cộng đồng tại các khu chế biến thủy sản ven biển miền Bắc"*

4. Các ý kiến phát biểu, nhận xét, đánh giá của các thành viên Hội đồng

4.1. PGS.TS. Đỗ Mạnh Cường

- Đề tài đáp ứng được tính cấp thiết trong tình hình hiện nay.

- Phương pháp nghiên cứu, kết quả nghiên cứu phù hợp với mục tiêu. Sản phẩm khoa học đáp ứng yêu cầu đặt ra

- Góp ý: Phần bàn luận nêu nhấn mạnh quá trình tác động của các tác nhân tác động đến sức khỏe của cộng đồng. Cách trình bày cần rõ ràng hơn.

Kết luận: Nghiên cứu đáp ứng được các yêu cầu đã đề ra tuy nhiên cần hoàn thiện tốt hơn. Nhất trí thông qua.

4.2. PGS.TS. Võ Thị Kim Loan

- Nghiên cứu có ý nghĩa. Phương pháp nghiên cứu phù hợp và kết quả nghiên cứu tin cậy

- Góp ý: Các bảng biểu của phần kết quả nghiên cứu nên trình bày khoa học hơn. Phần bàn luận nên làm rõ nguồn gốc các tác nhân hóa học và sinh học, có tác nhân nào xuất phát từ quá trình chế biến thủy sản hay không?

Kết luận: Đề tài tốt, cần chỉnh sửa cách trình bày phần kết quả nghiên cứu. Nhất trí thông qua.

4.3. PGS.TS. Nguyễn Văn Mùi

- Phương pháp nghiên cứu hợp lý, kết quả nghiên cứu đáng tin cậy

- Các sản phẩm đạt yêu cầu, phù hợp.

- Góp ý: Cần sửa cách trình bày, lưu ý bàn luận so sánh với các nghiên cứu tương tự ở các cộng đồng ven biển khác để nhấn mạnh các kết quả đạt được của đề tài.

Kết luận: Đề tài hoàn thành đúng theo yêu cầu đã đề ra. Nhất trí thông qua

4.6. PGS.TS. Dương Thị Hương

- Nội dung nghiên cứu mới, cách tiếp cận vấn đề hợp lý. Phương pháp nghiên cứu rõ ràng, phù hợp.

- Góp ý: Nhất trí với các ý kiến đã nêu của thành viên Hội đồng, cần bổ sung tài liệu tham khảo tiếng Việt, sửa một số lỗi chính tả.

Kết luận: Đề tài có tính khả thi cao. Nhất trí thông qua.

4.5. Chủ tịch Hội đồng

- Đề tài triển khai khoa học, kết quả ý nghĩa, góp phần khuyến nghị các giải pháp bảo vệ môi trường và sức khỏe cộng đồng dân cư khu vực ven biển. Vẫn còn một số tồn tại trong báo cáo nhưng không ảnh hưởng đến yêu cầu chung của đề tài.

4.6. Trả lời của Chủ nhiệm đề tài và nhóm nghiên cứu

Chủ nhiệm đề tài trả lời các câu hỏi của Hội đồng đặt ra; cảm ơn và tiếp thu những ý kiến góp ý của Hội đồng.

5. Kết quả bỏ phiếu đánh giá

Hội đồng tiến hành bỏ phiếu nghiệm thu đề tài nhánh.

Hội đồng bầu Ban kiểm phiếu với các thành viên sau:

Trưởng Ban: PGS.TS. Dương Thị Hương

Ủy viên: PGS.TS. Nguyễn Văn Mão

Tổng số phiếu phát ra: 05 phiếu

Tổng số phiếu thu về: 05 phiếu

Số phiếu hợp lệ: 05 phiếu

Kết quả đánh giá:

Đồng ý nghiệm thu đề tài nhánh: 05/05 phiếu

Đánh giá ở mức Đạt: 05/05 phiếu

Đánh giá mức Không đạt: 0/0 phiếu

6. Kết luận của Hội đồng

Chủ tịch Hội đồng kết luận đánh giá của Hội đồng: đề tài nhánh "Nghiên cứu ảnh hưởng của các tác nhân hóa học và sinh học tới sức khỏe cộng đồng khu nuôi trồng thủy sản ven biển miền Bắc" đạt yêu cầu, cần chỉnh sửa và bổ sung theo ý kiến hội đồng.

Đề nghị chủ nhiệm đề tài sửa và nộp lại 1 tuần sau nghiệm thu.

Cuộc họp kết thúc lúc 16h20 cùng ngày.

THƯ KÝ

ThS. Phạm Tuấn Việt

CHỦ TỊCH HỘI ĐỒNG

PGS.TS. Phạm Văn Hân

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TẠP CHÍ

Y HỌC VIỆT NAM

Năm thứ sáu mươi

TẬP 424

Y HỌC VIỆT NAM THÁNG 11 - SỐ ĐẶC BIỆT/2014

CHUYÊN ĐỀ: HÌNH THÁI HỌC
CHÀO MỪNG KỈ NIỆM 35 NĂM THÀNH LẬP TRƯỜNG ĐẠI HỌC Y DƯỢC CẦN THƠ (1979-2014)

TỔNG HỘI Y HỌC VIỆT NAM
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MỤC LỤC

Y HỌC VIỆT NAM THÁNG 11 - SỐ ĐẶC BIỆT/2014
CHUYÊN ĐỀ: HÌNH THÁI HỌC
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Nguyễn Bảo Trâm[1,2], Đỗ Minh Trung[2], Nguyễn Duy Bắc[2], Nguyễn Việt Trung[2], Trần Bảo Anh[2], Trần Ngọc Anh[2], Phạm Văn Trần[2]

TÓM TẮT

Hàng ối được biết đến với nhiều ứng dụng trong công nghệ mô nhưng khả năng ứng dụng trong cấy ghép. Hàng ối đóng vai trò như là một màng sinh học có thể làm giảm đáp ứng kết dính với thương tổn và khả năng tăng sinh, chế ngự sự một vết thương và nhanh lành vết thương. Chính vì vậy mục tiêu nghiên cứu này của chúng tôi nhằm xác định đặc điểm hình thái của màng ối và quần thể tế bào màng ối. Màng ối sau khi thu thập, xử lý và làm sạch được đánh giá về mật độ tróc, phân lập, nuôi cấy tăng sinh tế bào màng ối và xác định biểu hiện dấu ấn tế bào gốc. Qua tế bào phân lập được có hình dạng đặc trưng, có biểu hiện dấu ấn của tế bào gốc.

Từ khóa: Màng ối, Tế bào gốc, Tế bào gốc từ màng ối.

SUMMARY

BIOLOGICAL CHARACTERISTICS OF THE HUMAN AMNIOTIC MEMBRANE

Human amniotic membrane are known to be useful in many tissues engineering as well as applied in transplantation. Amniotic membrane as a biological membrane can significantly reduce pain in the burns wounds with the acute adhesion, surface coverage and burns heal faster. Aim of the study was identification of morphological characteristics and the amniotic membrane cells. After collecting and cleaning, amniotic membrane was assessed the structure, number, proliferation cultures and tested for expression of stem cells marker. The result shows that amniotic membrane is useful in tissues engineering as well as applied in transplantation. The isolated cells which have a typical shape expresses marker stem cells.

Keywords: amniotic membrane, Stem cells, amniotic stem cells.

I. ĐẶT VẤN ĐỀ

Tiếp nhận công nghệ mô (Tissue engineering - TE) là phương pháp dùng tế bào sinh học thay thế nhằm mục đích khôi phục, duy trì và cải thiện chức năng của các mô. Rất nhiều công trình nghiên cứu cũng bổ sung cho thấy đây là phương pháp có nhiều ưu điểm, đưa lại hiệu quả và có tiềm năng lớn trong điều trị các bệnh lý thoái hóa hoặc chấn thương mất tế bào như các bệnh Alzheimer, chấn thương tuỷ sống, đột quỵ não, nhồi máu cơ tim, bỏng và nhiều bệnh khác là ghép mô, cơ quan . Tuy nhiên hạn chế hiện nay của công nghệ mô là cần khảo sát về số lượng, quá trình thu thập và nhân nhân lại sao cho có số lượng tế bào đủ nhưng không gây ra những vấn đề về đạo đức, xã hội. Các tế bào gốc phân lập từ màng ối có tính sinh miễn dịch thấp, không có khả năng gây tạo khối u và có khả năng biệt hóa thành nhiều loại tế bào khác nhau. Đặc biệt, màng ối được xem như một nguồn nguyên liệu cấy ghép tự thân phù hợp trong cấy ghép được trên

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hiệu quả chẩn đoán và tiên lượng bệnh. Tuy nhiên, kỹ thuật này đòi hỏi phải có máy móc hiện đại và chi phí cao, không phù hợp với điều kiện của các cơ sở y tế tuyến dưới.

Kỹ thuật tế bào học áp dụng trong chẩn đoán bệnh lý tuyến giáp đã được nghiên cứu và áp dụng từ lâu trên thế giới và ở Việt Nam. Kỹ thuật này có ưu điểm là đơn giản, chi phí thấp, có thể áp dụng ở tuyến cơ sở. Tuy nhiên, kỹ thuật này có độ nhạy và độ đặc hiệu không cao, đặc biệt là trong chẩn đoán các tổn thương dạng nang tuyến giáp. Do đó, việc kết hợp kỹ thuật tế bào học với các kỹ thuật khác như xét nghiệm miễn dịch tế bào, xét nghiệm gen... là cần thiết để nâng cao giá trị chẩn đoán.

Trong những năm gần đây, một số nghiên cứu đã áp dụng kỹ thuật tế bào học dịch nang tuyến giáp kết hợp với xét nghiệm miễn dịch tế bào để chẩn đoán các tổn thương dạng nang tuyến giáp và đã thu được những kết quả khả quan. Tuy nhiên, các nghiên cứu này chủ yếu được thực hiện trên các máy móc hiện đại, chưa có nghiên cứu nào áp dụng trên các cơ sở y tế tuyến dưới. Vì vậy, chúng tôi tiến hành đề tài này nhằm đánh giá giá trị của kỹ thuật tế bào học dịch nang tuyến giáp kết hợp với xét nghiệm miễn dịch tế bào trong chẩn đoán các tổn thương dạng nang tuyến giáp, đồng thời đánh giá khả năng áp dụng kỹ thuật này trên các cơ sở y tế tuyến dưới.

II. ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU

2.1. Đối tượng nghiên cứu

Nang tuyến giáp được chọc hút bằng kim nhỏ dưới hướng dẫn của siêu âm tại Khoa Chẩn đoán hình ảnh, Bệnh viện Đa khoa tỉnh Thái Bình từ tháng 1/2018 đến tháng 12/2018.

- Tiêu chuẩn lựa chọn: Các nang tuyến giáp có kích thước ≥ 1cm, có chỉ định chọc hút tế bào bằng kim nhỏ dưới hướng dẫn của siêu âm.
- Tiêu chuẩn loại trừ: Các nang tuyến giáp có kích thước < 1cm, không có chỉ định chọc hút tế bào bằng kim nhỏ dưới hướng dẫn của siêu âm.

2.2. Phương pháp nghiên cứu

Nghiên cứu mô tả cắt ngang.

Cỡ mẫu: Áp dụng công thức tính cỡ mẫu cho ước lượng một tỷ lệ:

$$n = Z^2_{1-\alpha/2} \frac{p(1-p)}{d^2}$$

Trong đó:
- n: cỡ mẫu tối thiểu cần nghiên cứu
- $Z_{1-\alpha/2}$: hệ số tin cậy, với độ tin cậy 95% thì $Z_{1-\alpha/2} = 1,96$
- p: tỷ lệ ước đoán, lấy theo nghiên cứu của Nguyễn Thị Thanh Hà (2016) là 0,9
- d: độ chính xác tuyệt đối, chọn d = 0,05

Thay vào công thức ta có: $n = 1,96^2 \times \frac{0,9 \times 0,1}{0,05^2} = 138,3$

Vậy cỡ mẫu tối thiểu là 139 nang tuyến giáp.

Thực tế chúng tôi đã thu thập được 150 nang tuyến giáp.

2.3. Các bước tiến hành

Bước 1: Chọc hút nang tuyến giáp dưới hướng dẫn của siêu âm.

Bước 2: Làm tiêu bản tế bào học dịch nang tuyến giáp.

Bước 3: Làm khối tế bào dịch nang tuyến giáp.

Bước 4: Làm tiêu bản mô bệnh học khối tế bào dịch nang tuyến giáp.

Bước 5: Nhuộm hóa mô miễn dịch.

Bước 6: Đọc kết quả và phân tích kết quả.

2.4. Kỹ thuật chọc hút tế bào dịch nang tuyến giáp

Bệnh nhân được giải thích về mục đích, ý nghĩa của việc chọc hút tế bào dịch nang tuyến giáp, được ký cam kết đồng ý tham gia nghiên cứu.

Bệnh nhân được nằm ngửa, cổ ngửa ra sau, vùng cổ trước được bộc lộ hoàn toàn.

Sát khuẩn vùng cổ trước bằng cồn 70°.

Dùng bơm tiêm 10ml gắn kim 23G, chọc hút dịch nang tuyến giáp dưới hướng dẫn của siêu âm.

Sau khi hút hết dịch nang, rút kim ra khỏi nang, ấn giữ vùng chọc hút bằng bông cồn khoảng 5 phút.

Dịch nang tuyến giáp được bơm vào ống nghiệm có chứa sẵn 1ml dung dịch PBS 1X, lắc đều.

Dịch nang tuyến giáp được ly tâm với tốc độ 1500 vòng/phút trong 5 phút, sau đó bỏ phần dịch trong, giữ lại phần cặn.

Phần cặn được dàn đều trên lam kính, để khô tự nhiên, cố định bằng cồn 96° trong 15 phút, sau đó nhuộm Papanicolaou.

Phần cặn còn lại được cố định bằng formol 10% trong 24 giờ, sau đó làm khối parafin, cắt lát mỏng 4µm, nhuộm HE và nhuộm hóa mô miễn dịch.

2.5. Kỹ thuật nhuộm hóa mô miễn dịch

Các tiêu bản được nhuộm hóa mô miễn dịch với các kháng thể: Kháng thể kháng Calcitonin Type C, Kháng thể kháng Thyroglobulin (Tg), Kháng thể kháng Cytokeratin 7 (CK7), Kháng thể kháng Cytokeratin 19 (CK19), Kháng thể kháng Vimentin và kháng thể kháng BRAF V600E.

Các tiêu bản được nhuộm theo quy trình của hãng sản xuất.

Đọc kết quả: Kết quả nhuộm hóa mô miễn dịch được đọc bởi 2 bác sĩ giải phẫu bệnh có kinh nghiệm.

Kết quả được đánh giá theo tỷ lệ % tế bào dương tính và cường độ nhuộm.

Tỷ lệ % tế bào dương tính được đánh giá theo 4 mức độ: 0 (0%), 1 (1-25%), 2 (26-50%), 3 (>50%).

Cường độ nhuộm được đánh giá theo 4 mức độ: 0 (không nhuộm), 1 (nhuộm nhạt), 2 (nhuộm trung bình), 3 (nhuộm đậm).

Kết quả nhuộm hóa mô miễn dịch được đánh giá là dương tính khi có ít nhất 10% tế bào dương tính với cường độ nhuộm từ 2 trở lên.

2.6. Xử lý số liệu

Số liệu được nhập và xử lý bằng phần mềm Microsoft Excel 2010.

Các biến định tính được mô tả bằng tần số và tỷ lệ %.

Các biến định lượng được mô tả bằng giá trị trung bình, độ lệch chuẩn, giá trị nhỏ nhất và giá trị lớn nhất.

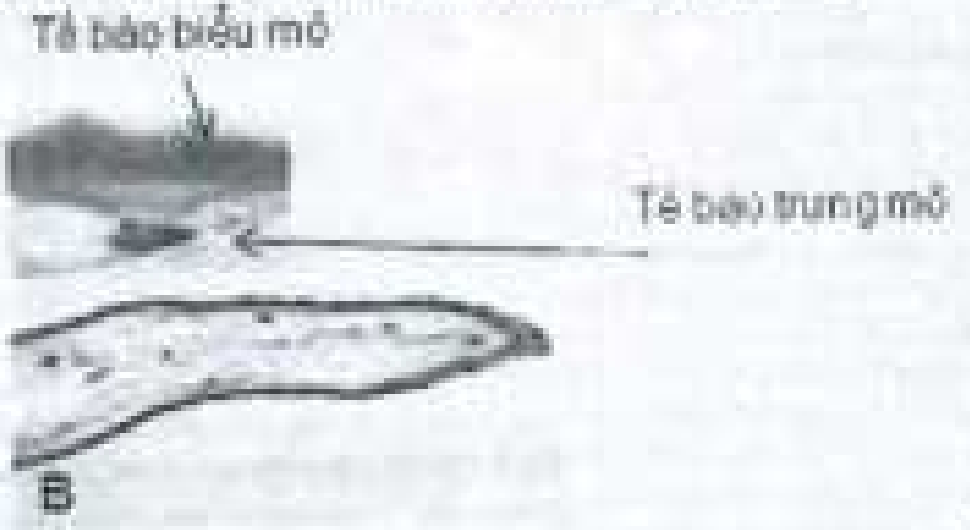
bằng đệm PBS, cho 0,1% Triton X100, rửa tiếp bằng PBS. Ủ tiêu bản với dung dịch chứa 2% BSA. Ủ tiêu bản với kháng thể đơn dòng Ber-EP4, rửa tiêu bản bằng PBS, cho ủ với kháng thể thứ hai có gắn huỳnh quang (kháng thể goat anti-mouse IgG, goat anti-Rabbit IgG, donkey anti-mouse IgG), rửa tiêu bản bằng PBS, đặt lamen chuyên nhuộm nhân tế bào, đặt lam nơn giữ tiêu bản. Kết quả tiêu bản được quan sát và chụp lưu lại hình ảnh trên kính hiển vi huỳnh quang.

III. KẾT QUẢ NGHIÊN CỨU VÀ BÀN LUẬN

3.1. Cấu trúc màng ối

Màng ối có nguồn gốc từ lá phôi ngoài (ngoại phôi bì) và có 5 lớp tế bào tạo lá: Biểu mô, Màng đáy, Lớp đặc, Lớp nguyên bào sợi, Lớp xốp. Để xác định ranh giới giữa các lớp của màng ối, chúng tôi đã nhuộm nhuộm HE màng ối đã phân tích được, kết quả được thể hiện ở hình 1.

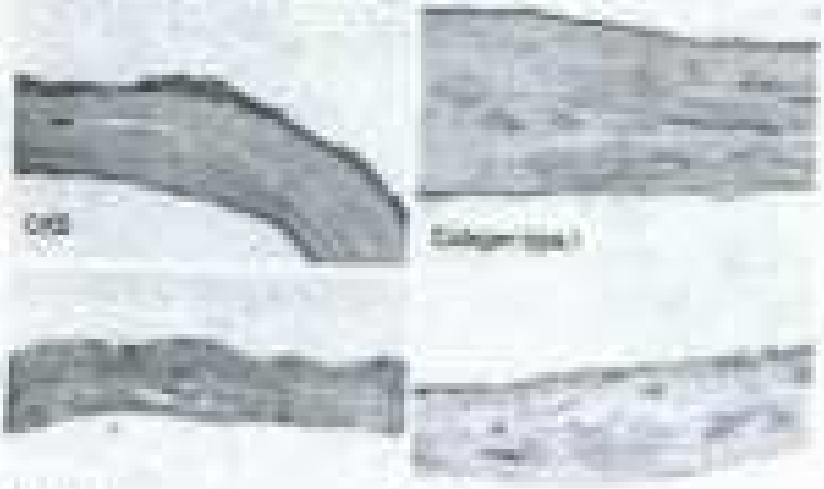
Hình 1: Cấu trúc màng ối trên tiêu bản nhuộm Hematoxylin và Eosin.



Màng ối sống có thể phân chia một cách đơn giản bao: lớp biểu mô (amniotic epithelium) gồm lớp tế bào biểu mô vô mạng (lớp) là lớp có thể chia phân lập được các tế bào gốc biểu mô và lớp nền đặc (compact stromal layer) gồm lớp đặc, nguyên bào sợi và lớp xốp) là lớp có thể chia phân lập được các tế bào gốc trung mô.

Trong khuôn khổ của nghiên cứu này màng ối đã sử dụng kỹ thuật hóa mô miễn dịch để xác định sự biểu hiện một số dấu ấn của màng ối đã qua xử lý với các dấu ấn Ber-Ep4, Collagen type I, vimentin, CK5. Màng ối có chuẩn đặc điểm và khả năng thích hợp để sử dụng trong kỹ thuật mô. Các lớp biểu mô của màng ối bao gồm các tế bào có đặc tính của tế bào gốc. Các tế bào gốc được xác định bằng kỹ thuật hóa mô miễn dịch với các dấu ấn của tế bào gốc biểu mô, kết quả cho thấy tế bào biểu hiện dương tính với các dấu ấn Ber-Ep4, Collagen type I, vimentin, CK5 (hình 2).

Hình 2: Hình thái các dẫn liệu Gen-I, Vitrocol, GAS, Collagen type I, sau màng đã ngưng tụ định bằng kỹ thuật hiển vi mẫu dính.



Vật liệu sinh học được sử dụng trong công nghệ tế bào cần phải đáp ứng được các yêu cầu không gây độc, không tạo u và sinh miễn dịch ở mức thấp. Bên cạnh đó cấu tử hóa của mô đích phải có khả năng gắn kết được với giá thể mà vẫn duy trì được yếu tố điều hòa sinh học như các yếu tố tăng trưởng và các vật liệu di truyền [3]. Các tế bào gắn kết được lên giá thể là nhờ các thành phần của chất nền giữa bào sau giá thể (extracellular matrix - ECM). Sự hiện diện của các phân tử collagen, laminin, fibronectin... có những ảnh hưởng to lớn đến khả năng gắn kết và phát triển của tế bào trên giá thể [1]. Với những yêu cầu trên thì vật liệu màng ối là một giá thể phù hợp cho công nghệ mô với cấu trúc của khuôn giúp bào điển hình. Các tế bào biểu mô màng ối tiết ra tiết ra collagen và các glycoprotein non-collagenous hình thành màng đáy. Trong lớp nền có nhiều của proteoglycans và các glycoprotein và có một mạng lưới sợi collagen chủ yếu collagen III. Trong màng đáy, tồn tại một lượng lớn perlecan. Perlecan là yếu tố quan trọng cho tăng trưởng và tương tác với các phân tử protein ngoại bào và kết dính tế bào [4]. Như vậy, màng ối bao gồm là một sản phẩm có nhiều triển vọng lớn trong công nghệ mô.

3.2. Xác định số bào phân lập và khả năng nuôi cấy tăng sinh tế bào từ màng ối

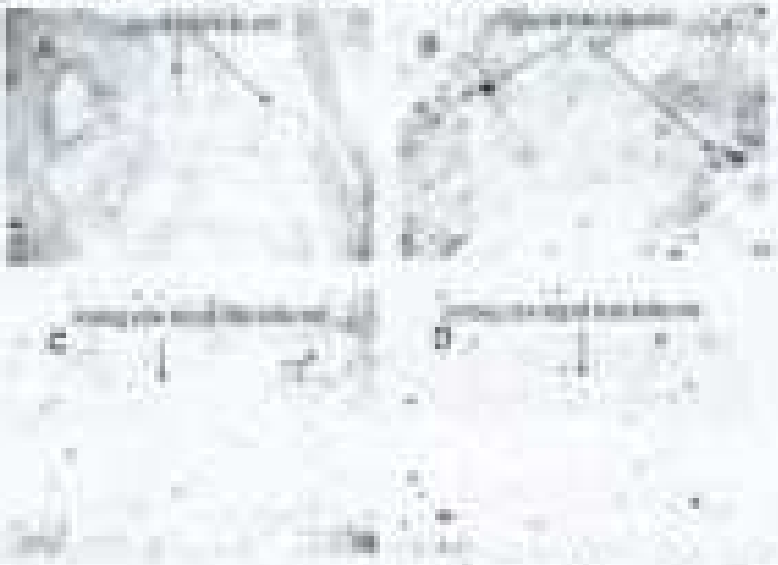
3.2.1. Khảo sát sử dụng enzym phân tách mô

Trong quá trình nghiên cứu chúng tôi đã tiến hành khảo sát về phân lập tế bào từng ối bằng enzym phân tách mô như sau:

Bảng 1: Thời gian tác dụng của enzym phân tách mô

STT	Tên enzym	Thời gian làm tan tế màng ối (phút)
1	Trypsin 0,25%	45 ± 10
2	Collagenase II 0,1%	50 ± 10
3	Trypsin 0,2% + Collagenase II 0,1% tỷ lệ 1/1	20 ± 10
4	Hyaluronidase 0,1%	Không tác dụng

Hình 4. A, B. Hình ảnh nuôi lá trước khi tách tế bào trước khi sách tế bào bằng enzym; C, D. Dĩ Mông đã sau khi sử dụng enzym tách lớp tế bào biểu mô



Trong khuôn khổ đề tài chúng tôi sử dụng riêng rẽ và kết hợp 3 loại enzym phân cắt mô là Trypsin, Collagenase và Hyaluronidase để đánh giá hiệu suất quá trình giải phóng tế bào biểu mô ra khỏi nuôi lá.

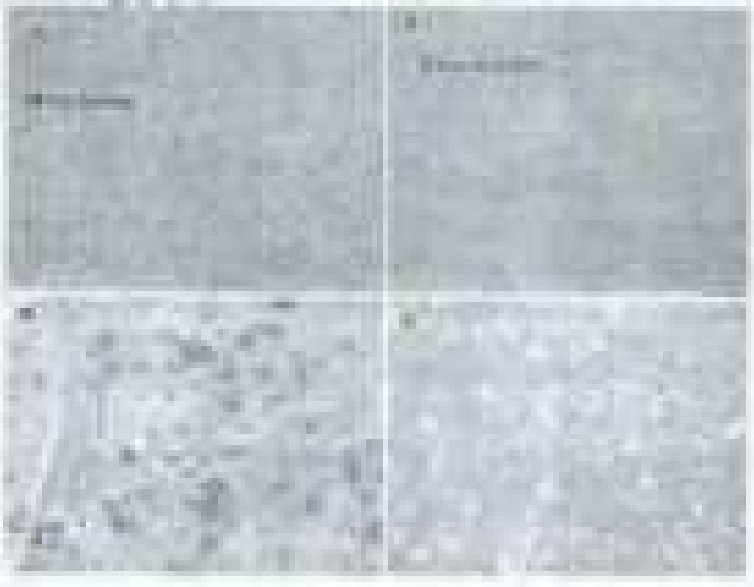
Các enzym khác nhau có thời gian tác dụng khác nhau lên quá trình phân rã nuôi lá, giải phóng tế bào (Bảng 1, hình 3). Nếu chỉ phân cắt nuôi lá bằng trypsin thì thời gian thường phải kéo dài, có khi phải 60 phút nuôi lá mới bị tan rã. Nếu dùng hiện collagenase lẫn với trypsin thì thời gian tan rã nuôi lá sẽ nhanh hơn. Hyaluronidase tiêu như không có tác dụng phân rã nuôi lá mặc dù đã có một số tác giả trên thế giới dùng enzym này để phân lập tế bào từ các mô khác nhau. Trypsin và Collagenase là các khá năng phân giải các protein ngoại bào như collagen, fibronin... làm phá vỡ cấu trúc ngoại bào do vậy có khả năng làm tan rã nuôi lá giải phóng tế bào.

3.4.2. Kết quả đánh giá khả năng phân lập và nuôi cấy dòng tế bào từ nuôi lá

Sau khi thực được các điều kiện và enzym tiến hành phân lập tế bào. Kết quả nghiên cứu cho thấy các tế bào sau khi phân lập có hình tròn, lơ lửng trong môi trường nuôi cấy. Sau khoảng 24 giờ nuôi cấy tế bào gốc biểu mô mảng tỏi có dấu hiệu bắt đầu bám dính xuống bề mặt đĩa nuôi cấy. Sau 3 ngày nuôi cấy tế bào có hình dạng đặc trưng của tế bào gốc biểu mô. Sau 2-3 ngày thay môi trường và kiểm tra mật độ tế bào nuôi cấy. Khi tế bào đạt đến 80 phần chiếm diện tích bề mặt đĩa nuôi cấy khoảng 70-80% diện tích bề mặt đĩa nuôi cấy thì quan và cấy chuyển tiếp tục nuôi cấy tăng sinh sản tới khi đạt số lượng tế bào cần để làm nguyên liệu cho hành các thí nghiệm tiếp theo.

Các tế bào sau khi bao quan và phân lập được cấy chuyển nuôi cấy tăng sinh. Tại thời điểm 0 giờ sau khi nước cấy tế bào vẫn còn trong trạng thái lơ lửng trong môi trường và có hình tròn chưa bám dính xuống bề mặt đĩa nuôi cấy (Hình 4A). Sau 24 giờ nuôi cấy một số tế bào biểu mô mảng tỏi bắt đầu có hiện tượng bò dài và bám dính xuống bề mặt đĩa (ấy chiếm vẫn còn một số tế bào còn lơ lửng chưa bám dính (Hình 4B). Sau hai ngày nuôi cấy hầu hết các tế bào biểu mô mảng tỏi đã tế dài và bám chặt xuống bề mặt đĩa nuôi cấy (Hình 4C). Tế bào tăng sinh sản phát khoảng 60-80% bề mặt đĩa nuôi cấy sau 8 ngày nuôi cấy (Hình 4D).

Hình 4: Tế bào gốc biểu mô nướu lấy qua răng phát triển sau 8 giờ (A), 24 giờ (B), 48 giờ (C) và sau 8 ngày (D).



Sau khi tế bào nướu lấy được phân lập sẽ được nuôi cấy trong môi trường DMEM có bổ sung 10% FBS và 1% kháng sinh. Tế bào được duy trì nuôi cấy ở nhiệt độ 37°C và 5% CO_2. Trong quá trình nuôi cấy phải theo dõi giảm các tế bào thường xuyên để tránh gây tiết trạng thực của tế bào và điều chỉnh môi trường nuôi cấy cho phù hợp. Sau 2-3 ngày phải thay môi trường một lần để được loại môi trường đã chết đồng thời cung cấp thêm dưỡng cho tế bào phát triển. Tất cả các thao tác thay môi trường cũng như kiểm tra mật độ tế bào phải được làm với trang tuyệt đối tránh nhiễm. Sau khi phân lập và nuôi cấy từng mảnh tế bào nướu lấy đạt đến một độ phù nhất định khoảng 60-80% bề mặt đĩa nuôi cấy, tiến hành cấy chuyển nuôi cấy từng mảnh nhỏ trong môi trường nuôi cấy ban đầu. Kết quả cho thấy tế bào nướu lấy phát triển và hình thành tốt trên bề mặt đĩa nuôi cấy với môi trường nuôi cấy ở nhiệt độ 37°C và 5% CO_2. Đây là điều kiện tốt giúp nuôi cấy từng mảnh tế bào gốc từ nướu lấy. Không sử dụng Trypsin-EDTA 0,25% quá lâu vì sẽ làm giảm khả năng sống của tế bào. Tế bào nếu được xử quá nhiều lần sẽ làm giảm các yếu tố tăng trưởng và gây ảnh hưởng đến khả năng sống của tế bào. Tất cả các công đoạn trong quy trình cấy chuyển phải được thực hiện trong môi trường vô khuẩn tránh để tế bào tiếp xúc với môi trường bên ngoài gây ra hiện tượng nhiễm. Do nuôi cấy tế bào đòi hỏi nghiêm mọi dụng cụ phải được hấp vô trùng tuyệt đối, các thao tác phải thực hiện chính xác nhanh và chuẩn, tiếp xúc không cần thiết giảm thiểu nguy cơ gây nhiễm. Các nghiên cứu này tương tự và phù hợp với các nghiên cứu của Trubiani Mikl và cs.

Để xác định tính gốc của tế bào từ nướu lấy phân lập và nuôi cấy từng sinh được. Trong khuôn khổ nghiên cứu, chúng tôi cũng đã xác định biểu hiện của dấu ấn Oct-3/4 nhằm xác định tính gốc của tế bào nướu lấy. Kết quả đã cho thấy các tế bào phân lập được có sự biểu của dấu ấn Oct-3/4 trong các tế bào nướu lấy ở những lần đầu tiên. Qua theo khả năng bám dính trên bề mặt dụng cụ nuôi cấy, khả năng tăng sinh và sự biểu hiện dấu ấn của tế bào gốc là Oct-3/4. Tế bào phân lập được là tế bào gốc nướu lấy.

IV. KẾT LUẬN

Xác định được cấu trúc của khuôn giúp bảo đảm tính sống với các thành phần của màng ối, màng ối có các tập tế bào, các tế bào này biểu hiện các dấu ấn của tế bào gốc như Oct-3/4, Collagen type I, vimentin, CK8.

Dã phân lập các tế bào màng ối khi sử dụng trypsin 0,25% và collagenase B 0,1% (tỷ lệ 1:1) Các tế bào thu nhận được có khả năng bám dính và tăng sinh trong môi trường DMEM có bổ sung 10% FBS và 1% kháng sinh. Các tế bào có biểu hiện dấu ấn của tế bào gốc Oct-3/4.

TÀI LIỆU THAM KHẢO

1. **Nguyễn Thị Thu Hà** (2004). "Tế bào gốc và ứng dụng trong y sinh học" *Tạp chí Nghiên cứu Y học. Phụ bản* 32 (4) 13-23.
2. **Niknejad. H, Peirovi. H, Jorjani. M, Ahmadiani. A, Ghanavi. J, Seifalian. AM.** (2008). Properties of the amniotic membrane for potential use in tissue engineering. *Eur Cell Mater.* 15, pp 88–99
3. **Wolgemuth KJ, Voigt M, Hofbiklin AW, Andre C, Schaefer DA, Gallo TA, Bjorn G** (2001). Tissue engineering in plastic reconstructive surgery. *Ann Plast Surg.* 261: 372-378.
4. **Sherbeck AD, Dodge GR, Colace I, Tann BS, Jones RV** (1992). Primary structure of the human hyaluronan synthase gene/protein from basement membrane (HSPGC/perlecan). A chimeric molecule with multiple domains homologous to the low density lipoprotein receptor, laminin, neural cell adhesion molecules, and epidermal growth factor. *J Biol Chem.* 267: 8344-8357
5. **Toda, A, Okabe, M, Yoshida, T, Nikaido, T.**(2007). The potential of amniotic membrane/amnion-derived cells for regeneration of various tissues. *J Pharmacol Sci.* 105:215-228.
6. **Miki, T., et al** (2005). Stem cell characteristics of amniotic epithelial cells. *Stem Cells.* 23(10). Pp 1549-1559.
7. **Toshio Miki, Keitaro Mitamura, Mark A. Hass, Deana B. Stolz, Stephen C. Strom.,** (2007). Identification of stem cell marker-positive cells by immunofluorescence in term human amnion. *Journal of Reproductive Immunology.* 75 91–96.
8. **Silvia De'az-Prado, EmmaMuiños-Lo'pez, TamaraHermida-Go'mez, ClaudiaCicione, M. EstherRendal-Va'zquez, IsaacFuentes-Boquete, Francisco J. De Toro, Francisco J. Blanco.,** (2011). Human amniotic membrane as an alternative source of stem cells for regenerative medicine. *Differentiation.* 1:162–171

LÝ LỊCH KHOA HỌC

1. Họ và tên: Vũ Thị Thanh Hiền

2. Năm sinh: 1970 **3. Giới tính:** Nữ

4. Nơi sinh: Hải Phòng

5. Nguyên Quán: Phước Nghĩa, Tuy Phước, Bình Định.

6. Địa chỉ liên hệ:
Điện thoại: NR_____ Mobile: 0903843090 Fax: _____
Email: vthien@hpmu.edu.vn

7. Học hàm, học vị:
Năm được công nhận PGS: 2019 Nơi cấp bằng: Viện sốt rét – Ký sinh trùng – Côn trùng Trung Ương
Năm được phong GS/FGS: _____ Nơi phong: _____

8. Cơ quan công tác:
Tên cơ quan: Trường Đại học Y Dược Hải Phòng
Khoa/Phòng, Bộ môn, Trung tâm: Khoa Y – Bộ môn Ký sinh trùng
Địa chỉ cơ quan: 72A Nguyễn Bỉnh Khiêm, Đằng Giang, Ngô Quyền, Hải Phòng
Điện thoại: 0225 3731 907 Fax: _____
Email: _____

9. Quá trình đào tạo

Bậc đào tạo	Nơi đào tạo	Chuyên ngành/Tên khóa luận, luận văn, luận án	Năm tốt nghiệp
Đại học	Trường Đại học Y Dược Hải Phòng	Bác sỹ đa khoa	2002
Thạc sĩ	Trường Đại học Y Hà Nội	Ký sinh trùng	2010
Tiến sĩ	Viện Sốt rét – Ký sinh trùng – Côn trùng Trung Ương	Ký sinh trùng	2019

10. Các khoá đào tạo khác (nếu có)

Văn bằng	Tên khoá đào tạo	Nơi đào tạo	Thời gian đào tạo
Cử nhân	Ngôn ngữ Anh	Trường Đại học Hồng Đức	5 năm

		Việt Nam:	
Chứng chỉ	Tin học	Trường Đại học Đông Đô	
Chứng chỉ	Nghiệp vụ sư phạm	Trường Đại học Sư phạm Hà Nội 2	2 tháng
Chứng chỉ	Bồi dưỡng chức danh nghề nghiệp GVC hạng II	Trường Đại học Sư phạm Hà Nội 2	2 tháng
Chứng chỉ	Bồi dưỡng chức danh nghề nghiệp GVCC hạng I	Trường Đại học sư phạm, Đại học Huế	2 tháng
Chứng chỉ	Bồi dưỡng lãnh đạo quản lý	Trường chính trị Tô Hiệu Hải Phòng	1 tháng

II. Trình độ ngoại ngữ

Tên ngoại ngữ	Văn bằng/Chứng chỉ	Năm
Anh	Cử nhân	2022

III. Quá trình công tác *(trước khi về Trường và sau khi về Trường)*

Thời gian *(Từ năm ... đến năm...)*	Vị trí công tác	Cơ quan công tác	Địa chỉ cơ quan
2002 - 2004	Bác sỹ	PK đa khoa Trần Thành Ngọ - Kiến An	Trần Thành Ngọ, Kiến An, Hải Phòng
2004 -2005	Bác sỹ	Phòng khám Trường Đại học Y Dược Hải Phòng	225C Lạch Tray, Ngô Quyền, Hải Phòng
2005 - nay	Giảng viên	Trường Đại học Y Dược Hải Phòng	72A Nguyễn Bỉnh Khiêm, Đằng Giang, Ngô Quyền, Hải Phòng

IV. Các công trình khoa học đã công bố

IV.1. Bài báo khoa học:

- *Tên tác giả: tên các tác giả của bài báo*
- *Tác giả chính: là Tác giả thứ nhất (first author) hoặc Tác giả liên hệ (corresponding author)*
- *Danh mục: WoS/Scopus hoặc Tạp chí trong nước thuộc HĐGSNN tính điểm*

TT	Tên bài báo	Tên tác giả	Tác giả chính	Tạp chí	Ngày XB	Số, trang	Danh mục	ISSN (DOI)
1	Thực trạng kiến thức, thái độ, thực hành và một số yếu tố	Đinh Thị Thanh Mai, Vũ Thị	Đinh Thị Thanh Mai	Tạp chí Phòng bệnh nội tiết và các bệnh ký sinh	2020	1 (113), 42 - 49		0868 - 3115

	tình quản rối loạn stress sau chấn thương của người dân bị ảnh hưởng bởi cơn bão số 3 tại huyện Kiến Thụy, Hải Phòng năm 2018	Thanh Hiền, Vũ Văn Thái		trong				
2	Epidemiological characterization of pityriasis versicolor and distribution of Malassezia species among students in Hai Phong city, Vietnam	Nguyễn Duy Hòa, Vũ Thị Thanh Hiền, Đinh Thị Thanh Mai, Vũ Văn Thái, Lại Thị Thanh Thủy, Nguyễn Thị Mai, Bùi Thị Hồng Ánh, Trịnh Văn Khương, Cao Bá Lạc, Trần Tiến Sang, Lê Thị Kim Dung, Hoàng Cao Sử, Lê Trần anh,	Nguyễn Duy Hòa	Current medical mycology	2020	6 (3), 11 - 17		10.18 502/C MM. 6.2.2 020

		Nguyễn Đức Lực, Đỗ Ngọc Anh						
3	Thực trạng và một số yếu tố liên quan đến nhiễm nấm Candida spp ở phụ nữ viêm đường sinh dục dưới tại bệnh viện Phụ sản Hải Phòng năm 2023	Nguyễn Thị Huyền Sương, Đinh Thị Thanh Mai, Vũ Văn Thái, Vũ Thị Thanh Hiền, Đinh Thị minh Thu, Trịnh Văn Chương	Nguyễn Thị Huyền Sương	Tạp chí Y học Việt Nam	2024	Số đặc biệt (545), 180 - 186		

13.2. Sách chuyên khảo, giáo trình – tài liệu dạy học:

- *Tên tài liệu: Sách/ Chương sách*
- *Loại hình: Chuyên khảo/ Tham khảo/ Giáo trình/ Tài liệu hướng dẫn*

TT	Tên tài liệu	Tên tác giả	Chủ biên/Đồng chủ biên	Nhà xuất bản	Năm xuất bản	Loại hình	ISBN
1	Ký sinh trùng y học	Đinh Thị Thanh Mai Vũ Văn Thái Võ Thị Thanh Hiền	9	Nhà xuất bản Y học	2021	Giáo trình	978-6-04-05-3085-0
2	Ký sinh trùng y học	Đinh Thị Thanh Mai Vũ Văn Thái Võ Thị Thanh Hiền	9	Nhà xuất bản Y học	2019	Giáo trình	
...							

14. Báo cáo Hội nghị - hội thảo khoa học

Ký yêu: Tên tác Tuần năm

TT	Tên báo cáo	Tên tác giả	Tác giả chính	Tên hội nghị	Thời gian báo cáo (tháng/năm)	Ký yếu	ISBN
			x				

15. Bằng sở hữu trí tuệ đã được cấp

Liệt kê các văn bằng bảo hộ: đối quyền sáng chế, giải pháp hữu ích, kiểu dáng công nghiệp, thiết kế bố trí, giống cây trồng...

TT	Tên và nội dung văn bằng	Số, Ngày, Ký hiệu	Nơi cấp	Năm cấp
1				
2				
...				

16. Công trình KH&CN được ứng dụng, chuyển giao

TT	Tên công trình	Hình thức	Quy mô	Địa chỉ áp dụng	Giá trị	Thời gian
1						
...						

17. Nhiệm vụ KH&CN các cấp

- *Loại hình: Đề tài/ Dự án / Đề án*
- *Tình trạng nhiệm vụ: Đã nghiệm thu/ Chưa nghiệm thu/ Không hoàn thành*

17.1. Nhiệm vụ KH&CN đã và đang chủ trì

Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình (nếu có)	Tình trạng nhiệm vụ	Ngày			Kinh phí
					Phê duyệt	Đăng ký kết quả (nếu có)	Công nhận kết quả	
Hiệu quả điều trị bệnh lang ben bằng thuốc bôi ketoconazole cho học sinh hai trường trung học cơ sở tại Hải Phòng			Trường Đại học Y Dược Hải Phòng	Đã nghiệm thu			2020	6.000.000
Thực trạng và đặc điểm lâm sàng bệnh nhân da của bệnh nhân đến khám tại Bệnh viện Da liễu Thái Bình			Trường Đại học Y Dược Hải Phòng	Đã nghiệm thu			2021	6.000.000

Nghiên cứu đặc điểm các loại viêm gây bệnh da ở bệnh nhân đến khám tại phòng khám viêm Bệnh viện da Liễu Thái Bình			Trường Đại học Y Dược Hải Phòng	Đề nghiệm thu			2023	6.000.000
Thực trạng và một số yếu tố liên quan đến bệnh nấm da ở bệnh nhân đến khám tại bệnh viện hữu nghị Việt Tiệp năm 2023			Trường Đại học Y Dược Hải Phòng	Đề nghiệm thu			2023	6.000.000
Thực trạng bệnh lý cảnh mũng ở bệnh nhân đến khám tại bệnh viện Đại học Y Hải Phòng			Trường Đại học Y Dược Hải Phòng	Đang triển khai	2023			6.000.000

17.2. Nhiệm vụ KH&CN đã và đang tham gia

Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình *(nếu có)*	Tình trạng nhiệm vụ	Ngày			Kinh phí
					Nghiệm thu	Công nhận kết quả	Đăng ký kết quả	

18. Giải thưởng về KH&CN trong và ngoài nước

TT	Tên giải thưởng	Hình thức khen thưởng	Cấp khen thưởng	Năm tặng thưởng
1				
2				
...				

19. Đào tạo sau đại học

- *Tại với hướng dẫn: hướng dẫn 1/ hướng dẫn 2*
- *Bậc đào tạo: Tiến sĩ/Thạc sĩ/Bổ Việt Trú/CKII...*

TT	Họ tên học viên	Vai trò	Bậc đào tạo	Chuyên ngành	Nơi đào tạo	Năm cấp bằng
1	Hồ Thị Huỳnh	Hướng dẫn 1	Thạc sỹ	XNYH	Trường ĐHYD Hải Phòng	2022
2	Nguyễn Thị Huyền Trang	Hướng dẫn 1	Thạc sỹ	XNYH	Trường ĐHYD Hải Phòng	2024
3	*Bác Sỹ Đồng Anh*	*Hướng dẫn 2*	Thạc sỹ	XNYH	Trường ĐHYD Hải Phòng	2023
NHỮNG THÔNG TIN KHÁC VỀ CÁC HOẠT ĐỘNG KHOA HỌC VÀ CÔNG NGHỆ						
(Tham gia các tổ chức thẩm định nghiệm thu, thành viên Ban biên tập các Tạp chí khoa học trong và ngoài nước. Thành viên của hội đồng quốc gia, quốc tế: ...)						

Hải Phòng, ngày 11 tháng 4 năm 2025

XÁC NHẬN CỦA ĐƠN VỊ

NGƯỜI KHAI

(Ký, ghi rõ họ tên)

Vũ Thị Thanh Hiền

BỘ Y TẾ
Số: 001254/BYT-CCHN

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

CHỨNG CHỈ HÀNH NGHỀ KHÁM BỆNH, CHỮA BỆNH

BỘ TRƯỞNG BỘ Y TẾ

Căn cứ Luật khám bệnh, chữa bệnh ngày 23/11/2009;
Căn cứ Nghị định số 87/2011/NĐ-CP ngày 27/9/2011 của Chính phủ quy định chi tiết và hướng dẫn thi hành một số điều của Luật khám bệnh, chữa bệnh;
Căn cứ Thông tư số 41/2011/TT-BYT ngày 14/11/2011 của Bộ trưởng Bộ Y tế hướng dẫn cấp chứng chỉ hành nghề đối với người hành nghề và cấp giấy phép hoạt động đối với cơ sở khám bệnh, chữa bệnh;
Xét đề nghị của Cục trưởng Cục Quản lý khám, chữa bệnh - Bộ Y tế,

CẤP CHỨNG CHỈ HÀNH NGHỀ KHÁM BỆNH, CHỮA BỆNH

Họ và tên: **VÕ THỊ THANH HIỀN.**
Ngày tháng năm sinh: 30/01/1978.
Giấy chứng minh nhân dân số: 030878650.
Ngày cấp: 27/5/2013. Nơi cấp: Công an Hải Phòng.
Chỗ ở hiện nay: 2/686 Thiên Lôi, phường Vĩnh Niệm, quận Lê Chân, thành phố Hải Phòng.
Văn bằng chuyên môn: Bác sỹ.
Phạm vi hoạt động chuyên môn: Chuyên khoa Thăm dò chức năng.

ĐÍNH CHÍNH: VIII BAN CHỈNH

Ngày 12-05-2015

Hà Nội, ngày 14 tháng 11 năm 2013
KT. BỘ TRƯỞNG
THỨ TRƯỞNG

Nguyễn Thị Xuyên

CÔNG CHỨNG VIÊN
Nguyễn Thị Hường

CỘNG HOÀ XÃ HỘI CHỦ NGHĨA VIỆT NAM

VIỆN TRƯỞNG
VIỆN SỐT RÉT - KÝ SINH TRÙNG
CÔN TRÙNG TRUNG ƯƠNG

Cấp

BẰNG TIẾN SĨ

Y HỌC

Cho: Bà **Võ Thị Thanh Hiền**

Sinh ngày: 30/01/1978 tại Hải Phòng

CHỨNG THỰC
BẢN SAO ĐÚNG VỚI BẢN CHÍNH
16-04-2019
Số chứng thực: 01.CT/BS
Hà Nội, ngày 11 tháng 6 năm 2019

VIỆN TRƯỞNG

PHÓ CHỦ TỊCH

PGS.TS. Trần Thanh Dương

Số hiệu: 000019
Số vào sổ cấp bằng: 38

THE SOCIALIST REPUBLIC OF VIETNAM

THE DIRECTOR OF
THE NATIONAL INSTITUTE OF MALARIOLOGY,
PARASITOLOGY AND ENTOMOLOGY

confers

THE DEGREE OF DOCTOR OF PHILOSOPHY

IN MEDICINE

Upon: Ms. *Vo Thi Thanh Hien*

Born on: January, 30th, 1975 in Hai Phong

Given under the seal of
The National Institute of Malariology, Parasitology and Entomology
Ha Noi, June 11th 2019

Serial number: 009019
Reference number: 35

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Số: 854/QĐ-YDHP

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

Hải Phòng, ngày 27 tháng 12 năm 2023

QUYẾT ĐỊNH

Về việc học viên được công nhận tên đề tài và cán bộ hướng dẫn khoa học cao học khoá 18 (2022 - 2024)

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Căn cứ Quyết định số 06/1999/QĐ-TTg ngày 21 tháng 01 năm 1999 của Thủ tướng Chính phủ về việc thành lập Trường Đại học Y Hải Phòng;

Căn cứ quyết định số 1313/QĐ-TTg ngày 13/12/2013 của Thủ tướng chính phủ về việc đổi tên Trường Đại học Y Hải Phòng thành Trường Đại học Y Dược Hải Phòng;

Căn cứ quyết định số 7858/QĐ-BGDĐT, ngày 23 tháng 12 năm 2008 của Bộ trưởng Bộ Giáo dục & Đào tạo về giao chuyên ngành đào tạo thạc sĩ: Nội khoa, Nhi khoa;

Căn cứ thông tư số 23/2021/ TT- BGDĐT ngày 30 tháng 8 năm 2021 của Bộ trưởng Bộ Giáo dục & Đào tạo về việc ban hành Quy chế tuyển sinh và đào tạo trình độ thạc sĩ;

Căn cứ quyết định số 1754/QĐ- YDHP ngày 07/12/2021 về việc ban hành Quy định đào tạo thạc sĩ của Trường Đại học Y Dược Hải Phòng;

Xét đề nghị của Trưởng phòng Quản lý đào tạo Sau đại học và Hội đồng thông qua đề cương luận văn thạc sĩ;

QUYẾT ĐỊNH:

Điều 1. Danh sách học viên Cao học khoá 18 (2022 - 2024) ngành Kỹ thuật xét nghiệm y học, Mã số: 8720601 của Trường Đại học Y Dược Hải Phòng được công nhận tiêu đề tài và cán bộ hướng dẫn.

(có danh sách kèm theo)

Điều 2. Học viên cao học và cán bộ hướng dẫn được hưởng các quyền lợi theo quy định đào tạo Sau đại học hiện hành của Nhà trường.

Điều 3. Các ông (bà) Trưởng phòng Quản lý đào tạo Sau đại học, tài chính kế toán, các cán bộ hướng dẫn và học viên có tên trong điều 1 căn cứ quyết định thi hành./.

CHỨNG THỰC
BẢN SAO ĐÚNG VỚI BẢN CHÍNH
Ngày 11-01-2024
Quyển số: 1/2023 SCT/BS
NGƯỜI THỰC HIỆN CHỨNG THỰC

Nơi nhận:
- Như điều 3;
- Lưu: VT, QLĐTSDH.

HIỆU TRƯỞNG

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

PHÓ HIỆU TRƯỞNG
Kế thừa Phạm Văn Linh

CÔNG CHỨNG VIÊN
Nguyễn Thị Anh Ngân

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

DANH SÁCH
HỌC VIÊN, TÊN ĐỀ TÀI VÀ CÁN BỘ HƯỚNG DẪN KHOA HỌC CAO HỌC KHÓA 10 (2022 – 2024)
NGÀNH KỸ THUẬT XÉT NGHIỆM Y HỌC
(Kèm theo Quyết định số 1161/QĐ-DHYDHP ngày 21 tháng 12 năm 2022)

TT	Họ và tên học viên	Tên đề tài	Cán bộ hướng dẫn
1.	Ngô Thị Ánh Tuyết	Tỷ lệ và đặc điểm kháng kháng sinh của các vi khuẩn phân lập được từ bệnh phẩm lưu nông tại Bệnh viện Trung ương Thái Nguyên năm 2023 – 2024.	1.TS. Nguyễn Đức Trung - Trường ĐH Thái Nguyên CN: Vi sinh - Hướng dẫn thứ nhất 2.TS. Vũ Văn Thái - Trường ĐHYD Hải Phòng CN: Ký sinh trùng - Hướng dẫn thứ hai
2.	Nguyễn Thị Lý	Nghiên cứu đặc điểm chỉ số Anti – Mullerian hormone (AMH), Antral Follicle Count (AFC), Ovarian Response Prediction Index (ORPI) trên phụ nữ được chỉ định thụ tinh trong ống nghiệm tại Bệnh viện Quốc tế Sản nhi Hải Phòng 2023 – 2024.	1.TS. Phạm Đức Xanh- BV Quốc tế Sản Nhi H.Phòng CN: Sản – Hướng dẫn thứ nhất 2.TS. Nguyễn Hùng Cường -Trường ĐHYD Hải Phòng CN: Vi sinh - Hướng dẫn thứ hai
3.	Vũ Thị Hải Hà	Xây dựng danh mục xét nghiệm định hình hóa thông, công nhận kết quả giữa các cơ sở y tế tỉnh Hải Dương.	1.TS. Nguyễn Hùng Cường Trường ĐHYD Hải Phòng CN: Vi Sinh - Hướng dẫn thứ nhất 2. TS. Ngô Thị Thảo - Bệnh viện Phụ sản H.Phòng CN: Hoá sinh - Hướng dẫn thứ hai
4.	Bùi Thị Hồng Ánh	Thực trạng nhiễm và thành phần loài nấm Aspergillus, Penicillium ở mức số vị thuốc sử truyền tại nội thành Hải Phòng năm 2024".	1. TS. Đặng Thu Hằng Trường ĐHYD Hải Phòng CN: Ký sinh trùng – Hướng dẫn thứ nhất 2. TS. Vũ Thị Dung Hiệu Trưởng ĐHYD Hải Phòng CN: Ký sinh trùng – Hướng dẫn thứ hai

HIỆU TRƯỞNG

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Số: 854/QĐ-YDHP

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

Hải Phòng, ngày 30 tháng 12 năm 2022

QUYẾT ĐỊNH
Về việc học viên được công nhận tên đề tài và cán bộ hướng dẫn khoá học cao học khoá 17 (2021 – 2023)

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Căn cứ Quyết định số 06/1999/QĐ-TTg ngày 25 tháng 01 năm 1999 của Thủ tướng Chính phủ về việc thành lập Trường Đại học Y Hải Phòng;

Căn cứ quyết định số 2153/QĐ-TTg ngày 17/11/2011 của Thủ tướng chính phủ về việc đổi tên Trường Đại học Y Hải Phòng thành Trường Đại học Y Dược Hải Phòng;

Căn cứ quyết định số 1776/QĐ-BGDĐT, ngày 24 tháng 6 năm 2019 của Bộ trưởng Bộ Giáo dục và Đào tạo về giao chuyên ngành đào tạo ngành Kỹ thuật xét nghiệm Y học trình độ thạc sĩ;

Căn cứ thông tư số 23/2021/ TT- BGDĐT ngày 30 tháng 8 năm 2021 của Bộ trưởng Bộ Giáo dục và Đào tạo về việc ban hành Quy chế tuyển sinh và đào tạo trình độ thạc sĩ;

Căn cứ quyết định số 1734/QĐ- YDHP ngày 07/12/2021 về việc ban hành Quy định đào tạo thạc sĩ của Trường Đại học Y Dược Hải Phòng;

Xét đề nghị của Trưởng phòng Quản lý đào tạo Sau đại học và Hội đồng thông qua đề cương luận văn thạc sĩ;

QUYẾT ĐỊNH:

Điều 1. Danh sách học viên Cao học khoá 17 (2021 – 2023) ngành Kỹ thuật xét nghiệm Y học, Mã số: 8720601 của Trường Đại học Y Dược Hải Phòng được công nhận tên đề tài và cán bộ hướng dẫn.

(có danh sách kèm theo)

Điều 2. Học viên cao học và cán bộ hướng dẫn được hưởng các quyền lợi theo quy định đào tạo Sau đại học hiện hành của Nhà trường.

Điều 3. Các ông (bà) Trưởng phòng Quản lý đào tạo Sau đại học, tài chính kế toán, các cán bộ hướng dẫn và học viên có tên trong điều 1 căn cứ quyết định thi hành./.

CHÚNG THỰC
BẢN SAO ĐÚNG VỚI BẢN CHÍNH
Ngày 04-05-2023

Nơi nhận:
- Như điều 3;
- Lưu: VT, QLĐTSĐH.

HIỆU TRƯỞNG

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

PGS.TS. Phạm Văn Linh

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

DANH SÁCH
HỌC VIÊN, TÊN ĐỀ TÀI VÀ CÁN BỘ HƯỚNG DẪN KHOA HỌC CAO HỌC KHOÁ 17 (2021 – 2023)
NGÀNH KỸ THUẬT XÉT NGHIỆM Y HỌC
(kèm theo Quyết định số 809/QĐ-YDHP ngày 30 tháng 12 năm 2022)

TT	Họ và tên học viên	Tên đề tài	Cán bộ hướng dẫn
1.	Nguyễn Thị Huyền Sương	Thực trạng nhiễm nấm da và tỉnh giác loài ở bệnh nhân đến khám tại Bệnh viện Hữu Nghị Việt Tiệp năm 2023.	1.TS. Vũ Thị Thanh Hiền – Trường ĐHYD Hải Phòng CN: Ký sinh trùng Hướng dẫn thứ nhất 2.TS. Đào Thu Hằng - Trường ĐHYD Hải Phòng CN: Sinh lý Hướng dẫn thứ hai
2.	Phạm Hương Thảo	Thực trạng không khuẩn sinh của vi khuẩn phân lập được từ bệnh nhân nhiễm khuẩn bệnh viện tại Bệnh viện đa khoa tỉnh Phú Thọ năm 2022 – 2023.	1.TS. Nguyễn Đức Trung – Trường ĐH Thái Nguyên CN: Vi sinh Hướng dẫn thứ nhất 2.TS. Phạm Thị Thu Trang- Trường ĐHYD Hải Phòng CN: Hoá sinh Hướng dẫn thứ hai
3.	Nguyễn Thị Hải Anh	Nghiên cứu đặc điểm tội nhiễm các thể ở các cặp vợ chồng vô sinh nữ xảy thai, thai chết lưu đến khám tại Bệnh viện Phụ sản Hải Phòng 2021 – 2023.	1. TS. Phạm Thị Thu Trang- Trường ĐHYD Hải Phòng CN: Hoá sinh Hướng dẫn thứ nhất 2. TS. Lưu Vũ Dũng – Bệnh viện phụ sản Hải Phòng CN: Hoá sinh Hướng dẫn thứ hai
4.	Cao Văn Tuyến	Đánh giá thực trạng và một số yếu tố liên quan đến hệ thống quản lý chất lượng xét nghiệm tại các phòng xét nghiệm tỉnh Hải Dương năm 2023.	1. TS. Vũ Văn Thái – Trường ĐHYD Hải Phòng CN: Ký sinh trùng Hướng dẫn thứ nhất 2. TS. Đinh Thị Xuyến – Trường BHCT Y tế Hải Dương CN: Sinh học Hướng dẫn thứ hai
5.	Vũ Ngọc Hiếu	Nâng lực thí thảo đường và một số yếu tố liên quan trên thai phụ tại Bệnh	1. TS. Lưu Vũ Dũng – Bệnh viện Phụ sản Hải Phòng CN: Hoá sinh Hướng dẫn thứ nhất

		viện Phụ sản Tâm Phúc, Hải Phòng năm 2022 - 2023.	2. TS. Phạm Thị Thu Tùng - Trường DHYD Hải Phòng CN: Hoà sinh. Hướng dẫn thứ hai
6.	Nguyễn Hữu Hiệp	Ứng dụng xét nghiệm đo tải lượng virus trong chẩn đoán và điều trị viêm gan virus C mạn tính tại Bệnh viện nhiệt đới tỉnh Hải Dương.	1. TS. Ngô Anh Thế - HVBH Việt Tiệp Hải Phòng CN: Truyền nhiễm Hướng dẫn thứ nhất 2.TS. Nguyễn Hùng Cường - Trường DHYD Hải Phòng CN: Vi sinh Hướng dẫn thứ hai
7.	Vũ Xuân Hiệu	Đánh giá thực trạng và kết quả của các giải pháp can thiệp quản lý quá trình xét nghiệm tại các Trung tâm Y tế hạng II tại tỉnh Hải Dương năm 2023.	1.TS. Nguyễn Hùng Cường - Trường DHYD Hải Phòng CN: Vi sinh Hướng dẫn thứ nhất 2.TS. Đinh Thị Xuyến – Trường DHKTYT Hải Dương CN: Sinh học Hướng dẫn thứ hai
8.	Vũ Đình Tuấn	Nghiên cứu tỷ lệ và một số yếu tố liên quan đến nhiễm HBV, HDV, HCV ở người tiêm chích tại Hải Phòng giai đoạn 2021 - 2023.	1.TS. Hoàng Văn Phong – BV HN Việt tiệp Hải Phòng CN: Huyết học Hướng dẫn thứ nhất 2.TS. Nguyễn Hùng Cường - Trường DHYD Hải Phòng CN: Vi sinh Hướng dẫn thứ hai
9.	Hoàng Thị Minh Thư	Tỉ lệ nhiễm, thành phần loài và một số yếu tố liên quan đến nhiễm nấm Candida SPP ở phụ nữ đến khám tại Bệnh viện Phụ sản Hải Phòng năm 2023.	1.PGS.TS. Đinh Thị Thanh Mai – Trường DHYD Hải Phòng CN: Ký sinh trùng Hướng dẫn thứ nhất 2. TS. Hàn Thu Hằng- Trường DHYD Hải Phòng CN: Sinh lý Hướng dẫn thứ hai
10.	Mạc Nguyễn Quỳnh Trâm	Ứng dụng xét nghiệm QuantiFERON-TB Access trong chẩn đoán lao tiềm ẩn tại cộng đồng.	1.TS. Nguyễn Hùng Cường- Trường DHYD Hải Phòng CN: Vi sinh Hướng dẫn thứ nhất 2. TS. Bạch Thị Như Quỳnh - Trường DHYD Hải Phòng CN: Sinh học phân tử Hướng dẫn thứ hai
11.	Lê Thanh Hằng	Ứng dụng kỹ thuật Genexpert trong chẩn đoán nhanh lao kháng thuốc lao trên phạm nhân nghi ngờ lao phổi tại trại giam Tân Lập năm 2022.	1.TS. Bạch Thị Như Quỳnh- Trường DHYD Hải Phòng CN: Sinh học phân tử Hướng dẫn thứ nhất 2. TS. Vũ Văn Thái - Trường DHYD Hải Phòng CN: Ký sinh trùng Hướng dẫn thứ hai

CHỨNG THỰC:
BẢN SAO ĐÚNG VỚI BẢN CHÍNH
Ngày 08-05-2023
Số chứng thực: 04/VL - Quyển số: 01/TBS
NGƯỜI THỰC HIỆN CHỨNG THỰC

CÔNG CHỨNG VIÊN
Nguyễn Thị Anh Ngân

HIỆU TRƯỞNG
PGS.TS. Phạm Văn Linh

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

Số: 53 /QĐ-YDHP

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

Hải Phòng, ngày 04 tháng 01 năm 2021

QUYẾT ĐỊNH

Về việc công nhận tên đề tài và cán bộ hướng dẫn khoa học luận văn thạc sĩ khoá 1 (2019 - 2021)

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Căn cứ Quyết định số 80/1999/QĐ-TTg ngày 23 tháng 03 năm 1999 của Thủ tướng Chính phủ về việc thành lập Trường Đại học Y Hải Phòng;

Căn cứ quyết định số 2113/QĐ-TTg ngày 11/11/2013 của Thủ tướng chính phủ về việc đổi tên Trường Đại học Y Hải Phòng thành Trường Đại học Y Dược Hải Phòng;

Căn cứ quyết định số 10/2006/QĐ-BGDĐT, ngày 06 tháng 4 năm 2006 của Bộ trưởng Bộ Giáo dục & Đào tạo về việc ban hành Quy chế đào tạo sau đại học;

Căn cứ Thông tư số 15/2014/QĐ-BGDĐT, ngày 15 tháng 5 năm 2014 của Bộ trưởng Bộ Giáo dục & Đào tạo về việc ban hành Quy chế đào tạo trình độ Thạc sĩ;

Căn cứ quyết định số 1776/QĐ-BGDĐT, ngày 24 tháng 6 năm 2019 của Bộ trưởng Bộ Giáo dục & Đào tạo về việc giao cho Trường Đại học Y Dược Hải Phòng đào tạo ngành Kỹ thuật xét nghiệm Y học trình độ thạc sĩ;

Xét đề nghị của Trưởng phòng Đào tạo Sau đại học và Hội đồng thông qua đề cương luận văn thạc sĩ;

QUYẾT ĐỊNH:

Điều 1. Công nhận Bà: **Đỗ Thị Hạnh** là học viên Cao học khoá 1 (2019 – 2021) của Trường Đại học Y Dược Hải Phòng với đề tài: "Thực trạng và một số yếu tố liên quan đến nhiễm nấm da ở bệnh nhân tại Bệnh viện Da liễu tỉnh Thái Bình năm 2020".

Ngành: Kỹ thuật xét nghiệm Y học Mã số: 8720601

Thời gian đào tạo: 02 năm

Cán bộ hướng dẫn:

TS. Võ Thị Thanh Hiền Trường ĐHYD Hải Phòng CN: Kỹ sinh trùng

Điều 2. Học viên sau khi và cán bộ hướng dẫn được hưởng các quyền lợi ghi trong quy chế đào tạo sau đại học hiện hành của Bộ Giáo dục & Đào tạo.

Điều 3. Các ông (bà) Trưởng phòng Đào tạo Sau đại học, tài chính kế toán, các cán bộ hướng dẫn và học viên **Đỗ Thị Hạnh** chịu trách nhiệm thi hành quyết định này./.

Nơi nhận:
- Như điều 3;
- Lưu Đào tạo SĐH;
- Lưu VT.

HIỆU TRƯỞNG

PGS.TS. Nguyễn Văn Khải

BẢN SAO ĐÚNG VỚI BẢN CHÍNH
Ngày 11-05-2021
NGƯỜI THỰC HIỆN CHỨNG THỰC

CÔNG CHỨNG VIÊN
Nguyễn Thị Anh Ngân

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

BIÊN BẢN
NGHIỆM THU ĐỀ TÀI KHCN CẤP CƠ SỞ NĂM 2023

Tên đề tài: Thực trạng và một số yếu tố liên quan đến bệnh nấm da ở bệnh nhân đến khám tại Bệnh viện Hữu nghị Việt Tiệp năm 2023

Chủ nhiệm đề tài: Võ Thị Thanh Hiền

Thành viên tham gia: Đinh Thị Thanh Mai, Trịnh Văn Khương, Nguyễn Thị Huyền Sương

Đơn vị: Ký sinh trùng

Căn cứ Quyết định số: 2350 /QĐ - YDHP ngày 08 tháng 12 năm 2023 của Hiệu trưởng trường Đại học Y Dược Hải Phòng về việc thành lập Tiểu ban Khoa học công nghệ nghiệm thu đề tài nghiên cứu khoa học cấp cơ sở năm 2023, Tiểu ban đã tiến hành họp để đánh giá, nghiệm thu đề tài vào hồi 9h00 ngày 28 tháng 12 năm 2023 tại trường Đại học Y Dược Hải Phòng.

Các thành viên có mặt:

1. PGS.TS. Vũ Văn Quang – Trưởng tiểu ban
2. TS. Nguyễn Hùng Cường – Phó trưởng tiểu ban
3. TS. Chu Khắc Tân – Ủy viên
4. TS. Trần Thị Liên – Ủy viên

Thư ký hành chính: ThS. Trần Thị Thanh Bình

Các thành viên vắng mặt: Không

NỘI DUNG NGHIỆM THU:

1. Đọc quyết định thành lập Tiểu ban: **ThS. Trần Thị Thanh Bình**
2. Trưởng Tiểu ban điều khiển buổi nghiệm thu.
3. Chủ nhiệm đề tài trình bày tóm tắt báo cáo tổng kết đề tài *(có bản báo cáo tóm tắt kèm theo)*.
4. Các thành viên Tiểu ban nhận xét, góp ý *(có bản nhận xét kèm theo)*.

5. Các thành viên trong Tiểu ban và những người tham dự buổi nghiệm thu trao đổi về nội dung, phương pháp, kết quả nghiên cứu của đề tài; và thống nhất một số ý kiến sau:

Thống nhất với đường phương pháp và kết quả nghiên cứu

6. Đánh giá tổng quát:

6.1. Ban kiểm phiếu gồm:

- **TS. Trần Thị Liên**
- **ThS. Trần Thị Thanh Bình**

6.2. Tiểu ban đã bỏ phiếu đánh giá kết quả như sau:

Tổng số phiếu phát ra : 5 phiếu
Tổng số phiếu thu vào : 5 phiếu
Số phiếu hợp lệ : 5 phiếu
Số phiếu không hợp lệ : 0 phiếu

6.3. Kết quả đánh giá:

Xuất sắc : 5 phiếu
Khá : 0 phiếu
Đạt : 0 phiếu
Không đạt : 0 phiếu

Kết quả đề tài đạt loại: Xuất sắc

7. **Kết luận:**

Thông qua đề tài

Hải Phòng, ngày 09 tháng 12 năm 2023

Trưởng Tiểu ban
(Ký và ghi rõ họ tên)

PGS.TS. Phạm Văn Hường

Thư ký
(Ký và ghi rõ họ tên)

Trần Thị Thanh Bình

Current Medical Mycology

Epidemiological characterization of pityriasis versicolor and distribution of *Malassezia* species among students in Hai Phong city, Vietnam

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ABSTRACT

Background and Purpose: Pityriasis versicolor (PV) is a common fungal skin infection caused by *Malassezia* species. Previous studies have shown that the prevalence of PV is influenced by geographic factors. The aim of the current study was to find the epidemiological characteristics of PV and distribution of *Malassezia* species in the secondary school students living in Hai Phong city, Vietnam.

Materials and Methods: This study was conducted on 1707 students within the age range of 10 - 14 years selected from five secondary schools in Hai Phong city. The students were screened for PV skin lesions from August 2016 to December 2017. The isolation of *Malassezia* from PV patients was conducted by performing direct microscopy and culturing on modified Dixon agar plates, containing gentamicin, at 35°C for 7 days to the next stage. The fungal strains obtained from patients with positive fungal cultures were identified using the CHROMagar™ *Malassezia* medium, polymerase chain reaction-restriction fragment length polymorphism techniques, and 26S rDNA gene sequencing.

Results: Pityriasis versicolor was diagnosed in 261 (15.30%) students and confirmed by clinical appearance and direct examination. A total of 251 (96.17%) samples gave an amplified 26S rDNA gene. With regard to demographic characteristics, 56.68% of the PV cases were females and 57.08% of cases resided in urban areas. Furthermore, 68.20% of the subjects had the lesions duration of more than 6 months. Hypopigmented and erythematous skin lesions were also observed in the research participants, with hypopigmentation being the most frequent manifestation (77.39%). Most of the *Malassezia* fungal strains were isolated from the trunk (39.84%), face (32.89%), and chest (16.51%). *Malassezia furfur* and *M. globosa* accounted for PV in 56.22% and 3.73% of the cases, respectively. Furthermore, *Malassezia furfur* was dominant on both head and urban areas, while *M. globosa* was found only on the other areas.

Conclusion: The findings of the present study were indicative of the high prevalence of *Malassezia* yeasts, mostly *M. furfur*, among the students in Hai Phong city, Vietnam.

Keywords: Hai Phong city, *Malassezia*, Pityriasis versicolor, Students, Vietnam

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Introduction

The lipophilic yeasts of genus *Malassezia* are the members of the resident skin microflora in humans and other warm-blooded animals [1, 2]. These yeasts are associated with some skin diseases, such as pityriasis versicolor (PV), seborrheic dermatitis, atopic dermatitis, folliculitis, and folliculitis [3, 4]. To date, 14 species have been identified in *Malassezia* genus [5-7], 10 cases of which have been isolated from humans. These species include *M. dermatis*, *M. furfur*, *M. globosa*, *M. japonica*, *M. obtusa*, *M. pachydermatis*, *M. restricta*, *M. slooffiae*, *M. sympodialis* and *M. yamatoensis* [8, 9].

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Malassezia species are a normal part of human commensal skin flora; however, they could be responsible for cutaneous diseases, namely PV [4]. The risk factors for PV are high temperature, high relative humidity, fatty skin, confinement/occlusion, immunodeficiency, pregnancy, and overcrowding households [9], [10]. In addition, some studies have shown that Malassezia may be associated with psychrometric, hospitals, captivity, genitals and fungal bloodstream carcinoma, especially in neonates [6, 11, 12].

Malassezia species can be identified by physiology, biochemistry, and physiological methods [13]. However, the differentiation of these species based on these methods is difficult because some species have very similar characteristics, especially for the newly identified species [6, 7]. Because of the limitations of morphological and biochemical methods, several molecular approaches, using different targets, have been successfully used for the species identification of Malassezia. Some of these approaches include polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP) based on ITS-rDNA regions and 26S genes [6, 9, 13], nested PCR [2], multiplex PCR [14], real-time PCR [7], and sequence analysis [15].

The secondary school students in Vietnam's cities often only begin to go through puberty, therefore they have highly active sebaceous glands. There available are of a playful age with extended schooling. Based on the literature, Malassezia exists in different countries, including Vietnam [1, 16, 17]. Nevertheless, there are limited data on Malassezia infections in the secondary students in Ha Nong area, Vietnam. Ha Nong is located in the north of Vietnam with the all-year prevailing temperature of 21-28°C and humidity of 80-85%. With this background in mind, the present study was conducted to determine the epidemiological characteristics of PV and distribution of Malassezia species in the secondary school students living in Ha Nong city, Vietnam.

Materials and Methods

Study population

A total of 1,215 students within the age range of 16-18 years were selected from four secondary schools, namely Trinh Nhan (An Khe district), Le Hong Phong (Duyen district), Quang Hung (An Khe district), and Doan Ke Thien (Dong Hy district), in Ha Nong city, Vietnam, from August 2016 to December 2017. All these students were screened for PV. A questionnaire was used to record the information data about the epidemiology of each person.

Sampling

The specimens were taken by scraping the lesions with a sterile blade. In case of the presence of enamel cellulose or emollient scales, the samples were taken by means of cellotape. In patients with PV having more than two lesion sites, all lesions were sampled, and a record was made regarding the affected body site.

Microscopy and culture

The diagnosis of PV was based on clinical appearance and direct microscopic examination in 20% potassium hydroxide (KOH) and staining with methylene blue. To this end, the skin specimens obtained from patients with clinically suspected PV were used for direct microscopic examination with 20% KOH (Sinchao Co. Ltd, Vietnam) and staining with methylene (Merck, Germany). The PV was established based on the characteristic clusters of spores with short hyphae. Skin scale sampling was continued in the patients who had positive direct microscopy, and the samples were immediately cultured on modified Dixon agar plates, containing gentamicin (at a final concentration of 25 µg/ml).

The inoculated plates were incubated at 32°C and observed every day for a maximum of 7 days before negative results were noted. The colonies were subcultured on CHROMagar™ *Malassezia* medium (CHROMagar, France) to determine the co-existence of *Malassezia* species and *Candida* species. *M. furfur* and other *Malassezia* species according to the manufacturer's instructions. If *Malassezia* species were the same as different body sites, it was considered to be a single isolate.

Molecular identification of the isolated species of Malassezia

DNA isolation

The pure cultures of all *Malassezia* isolates were homogenized in 100 µl of sterile water (Corning, USA) and incubated with cortical buffer (194 cortical, 194 AM isolate, EDTA, 14 mM, β-mercaptoethanol, and 200 Lyticase enzyme units (A3554, Sigma-Aldrich Co. Ltd., Poole, UK) at 30°C for 60 min to destroy fungal cell membranes. In the next stage, the DNA of each microbial isolate was extracted using the biologix QIAamp DNA Blood Kit (No. 51104, Qiagen, Hilden, Germany), according to the manufacturer's guidelines. The purified DNA was preserved with distilled water at -20°C until the implementation of the PCR reaction.

Polymerase chain reaction amplification

The PCR products (400-550 bp) of *Malassezia*-containing ITS2 rDNA, were amplified by ITS3 (F: GCA TCG ATG AAG AAC GCA GC-3') and ITS4 (F: TCC TCC GCT TAT TGA TAT GC-3') primers (Integrated DNA Technologies, USA) as described previously [9]. The total PCR reaction volume of 50 µl consisted of 5 µl of the DNA solution of *Malassezia*, 25 µl Master Mix 2X (Thermo Fisher Scientific, USA), 2 µl of each primer (0.2 µM), and 16.8 µl of deionized water. The PCR reaction was performed on the Eberhu Mastercycler gradient cycler (Thermo Fisher Scientific, USA) with a thermal cycle at 94°C for 5 min. This was followed by 35 cycles of 94°C for 30 sec, 72°C for 30 sec, and 72°C for 45 sec and also one cycle of 72°C for 15 min and 1 cycle of 20°C for 10 min, after

amplification, the products were stored at 4°C until being used.

Restriction fragment length polymorphism analysis

The RFLP was performed according to the method described by Rudzinska et al. [9] to distinguish *Mollusca* species. Digestion was performed in a final reaction volume of 10 µl, containing of 5 µl of PCR product, 1 µl (10U) of each restriction enzyme (*Hae*III, *Rsa*I, and *Msp*A11) (Thermo Fisher Scientific, USA), 1 µl of 10X Tango buffer solution, and 3 µl of deionized water (Thermo Fisher Scientific, USA). After 3 h of incubation at 37°C, the enzyme was inactivated at 80°C for 15 min. For analyzing the digestion products, 6 µl of each product in addition to 1 µl of loading dye buffer was separated by 2% agarose gel in 0.5 TBE buffer for about 1 h 15 at 90 V. The ethidium bromide staining was then visualized by ultraviolet illumination (UVP, Canada). The size of each band was determined by a 100-bp Plus Ladder molecular weight marker (Thermo Fisher Scientific, USA).

ITS2 and 28S rRNA gene sequencing

The D1-D3 domain region of 28S rRNA gene was amplified with the primers 28S-3 (5'-DGA TAT CAA TAA (4/5) (A/G) GAA AAG-3') and 28S-4 (5'-GGT (C/T) TAT TTC AAG (A/G) ACG (C/T) (triangular) DNA Technologies, USA). The PCR products of some strains of *Mollusca* were sent to the Applied Scientific Asia Biotech Kembangan 81100, Selangor, Malaysia) for purification and automatic sequencing with the same primers being used for PCR. The sequences were read on the ABI 3130 Genetic Analyzer software (BioEdit Software version 7.1).

Data and sequence analysis

The SPSS statistics software (Chicago, IL, USA; version 20.0) was used for processing the data in our study. A *P*-value less than 0.05 was considered statistically significant. The obtained sequences were then compared to the available data in the NCBI database, using the BLAST guidelines (http://blast.ncbi.nlm.nih.gov/Blast.cgi).

Ethical considerations

The purpose and benefits of the study were explained to the students, as well as their parents/guardians and local teachers. The inclusion criteria were: 1) willingness to participate in the study, 2) a written informed consent, and 3) informed consent of the parents/guardians. The study protocol was approved by the Scientific and Ethical Committee of the National Institute of Malariology, Parasitology and Entomology (Hanoi, Vietnam) in November 2013 (ethics code: 103/2013/YTCC). Furthermore, the study was conducted in accordance with the Declaration of Helsinki Principles.

Results

A total of 1,337 students aged 10-16 years were chosen to be screened for PV skin lesions. The mean age of the cases of PV was 13.3 years. The research population consisted of 698 males (age range: 10-16 years) and 639 females (age range: 11-16 years). The demographic characteristics of the subjects are shown in Table 1. Based on the clinical appearance and direct microscopic examination of 20% KOH and staining with methylene (Figure 1), a total of 289 (21.6%) patients were diagnosed with PV. There were no statistically significant differences between the two genders or between the urban and rural residents in terms of the prevalence of PV ($P=0.18$ and $P=0.89$).

Table 1. Demographic characteristics of the research participants

Demographic characteristics	Total (n = 1,337) n (%)
Gender	
Male	[illegible]
Female	[illegible]
Place of residence	
Rural	[illegible]
Urban	[illegible]

Figure 1. Map of PV-endemic districts in Ha Giang province, Vietnam

Table 1: Prevalence of clinical characteristics of the disease

Clinical characteristics	Num (%)
Gender (n = 1625)	
Male	1511 (93.1)
Female	114 (6.9)
Residence (n = 1625)	
Rural	1385 (85.23)
Urban	240 (14.77)
Duration of clinical manifestation (n = 1625)	
< 1	1911 (76)
1 - 5	714 (24)
> 5	1350 (83.1)
Pregnancy (n = 1625)	
Yes	1710 (10)
No	1615 (99.38)
Number of affected area (n = 1625)	
1	1575 (96.92)
[illegible]	50 (3.08)
Symptoms (n = 1625)	
Asymptomatic	1611 (99.14)
Slight pigmentation	14 (0.86)
Itchiness	1 (0.06)
Combination	1 (0.06)
Scraped for mycosis (n = 1511)	
Yes	1511 (100)
Wash	1511 (100)
Chalk	1511 (100)
Black	1511 (100)
Skin	1511 (100)
Methods	1511 (100)

of pityriasis versicolor.

Based on the results, 8.25% of subjects who had PV lesion in their forearm. Furthermore, one of these types

Figure 2: Pityriasis versicolor lesion (A) and Wood's Light (B) of lesion in a patient with multiple lesion (B).

Figure 3: Distribution of Malassezia species

of organisms, two types were seen in the study participants, with hyperpigmentation being the most frequent one. The clinical characteristics of the subjects are presented in Table 2. Most of the specimens were collected from the lesions on the back (98.89%), face (19.99%), and chest (16.31%). Out of the 969 samples collected from PV lesions, 293 were gave an amplified DNA band (30.07% growth rate). Based on the results of CHROMagar™ Malassezia medium, PCR-RFLP, and gene sequencing methods, out of 293 Malassezia isolates, 282 (96.25%) and 11 (3.75%) strains were identified as *M. furfur* and *M. japonica*, respectively; however, other Malassezia species were not detected in the specimens (Figure 3).

The prevalence of the co-colonization of the two identified Malassezia species was 0.34% (Table 3). These two species were discovered in both males and females. In addition, Malassezia furfur was found in both rural and urban areas, while M. japonica was only found in urban areas (data not shown). Figure 4 depicts the agarose gel electrophoresis of PCR products of the two isolates after digestion with the *AluI*, *RsaI*, and *HhaMI* restriction enzymes.

The representative sequences (50–550 nt/bp) regions of seven isolates, containing three *M. furfur* isolates and four *M. japonica* isolates, were deposited in the NCBI database (GenBank, USA) with the accession numbers of MF193693.1 to MF193697.1 and MF193524.1 to MF193527.1, respectively (Table 4).

Table 3: Co-colonization of Malassezia species in pityriasis versicolor patients

Malassezia species	Number (%)
M. furfur	141 (48.12)
M. japonica	10 (3.41)
M. furfur + *M. japonica*	2 (0.68)
None	140 (47.78)

Discussion

Pityriasis versicolor is observed more commonly among teenagers and young adults, especially in tropical and temperate regions [1,3, 18]. The prevalence of PV is higher in tropical countries (nearly 30–40%),

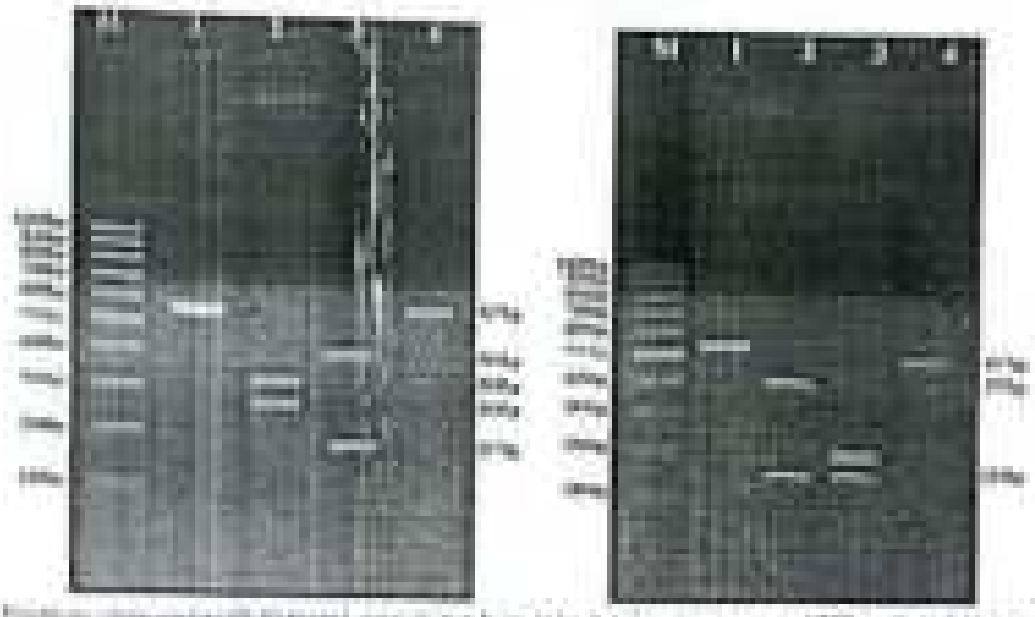

Table 4.

Name of strain	Accession number	Name of species
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

compared to that in temperate temperatures (1.4%) [16]. The relationship among climate, environment, and host factors has not been clearly described yet [1]. Moreover, there are no exact data on the pathogenesis of this condition and the association of new *Malassezia* species with PV lesions [14]. With regard to this fact, the prevalence of *Malassezia* infection depends on various factors, such as age, gender, body position, environment, and endogenous factors [1]. Based on a study of students, the prevalence and distribution of *Malassezia* species depend on the identification techniques, location, and local factors (environmental conditions) [6, 19].

In our study, 100% of the specimens were positive in the direct microscopic examination on 20% KOH and staining with methylene blue and showed clusters of yeast cells with short hyphae. The prevalence of PV was found to be higher in the secondary students (27.4%) investigated in this study, compared to the values reported by other countries, such as Iran [6] and Nigeria [20]. However, out of the 365 samples collected from PV lesions, a positive growth was only recovered for 96.07% (n = 294) of the cases. In the same way, previous studies have shown that *Malassezia* species have not usually been found in the culture method, but in the direct microscopic examination [1, 21].

Malassezia species tend to be the predominant flora of the body. The existence of these fungi depends on some factors such as humidity and the amount and composition of skin lipids [1]. The influence of gender on the propensity to developing PV is still unclear [6]. The results regarding the influence of gender on PV are in line with those of the previous studies. However, other authors reported a higher incidence in women. The reasons for such differences in the rate of *Malassezia* between males and females may be attributable to the more attention of women to their beauty and skin hygiene [22, 23]. On the other hand, males are more involved in outdoor activities which place them at a high risk of exposure to some predisposing factors, such as high temperature and humidity [24].

In the current study, the frequency of hyperpigmentation lesions accounted for 97.83% of the PV lesions, which were more common than other lesions. In a study performed on 139 PV cases in Mumbai, India, Shah et al. [25] reported that 66.19%, 0.62%, and 1.24% of the PV lesions had hyperpigmentation, hypopigmentation, and both hyperpigmentation and hypopigmentation, respectively. Likewise, in a study conducted on 98 PV patients in Malaysia, as the neighboring country of Vietnam, hyperpigmentation was found to be the most common lesion (64.3%) [16]. The predominance of PV lesions in tropical climates is probably explained by its

pityriasis versicolor (i.e., an observer-dependent index obtained from M. furfur) [11, 16]. This agent has the ability to produce fungus against ultraviolet exposure and relieve the symptoms of human melanocytes [16] that may explain over 90% hypopigmentation observed in our study.

There are many techniques that have been proposed to detect and distinguish Malassezia species in clinical samples [6, 26]. In our study, Malassezia fungus was identified by means of the CHROMagar™ Malassezia medium according to the manufacturer's instructions, PCR-RFLP as described by Kiatsoontorn et al. [9] and sequencing of the D1/D2 of ITS [19]. Two Malassezia species, namely M. furfur and M. japonica, were detected with the prevalence rates of 95.2% and 4.8%, respectively. Malassezia fungal species composition found in this study was different from that reported by Cao et al. [17], investigating over 500 patients with PV visited at Hy Vietnam National Hospital of Dermatology. In the mentioned study, 11 different Malassezia fungal species were found by culture techniques, in which M. globosa and M. furfur were accounted for the highest proportion (42.4% and 17.1%, respectively). However, M. furfur and M. japonica only accounted for 10.8% and 4.1% of the cases, respectively [17].

The differences in species composition in the two studies may be due to the characteristics of our study population. In this regard, our research population consisted of young high school students in the city (i.e., Hai Phong) while in the study by Cao et al. [17], the patients with PV came from many various provinces. In addition, the method of identification was different between the two studies. In our study, three techniques of CHROMagar™ Malassezia, PCR-RFLP, and gene sequencing were used concurrently. However, Cao et al. [17] used culture techniques in various environments (i.e., Dixon, SDA, Tween 40, Tween 60, Tween 80). This discrepancy urges the need for extensive research to better understand this issue.

In most countries, the Malassezia species of human participants have many differences [18, 21, 23]. In a study performed in China on subjects with PV, Chengfei Xu et al. [19] recorded 10 different Malassezia species, among which M. globosa was the most common one. In another study in India, Chowdhary et al. [21] only recorded five different Malassezia species, among which M. globosa was found to be the most common species. Meanwhile, Levy et al. [24], investigating seborrheic dermatitis in Kenya, only recorded 4 different species of Malassezia, with M. restricta being the most ; relative studies. Furthermore, in a study carried out in Indonesia, a country in Southeast Asia, on persons with PV, six different Malassezia species were identified, and M. furfur was reported as the most common species [16].

In our study, M. furfur and M. japonica was found in both genders. However, the distribution of species composition was not statistically significant between the two genders like previous studies [16, 27]. Consistent with a study performed by Kiatsoontorn et al. [16], the PV lesions were mainly found in the upper part of the body, especially on the back. However, the reported species distribution in relation sites varies across different studies. In the current research, M. furfur was found at all sites of injuries, while in some studies, M. furfur was not observed in many sites [1, 16]. Furthermore, M. japonica was detected in the present study, nonetheless, this species has not been reported in many Asian countries, such as India [21, 28], Iran [5, 22], Korea [8, 16], and Indonesia [16]. Malassezia fungal species composition varied among ethnicities and urban patients. In this regard, racial patterns may only inferred with M. furfur, while patterns residing in the urban areas were inferred with both M. furfur and M. japonica.

Conclusion

As the findings indicated, the prevalence of PV was higher in the students living in Hai Phong city than in those residing in other parts of the world. In the present study, M. furfur and M. japonica were identified as the etiological agents, with M. furfur being more common than M. japonica. However, no other Malassezia species was detected.

Acknowledgements

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Author's contributions

N. D. B., V. T. T. H., and D. N. A. designed the study. D. T. T. H., V. V. T., L. T. T., N. T. M., D. T. H. A., T. V. B., C. B. L., and H. C. S. collected the samples and clinical data. V. T. T. H., T. T. B., L. T. K. D., T. T. M., L. T. A., and N. K. L. identified the species of the responsible agents. N. D. B., V. T. T. H., and D. N. A. drafted the manuscript. All authors read and approved the final manuscript.

Conflicts of interest

The authors declare that they have no conflicts of interest.

Financial disclosure

The authors have no relevant financial interests in the manuscript.

References

1. Zaman K, Ahmad N, Sultana A. Modern trends in epidemiology of pipeline accidents in Arid Provinces. Int J Environ Res Public Health. 2015;12(3):2345–2360.
2. Ali M, Khan TF, Ahmed SR, Rehman ZU. Comparison of Model Fit for Accident Frequency Data from Provincial Highways. J Transp Eng. 2016;142(5):04016012.
3. Iqbal M, Rehman S, Ahmed F, Siddiqui A, Qureshi M. Risk factors for pipeline accidents in Arid Provinces: A case-control study. Int J Occup Environ Health. 2019;25(2):112–120.
4. Hussain R, Chakrabarti A, Gupta S, Kundu S, Bandyopadhyay AK. Phenotypic and molecular characterization of Klebsiella pneumoniae isolated from pipeline outbreak. J Appl Microbiol. 2015;119(1):213–224.
5. Fontana D, Magnani F, Ciampolini M, Sciarretta FS, Voltolini A. The Mediterranean pipeline in crisis and economic downturn. Econ Mediterr Rev. 2012;10(2):105–121.
6. Mukhtar N, Rehman MU, Khurshid JR. Prevalence of Klebsiella species in pipeline flow wastewater of Kabbani, Northwestern Iran. J Pipeline Manag Technol. 2014;28(1):75–83.
7. Aziz F, Ahmed I, Haq S, Tahir H, Malik F, Ayub A, Rauf Toru PCR. Identification of the Klebsiella 5-mcrbc Gene Effective. 2017;10(6):611–617.
8. Fiorella G, Tondello MD, Cabrera JS. Pathogenic transmission of Klebsiella species found on multidrug-resistant pipeline field. Pipeline Res Rep. 2012;10(2):199–210.
9. Krishnamurthy RM, Haroldson P, Singh S, Tulgeniuscue BR, Krishi S, Chakraborty I. Environmental Klebsiella isolates from Gondwana Syncline. Pipeline Res Rep. 2014. 10(3):201–217.
10. Zhao Y, Li J, Kang H, Song MP, Wang MQ. A research methodology for the repair of aged pipelines and reinforcement carried by Klebsiella. Int J Biomater. 2016;2016:1414.
11. Ali S, Ramsey KA, Mangalore G, Andrikson T, Sharma G, Cardenas F. Blood culture epidemiology and diagnosis of Klebsiella bone tuberculosis: changes and evolving. Med Mycol. 2014. Art 1:1–10.
12. Bauer-Lee L, Lorenzo M. Tuberculosis in the united states: economic and national economic distribution. 2015;47(1):105–6.
13. Nielsen PK, Agostinho Ana Bruce R, Kraemer T, Grün M. The genome of Klebsiella clinical isolated from scientific and economic research in Pipeline Materials. 2015;38(6):750–8.
14. Ivanov D, Georgieva N, Kostovichena D, Tzvetkov R, Boteva I. Identification of Klebsiella species from pipeline corrosion tenders with a new multiplex PCR method. Mol Cell Probes. 2014;17(1):23–9.
15. Chen DW, Bian Lin, Hao QH, Jiang M, Zhou D, Zhou G. Biochemical of Klebsiella species in the Karst Areas of China: laboratory methods before and a 2004 screening. Pipeline. 2014;112(1):751–64.
16. Nyambi TE, Bonnet S, Mala Nimo I. Identification of Klebsiella species from pipeline corrosion in pipelines and its screening with clinical characteristics. Pipeline. 1995. 13(4):337–42.
17. Carr VT, Tan TM, Kee BT, Tee BG, Mok PPT, Lye BS, et al. Distribution of Klebsiella Species from Bogia of Papua with Pyrosis Vaccines by Clinical in Patients. Spec issue Blood J Med Sci. 2015;7(2):184–9.
18. Lawrence D, Rose Mike S, Radu F, Navarro BR. Resistance of Klebsiella strains of pipelines corrosion tenders in northern Argentina. Rev Environ Microb. 2010;27(1):1–9.
19. Liu J, Bai F, Zhang Q, Zhang M, Wei D, Li C. the incidence of the Klebsiella species detachment in the area of patients with pipeline corrosion in Changde, China. Int Pipeline J. 2014. 2014:459329.
20. Abu OO, Omojowo B, Olusola OA, Ogbonna ACI. Characteristics and Factors of Superficial Fungal Infections among School Children in Ilorin, North-Central Nigeria. Biomed Res Front. 2016;2016:4908317.
21. Upadhyay S, Singh S, Bhargava T, Shah B. Prevalence of pipeline Klebsiella species in pipeline corrosion in school boys (Bumpus) Kirkland Lakes. 2016;15(1):75–84.
22. Rizvi A, Shaikh A, Bokhari AM, Khokhar M, Farooqui S, Mustafa Shah T, et al. Molecular epidemiological study of Klebsiella pneumoniae isolated from pipeline corrosion in Karachi, Pakistan. Front Microbiol. 2016;7:1483.
23. Kuwahara S, Kawakami Y, Imai K, Yamamoto K, Ikeda T, Banno M, et al. Study of the prevalence of Klebsiella species in patients with pipeline corrosion and healthy individuals in Kansai area. BMC Dermatol. 2009;9:13.
24. Rizwan S, Hafeez W, Khurram N, Hussain M, Ahmed N, Hamid S. Clinicoepidemiological profile of pipeline corrosion in Azad Jammu & Kashmir. 2016;28(2):195–201.
25. Shah A, Shaikh S, Ujjan AA, Shaikh S, Ahmed R, Shaikh S. Identification and detection of Klebsiella in patients clinically suspected of having pipeline corrosion. Indian J Dermatol. 2011;56(1):54.
26. Lee YW, Kang HJ, Kim BS, Kim MS, Lee YY, Lee JW, et al. Distribution of Klebsiella species on the body in Native volunteer persons. Ann Dermatol. 2013;25(3):316–21.
27. Ashraf MS, Al-Khaldi AI, Ahmed QM. Physiologic Identification and Molecular Characterization of Klebsiella spp. Isolated from Pipeline corrosion patients with special emphasis on risk factors in Qassim province, Kingdom of Saudi Arabia. J Med Sci. 2015;15(6):287–93.
28. Nasrin N, Ahmed Z, Chowdhury G, Bhuiyan MSA, Ahsan S, Hasanuzzaman SMA, et al. Occurrence of facility and analysis using disciplines research. the role of community in Rural Health Pract Clin Acad Microbiol. 2014;1:e1.

Tạp chí

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THỰC TRẠNG KIẾN THỨC, THÁI ĐỘ, THỰC HÀNH VÀ MỘT SỐ YẾU TỐ LIÊN QUAN VỀ BỆNH SỐT MẠT HUYẾT CỦA NGƯỜI DÂN HAI XÃ HUYỆN KIẾN THỤY, HẢI PHÒNG, NĂM 2019

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Đại học Y Dược Hải Phòng

Tóm tắt

Nghiên cứu cắt ngang mô tả trên 760 hộ gia đình về bệnh sốt mạt huyết. Kết quả cho thấy: tỷ lệ người dân có kiến thức đúng về bệnh sốt mạt huyết là 88,7%, tỷ lệ có thái độ đúng là 87,6%, tỷ lệ thực hành đúng là 73,7%. 97,8% người dân biết sốt mạt huyết là bệnh truyền qua vết đốt của một loại côn trùng. 73,4% có thái độ không đồng ý với quan điểm cho rằng bệnh sốt mạt huyết là bệnh không thể phòng tránh được. 73,4% người dân thực hành đúng khi bị bệnh sốt mạt huyết. 88,4% người dân tự đến trạm y tế xã khi bị bệnh sốt mạt huyết. 58,9% người dân đến khám tại bệnh viện huyện. 84,2% người dân biết đến 3 thời điểm nguy hiểm của người bị bệnh sốt mạt huyết. 58,9% dùng thuốc hạ sốt. 48,7% chọn uống nhiều nước. 38,8% người dân biết sử lý bọc muỗi. 87,0% phun thuốc diệt muỗi. 82,2% phát quang bụi rậm. 85,0% dọn mùa đông thoát nhiệt. 42,1% dùng hóa chất muỗi trong nhà. 43,0% dùng dương xỉ muỗi. 34,0% dùng biện pháp làm khô thoát muỗi. 79,1% ngủ màn phòng tránh muỗi đốt. 50,7% sợ muỗi trong nhà. 99,9% dùng hương xua muỗi đốt. Không có sự khác biệt giữa kiến thức đúng về thực hành đúng về phòng chống sốt mạt huyết giữa nam và nữ, giữa các nhóm tuổi, p >0,05. Những người có trình độ học vấn cao có kiến thức đúng về thực hành đúng về phòng chống sốt mạt huyết cao hơn những người có trình độ học vấn thấp, p <0,05. Những người là cán bộ công chức có học vấn, trình độ kiến thức đúng và thực hành đúng về phòng chống sốt mạt huyết cao hơn nhóm nghề nghiệp khác, p <0,05.

Từ khóa: Kiến thức thái độ thực hành, sốt mạt huyết, vùng Đông

1. ĐẶT VẤN ĐỀ

Sốt mạt huyết Đông (a bệnh truyền nhiễm cấp tính do vi rút Đông gây ra. Lây truyền từ người sang người qua trung gian truyền bệnh là muỗi *Aedes* spp trong đó có vai trò quan trọng nhất là *Aedes aegypti* vào giai đoạn muỗi đốt. Muỗi vận chuyển vi rút và loại côn trùng quanh nhà, bệnh do vi rút Đông của Châu Mỹ nhiệt đới và cận nhiệt đới có nước động.

Sốt mạt huyết Đông đã trở thành vấn đề y tế quan trọng không chỉ đối với khu vực Đông Nam Á và Tây Thái Bình Dương mà cả các nước Châu Phi, Châu Mỹ La Tinh, vùng Caribe, các nước có khí hậu nhiệt đới và cận nhiệt đới, cho nước đang phát triển [7].

Năm 2016, cả nước ghi nhận 189.399 trường hợp mắc sốt mạt huyết tại 56 tỉnh thành phố, trong đó 36 trường hợp tử vong. Theo số liệu của Cục y tế dự phòng, năm 2017 có 80.000 trường hợp mắc sốt mạt huyết, trong đó khu vực miền Bắc có tới 14.000 trường hợp.

Hiện nay, chưa có thuốc đặc trị và vắc xin phòng bệnh. Vì vậy, phòng chống sốt mạt huyết đang và trở quan trọng trong công tác chăm sóc sức khỏe cộng đồng. Chương trình Quốc gia về Phòng chống sốt mạt huyết được triển khai từ năm 1999 đánh giá về kiến thức, thái độ và thực hành của người dân về phòng chống bệnh này. Tại huyện Kiến Thụy, Hải Phòng chưa có nhiều. Chính vì những lý do này, chúng tôi tiến hành thực hiện đề tài với mục tiêu mô tả kiến thức, thái độ, thực hành của người dân về bệnh sốt mạt huyết của người dân tại hai xã huyện Kiến Thụy, Hải Phòng, năm 2019 và các đánh giá về yếu tố liên quan đến bệnh sốt mạt huyết tại địa điểm nghiên cứu.

2. ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU

2.1. Đối tượng nghiên cứu

- Chủ hộ hoặc người đại diện cho các hộ gia đình từ 16 tuổi trở lên.

- Tiêu chuẩn chọn đối tượng: Có chủ hộ hoặc người trên 16 tuổi đại diện cho hộ gia đình ở nhà, có khả năng trả lời những câu hỏi phỏng vấn.

- Tiêu chuẩn loại trừ: Là hộ gia đình không có người ở nhà, người mắc bệnh nặng thính giác, câm, điếc, không đồng ý tham gia hoặc bỏ dòng cho tới khi đến khảo sát sau 3 lần nhưng 3 ngày liên tiếp.

2.2. Địa điểm nghiên cứu: Giáo: 1 xã Thanh Sơn và Ngũ Đoan, huyện Kiến Thụy, Hải Phòng.
Thời gian: Từ tháng 3/2019 đến 1/2019

2.3. Phương pháp nghiên cứu: Theo phương pháp nghiên cứu mô tả cắt ngang.

2.3.1. Phương pháp chọn mẫu

Cỡ mẫu nghiên cứu

Công thức xác định cỡ mẫu thực dùng cho nghiên cứu mô tả cắt ngang:

$$n = 1^2_{1-\alpha/2} \frac{p(1-p)}{d^2}$$

Trong đó:

- n: Cỡ mẫu mong muốn;
- $1^2_{1-\alpha/2}$: hệ số tin cậy trong mẫu 95%, $1^2_{1-\alpha} = 1,96$ ($\alpha = 0,05$)
- p: là tỷ lệ những người có kiến thức, thái độ và thực hành tốt, ước lượng khoảng 50%.
- d: độ chính xác mong muốn: 0,05

Như vậy, cỡ mẫu tối thiểu là 384 hộ gia đình. Để tạo chỉ số cỗ, chúng tôi nhân kí số gấp 2 lần n = 384 x 2 = 768 hộ gia đình. Thực tế chúng tôi đã thực hiện khảo sát được 785 hộ gia đình.

2.3.1.2. Phương pháp chọn mẫu

- Chọn xã: Sử dụng phương pháp chọn mẫu ngẫu nhiên phân tầng theo 2 xã tại huyện Kiến Thụy, Hải Phòng.

- Chọn hộ gia đình: Sử dụng phương pháp chọn mẫu ngẫu nhiên hệ thống. Lập danh sách hộ gia đình của 2 xã. Chọn k = 5 và chọn hộ gia đình đầu tiên là số thứ tự 3, các hộ tiếp theo là k_1 (1, 18, ... cho đến khi đủ 785 hộ gia đình cần để nghiên cứu [10]. Tại đó, chúng tôi có được số hộ nghiên cứu cho từng xã như sau: xã Thanh Sơn (398 hộ), xã Ngũ Đoan (390 hộ).

2.3.2. Kỹ thuật thu thập thông tin

Bộ câu hỏi được soạn thảo dựa vào tài liệu hướng dẫn của Viện Vệ sinh dịch tễ Trung ương, có bổ sung chỉnh lý cho phù hợp theo tỉ các địa phương và mục tiêu nghiên cứu [10].

2.4. Xử lý số liệu: Các số liệu được mã hóa và xử lý trên máy vi tính với phần mềm EPI INFO version 8.04 và SPSS 18.0.

3. KẾT QUẢ NGHIÊN CỨU

3.1. Kiến thức, thái độ thực hành về bệnh sốt xuất huyết của người dân tại các địa điểm nghiên cứu

3.1.1. Kiến thức của người dân về bệnh sốt xuất huyết

Bảng 1. Nguồn thông tin được người dân tiếp cận (n = 785)

Nguồn thông tin	Số lượng	Tỷ lệ (%)
Truyền hình	630	80,3
Báo, phát thanh	186	23,7
Sách báo	124	15,9
Loa phát thanh của xã	719	91,6
Tờ rơi	217	27,6
Cán bộ y tế xã	644	82,1
Y tế thôn	487	62,1
Y tế tư nhân	93	11,8
Người nhà, bạn bè kinh nghiệm	199	25,4
Bị sốt xuất huyết	18	2,3
Người khác		

Theo kết quả có 97,4% người dân biết bệnh sốt xuất huyết qua nguồn kênh, cán bộ y tế xã truyền thông người dân biết là 91,6%, loa phát thanh và thôn chiếm 62,1%.

Bảng 2. Kiến thức của người dân về triệu chứng sớm bệnh sốt xuất huyết (n = 785)

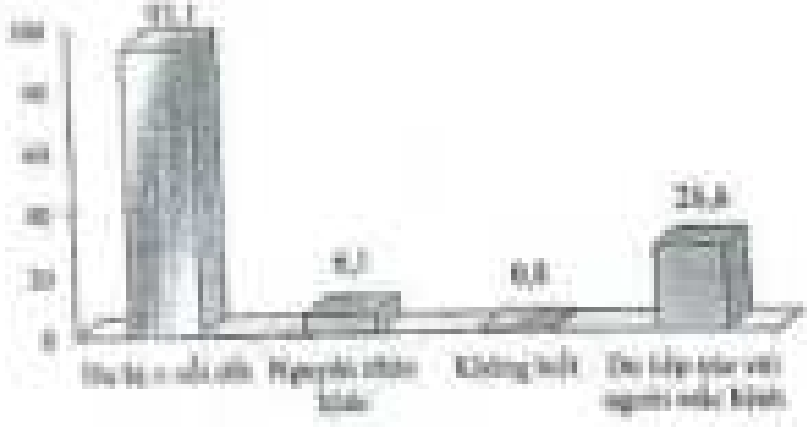
Dấu hiệu sớm sốt xuất huyết	Số lượng	Tỷ lệ (%)
Sốt cao liên tục >3 ngày	594	75,6
Chảy máu chân răng	728	92,7
Chảy máu mũi, nôn ra máu, đi ỉa ra máu	491	62,5
Nhức đầu, đau mình mẩy	460	58,6
Khác	39	5,0

Nhận xét: Kiến thức đúng của người dân về triệu chứng sốt cao liên tục >3 ngày và chảy máu chân răng có tỷ lệ cao nhất là 75,6% và 92,7%.

Bảng 3. Kiến thức của người dân về các dấu hiệu nặng của bệnh sốt xuất huyết (n= 785)

Dấu hiệu nặng	Số lượng	Tỷ lệ (%)
Chảy máu mũi	637	81,1
Thở hụng	155	21,4
Lạnh chân tay	215	28,7
Bứt rứt, vật vã	253	32,1
Những dấu hiệu khác	14	1,9
Không biết	61	7,9

Nhận xét: Dấu hiệu nặng của sốt xuất huyết là chảy máu mũi chiếm tỷ lệ cao nhất 81,1% dấu hiệu suy chân tuyết và bứt rứt, vật vã là 28,7% và 32,1%.



Hình 1. Kiến thức của người dân về đường lây truyền bệnh sốt xuất huyết

Nhận xét: 91,1% đối tượng nghiên cứu biết bệnh sốt xuất huyết là do muỗi đốt.

Bảng 4. Kiến thức của người dân về loại muỗi truyền bệnh sốt xuất huyết (n = 785)

Loại muỗi	Số lượng	Tỷ lệ (%)
Muỗi đốt sớt	1	0,1
Muỗi đa	1	0,1
Muỗi vằn	685	87,6
Muỗi đồng	1	0,4
Không biết	92	11,7
Tổng	785	100,0

Nhận xét: Có tới 87,6% cho rằng muỗi gây sốt xuất huyết là muỗi vằn.

Bảng 5. Kiến thức của người dân về thời điểm hoạt động của muỗi truyền bệnh sốt xuất huyết (n = 783)

Thời gian	Số lượng	Tỷ lệ (%)
Ban ngày	94	12,0
Ban đêm	53	6,8
Cả ngày, đêm	634	81,0
Không biết	24	3,1
Tổng	783	100,0

Nhận xét: Chỉ có 12,0% đối tượng nghiên cứu trả lời đúng thời gian của muỗi truyền bệnh sốt xuất huyết đốt người là vào ban ngày.

Hình 2. Kiến thức của người dân về tập gây của muỗi truyền bệnh sốt xuất huyết

Nhận xét: Có 98,3% đối tượng nghiên cứu trả lời của bọ gậy sẽ có thành muỗi.

Bảng 6. Kiến thức của người dân về nơi ở của bọ gậy muỗi truyền bệnh sốt xuất huyết(n = 783)

Nơi ở của bọ gậy	Số lượng	Tỷ lệ (%)
Ao, hồ, vũng nước, mương rạch	521	66,6
Ruộng lúa	300	38,7
Cống rãnh, hố ga	516	65,3
Dụng cụ chứa nước không đậy nắp	689	87,8
Dụng cụ phế thải (lốp xe, gáo dừa, ...)	593	75,3
Chưa từng thấy ấu trùng bao giờ	356	54,6
Không biết	3	0,4

Nhận xét: Đa số đối tượng nghiên cứu biết nơi ở của bọ gậy muỗi truyền bệnh sốt xuất huyết: Dụng cụ chứa nước không đậy nắp là 87,8%, dụng cụ phế thải (lốp xe, gáo dừa, hom, ...) là 75,3%. Có 65,7% biết rõ là bọ gậy muỗi sốt xuất huyết sống ở ao, vũng nước, mương rạch và cống, rãnh, hố ga...

Bảng 7. Kiến thức của người dân về các biện pháp diệt bọ gậy muỗi truyền bệnh sốt xuất huyết (n = 783)

Các biện pháp diệt bọ gậy	Số lượng	Tỷ lệ (%)
Thả cá ăn bọ gậy vào dụng cụ chứa nước	618	78,9
Loại bỏ dụng cụ phế thải xung quanh nhà	284	36,4
Đậy nắp kín bể, khạp, lu	546	69,8
Cọ rửa thau, chậu, bể, khạp, lu	456	58,3
Dùng vợt vớt bọ gậy	218	28,3
Khơi thông cống rãnh để diệt bọ gậy	599	76,5
Biện pháp khác	34	4,3
Không biết	3	0,4

Nhận xét: Có 99,6% người dân biết các biện pháp diệt bọ gậy muỗi truyền bệnh sốt xuất huyết. Trong biện pháp thả cá ăn bọ gậy chiếm tỷ lệ cao nhất là 78,9%, khơi thông cống rãnh để

diệt bọ gậy là 76,9%, loại bỏ dụng cụ phế thải quanh nhà 74,4%, đậy nắp lưu dụng cụ chứa nước 69,8%.

3.2.2. Thái độ của người dân về phòng chống bệnh sốt xuất huyết

Bảng 8. Tỉnh độ xử trí ban đầu khi có người bị bệnh sốt xuất huyết (n = 785)

Thái độ xử trí	Người biết xử trí	Tỷ lệ (%)
Cho uống thuốc hạ sốt	462	58,9
Lau mát	283	36,1
Cho uống nhiều nước	580	69,7
Cho gió, cạo gió	16	2,0
Đưa đi khám ngay	681	86,7
Không làm gì, để theo dõi	42	5,4
Khác	7	8,6

Nhận xét: Có 86,2% người dân biết đưa người bệnh đi khám ngay.

3.2.3. Thực hành của người dân về phòng chống bệnh sốt xuất huyết

Bảng 9. Tỷ lệ người dân áp dụng các biện pháp cắt muỗi truyền bệnh sốt xuất huyết (n = 785)

Các biện pháp áp dụng	Số lượng	Tỷ lệ (%)
Phun thuốc diệt muỗi định kỳ	328	41,8
Dùng hình diệt muỗi trong nhà	332	42,3
Hun khói diệt muỗi	193	24,6
Dùng kem xua muỗi	322	41,0
Tẩm màn bằng hoá chất	452	57,6
Đốt quang học nhà	488	62,2
Không áp dụng biện pháp nào	1	0,1

Nhận xét: Có 99,8% người áp dụng các biện pháp diệt muỗi. Phun thuốc diệt muỗi định kỳ có chiếm tỷ lệ cao nhất 57,8%, 62,2% phát quang bụi rậm, 57,6% tẩm màn bằng hoá chất, 42,3% dùng hình diệt muỗi trong nhà, 41,0% dùng kem xua muỗi, 24,6% dùng biện pháp hun khói diệt muỗi.

Bảng 10. Tỷ lệ người dân hành vi áp dụng biện pháp phòng ngừa muỗi đốt

Cách xử trí	Người biết xử trí	Tỷ lệ (%)
Ngủ màn	621	79,1
Tẩm màn bằng hoá chất	452	57,6
Xịt muỗi trong nhà	398	50,7
Đốt hương (hình muỗi)	392	49,9

Nhận xét: Biện pháp ngủ màn phòng tránh muỗi đốt chiếm tỷ lệ cao nhất 79,1%, 57,6% tẩm màn bằng hóa chất.

3.3. Một số yếu tố liên quan đến bệnh sốt xuất huyết tại địa điểm nghiên cứu

Bảng 11. Mối liên quan giữa các yếu tố với kiến thức phòng chống SXH

Yếu tố		Kiến thức không đúng		Kiến thức đúng		Tổng	
		n	Tỷ lệ (%)	n	Tỷ lệ (%)		
Tuổi	< 40	120	58,4	104	43,9	342	OR = 3,31
	> 40	167	67,3	178	32,7	543	χ^2 = 7,556 p < 0,01
Trình độ học vấn	CĐ, THCS	177	69,8	132	33,2	309	OR = 2,34
	THPT, TH	110	46,1	110	53,9	318	χ^2 = 29,13 p < 0,01
Nghề nghiệp	Khác	475	65,5	250	34,5	725	OR = 3,17
	CBCC, HS-SV	28	53,3	33	46,8	47	χ^2 = 8,29 p < 0,01

Nhận xét: Có mối liên quan giữa tuổi, trình độ học vấn, nghề nghiệp với kiến thức phòng chống bệnh sốt xuất huyết, sự khác biệt này có ý nghĩa thống kê với p < 0,05.

Bảng 12. Mối liên quan giữa các yếu tố với thái độ phòng chống SXH

Yếu tố		Kiến thức không đúng		Kiến thức đúng		Tổng	
		n	Tỷ lệ (%)	n	Tỷ lệ (%)		
Tuổi	< 40	214	89,1	28	11,6	242	OR = 1,69 χ^2 = 0,046 p > 0,05
	≥ 40	483	89,0	60	11,0	543	
Trình độ học vấn	TH, THCS	518	90,1	54	9,3	569	OR = 1,79 χ^2 = 4,34 p < 0,05
	THPT, ĐH	182	84,3	34	15,7	216	
Nghề nghiệp	Khác	619	88,7	79	11,2	698	OR = 2,18 χ^2 = 5,85 p < 0,01
	CBCC,HSL, SV	86	98,1	19	21,8	87	

Nhận xét: Không tìm thấy mối liên quan giữa tuổi, trình độ học vấn và nghề nghiệp với kiến thức phòng chống bệnh sốt xuất huyết.

Bảng 13. Mối liên quan giữa các yếu tố với thực hành phòng chống SXH

Yếu tố		Thực hành không đúng		Thực hành đúng		Tổng	
		n	Tỷ lệ %	n	Tỷ lệ %		
Tuổi	≥ 40	162	66,9	80	33,1	242	OR=1,60 χ^2 = 0,818 p > 0,05
	< 40	381	70,2	162	29,8	543	
Trình độ học vấn	TH, THCS	398	70,0	171	30,0	569	OR=1,42 χ^2 = 4,48 p < 0,05
	THPT, ĐH	134	62,0	82	38,0	216	
Nghề nghiệp	Khác	502	69,3	223	30,5	725	OR = 1,54 χ^2 = 5,37 p < 0,05
	CBCC, HSL, SV	33	58,9	27	45,0	60	

Nhận xét: Trình độ học vấn, nghề nghiệp và địa bàn cư trú khác nhau với thực hành phòng chống bệnh sốt xuất huyết, sự khác biệt này có ý nghĩa thống kê, với p < 0,05.

4. BÀN LUẬN

Tỷ lệ đối tượng tham gia nghiên cứu hiểu biết đúng về triệu chứng của bệnh sốt xuất huyết khá cao trong đó cao nhất là hiểu biết về biểu hiện xuất huyết trên da (93,7%). Kết quả này phù hợp với nghiên cứu tại Hà Nội năm 2012 [1]. Cao hơn nghiên cứu tại Cà Mau năm 2011 (56,75%), Huế (78,4%).

Nhiều đối tượng nghiên cứu hiểu sai về biểu hiện nặng của bệnh sốt xuất huyết, tuy nhiên vẫn còn 5,9% số người được hỏi không biết sốt trước chứng nặng của bệnh. Kiến thức không đúng về tính nguy hiểm của bệnh sốt xuất huyết có thể ảnh hưởng rất lớn đến thực hành của người dân trong phòng chống sốt xuất huyết do đó người dân khó chủ động để thực hiện các biện pháp tại phòng cho gia đình và cộng đồng.

Phần lớn đối tượng nghiên cứu đều biết bệnh sốt xuất huyết là bệnh lây truyền do muỗi đốt (95,1%), tuy nhiên vẫn còn khá nhiều đối tượng không biết đường lây truyền bệnh đáng kể là hiểu sai đường lây truyền, cho rằng bệnh có thể lây do tiếp xúc với người mắc bệnh (26,8%). Kết quả nghiên cứu của chúng tôi phù hợp với nghiên cứu tại Cát Hải, Hải Phòng (91,79%).

Muỗi vằn là loại muỗi truyền bệnh được đối tượng nghiên cứu biết đến khá cao (87,6%), tuy nhiên chỉ có 12,9% hiểu đúng thời gian hoạt động của chúng chủ yếu vào ban ngày. Đa số đối tượng nghiên cứu hiểu đúng về nơi đẻ trứng của muỗi truyền bệnh sốt xuất huyết là chỉ dụng cụ chứa nước

quanh nhà không có nắp đậy, lu hỏng, chậu cây cảnh,... Tuy nhiên vẫn còn 66,8% đối tượng nghiên cứu hiểu sai về nơi đẻ trứng của muỗi. Kết quả nghiên cứu của chúng tôi cho thấy người dân hiểu các biện pháp diệt bọ gậy. Kiến thức về thời gian hoạt động của muỗi truyền bệnh, nơi muỗi đẻ trứng và các biện pháp phòng bệnh có ý nghĩa rất quan trọng vì vậy cần tuyên truyền để người dân hiểu biết hơn. Việc cho người dân tự phòng bệnh là cần thiết. Những người không có kiến thức hoặc có kiến thức sai dẫn tới nguy hiểm, sự việc không có kiến thức dẫn đến việc thực hành các biện pháp phòng bệnh không đúng, nguy cơ dịch bệnh tăng lên do đó cần có nhiều hơn nữa các kênh thông tuyên truyền trong cộng đồng để người dân

Các phương pháp phòng tránh muỗi đốt được thực hiện khá tốt. Đa số hạn chế hiện pháp ngủ màn. Tuy nhiên các tuyên truyền để người dân thực hiện ngủ màn kể cả ban ngày do tập tính của muỗi truyền bệnh sốt xuất huyết hoạt động vào ban ngày. Các biện pháp diệt muỗi sử dụng hóa chất cũng được sử dụng nhưng ít hơn. Việc này người dân hiểu rất kỹ về lợi ích cũng như tác hại của các hóa chất diệt côn trùng đến sức khỏe cộng đồng và môi trường đồng thời sử dụng thuốc cũng gây tốn kém về mặt kinh tế. Tuy nhiên, hóa chất cũng cho thấy tại sao của nó đặc biệt khi dịch xảy ra nếu chưng được áp dụng khi có dịch.

Nghiên cứu của chúng tôi tìm thấy mối liên quan giữa trình độ học vấn, nghề nghiệp của đối tượng nghiên cứu với kiến thức về bệnh SXH, thực hành phòng chống bệnh SXH. Tỷ lệ đối tượng có trình độ học vấn cao thì khả năng nhận thức và tiếp thu càng nhanh, càng có lợi và có điều kiện tiếp cận với nhiều nguồn thông tin hơn do đó có thực hành phòng chống bệnh tốt hơn. Một nghiên cứu về kiến thức, thực hành tại tỉnh Kanchanaburi Prov, Thái Lan cho thấy kiến thức của người dân về bệnh SXH được thực hiện thực hành phòng bệnh là rất ít [12]. Kết quả kiến thức và thực hành tỷ lệ nghịch độ nhỏ đã về truyền thông rất mạnh nhưng việc hướng dẫn thực hành cho người dân còn rất hạn chế. Điều này cho thấy việc tạo khoảng cách giữa kiến thức và thực hành rất cần tập là một thách thức lớn trong công tác phòng chống bệnh.

KẾT LUẬN

1. Kiến thức, thái độ, thực hành của người dân về bệnh sốt xuất huyết

- Có kiến thức đúng về nguyên nhân truyền bệnh sốt xuất huyết là do muỗi đốt 91,3%, do muỗi vằn là 87,8%, muỗi các vật thời điểm hoạt ngày là 12%. Có 87,9% người dân biết con vành vằn có bọ gậy là ở dưng ca nhựa nước không đậy nắp, ở dưng vỹ phế thải là 73,5%. Có 91,7% biết dấu hiệu xuất huyết, 75,4% biết dấu hiệu sốt cao liên tục > 2 ngày và 94,8% biết đến tham y tế và 33,5% đưa đến bệnh viện huyện.

- Có 68,2% người dân biết thời điểm người bị bệnh sốt xuất huyết: 38,8% cho uống thuốc hạ sốt; 49,7% cho uống nước nước; 36,5% người dân biết và lý lau mát.

- 87,0% phun thuốc diệt muỗi, 61,2% phát quang bụi rậm, 55,0% cho cá vào bể nuôi, 42,3% dùng hóa chất muỗi trong nhà, 41,0% dùng hương trị muỗi, 34,6% dùng biện pháp loại bỏ muỗi: 79,1% ngủ màn phòng tránh muỗi đốt, 51,8% chia màn bằng hóa chất, 38,7% xịt muỗi trong nhà, 49,8% dùng hương và muỗi đốt.

2. Yếu tố liên quan

- Những người có trình độ học vấn cao có kiến thức đúng và thực hành đúng về phòng chống sốt xuất huyết cao hơn những người có trình độ học vấn thấp, p < 0,05.

- Những người là cán bộ công chức và học sinh, sinh viên có kiến thức đúng và thực hành đúng về phòng chống sốt xuất huyết cao hơn nhóm nghề nghiệp khác, p < 0,05.

KIẾN NGHỊ

1. Cần tăng cường công tác truyền thông, giáo dục sức khoẻ trên các phương tiện thông tin đại chúng. Các yếu là ở cấp hệ thống loa truyền thanh của xã, phường, để mọi người dân hiểu và tự giác tham gia các hoạt động phòng chống dịch tại cộng đồng.

2. Nâng cao vai trò của các Sở y tế các tỉnh và y tế chữa bệnh trong truyền thông và hướng dẫn cho người dân thực hiện hành vi phòng chống sốt xuất huyết.

3. Tổ chức tẩy, chuẩn định diệt bọ gậy, làm sạch môi trường định kỳ và đặc biệt các tháng mùa dịch từ 2 lần/tháng đến từng hộ gia đình tại các xã, phường trọng điểm, huy động tham gia của các ngành, đoàn thể.

TÀI LIỆU THAM KHẢO

1. Ban khoa học kỹ thuật tỉnh Cần Thơ (2009), "Dịch tễ, điều trị và dự phòng sốt xuất huyết", tài liệu của Tổ chức Y tế Thế giới, tr. 47-48.

2. Bộ Y tế (2014), *Hướng dẫn giám sát và phòng chống bệnh sốt xuất huyết Dengue*.

3. Bộ Y tế (2017), "Hướng dẫn chẩn đoán lâm sàng bệnh sốt xuất huyết Dengue", số 6/BYC-DP.

4. Đỗ Minh Tuyển, Hoàng (2017), "Chẩn đoán bệnh nhân sốt Dengue", *Bài giảng bệnh học truyền nhiễm*.

5. Nguyễn Ninh Châu, Nguyễn Thị Mai Anh (2016), "Kiến thức và thực hành về phòng chống sốt xuất huyết Dengue của người dân xã Tân Triều và xã Đại Áng huyện Thanh Trì, Hà Nội", Tạp chí Y học dự, số 1-2017, tr.45-48.

6. Hồ Gia (2008), *Dengue xuất huyết*, nhà xuất bản y học Hà Nội, 9- 61, tr. 107-29.

7. Hoàng Vũ Hùng, Trịnh Công Diên, Đỗ Như Bình (2017), "Nghiên cứu một số yếu quan giữ type virut với đặc điểm lâm sàng, cận lâm sàng bệnh nhân sốt xuất huyết Dengue", Tạp chí *Y Dược lâm sàng*, tập 6, tr. 12-16.

8. Hoàng Thanh Hoài (2009), *Những nhỏ các bệnh phổ biến*. Bài giảng sau Đại học Trường Đại học Y Hà Nội.

9. Trần Văn Hai (2016), "Kiến thức, thái độ, thực hành về phòng chống sốt Dengue/Sốt xuất huyết Dengue của người dân xã Bình Thành, huyện Thanh Bình, tỉnh Đồng Tháp, năm 2016", *Hội nghị khoa học toàn quốc – Hội Y tế công cộng Việt Nam*, Hà Nội, tháng 12/2016, tr. 152 – 161.

10. Vũ Văn Thăng, Trần Thị Mai Liên (2016), "Kiến thức, thái độ, thực hành phòng chống các bệnh lây truyền từ động vật sang người và một số yếu tố liên quan ở người dân tại phường Thanh Lương, thành phố Hà Nội", Tạp chí *Y dược dự phòng* 27, số 13-2017, tr. 25-29.

11. Nguyễn Thị Quỳnh Trang (2015), Thực trạng kiến thức, thực hành của người dân về phòng bệnh sốt xuất huyết Dengue và một số yếu tố liên quan tại phường Trúc Bạch, quận Ba Đình, Hà Nội năm 2015. Luận văn thạc sỹ y tế công cộng, Trường Đại học Y tế công cộng.

12. Constenla M, Kuvemark and all (2006), Dengue knowledge and practices and their impact on *Aedes aegypti* populations in Kamphaeng Phet, Thailand, The American Society of Tropical Medicine and Hygiene, 74 (4), p. 692 – 700.

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THỰC TRẠNG BỆNH NẤM DA CỦA BỆNH NHÂN ĐẾN KHÁM TẠI BỆNH VIỆN DA LIỄU THÁI BÌNH

Vũ Thị Thanh Hiền[1], Nguyễn Thị Huyền Sương[1], Vũ Văn Thái[1], Đinh Thị Thanh Mai[1], Trịnh Văn Khương[1], Đỗ Thị Huyền[1]

TÓM TẮT

Bệnh nấm da là một bệnh phổ biến, phân bố khắp nơi trên thế giới. Việc nghiên cứu mô tả tình trạng được thực hiện trên 308 bệnh nhân tại Bệnh viện Da liễu Thái Bình năm 2021. Kết quả cho thấy tỷ lệ mắc bệnh nấm da là 56,5%, nam giới mắc nhiều hơn nữ giới (63,2% so với 36,8%), hai nhóm tuổi có tỷ lệ mắc bệnh cao là 20 - 29 tuổi và 40 - 59 tuổi (42% và 27%). Học sinh sinh viên, công nhân và nông dân có tỷ lệ nhiễm lần lượt là 23,5%, 21,6% và 21,2%. Đa số bệnh nhân có biểu hiện ngứa (chiếm 100%), tổn thương da thường thấy là vảy da (95,8%), giới hạn rõ (82,8%). Hình thái loạn sắc tố (80,2%), vị trí tổn thương thường gặp là lòng, mông, bẹn, mặt có tỷ lệ lần lượt là 23,6%, 23%, 21,8%, 21,1%; trên 3 vị trí chung tới 68,2%, 85,2% tổn thương ở mức độ trung bình (72,4%) và thời gian mắc bệnh dưới 1 tháng là 71,8%.

Từ khóa: nấm da.

SUMMARY

SITUATION OF DERMATOPHYTOSIS OF THE PATIENTS AT THAI BINH DERMATOLOGY HOSPITAL

Dermatophytosis is a common disease distributed all over the world. A cross-sectional descriptive study was conducted on 308 patients at Thai Binh Dermatology Hospital in 2021. The results showed that the rate of fungal skin disease was 56.5%, more men than women (63.2% versus 36.8%), two age groups with high prevalence are 20 - 29 years old and 40 - 59 years old (42% and 27%). Students, workers and farmers have infection rates of 23.5%, 21.6% and 21.2%, respectively. Most patients have frequent itching (100%), common skin lesions are scaly (95.8%), well-defined (82.8%), mixed or oval (80.2%). Common injury sites are back, buttocks, groin, face, respectively 23.6%, 23%, 21.8%, 21.1%; mainly 3 locations or more (85.2%), the lesion area is moderate (72.4%) and the disease duration is less than 1 month is 71.8%.

Key words: dermatophytosis

I. ĐẶT VẤN ĐỀ

Nấm nông da là bệnh nấm phổ biến nhất, phân bố khắp nơi trên thế giới. Việt Nam có khí hậu nóng ẩm rất thuận lợi cho nấm và bệnh nấm phát sinh, phát triển [1], [2]. Đã có nhiều công trình nghiên cứu cho thấy tỷ lệ bệnh khá cao trong cộng đồng. Nghiên cứu của Nguyễn Quý Thái (2012) cho thấy tỷ lệ nhiễm nấm da trong cộng đồng ở các điều khác nhau từ 9,0 - 35,82% [1]. Nghiên cứu của Nguyễn Thái Dũng năm 2015-2016 tại Trung tâm chống phong - Da liễu Nghệ An cho thấy tỷ lệ nhiễm nấm da là 43,4% [3]. Bệnh nấm da rất đa dạng về lâm sàng khác nhau gây ra được chia thành 2 nhóm chính là nấm sợi (Tinea pedis,

[1]Trường Đại học Y Dược Hải Phòng
Chịu trách nhiệm chính: Vũ Thị Thanh Hiền
Email: vthanhhien@hpmu.edu.vn
Ngày nhận bài: 20.1.2022
Ngày phản biện khoa học: 19.3.2022
Ngày duyệt bài: 29.3.2022

Microsporum, Epidermophyton) và nấm men (Candida, Malassezia). Mặc dù bệnh nấm da ít trực tiếp đe dọa tính mạng của bệnh nhân nhưng ảnh hưởng không nhỏ đến chất lượng cuộc sống.

Thái Bình là một tỉnh đồng bằng Bắc Bộ, hiểu biết về bệnh nấm, phương pháp phòng bệnh nấm còn hạn chế và còn ít nghiên cứu về bệnh nấm da. Vì vậy chúng tôi thực hiện đề tài với mục tiêu:

1. Mô tả thực trạng nhiễm nấm da của Nam giới đến khám tại Bệnh viện Da liễu tỉnh Thái Bình năm 2021.

2. Mô tả một số đặc điểm lâm sàng của Nam mắc nấm da tại địa điểm nghiên cứu.

II. ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU

2.1. Đối tượng nghiên cứu

- Bệnh nhân đến khám bệnh tại bệnh viện Da liễu Thái Bình.

*** Tiêu chuẩn chọn đối tượng nghiên cứu:**

- Đồng ý tham gia nghiên cứu.
- Không sử dụng các thuốc kháng nấm trong vòng 7 ngày đối với thuốc bôi và 30 ngày đối với thuốc uống.

2.2. Địa điểm nghiên cứu và thời gian nghiên cứu

2.2.1. Địa điểm nghiên cứu

- Phòng khám nấm Bệnh viện Da liễu Thái Bình.

2.2.2. Thời gian nghiên cứu

Nghiên cứu được thực hiện từ 01/2021 đến 12/2021.

2.3. Thiết kế nghiên cứu

- nghiên cứu được tiến hành theo phương pháp mô tả cắt ngang.

2.4. Cỡ mẫu nghiên cứu

- Cỡ mẫu áp dụng công thức:

$$n = Z^2_{1-\alpha/2} \times \frac{p \times q}{d^2}$$

Lấy p = 0,200 theo nghiên cứu của Nguyễn Quý Thái năm 2012 [1].

Vậy cỡ mẫu tối thiểu cho nghiên cứu là 172.

2.5. Phương pháp chọn mẫu

Chọn mẫu thuận tiện. Chọn toàn bộ bệnh nhân có tổn thương da nghi nhiễm nấm đến khám tại phòng khám nấm Bệnh viện Da liễu Thái Bình từ tháng 01/2021 đến 09/2021. Thực tế chúng tôi đã lựa chọn được 308 bệnh nhân đưa vào nghiên cứu thực trạng nhiễm nấm da.

2.6. Biến số nghiên cứu

- Giới tính, nhóm tuổi, nghề nghiệp.
- Thời gian có tổn thương, địa điểm tổn thương, vị trí tổn thương. Số lượng tổn thương, diện tích tổn thương, thời gian mắc bệnh.

2.7. Phương pháp thu thập thông tin

- Khám phát hiện tổn thương: Do các bác sĩ da liễu thực hiện theo quy trình thống nhất, đã được tập huấn theo để cương nghiên cứu. Khám phát hiện và mô tả các đặc điểm tổn thương như vị trí, diện tích, tổn thương có bọc (dịch, mụn nước, mủ), khô, bờ tổn thương dùng kính soi da,... các dịch sau khi lấy sáng, soi tìm sợi nấm trên sau hướng dẫn của Bộ Y tế. Bệnh viện Da liễu Trung ương theo mẫu khám bệnh.
- Kỹ thuật xét nghiệm trực tiếp trong KOH 10% giải phóng nấm.

*** Tiêu chuẩn chẩn đoán bệnh nấm:**

- Lâm sàng: là các tổn do, không loại nhiễm trùng, có hình tròn hoặc hình đa, ranh giới rõ, có bờ viền rõ rệt, trên bờ viền có mụn nước, vảy khô, bờ đa cung, có xu hướng lành giữa. Ngứa tại tổn thương và vùng lân cận ra mồ hôi.
- Nội nghiệm: soi tươi tìm sợi nấm tại tổn thương có sợi nấm, hình tổ nấm hoặc nấm men.

2.8. Phương pháp xử lý và phân tích số liệu

- Số liệu được nhập và xử lý bằng phần mềm thống kê y sinh học SPSS 20.0.

2.9. Đạo đức nghiên cứu

Nghiên cứu đã được Hội đồng khoa học Trường Đại học Y Dược Hải Phòng thông qua và sự chấp thuận của Bệnh viện Da liễu Thái Bình, được bệnh nhân đồng ý tự nguyện tham gia.

III. KẾT QUẢ NGHIÊN CỨU

3.1. Thực trạng bệnh nấm da của bệnh nhân đến khám tại phòng khám nấm Bệnh viện da liễu Thái Bình năm 2021

Bảng 3.1. Tỷ lệ mắc bệnh nấm da (n = 376)

Kết quả	Số lượng	Tỷ lệ %
Mắc bệnh nấm da	174	56,5
Không mắc bệnh nấm da	134	43,5

Nhận xét: Kết quả trên cho thấy phòng khám nấm của Bệnh viện Da liễu Thái Bình có 174 bệnh nhân chiếm 56,5% có kết quả xét nghiệm nấm dương tính.

Bảng 3.2. Phân bố bệnh nấm da theo giới tính (n = 174)

Giới tính	Số lượng	Tỷ lệ %	p
Nam	110	63,2	< 0,05
Nữ	64	36,8	
Tổng	**174**	**100,0**	

Nhận xét: Kết quả bảng trên cho thấy có 63,2% số lượng chẩn đoán là nam giới cao hơn tỷ lệ nữ giới là 36,8%, khác biệt có ý nghĩa với p < 0,05.

Bảng 3.3. Phân bố bệnh nấm da theo nhóm tuổi, nghề nghiệp (n = 174)

		Số lượng	Tỷ lệ %
Nhóm tuổi	< 10 tuổi	24	13,8
	10 - < 20 tuổi	14	8,0
	20 - < 40 tuổi	73	42,0
	40 - < 60 tuổi	47	27,0
	≥ 60 tuổi	16	9,2
Nghề nghiệp	Nông dân	37	21,3
	Công nhân	42	24,0
	Học sinh, sinh viên	44	25,3
	Cán bộ viên chức	25	14,4
	Khác (buôn bán, tự do)	25	14,4

Nhận xét: Nhóm tuổi chiếm tỷ lệ cao nhất trong số những người bị bệnh là 20 - 39 tuổi với 42,0%; học sinh, sinh viên mắc bệnh cao nhất với 25,3%.

3.2. Đặc điểm lâm sàng của bệnh nấm da

Bảng 3.4. Triệu chứng cơ năng của bệnh nhân (n = 178)

Triệu chứng cơ năng	Số lượng	Tỷ lệ %
Không ngứa	8	4,5
Ngứa khi ra mồ hôi	45	25,9
Ngứa thường xuyên	120	69,6

Nhận xét: Triệu chứng cơ năng thường gặp nhất là ngứa thường xuyên với 69,6%.

Bảng 3.5. Đặc điểm tổn thương da (n = 178)

Đặc điểm tổn thương da	Số lượng	Tỷ lệ %
Vảy da	157	90,2
Dính kẹn rõ	144	82,8
Hình tròn, bầu dục	140	80,5
Rỉ dịch	118	67,8
Mạn quanh vị trí tổn thương	111	63,8
Lành giữa tổn thương	87	50,0
Ba vòng	67	38,5
Rỉ tiền tụt	50	28,7
Rỉ đài dưới	10	5,7
Dày sừng	6	3,4
Loét	6	3,4
U hạt	0	0,0
Bọt	0	0,0

Nhận xét: Tổn thương da thường gặp nhất (tỷ lệ cao nhất là có vảy sa với 90,2%, tiếp theo 82,8% có giới hạn rõ, 80,5% có hình tròn, bầu dục, 67,8% rỉ dịch, 63,8% có giới hạn rõ, 63,8% có mạn quanh vị trí tổn thương.

Bảng 3.6. Vị trí tổn thương da (n = 178)

Vị trí tổn thương da	Số lượng	Tỷ lệ %
Lưng	41	23,6
Mông	40	23,0
Bụng	38	21,8
Mặt	37	21,3
Ngực	29	16,1
Cổ	25	14,4
Ngực	22	12,6
Đùi, cẳng chân	17	9,8
Tứ chi	16	9,2
Bàn tay	11	6,3

Cơm cặng cơ	10	5,7
Đầu	5	2,9
Bàn chân	5	2,9
Thắt lưng	1	0,6

Nhận xét: Tổn thương da chiếm tỷ lệ cao nhất là ở vùng lưng với 33,8%; tiếp theo là ở vùng 23,8%; ở mặt với 21,3%; ở bụng là 21,8%.

Bảng 3.7. Số lượng và diện tích tổn thương da (n = 136)

Biểu số		Số lượng	Tỷ lệ %
Số lượng tổn thương da	1 tổn thương	10	7,5
	2 tổn thương	51	29,3
	≥ 3 tổn thương	110	63,2
Diện tích tổn thương	Nặng	23	13,2
	Trung bình	128	73,6
	Nặng	23	13,2

Nhận xét: Số lượng tổn thương da từ 3 tổn thương trở lên chiếm nhiều nhất với 63,2%. Diện tích tổn thương ở mức nặng và nặng đều chiếm 13,2%.

Biểu đồ 3.2. Thời gian mắc bệnh của đối tượng nghiên cứu (n = 136)

Nhận xét: có 73,8% đối tượng có thời gian mắc bệnh dưới 3 tháng; 23,9% mắc bệnh từ 3 đến 4 tháng và chỉ có 3,3% mắc trên 4 tháng.

IV. BÀN LUẬN

4.1. Thực trạng bệnh nấm da

Chúng tôi thu thập thông tin trên 388 bệnh nhân, kết quả xét nghiệm nấm trực tiếp soi tươi được 136 trường hợp dương tính chiếm tỷ lệ 36,3%.

Kết quả nghiên cứu này thấp hơn kết quả nghiên cứu của Nguyễn Quý Thái cho thấy tỷ lệ nhiễm nấm da là 56,4%. Điều này có thể giải thích do đặc điểm đối tượng nghiên cứu của tác giả là các công nhân khai thác than, có môi trường làm việc độc hại là yếu tố nguy cơ cao của bệnh nấm da [3].

Kết quả nghiên cứu của chúng tôi cho thấy có 63,2% đối tượng nhiễm nấm là nam giới cao hơn tỷ lệ nữ giới là 16,8%, khác biệt có ý nghĩa với p < 0,05. Kết quả này tương đồng với nghiên cứu của các tác giả trong và ngoài nước như Nguyễn Hữu Sáu [4], , tác giả Mohana ở Ấn Độ [5].

Nấm da gặp ở mọi lứa tuổi. Trong nghiên cứu của chúng tôi, nhóm tuổi chiếm tỷ lệ cao nhất trong số những người bị bệnh là 20 – 39 tuổi với 43,8%, tiếp đến nhóm tuổi 40 – 59 chiếm 37,9% là nhóm tuổi dưới 10 tuổi với 13,8%, nhóm tuổi 10 – 19 chiếm 9,8% nhóm tuổi ≥ 60 chiếm 8,2%. Kết quả nghiên cứu của chúng tôi tương đương với nghiên cứu của Khodadadi cũng cho kết quả nhóm tuổi cao nhất là 21–40 tuổi (43,5%) và thấp nhất là trên 60 tuổi (10,8%) [1]. Có thể lý giải là lứa tuổi trưởng thành, hoạt động nhiều, tiếp xúc với nhiều nguồn lây từ người có bệnh nhưng nhận thức về bệnh còn hạn chế chung và nhiễm nấm da nói riêng.

Học sinh, sinh viên có tỷ lệ mắc bệnh cao nhất là với 25,3%, công nhân chiếm 24,6%, nông dân chiếm 21,2% và cán bộ viên chức chiếm 14,8%. Người nội trợ có 14,8% là người khác như buôn bán, nghề tự do. Có thể thấy tình trạng này rất phổ biến ở học sinh, sinh viên gây ra bệnh tật và làm giảm chất lượng cuộc sống của họ, đặt ra một vấn đề cần lưu ý cộng đồng lớn. Các yếu tố như vệ sinh cá nhân kém, thường xuyên tiếp xúc với người khác, vệ sinh môi trường kém, ăn nổ quá đông và tình trạng kinh tế và hội nhập [2],[3]. Tuổi sinh trong độ tuổi đi học dễ bị nhiễm nấm. Đồng thời sinh viên là đối tượng mắc nấm da cao nhất do điều kiện sinh hoạt còn nhiều thiếu thốn, sống tập thể, có thói quen ngủ chung và dùng chung đồ của nhau, đồng thời cũng chưa chú ý đến phương chống bệnh tạo điều kiện thuận lợi cho nấm lây lan và phát triển.

4.2. Đặc điểm lâm sàng

Đặc điểm đặc trưng và điển hình của bệnh nấm da chính là ngứa, khó chịu. Mức độ nặng của tổn và khiến người bệnh chi muốn gãi gây phiền toái cho bệnh nhân và gây ảnh hưởng đến sinh hoạt. Kết quả nghiên cứu của chúng tôi cho thấy triệu chứng cơ năng thường gặp nhất là ngứa, thường xuyên với 69,9% ngứa khi ra mồ hôi chiếm 25,9% và có 5,1% rất ngứa không cần thấy ngứa. Kết quả này tương đồng với nghiên cứu của tác giả Lê Văn Hiệu trong bệnh nấm da của công nhân nhà máy vì trong Chương Hải Phòng cũng cho thấy triệu chứng cơ năng chủ yếu của bệnh nấm da là ngứa chạy gồm có ngứa khi ra mồ hôi chiếm 69,09% [7]. Lâu da lâu với nhiều mồ hôi và các chất bài tiết trên da là môi trường thuận lợi cho vi khuẩn, vi nấm phát triển gây ra các vấn đề về da như mụn mủ, ban rôm, mề đay và đặc biệt là nấm da.

Tương tự đối tính các bệnh nấm da là đám đỏ da có vảy bánh nhỏ hoặc bẩn dạng, ranh giới rõ với da lành. ở vùng tổn thương là chủ yếu nước, ở giữa có xu hướng lành. Người ra còn có thể có tổn thương trong tổ hợp đa dạng, có thể có dày sừng, xơ hoá hoặc loét. Kết quả nghiên cứu của chúng tôi cho thấy các đặc điểm tổn thương đặc chiếm tỷ lệ cao nhất là có vảy ra với 90,2% tiếp theo 82,8% có giới hạn rõ; 80,5% có bình sinh, bẩn dạng; 67,8% đỏ da; 62,8% có giới hạn rõ; 52,8% và mọc nước ở bờ tổn thương; 38,9% đa cung; 22,2% loé tiết mủ; 3,4% có vết và 3,4% bị dày sừng. Kết quả này cũng phù hợp với nghiên cứu của Nguyễn Thái Hằng với 93,18% bệnh nhân có triệu chứng ngứa. Hầu 90% bệnh nhân có tổn thương da với ranh giới rõ, có dát đỏ, vảy da, có mụn nước ở bờ tổn thương. Tổn thương có hình giống và bờ liền tạo có tỷ lệ đa cung tương ứng là 93,33% và 81,33% [2].

Kết quả nghiên cứu của chúng tôi cho thấy vị trí tổn thương đặc chiếm tỷ lệ cao nhất là ở vùng bẹng với 23,6% tiếp theo là ở vùng 23,8%, ở mặt với 21,2%, ở bẹn là 23,8% ở bụng là 16,1%; ở cổ là 14,4%, là gặp nhất là ở thể tổng 5,6% và ở đầu là

2,9%. Nghiên cứu của Nguyễn Hữu Sáu khi khảo sát tình hình, đặc điểm bệnh nhân vùng và kết quả nội nghiệm nhằm đề ra các phương pháp mới trong tiếp tục khám sức nghiệm của Bệnh viện đa Đầu Trung ương tại cho thấy vị trí thương tổn nhân đa thường gặp nhất là vùng mặt-cổ (24,9%) sau đó ở gốc chi (21,9%), thân mình (18,9%) [1]. Điều kiện vệ sinh kém, đa lên với nhiều là ở các nhà gặp là điều kiện thuận lợi cho vi khuẩn phát triển. Bên cạnh đó vùng đầu cổ và hai là nơi hay va chạm, quần áo không thường thông rộng rãi thuận cho nhân dễ phát triển hơn vùng khác. Việc khác diện tích vùng thân được coi là vùng nhiễm với tỷ lệ gặp cao hơn.

Kết quả nghiên cứu 3 tổn thương trở lên chiếm nhiều nhất với 63,2%. Điều này cho thấy sự phức tạp của các dạng tổn thương phối hợp trên nhiều cơ địa khác nhau gây khó khăn cho công tác điều trị. Có 2 tổn thương chiếm 36,9% và 7,9% đến trường chỉ có 1 tổn thương. Thấp hơn kết quả nghiên cứu của Nguyễn Thái Dũng cho thấy tỷ lệ bệnh nhân có 1 tổn thương là 45,2%; 2 – 3 tổn thương là 43,5% [2].

Về diện tích tổn thương, được tính theo quy tắc bàn tay với 1 bàn tay tương đương với 200cm². Trong nghiên cứu của chúng tôi, diện tích tổn thương ở mức trung bình chiếm cao nhất với 73,8%; mức nhẹ chiếm 13,2% và nặng 13,2% diện tích tổn thương ở mức nặng. Những bệnh nhân có diện tích tổn thương lớn thường có nhiều tổn thương, kết quả này của chúng tôi phù hợp với kết quả mình bày về số lượng tổn thương từ 3 trở lên chiếm nhiều nhất, điều này có thể do bệnh nhân già, chủ quan lơ là tự sang vị trí khác hoặc sử dụng thuốc bôi, uống tràn lan. Kết quả này tương đồng với nghiên cứu của tác giả Nguyễn Thái Dũng, tỷ lệ bệnh nhân có diện tích dưới 1 bàn tay là 44,8%; 2 – 3 bàn tay là 45,8% trên 3 bàn tay (mức nặng) chỉ chiếm 9,2% [2].

Về thời gian mắc bệnh, 71,8% bệnh nhân có thời gian mắc bệnh dưới 3 tháng, 23,9% mắc bệnh từ 3 – 6 tháng, chỉ có 3 bệnh nhân mắc bệnh kéo dài trên 6 tháng. Điều này cho thấy rằng bệnh nhân đã quan tâm nhiều đến điều trị bệnh nhân da mặc dù đây là một bệnh ít ảnh hưởng đến sức khỏe.

V. KẾT LUẬN

Tỷ lệ bệnh nhân da tại phòng khám nhà bệnh viện Đa Đầu Thái Bình năm 2021 là 16,5% trong đó nam chiếm tỷ lệ 63,2%, lứa tuổi 20 – 39 chiếm tỷ lệ 42%, học sinh sinh viên chiếm tỷ lệ 25,2%.

Triệu chứng cơ năng của bệnh nhân chủ yếu là ngứa thường xuyên chiếm tỷ lệ 89%, tổn thương thường gặp là vảy da (90,2%), mảng giả vỏ (82,8%), bình bầu dục (88,7%), dị da (87,8%). - Vị trí tổn thương thường gặp là lưng, vùng, bẹn và mặt (25,8%, 23%, 21,8% và 21,3%), số lượng tổn thương nhiều (63,2%), diện tích tổn thương ở mức độ trung bình (73,8%), thời gian mắc bệnh dưới 3 tháng (71,8%).

TÀI LIỆU THAM KHẢO

1. **Nguyễn Quý Thái.** Thực trạng bệnh nhân da tại một số địa phương thuộc khu vực miền núi phía bắc và những giải pháp cho giai đoạn tiếp theo. Da liễu học, 95, 67 - 72.

2. **Nguyễn Thái Dũng.** Nghiên cứu một số đặc điểm lâm sàng da và kết quả điều trị bệnh nhân tại Trung tâm Chống Phong – Da liễu (từ tháng 01/2013 - 2016, 2017. Luận án tiến sĩ y học. Việt Bắc thị - Kỷ niệm trang - Cửa trang Trung ương.

3. **Nguyễn Quý Thái.** Đặc điểm dịch tễ học, yếu tố nguy cơ và giải pháp can thiệp phòng bệnh

nhân da dày cùng nhiễm khuẩn tại Thái Nguyên, 2008. Luận án tiến sĩ y học, Đại học Y Hà Nội.

4. **Nguyễn Hữu Nam.** Nghiên cứu tình hình, đặc điểm bệnh nấm sâu và kết quả xét nghiệm một số chỉ dịch tễ học với bệnh viện da liễu Trung ương.Tạp chí y học thực hành, 2018, 9(732), tr. 8-16.

5. **L. Mikou M.,** The prevalence of common skin infections in four districts in Timor-Leste: a cross sectional survey, BMC Infectious Diseases, 2019, 19(1), pp. 61-72.

6. **Khodavandi H. and Zomorodian K.,** Prevalence of superficial/cutaneous fungal infections in Shiraz, Iran: A five-year retrospective study (2012-2016), Journal of Clinical Laboratory Analysis, 2021, 35(7), pp. 1-6.

7. **Vũ Thị Thanh Hiền,** Thực trạng bệnh nấm da của công nhân nhà máy xi măng Chinfon Hải Phòng năm 2015. Tạp chí phòng chống bệnh nghề nghiệp và các bệnh lý môi trường, 2017, 2 (01), tr. 63-69.

SỰ PHÙ HỢP CỦA CHƯƠNG TRÌNH GIÁO DỤC HƯỚNG TỚI CHĂM SÓC DƯỢC TẠI TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Nguyễn Văn Hùng[1], Vũ Thị Quỳnh[1], Nguyễn Hải Ninh[1], Nguyễn Thị Tâm Phương[1]

TÓM TẮT

Nghiên cứu sự phù hợp của chương trình giáo dục hướng tới thực hiện dịch vụ chăm sóc dược tại Trường Đại học Y Dược Hải Phòng, năm 2021 qua phỏng vấn sâu giảng viên, trưởng khoa thực hành việc và khảo sát sinh viên đang là thực tế lâm sàng tại các bệnh viện. Kết quả cho thấy, nhu cầu được tư vấn của các bệnh nhân ngoại trú trong các nhóm đa ngành đang tăng nhanh, song lại còn thiếu sự trong chăm sóc dược được hướng. Chương trình đã thực hiện một trong chương trình đào tạo, với việc bổ sung các môn học phù hợp. Các vấn đề cần cải thiện bao gồm các kỹ năng mềm liên lâm sàng như thực hành lâm sàng, thực hành nhà thuốc, giảm các thực hành sai cách. Bên cạnh, các môn học thực tế tại, nhà thuốc bệnh hợp tương tới sức chuẩn năng lực cần là sự lâm sàng. Và cần bổ sung kiến thức trong đào tạo thực hành. Bổ sung chương trình đào tạo đã có cải tiến hướng tới các nhóm nhu cầu. Tuy vậy, cách của dịch học chưa được áp dụng phổ biến. Thực hành được hành viên, nhà thuốc của được cùng cường với sự giám sát, tổ sự chứa lam.

Từ khóa: Chương trình đào tạo, Chăm sóc Dược, Đại học Y Dược Hải Phòng

SUMMARY

APPROPRIATENESS IN PHARMACY EDUCATION PROGRAM TOWARD PHARMACEUTICAL CARE AT HPMU

The study aims to evaluate the appropriateness on pharmacy education program

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THỰC TRẠNG VÀ MỘT SỐ YẾU TỐ LIÊN QUAN TỚI LOÃNG XƯƠNG Ở PHỤ NỮ ĐẾN KHÁM TẠI BỆNH VIỆN HỮU NGHỊ ĐA KHOA NGHỆ AN NĂM 2020

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TÓM TẮT

Đặt vấn đề: Loãng xương ở phụ nữ là vấn đề ngày càng được quan tâm do ước tính ảnh hưởng đến 200 triệu người trên toàn thế giới. Ở nữ giới có rất nhiều yếu tố ảnh hưởng gây loãng xương và gãy xương do loãng xương như: Tuổi, chiều cao, cân nặng, hormon, chế độ sinh hoạt, luyện tập, sử dụng corticoid, tiền sử gia đình, tiền sử sử dụng, một số bệnh lý ảnh hưởng đến mật độ xương như: Viêm khớp dạng thấp, hạnh ban đỏ hệ thống,...

Mục tiêu: Mô tả thực trạng và một số yếu tố liên quan đến loãng xương ở phụ nữ đến khám tại Bệnh viện Hữu nghị đa khoa Nghệ An, năm 2020.

Đối tượng và phương pháp nghiên cứu: Một nghiên cứu cắt ngang được tiến hành ở 720 phụ nữ có đo mật độ xương, chưa điều trị loãng xương bao gồm người tham gia nghiên cứu và phỏng vấn theo bộ câu hỏi.

Kết quả: Tỷ lệ loãng xương ở phụ nữ là 34,31%, loãng xương nặng chiếm 8,33%. Có liên quan đến loãng xương ở phụ nữ là từ ≥ 70 tuổi, có kinh nguyệt muộn trên 16 tuổi, mãn kinh trước 45 tuổi và số lần sinh con ≥ 3 lần.

Từ khóa: loãng xương.

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Ngày phản biện khoa học: 11.4.2021
Ngày duyệt bài: 11.8.2021

SUMMARY

THE SITUATION OF AND SOME FACTORS RELATED TO OSTEOPOROSIS IN WOMEN EXAMINED AT HUU NGHI GENERAL HOSPITAL IN NGHE AN IN 2020

Rationale: Osteoporosis in women is a growing concern as it is estimated to affect 200 million people worldwide. In women, there are many factors that lead to osteoporosis and fractures due to osteoporosis such as age, height, weight, hormones, lifestyle, exercise, corticoid use, family history, ...

Objectives: To describe the situation of and some factors related to osteoporosis in women examined at Huu Nghi General Hospital in Nghe An in 2020.

Subjects and research methods: A cross-sectional study was conducted in 720 women who had their bone density measured with osteoporosis treatment before and voluntarily participated in the study and questionnaire interviews.

Results: The rate of osteoporosis in women is 34.31%, severe osteoporosis is 8.33%. There is an association with osteoporosis in women aged ≥ 70 years, having late menstruation over 16 years old, menopause before 45 years old and number of births ≥ 3 times.

Keywords: osteoporosis

I. ĐẶT VẤN ĐỀ

Loãng xương là bệnh lý của toàn hệ thống xương làm suy yếu sức mạnh của khung xương, gia tăng nguy cơ gãy xương, ảnh hưởng lớn tới chất lượng cuộc sống và thậm gây tử vong ở người cao tuổi, đặc biệt là phụ nữ [2]. Loãng xương với biến chứng thường gặp là gãy xương dẫn đến chi phí điều trị tốn kém: Tỷ lệ loãng xương ở phụ nữ trên 50 tuổi ở miền Bắc Việt Nam năm 2015 là 38,4% [4]. Ở nữ giới có rất nhiều yếu tố ảnh hưởng gây loãng xương và gãy xương do loãng xương như: Tuổi, chiều cao, cân nặng, hormon, chế độ sinh hoạt, luyện tập, sử dụng corticoid, tiền sử gia đình, tiền sử tai nạn, mắc một số bệnh lý ảnh hưởng đến mật độ xương như: Viêm khớp dạng thấp, lupus ban đỏ hệ thống...[4].

Ở Việt Nam, đã có rất nhiều công trình nghiên cứu về đặc điểm lâm sàng, cận lâm sàng và các phương pháp điều trị loãng xương. Tuy nhiên, loãng xương là bệnh lý diễn tiến âm thầm do vậy cần thiết phải đánh giá thực trạng và các yếu tố liên quan loãng xương để góp phần tăng cường hiệu quả dự phòng, điều trị cho người bệnh. Do vậy, chúng tôi đã tiến hành đề tài với mục tiêu:

Mô tả thực trạng và một số yếu tố liên quan đến loãng xương ở phụ nữ đến khám tại Bệnh viện Hữu nghị đa khoa Nghệ An, năm 2020.

Trên cơ sở kết quả nghiên cứu đề xuất các biện pháp can thiệp nhằm phòng chống bệnh.

II. ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU

2.1. Địa điểm nghiên cứu

Khoa Khám bệnh, Bệnh Viện Hữu nghị Đa khoa Nghệ An.

2.2. Đối tượng nghiên cứu

Tiêu chuẩn lựa chọn

- Nữ giới.
- Có đo mật độ xương.
- Chưa điều trị loãng xương lần nào.
- Tự nguyện tham gia nghiên cứu.

Tiêu chuẩn loại trừ

- Bệnh nhân đã hoặc đang điều trị loãng xương.
- Bệnh nhân không hợp tác, mất trí nhớ hoặc sợ nhớ kém ảnh hưởng đến quá trình thu thập thông tin chính xác.
- Đã thay khớp bằng nhân tạo.

2.3. Thời gian nghiên cứu

Từ tháng 01/2020 đến tháng 09/2020.

2.4. Phương pháp nghiên cứu

Theo phương pháp nghiên cứu ngang mô tả.

2.4.1. Cỡ mẫu

Công thức tính cỡ mẫu:

$$n = Z^2_{1-\alpha/2}\frac{p(1-p)}{\Delta^2}$$

α: Mức ý nghĩa thống kê.

Δ: Khoảng sai lệch mong muốn.

p: Xác suất loãng xương ở phụ nữ theo nghiên cứu của Nguyễn Thị Ngọc Lan [4].

Với $\alpha = 0,05$; $\Delta = 0,04$; $p = 0,384$. Thay vào công thức ta có $n = 184$. Để tăng độ tin cậy của nghiên cứu chúng tôi lấy $n = 720$ người.

2.4.2. Cách chọn mẫu

- Mỗi ngày đến khám và đo loãng xương tại phòng khám của bệnh viện có 10 - 15 phụ nữ. Các đối tượng đủ tiêu chuẩn được phỏng vấn đưa vào nghiên cứu.
- Lấy đến khi đủ số lượng nghiên cứu.

2.4.3. Các biến số, chỉ số trong nghiên cứu

- Thực trạng loãng xương: Mật độ xương trung bình, tỷ lệ loãng xương theo vị trí, tỷ lệ loãng xương chung, phân loại mật độ xương

2.4.4. Phương pháp thu thập thông tin

a. *Công cụ thu thập số liệu*

- Bộ câu hỏi phỏng vấn theo bộ câu hỏi thống nhất bao gồm các chỉ số và biến số để tìm hiểu về thực trạng.

- Đo mật độ xương bằng phương pháp hấp thụ tia X năng lượng kép.

b. Phương pháp thu thập số liệu

* Thăm khám lâm sàng và đánh giá kết quả.

- Cân nặng: Cân nặng.

- BMI: Được tính theo công thức: BMI = m/h^2; m: Cân nặng (kg); h: Chiều cao (m).

Phân loại BMI: Sử dụng phân loại BMI theo tiêu chuẩn năm 2000 của WHO dành cho các nước Châu Á Thái Bình Dương.

+ Gầy: BMI < 18,5 kg/m^2; Bình thường: 18,5 ≤ BMI ≤ 22,9 kg/m^2 Thừa cân và béo phì: BMI ≥ 23 kg/m^2

- Giảm chiều cao trên 3 cm: Coi là có khi bệnh nhân có chiều cao thấp hơn ít nhất trên 3 cm so sánh với chiều cao khi khám sức khỏe tuổi thanh niên [2].

* Đo mật độ xương

- Thiết bị đo: Bằng phương pháp đo hấp thụ tia X năng lượng kép (Dual energy Xray absorptiometry - DXA).

- Vị trí đo tại cột sống thắt lưng và cổ xương đùi.

+ Đánh giá mật độ xương theo tiêu chuẩn của WHO năm 1994 - [3].

Bình thường: Mật độ xương ≥ -1

Khối lượng xương thấp: Mật độ xương từ -1 đến -2,5

Loãng xương: Mật độ xương ≤ -2,5

Loãng xương nặng: Mật độ xương ≤ -2,5 và có ≥ 1 lần gãy xương

2.5. Sai số và cách khắc phục

- Sai số lớn nhất có thể gặp trong nghiên cứu này là người bệnh không cung cấp thông tin hoặc sẽ làm sai lệch kết quả.

- Khống chế sai số:

+ Thiết kế bộ câu hỏi phỏng vấn có cấu trúc.

+ Tập huấn kỹ cho điều tra viên là cán bộ y tế để lấy số liệu thống nhất.

+ Giải thích rõ cho người bệnh về mục tiêu nghiên cứu, tính bảo mật, quyền từ chối hoặc đồng tham gia trả lời phỏng vấn.

+ Giám sát quá trình thu thập số liệu nghiên cứu.

+ Kiểm tra ngẫu nhiên 5% số phiếu thu thập thông tin, nếu chưa đạt tiêu chuẩn đề nghị làm lại.

+ Làm sạch số liệu trước khi tiến hành phân tích.

2.6. Xử lý và phân tích số liệu

Nhập số liệu và xử lý số liệu trên máy vi tính bằng phần mềm STATA 14.0.

- Tính giá trị lớn nhất, nhỏ nhất, giá trị trung bình, độ lệch chuẩn, các tỷ lệ phần trăm.

- Dùng thuật toán χ^2 để so sánh các tỷ lệ quan sát, dùng test T-student để so sánh các giá trị trung bình, sự khác biệt khi $p < 0,05$.

2.7. Đạo đức trong nghiên cứu

- Nghiên cứu đã được sự đồng ý của Hội đạo: Khoa khám bệnh, Ban giám đốc Bệnh viện Hữu nghị Đa khoa Nghệ An .

- Các đối tượng tham gia nghiên cứu một cách tự nguyện, được cung cấp đầy đủ các thông tin về nghiên cứu, các thông tin liên quan đến đối tượng nghiên cứu được cam kết giữ bí mật.

Tất cả đối tượng nghiên cứu đều được thăm khám bệnh và phỏng vấn theo một mẫu phiếu điều tra thống nhất.

III. KẾT QUẢ NGHIÊN CỨU

3.1. Thực trạng loãng xương ở phụ nữ nghiên cứu

Bảng 3.1. Tỷ lệ loãng xương chung của đối tượng nghiên cứu (n = 720)

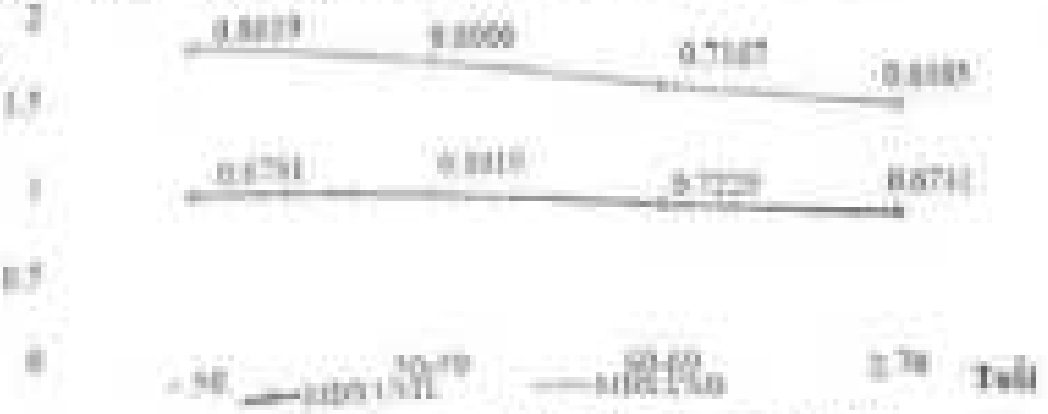
Số mẫu nghiên cứu	Số mắc (+)	Tỷ lệ (%)
720	201	34,31

Nhận xét: Tỷ lệ loãng xương chung của đối tượng nghiên cứu chiếm 34,31%.

Biểu 3.1 Phân loại mật độ xương ở đối tượng nghiên cứu (n = 720)

Nhận xét: Tỷ lệ loãng xương nặng của đối tượng nghiên cứu chiếm 8,33%.

3.2. Một số yếu tố liên quan đến loãng xương ở phụ nữ nghiên cứu



Biểu 3.2. Mối liên quan giữa tuổi và mật độ xương (n = 720)

Nhận xét: Mật độ xương giảm dần theo tuổi ở cả vị trí cột sống thắt lưng và cổ xương đùi.

Bảng 3.2. Liên quan giữa tuổi với loãng xương (n = 720)

Nhóm mật độ xương / Phân loại tuổi	Loãng xương		Không loãng xương	
	n	Tỷ lệ %	n	Tỷ lệ %
< 70	221	71,04	87	28,06
≥ 70	168	40,98	242	59,02
Tổng	391	54,31	329	45,69

$\chi^2 = 68,9\%$; OR = 3,69; (3,63 - 5,23); p < 0,001

Nhận xét: Nhóm đối tượng nghiên cứu ≥ 70 tuổi có nguy cơ loãng xương cao gấp 3,89 lần người khác với độ tin cậy 95% (OR = 3,89; 95%CI = 2,03 - 5,25), sự khác biệt có ý nghĩa thống kê với p < 0,001.

Bảng 3.3. Liên quan giữa chỉ số khối cơ thể với loãng xương (n = 720)

Nhóm mật độ xương / Phân loại BMI	Loãng xương		Không loãng xương	
	n	Tỷ lệ %	n	Tỷ lệ %
< 18,5 kg/m²	48	78,69	13	21,31
≥ 18,5 kg/m²	343	52,05	316	47,95
Tổng	391	54,31	329	45,69
χ^2 = 35,95; OR = 3,48; (1,81 - 6,45); p < 0,001				

Nhận xét: Người có BMI thấp (< 18,5 kg/m²) có nguy cơ mắc loãng xương cao gấp 3,48 lần người khác với độ tin cậy là 95% (OR = 3,48; 95%CI = 1,81 - 6,45), sự khác biệt có ý nghĩa thống kê với p < 0,001.

Bảng 3.4. Liên quan giữa tuổi có kinh lần đầu tiên với loãng xương (n = 720)

Nhóm mật độ xương / Tuổi có kinh	Loãng xương		Không loãng xương	
	n	Tỷ lệ %	n	Tỷ lệ %
> 16	207	63,89	117	36,11
≤ 16	184	46,46	212	53,54
Tổng	391	54,31	329	45,69
χ^2 = 21,77; OR = 2,04; (1,58 - 3,77); p < 0,001				

Nhận xét: Người có tiền sử kinh lần đầu tiên từ 16 tuổi trở lên có nguy cơ mắc loãng xương cao gấp 2,04 lần người khác với độ tin cậy là 95% (OR = 2,04; 95%CI = 1,58 - 2,77), sự khác biệt có ý nghĩa thống kê với p < 0,001.

Bảng 3.5.Liên quan giữa tuổi mãn kinh hoặc cắt buồng trứng với loãng xương (n=720)

Nhóm mật độ xương / Tuổi mãn kinh hoặc cắt buồng trứng	Loãng xương		Không loãng xương	
	n	Tỷ lệ %	n	Tỷ lệ %
< 45	137	65,83	68	33,17
≥ 45	247	54,05	210	45,95
Tổng	391	54,31	329	45,69
χ^2 = 8,48; OR = 1,71; (1,21 - 2,42); p < 0,01				

Nhận xét: Người mãn kinh hoặc cắt buồng trứng trước 45 tuổi có nguy cơ mắc loãng xương cao gấp 1,71 lần người khác với độ tin cậy là 95% (OR = 1,71; 95% CI = 1,21 - 2,42), sự khác biệt có ý nghĩa thống kê với p < 0,01.

Bảng 3.6. Liên quan giữa số lần sinh con với loãng xương (n = 720)

Nhóm mật độ xương / Số lần sinh con	Loãng xương		Không loãng xương	
	n	Tỷ lệ %	n	Tỷ lệ %
≥ 3	190	75,83	61	24,17
< 3	201	45,38	278	54,62
Tổng	391	54,31	329	45,69
χ^2 = 55,64; OR = 3,78; (2,59 - 5,50); p < 0,001				

Nhận xét: Người có số lần sinh con ≥ 3 có nguy cơ loãng xương cao gấp 3,78 lần người khác với độ tin cậy 95% (OR = 3,78; 95%CI = 2,59 - 5,50), sự khác biệt có ý nghĩa thống kê với p < 0,001.

Bảng 3.7. Liên quan giữa luyện tập thể dục với loãng xương (n = 720)

Nhóm mật độ xương / Lối sống	Loãng xương		Không loãng xương	
	n	Tỷ lệ %	n	Tỷ lệ %
Không tập thể dục	352	59,39	241	40,74
Tập thể dục	39	33,91	87	69,09
Tổng	391	54,31	329	45,69
χ^2 = 32,52; OR = 3,28; (2,13 - 4,95); p < 0,001				

Nhận xét: Người không tập luyện thể dục - thể thao có nguy cơ mắc loãng xương cao gấp 3,25 lần người có tập luyện với độ tin cậy là 95% (OR = 3,25; 95%CI = 2,13 - 4,95), sự khác biệt có ý nghĩa thống kê với p < 0,001.

Bảng 3.8 Liên quan giữa sử dụng corticoid kéo dài với loãng xương (n = 720)

Nhóm mật độ xương / Sử dụng corticoid kéo dài	Loãng xương		Không loãng xương	
	n	Tỷ lệ %	n	Tỷ lệ %
Có	64	67,37	31	32,63
Không	327	52,32	298	47,68
Tổng	391	54,31	329	45,69
χ^2 = 7,52; OR = 1,88; (1,19 - 2,98); p < 0,01				

Nhận xét: Người có tiền sử sử dụng corticoid kéo dài có nguy cơ mắc loãng xương cao gấp 1,88 lần khác với độ tin cậy là 95% (OR = 1,88; 95%CI = 1,19 - 2,98), sự khác biệt có ý nghĩa thống kê với p < 0,01.

V. BÀN LUẬN

4.1. Thực trạng loãng xương ở phụ nữ

Tỷ lệ loãng xương

- Tỷ lệ loãng xương theo nghiên cứu của chúng tôi là 54,31% (Bảng 3.1), thấp hơn Hà Hoàng Thị Bích (2014) nghiên cứu 650 phụ nữ ≥ 60 tuổi tỷ lệ loãng xương là 69,1% trong đó loãng xương nặng chiếm 18,7% [1] tương đương kết quả nghiên cứu của Nguyễn Thị Ngọc Lan (2013) nghiên cứu 988 phụ nữ trên 50 tuổi [4]. Bởi vì đối tượng nghiên cứu của chúng tôi bao gồm tất cả phụ nữ tuổi trưởng thành, do vậy tỷ lệ loãng xương thấp hơn các tác giả khác khi nghiên cứu ở phụ nữ lớn tuổi hoặc trên 50 tuổi hoặc độ tuổi mãn kinh hoặc trên 50 tuổi [4].

- Người ra theo nhiều chuyên gia loãng xương tại Việt Nam: Lý do cần sử dụng giá trị tham chiếu cho người Việt (tính giá trị T-score cho người Việt Nam) [3]. Như vậy, sẽ có thể giải thích cho sự khác nhau về tỷ lệ loãng xương trong nghiên cứu của chúng tôi và một số tác giả trong nước [2].

4.2. Một số yếu tố liên quan đến loãng xương ở phụ nữ

4.2.1. Liên quan tuổi với loãng xương

- Theo nhiều nghiên cứu chỉ ra tuổi là một yếu tố nguy cơ độc lập ảnh hưởng tới mật độ xương, tuổi càng cao thì nguy cơ mắc loãng xương càng lớn [4], [6], [7]. Trong nghiên cứu của chúng tôi (Hình 3.2) thấy rằng mối tương quan nghịch biến giữa mật độ xương ở cột sống thắt lưng và số xương

đái với tuổi, có ý nghĩa thống kê với p < 0,001. Như vậy là nếu tuổi tăng lên thì mật độ xương sẽ giảm đi cả ở cột sống thắt lưng và cổ xương đùi. Kết quả này tương tự như kết quả Hồ Phạm Thục Lan (2011) [3], Hoàng Thị Bích (2014) [1], Nguyễn Thị Ngọc Lan (2015) [4].

- Theo Bảng 3.2, nữ giới ≥ 70 tuổi có nguy cơ mắt loãng xương cao gấp 3,69 lần so với nữ giới < 70 tuổi. Kết quả này phù hợp với Nguyễn Thị Ngọc Lan và cộng sự khi nghiên cứu mật độ xương trên 988 phụ nữ ≥ 50 tuổi tại miền Bắc Việt Nam năm 2015.

4.2.2. Liên quan giữa chỉ số khối cơ thể và loãng xương

- Mật độ xương của những người béo cao hơn rất nhiều so với những người gầy và mật độ xương tương quan tỷ lệ thuận với cả chiều cao, cân nặng và BMI đặc biệt là cân nặng và BMI.

4.2.3. Liên quan tình trạng kinh nguyệt và số lần sinh con với loãng xương

- Tuổi có kinh lần đầu tiên

Người có chu kỳ kinh lần đầu tiên lúc 16 tuổi trở lên có nguy cơ loãng xương gấp 2,04 lần người có kinh trước 16 tuổi (Bảng 3.4). Một số tác giả trong và ngoài nước cũng nhận thấy có mối liên quan mật thiết giữa tuổi có kinh lần đầu tiên và loãng xương [3].

- Tuổi mãn kinh

Trong số 720 đối tượng nghiên cứu có 662 phụ nữ đã mãn kinh chiếm 91,94%. Phụ nữ mãn kinh hoặc cắt buồng trứng trước 45 tuổi có nguy cơ mắt loãng xương cao gấp 1,71 lần người khác có ý nghĩa thống kê với mức tin cậy 95% (OR = 1,71, 95%CI = 1,21 - 2,42) (Bảng 3.5). Nhiều nghiên cứu trong nước chỉ ra tuổi mãn kinh là một yếu tố nguy cơ loãng xương. Tạo Minh Thủy (2013) [5], Hoàng Thị Bích (2014) [1].

- Số lần sinh con

Trong nghiên cứu của chúng tôi những người sinh con ≥ 3 lần có nguy cơ loãng xương gấp 3,36 lần so với người khác (OR = 3,36, 95%CI = 2,40 – 4,71) (Bảng 3.6). Quá trình mang thai là một yếu tố kích thích làm thay đổi hoạt động nội tiết tố nữ do vậy làm ảnh hưởng đến chu chuyển xương. Phụ nữ sinh nhiều con sẽ ảnh hưởng tới quá trình chuyển hóa canxi do có sự dịch chuyển canxi từ mẹ sang con trong quá trình mang thai và cho con bú. Do đó nếu không bổ sung đủ lượng canxi cần thiết những phụ nữ sinh nhiều con sẽ có nguy cơ loãng xương cao [5].

-Yếu tố tập luyện

Những người không tập luyện thể dục có nhiều loãng xương cao hơn nhóm không loãng xương và những người không tập luyện có nguy cơ bị loãng xương cao gấp 2,23 lần người bình thường (OR = 2,23 95%CI = 2,13 – 4,95) (Bảng 3.7). Có lẽ tương này là do sự vận động của các cơ kích thích sự tạo xương và tăng khối lượng xương ngược lại sự giảm vận động dẫn đến mất xương nhanh.

-Tiền sử sử dụng glucocorticoid kéo dài

Những người sử dụng corticoid kéo dài có nguy cơ bị loãng xương cao hơn gấp 1,89 lần so với người bình thường (Bảng 3.8). Nhiều nghiên cứu của các tác giả nước ngoài cũng cho thấy những bệnh nhân sử dụng glucocorticoid kéo dài có nguy cơ gây xương cao. Glucocorticoid đẩy nhanh hoạt động tế bào xương tủy nhiều hơn Xương xốp, vì thế số mất xương này ra nhanh và thường gây gãy xương do loãng xương ở thân đốt sống xương mềm và ở đầu các xương dài [3].

V. KẾT LUẬN

Qua nghiên cứu 720 phụ nữ đến khám và kiểm tra sức khỏe tại Bệnh viện Hữu nghị Đa Khoa Nghệ An; chúng tôi rút ra một số kết luận sau:

+ Tỷ lệ loãng xương ở phụ nữ là 34,31%, trong đó loãng xương nặng chiếm 8,33%.

+ Yếu tố liên quan:

- Tuổi: Người có tuổi ≥ 70 có nguy cơ mắc loãng xương gấp 3,34 lần so với người dưới 70 tuổi, p < 0,001.

- Tình trạng kinh nguyệt:

+ Phụ nữ có kinh muộn (> 16 tuổi) có nguy cơ mắc loãng xương gấp 3,47 lần so với người bình thường, p < 0,001.

+ Phụ nữ mãn kinh trước 45 tuổi có nguy cơ mắc loãng xương gấp 2,30 lần so với người bình thường, p < 0,05.

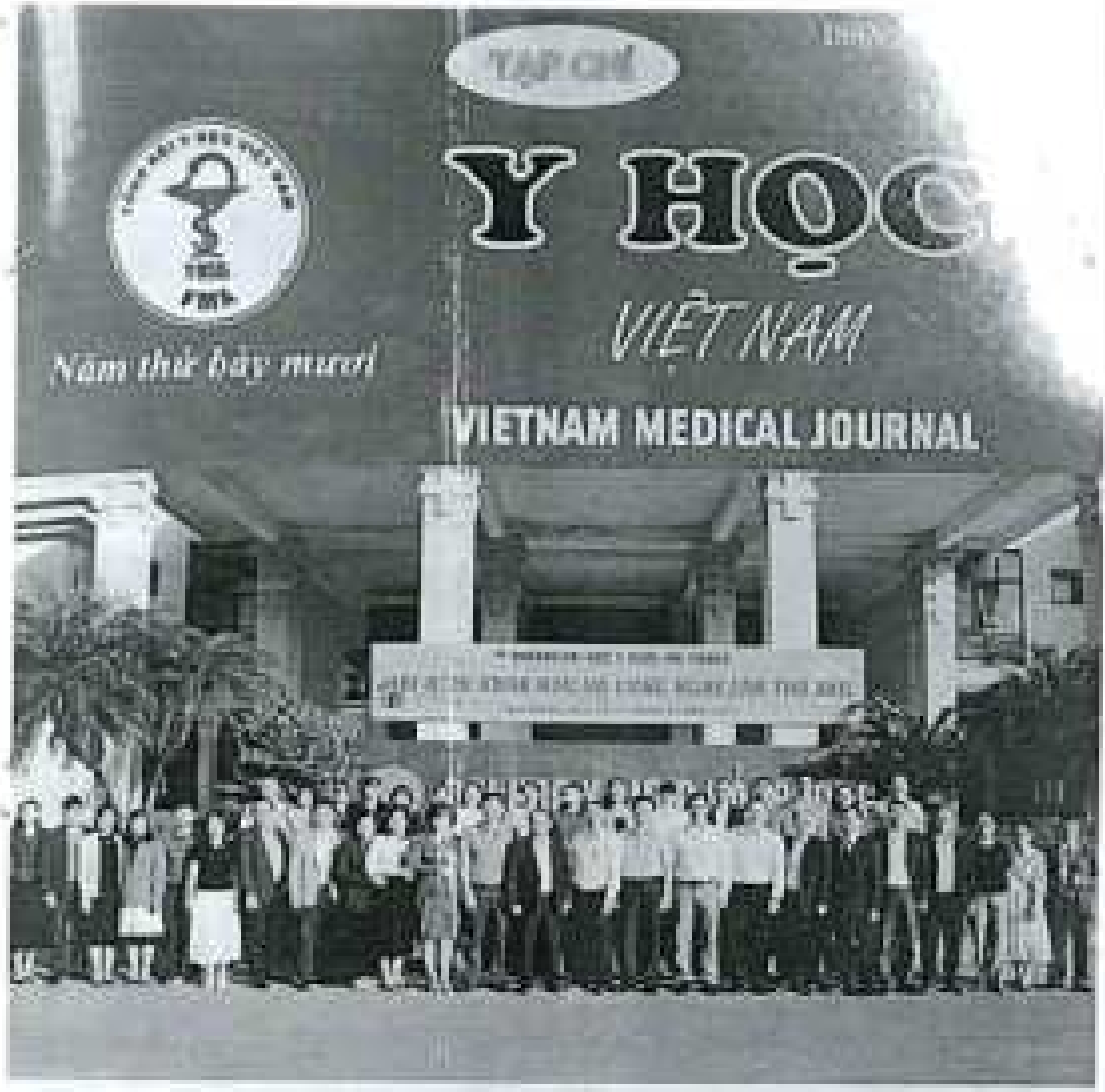
+ Phụ nữ có số lần sinh con ≥ 3 lần có nguy cơ mắc loãng xương gấp 4,66 lần so với phụ nữ có số lần sinh con = 5 lần, p < 0,001.

VI. KIẾN NGHỊ

Phụ nữ đặc biệt là các đối tượng có nhiều yếu tố nguy cơ nên được kiểm tra mật độ xương định kỳ nhằm phát hiện sớm bệnh loãng xương.

TÀI LIỆU THAM KHẢO

1. **Hoàng Thị Bích, Nguyễn Thị Ngọc Lan và Hoàng Hoa Sơn (2014)**, "Khảo sát yếu tố nguy cơ loãng xương ở phụ nữ mãn kinh từ 40 tuổi trở lên", Tạp Chí Nội Khoa, tr. 185 - 190.
2. **Đỗ Thị Khánh Hà (2007)**, "Một số yếu tố liên quan gây loãng xương ở người cao tuổi", Tạp chí nghiên cứu y học 53(3), tr. 144-148.
3. **Hồ Phạm Thục Lan, Phạm Ngọc Hoa và Lại Quốc Thái (2018)**, "Chẩn đoán loãng xương: ảnh hưởng của giá trị tham chiếu", Thời Sự Y Học 17 (3 và 2).
4. **Nguyễn Thị Ngọc Lan và cộng sự (2015)**, "Khảo sát yếu tố nguy cơ loãng xương ở phụ nữ Việt Nam từ 50 tuổi trở lên và xem giới từ 60 tuổi trở lên", Tạp chí Nghiên cứu y học 7(5), tr. 85-98.
5. **Tạo Minh Thủy và Nguyễn Thị Ngọc Lan (2015)**, "Khảo sát các yếu tố nguy cơ loãng xương ở phụ nữ miền Bắc Việt Nam từ 50 tuổi trở lên", Tạp chí Nội khoa, tr. 245 -249.
6. **Dimai H.P., Durchschlag E.and Dimai H.P. (2017)**, Age-related prevalence of osteoporosis and fragility fractures: real-world data from an Austrian Menopause and Osteoporosis Clinic, Climacteric, 20(6), pp. 557-563.
7. **Burge R., Dawson-Hughes B., Solomon D. H.and et al. (2007)**, Incidence and economic burden of osteoporosis-related fractures in the United States, 2005-2025, J Bone Miner Res, 22(3), pp. 465-75.
8. **Qiao Dan, Liu Xiaotian, Yu Ruoqiao et al. (2018)**, Gender-specific prevalence and influencing factors of osteopenia and osteoporosis in Chinese rural populations: the Henan Rural Cohort Study, BMJ Open, 10(11), p. e038595.



Tạp chí

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CÔNG TRÌNH NGHIÊN CỨU KHOA HỌC CHÀO MỪNG KỶ NIỆM 45 NĂM NGÀY THÀNH LẬP TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG 1979-2024

TỔNG HỘI Y HỌC VIỆT NAM

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THỰC TRẠNG VÀ MỘT SỐ YẾU TỐ LIÊN QUAN ĐẾN NHIỄM NẤM CANDIDA SPP. Ở PHỤ NỮ VIÊM ĐƯỜNG SINH DỤC DƯỚI TẠI BỆNH VIỆN PHỤ SẢN HẢI PHÒNG NĂM 2023

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TÓM TẮT

Nghiên cứu mô tả cắt ngang trên 398 phụ nữ điều trị viêm đường sinh dục dưới tại Bệnh viện Phụ sản Hải Phòng. Kết quả nghiên cứu cho thấy: Tỷ lệ nhiễm nấm Candida spp. chung là 24,12%, nhiễm cao nhất ở nhóm tuổi 25 – <35 (36%), trình độ học vấn THPT (63,07%) và nghề nghiệp công nhân (40,63%). 100% đối tượng tham gia nghiên cứu sử dụng nước máy trong sinh hoạt, phụ nữ có sử dụng dung dịch vệ sinh nhiễm 77,89%, phụ nữ sinh 2 con nhiễm nấm Candida spp. cao với 41,21%, người đã từng viêm sinh dục nhiễm 37,29% sử dụng dụng cụ tử cung nhiễm 16,03% Nhóm phụ nữ không sử dụng dung dịch vệ sinh có nguy cơ nhiễm nấm Candida spp. gấp 1,91 lần so với các nhóm khác, với p< 0,05. Nhóm phụ nữ sử dụng dụng cụ tử cung có nguy cơ nhiễm nấm Candida spp. gấp 2,2 lần so với các nhóm khác, với p< 0,05.

Từ khoá: nấm candida spp., viêm đường sinh dục dưới

SUMMARY

SITUATION AND RELATED FACTORS OF CANDIDA SPP. INFECTION IN WOMEN WITH LOWER GENITAL TRACT INFLAMMATION AT HAI PHONG OBSTETRICS AND GYNECOLOGY HOSPITAL IN 2023

A cross-sectional study was conducted on 398 women undergoing examinations for lower genital tract inflammation at Hai Phong Obstetrics and Gynecology Hospital. The research results revealed that the overall prevalence of Candida spp. infection was 24.12%, with the highest rates observed in the following groups: age group 25 – <35 (36%), high school education level (63.07%), and occupation as a laborer (40.63%). All study participants used tap water for daily activities. 77.89% of women using hygiene solutions were infected, women who had given birth to two children had a high Candida spp. infection rate of 41.21%, those with a history of pelvic genital inflammation showed a 37.29% infection rate, and the use of intrauterine devices made up a 16.03% infection rate. The group of women not using hygiene solutions had a 1.91 times higher risk of Candida spp. infection compared to other groups, with $p < 0.05$. Women using intrauterine devices had a 2.2 times higher risk of Candida spp. infection compared to the groups, with $p < 0.05$.

Keywords: Candida spp. fungus, lower genital tract inflammation.

I. ĐẶT VẤN ĐỀ

Tác nhân gây viêm đường sinh dục nữ thể kể tới như vi khuẩn lậu (Chlamydia trùng roi (Trichomonas), nấm (Candida

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Ngày duyệt bài: 28/2/2024
Ngày nhận bài: 12/3/2024
Ngày phản biện khoa học: 12/04/2024

ở phụ nữ âm đạo do nấm Candida spp. dao động từ 15,3-17,8%, trong đó Candida albicans chiếm 80% đến 92% [1]. Nấm Candida spp. là nguyên nhân phổ biến hàng đầu gây viêm đường sinh dục ở phụ nữ tuổi sinh sản [2]. Theo ước tính của Tổ chức Y tế Thế giới (WHO) năm 2016 có khoảng 75% phụ nữ đã từng bị mắc viêm sinh dục do nấm Candida spp. trong độ tuổi sinh sản tập trung chủ ở các nước đang phát triển trong đó có Việt Nam [3].

Viêm đường sinh dục dưới do nấm Candida gây tuy không gây nguy hiểm đến tính mạng người bệnh, nhưng là nguyên nhân chủ yếu gây ra những rối loạn làm ảnh hưởng đến sức khỏe, khả năng lao động và hạnh phúc gia đình [1]. Trong những năm gần đây, cùng với việc sử dụng không hợp lý các thuốc kháng sinh mở rộng rãi và kéo dài, thiếu kiến thức về quan hệ tình dục, thói quen vệ sinh... đã gây ra những vấn đề đáng lo ngại trong điều trị bệnh viêm âm đạo do nấm. Việc nghiên cứu các yếu tố liên quan đến bệnh viêm âm đạo do nấm Candida đóng vai trò rất quan trọng, giúp các thầy thuốc lâm sàng trong việc điều trị và tư vấn cho người bệnh phòng tránh nấm có hiệu quả giảm tỷ lệ mắc nấm cũng như giảm tái phát nấm.

Với mong muốn góp phần làm tốt hơn trong công tác chăm sóc sức khỏe ở lứa tuổi phụ nữ trong độ tuổi sinh sản và phòng ngừa bệnh do nấm Candida spp. gây ra, chúng tôi tiến hành nghiên cứu: **"Thực trạng và một số yếu tố liên quan đến nhiễm nấm Candida spp. ở phụ nữ đến khám viêm đường sinh dục dưới tại Bệnh viện Phụ sản Hải Phòng năm 2023"** với các mục tiêu sau: *Xác định tỷ lệ nhiễm Candida spp. ở phụ nữ đến khám viêm đường sinh dục dưới tại Bệnh viện Phụ sản Hải Phòng năm 2023 và một số yếu tố liên quan đến nhiễm nấm Candida spp. ở đối tượng nghiên cứu.*

Trên cơ sở kết quả nghiên cứu đề xuất các biện pháp hữu hiệu nhằm phòng chống bệnh.

II. ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU

2.1. Đối tượng nghiên cứu

Gồm 398 phụ nữ đến khám viêm đường sinh dục dưới tại Bệnh viện Phụ sản Hải Phòng.

Tiêu chuẩn lựa chọn: phụ nữ đến khám có dấu hiệu ra khí hư âm đạo bất thường, ngứa rát âm hộ, âm đạo, đồng ý tham gia nghiên cứu.

Tiêu chuẩn loại trừ: phụ nữ đang hành kinh, đang ra máu âm đạo, thụt rửa âm đạo trong vòng 48 giờ trước khi đến khám, đang không nằm toàn thân hoặc đặt thuốc không nằm trong vòng 2 tuần trước khi đến khám, đối tượng có vấn đề về tâm thần.

2.2. Địa điểm và thời gian nghiên cứu

Địa điểm nghiên cứu: Bệnh viện Phụ sản Hải Phòng.

Thời gian nghiên cứu: Từ tháng 02/2023 đến tháng 10/2023.

2.3. Thiết kế nghiên cứu: Theo phương pháp nghiên cứu mô tả cắt ngang.

2.4. Cỡ mẫu, chọn mẫu

2.4.1. Cỡ mẫu

Cỡ mẫu nghiên cứu cho tỷ lệ nhiễm Candida spp: Chúng tôi áp dụng công thức tính cỡ mẫu nghiên cứu:

$$n = Z^2_{1-\alpha/2} \frac{pq}{d^2}$$

Trong đó: n: số mẫu cần phải điều tra; $Z_{1-\alpha/2}$: hệ số tin cậy, với $\alpha = 0,05$, độ tin cậy 95% thì $Z_{1-\alpha/2} = 1,96$; q: là yếu tố phụ thuộc vào p (q= 1-p); d: độ chính xác mong muốn

là 0,05; p = 0,5 theo kết quả nghiên cứu của Mai Thục Anh [4].

Như vậy, theo các công thức tính cỡ mẫu cỡ mẫu là 385 người. Thực tế, chúng tôi đã tiến hành nghiên cứu cho 398 phụ nữ trong diện nghiên cứu.

Cỡ mẫu điều tra kiến thức và thực hành về bệnh viêm đường sinh dục do nấm Candida: Phương vấn kiểu thức. Các bệnh về bệnh viêm đường sinh dục dưới do nấm Candida spp. của chính đối tượng nghiên cứu.

2.4.2. Cách chọn mẫu:

Chúng tôi chọn mẫu nghiên cứu thuận tiện, không các suất thỏa mãn các tiêu chí lựa chọn để đưa vào nghiên cứu. Mỗi ngày sẽ phỏng vấn đến khám và làm xét nghiệm viêm đường sinh dục dưới tại Bệnh viện Phụ sản Hải Phòng khoảng 20 người. Các ngày trong tuần chúng tôi sẽ tiến hành xét nghiệm và phỏng vấn các đối tượng nghiên cứu.

2.5. Kỹ thuật, công cụ và quy trình thu thập số liệu

2.5.1. Công cụ thu thập thông tin

Dụng cụ khám lâm sàng

Dụng cụ soi tươi tiếp, nhuộm Gram: Kính hiển vi quang học, lam kính, lá kính, đèn cồn, que tăm bông vô khuẩn....

Qua phỏng vấn kiến thức, thực hành phòng chống nhiễm trùng đường sinh sản để đánh giá yếu tố liên quan đến viêm đường sinh dục dưới do nấm Candida spp.

Bộ câu hỏi gồm 3 phần: hành chính, kiến thức và thực hành.

2.5.2. Kỹ thuật thu thập thông tin

Xét nghiệm nấm soi tươi và nhuộm Gram theo hướng dẫn thực hành của bộ y tế (ghi 1939/QĐ- BYT ngày 30/04/2017) để đánh giá tỷ lệ nhiễm nấm đường sinh dục dưới.

Kỹ thuật điều tra về kiến thức, thực hành của bệnh nhân để xác định yếu tố liên quan.

2.5.3. Các bước tiến hành

Nhóm nghiên cứu được tập huấn kỹ trước khi triển khai nghiên cứu gồm: cách thu thập mẫu dịch âm đạo, kỹ thuật xét nghiệm, kỹ thuật phỏng vấn.

Sau khi thu thập, các mẫu dịch âm đạo sẽ được xét nghiệm ngay bằng kỹ thuật soi tươi để xác định tỷ lệ nhiễm nấm âm đạo.

Các kết quả xét nghiệm dịch âm đạo tìm nấm được ghi vào phiếu xét nghiệm.

2.6. Xử lý và phân tích số liệu

Số liệu thu thập trong nghiên cứu được xử lý theo phương pháp thống kê sinh học và sử dụng phần mềm SPSS 20.0.

2.7. Đạo đức nghiên cứu

Nghiên cứu được sự đồng ý của ban Giám hiệu trường Đại học Y Dược Hải Phòng và Ban Lãnh đạo Bệnh viện Phụ sản Hải Phòng. Nghiên cứu được tiến hành khi có sự tự nguyện đồng ý tham gia nghiên cứu sau khi đã được giải thích rõ mục tiêu nghiên cứu. Các đối tượng nghiên cứu sẽ ký tên vào phiếu chấp thuận tham gia trước khi tiến hành nghiên cứu. Nghiên cứu không thực hiện thủ thuật xâm lấn gì có hại cho người tham gia. Các dữ liệu nghiên cứu sẽ được bảo mật hoàn toàn, số liệu chỉ phục vụ cho mục đích nghiên cứu.

có thể dễ dàng tiếp cận được với các người có vấn đề về bệnh lý viêm đường sinh dục, qua đó kịp thời có các tư vấn để có sức khoẻ sinh sản, cũng thời có điều kiện nâng tỉ lệ nhiễm nấm Candida spp. ở phụ nữ tới khám viêm đường sinh dục dưới tại Bệnh viện Phụ sản Hà Nội tương đồng với kết quả của các nghiên cứu trong cộng đồng.

Theo nghiên cứu của chúng tôi tỷ lệ phụ nữ mang giá nghiên cứu cao nhất ở nhóm tuổi từ 25-<35 với 46,88%, tiếp tới là nhóm tuổi ≥35 chiếm 37,44% và nhóm tuổi chiếm tỷ lệ thấp nhất là 18-<25 với 16,68%. Như vậy, đối tượng nghiên cứu này tập trung ở lứa tuổi sinh đẻ tối ưu và nhóm tuổi lao động trẻ. Kết quả này tương tự với nhiều tác giả như các nghiên cứu của Trịnh Thị Mỹ Ngọc [6].

Nghiên cứu của chúng tôi cho thấy tỷ lệ nhiễm nấm ở đối tượng nghiên cứu có số lần sinh 2 con chiếm 41,21% cao hơn so với đối tượng có số lần sinh con ≤1 (35,36%) và ≥3 (23,11%). Kết quả này có sự tương đồng với nghiên cứu của tác giả Bùi Đình Long (2017)[7].

Trong đó tỷ lệ nhiễm nấm Candida spp. có 21,07% các trường hợp sử dụng dụng cụ tử cung tránh thai[8]. Mặc dù vòng tránh thai rất tiện lợi và các dụng cụ tử cung rất chung được coi là an toàn, tuy nhiên đôi một số yếu tố như dụng cụ thủ thuật chưa đảm bảo, vệ sinh vòng kém không sạch, điều kiện vệ sinh tình dục của bạn tình chưa tốt,... tạo điều kiện cho vi khuẩn và nấm tấn công.

4.2. Một số yếu tố liên quan đến nhiễm nấm Candida spp.

Phân tích của chúng tôi cho thấy chưa có mối liên quan có ý nghĩa thống kê giữa tỷ lệ nhiễm nấm Candida spp. và tuổi (p>0,05). Kết quả của chúng tôi khác với kết quả của tác giả Phan Anh Tuấn và cộng sự cho thấy trong số bệnh nhân viêm âm đạo do nấm Candida spp. thường gặp ở nhóm tuổi 24 – 40. Nhận thấy ở phụ nữ khi tuổi càng cao, các đặc điểm sinh lý, hành vi thay đổi theo hướng bất lợi có thể dẫn đến gia tăng tình trạng viêm âm đạo do nấm Candida spp., lứa ở nhóm phụ nữ ở độ tuổi lao động trẻ tỷ lệ nhiễm nấm đường sinh dục có xu hướng tăng do nhu cầu về tình dục cao tạo điều kiện cho các bệnh viêm đường sinh dục phát triển.

Thói quen vệ sinh ở phụ nữ là yếu tố cơ bản để phòng ngừa viêm đường sinh dục dưới do Candida spp. Ngày nay, có nhiều sản phẩm giúp kiểm soát, tiêu diệt hoặc hạn chế các tác nhân gây bệnh, do đó giúp giảm tỷ lệ mắc bệnh. Sử dụng sản dụng dịch vệ sinh phụ nữ có hiệu quả hơn trong giảm tỷ lệ viêm đường sinh dục dưới do nấm Candida spp. Nghiên cứu của chúng tôi cho thấy, đối tượng không sử dụng dung dịch vệ sinh có nguy cơ viêm đường sinh dục dưới do nấm Candida spp. cao gấp 1,91 lần so với nhóm sử dụng dung dịch vệ sinh (p<0,05).

Kết về tiền sử sản phụ khoa, tổng sinh mắc bị rách lâu sinh khiến tự nhiên nhập của các yếu tố gây bệnh dễ dàng hơn, dẫn đến làm tăng nguy cơ mắc viêm nhiễm đường sinh dục ở người phụ nữ. Nghiên cứu của tác giả Bùi Đình Long (2017) trên phụ nữ có chồng tại hai công ty may tỉnh Nghệ An tỉ lệ phụ nữ chưa sinh lần nào chiếm 8,6% [7] thấp hơn so với phụ nữ đã từng sinh con. Kết quả của chúng tôi cho thấy không có mối liên quan giữa tỷ lệ viêm đường sinh dục dưới do nấm Candida spp. với số lần sinh con (p>0,05). Kết quả này có sự tương đồng với nghiên cứu của tác giả Mai Thuỷ Anh (2018) [4]. Nhất khác, tỷ lệ viêm đường sinh dục dưới ở phụ nữ tại Việt Nam là cao. Ảnh hưởng của yếu tố nội tiết cũng như những môi trường thuận lợi ở những người có tiền

với viêm viêm đường sinh dục dưới sử dụng dụng cụ tử cung có ngay cơ mắc bệnh. Tuy nhiên kết quả của chúng tôi không thấy mối liên quan có ý nghĩa thống kê giữa tỷ lệ đường sinh dục dưới do nấm Candida spp. và tiền sử viêm âm đạo, âm hộ (p>0,05).

Nghiên cứu của chúng tôi cho thấy phụ nữ sử dụng dụng cụ tử cung có ngay cơ viêm đường sinh dục dưới do nấm Candida spp. cao gấp 2,2 lần so với nhóm sử dụng biện pháp tránh thai khác (p<0,05). Dụng cụ tử cung là phương pháp tránh thai được sử dụng phổ biến do đạt hiệu quả cao (97%) và duy trì được trong thời gian dài, trung bình từ 5-10 năm. Tuy nhiên phương pháp này không có tác dụng ngăn ngừa lây nhiễm các bệnh viêm đường sinh dục, có thể gây tăng dịch tiết âm đạo tạo điều kiện cho các vi khuẩn và nấm phát triển.

V. KẾT LUẬN

Tỷ lệ nhiễm nấm Candida spp. chung là 24,12%, nhiễm cao nhất ở nhóm tuổi 25 – <35 (30%); phụ nữ sinh 2 con nhiễm nấm Candida spp. cao với 41,2 %; sử dụng dụng cụ tử cung nhiễm 16,93%.

Nhóm phụ nữ không vệ sinh vùng kín có ngay cơ nhiễm nấm Candida spp. gấp 1,91 lần so với các nhóm khác, với p< 0,05.

Nhóm phụ nữ sử dụng dụng cụ tử cung có ngay cơ nhiễm nấm Candida spp. gấp 2,2 lần so với các nhóm khác, với p< 0,05.

VI. KHUYẾN NGHỊ

Tuyên truyền cho các đối tượng về sức khỏe sinh sản, tình dục, có thể sử dụng các biện pháp tránh thai khác thay cho dụng cụ tử cung để hạn chế các bệnh viêm âm đạo do nấm Candida spp.

Tham vấn cho các phụ nữ tại khoa Phụ khoa nên sử dụng dung dịch vệ sinh và tại khoa cơ quan sinh dục sau khi đi vệ sinh, nên quần áo thoáng mát, thay quần áo mỗi ngày.

VII. LỜI CẢM ƠN

Một phần kinh phí thực hiện nghiên cứu này được từ sự hỗ trợ của Trường Đại học Y Dược Hải Phòng, mã số đề tài HĐNB/ĐT 23/01.

TÀI LIỆU THAM KHẢO

1. **Trường Đại học Y khoa Phạm Ngọc Thạch (2018).** Sản phụ khoa. Nhà xuất bản Đại học Quốc gia TP.HCM, tr. 122- 141.
2. **Lê Hoài Chương (2011).** Khảo sát một nguyên nhân gây viêm nhiễm đường sinh dục dưới ở phụ nữ đến khám phụ khoa tại bệnh viện Phụ sản Trung ương. Y học Thực hành, 802(3), 66-69.
3. **Alan H. B. Lauren N (2013).** Benign disorders of the vulva & vagina. Current, obstetric & gynecologic diagnosis & treatment, p. 651 -655.
4. **Trịnh Mai Anh,** Nghiên cứu tỷ lệ viêm âm đạo do nấm Candida ở phụ nữ mang thai ba tháng đầu tại bệnh viện Quận Thủ Đức. Đại học Y dược Huế, 2018.
5. **Nông Thị Thu Trang,** Nghiên cứu một số đặc điểm dịch tễ học viêm nhiễm đường sinh dục dưới ở phụ nữ nông thôn miền núi tỉnh Thái Nguyên và hiệu quả giải pháp can thiệp 2015. Đại học Thái Nguyên: Thái Nguyên.
6. **Trịnh Thị Mỹ Ngọc,** Tỷ lệ viêm âm đạo do nấm Candida và yếu tố liên quan ở phụ nữ có thai ba tháng cuối tại Phan Thiết - Bình Thuận 2009, Đại học Y Dược Thành phố Hồ Chí Minh, Hồ Chí Minh.
7. **Bùi Đình Long (2017).** Thực trạng và một số yếu tố liên quan tới viêm nhiễm đường sinh dục dưới ở phụ nữ 18-49 tuổi có chồng tại 2 công ty may tỉnh Nghệ An và hiệu quả truyền thông. In Vệ sinh xã hội học và Tổ chức tế. Viện Vệ sinh Dịch tễ Trung Ương H Nội.

KẾT QUẢ NGHIÊN CỨU

3.1. Tỷ lệ nhiễm nấm Candida spp. ở phụ nữ đến khám viêm đường sinh dục dưới tại Bệnh viện Phụ sản Hải Phòng năm 2023

Hình 1. Tỷ lệ nhiễm nấm Candida spp. ở đối tượng nghiên cứu (n=398)

Nhận xét: Tỷ lệ nhiễm nấm Candida spp. ở đối tượng tham gia nghiên cứu là 24,12%.

Bảng 1. Phân bố bệnh nhân nhiễm nấm Candida spp. theo nhóm tuổi

Nhóm tuổi	Số lượng (n=96)	Tỷ lệ (%)
18 - <25	12	12,5
25 - <35	48	50
≥35	36	37,5
Tổng	**96**	**100**

Nhận xét: Tỷ lệ nhiễm nấm Candida spp. ở nhóm tuổi 25 - <35 là 50%.

Bảng 2. Phân bố bệnh nhân nhiễm nấm Candida spp. theo số lần sinh con

Số lần sinh con	Số lượng (n= 96)	Tỷ lệ (%)
≤ 1	34	35,68
2	40	41,21
≥ 3	22	23,11
Tổng	**96**	**100**

Nhận xét: Đối tượng nghiên cứu có số lần sinh 2 con chiếm tỷ lệ nhiễm nấm Candida cao nhất 41,21%, nhóm đối tượng có số lần sinh con ≤ 1 và ≥ 3 có tỷ lệ nhiễm nấm Candida thấp lần lượt là 35,68% và 23,11%.

Bảng 3. Phân bố bệnh nhân nhiễm nấm Candida spp. theo tỷ lệ sử dụng dụng cụ tránh thai

Biện pháp tránh thai	Nhiễm nấm Candida (n=96)	
	Số lượng (n= 96)	Tỷ lệ (%)
Dụng cụ tử cung	21	21,87
Khác	75	78,13
Tổng	**96**	**100**

Nhận xét: Tỷ lệ nhiễm nấm Candida spp. ở nhóm đối tượng sử dụng các biện pháp tránh thai khác là 78,13%.

3.2. Một số yếu tố liên quan đến nhiễm nấm *Candida* spp. ở đối tượng nghiên cứu

Bảng 4. Liên quan giữa nhiễm nấm Candida spp. đường sinh dục dưới với tiền sử

Nhóm tuổi	Nhiễm nấm Candida		OR (95% CI)	p
	Có	Không		
18 - 35	63	190	0,99 (0,62-1,56)	0,97
> 35	[illegible]	113		

Nhận xét: Không có mối liên quan giữa tỷ lệ nhiễm nấm *Candida* spp. đường sinh dục dưới và tuổi (p>0,05).

Bảng 5. Liên quan giữa nhiễm nấm Candida spp. đường sinh dục dưới

Sử dụng DPVS	Nhiễm nấm *Candida*	Không nhiễm nấm *Candida*	OR 95% CI	p
Không	30	58	1,91 (1,13-3,20)	0,01
Có	66	264		

Nhận xét: Đối tượng không sử dụng dung dịch vệ sinh có nguy cơ nhiễm nấm *Candida* spp. đường sinh dục dưới cao gấp 1,91 lần có ý nghĩa thống kê với p<0,05.

Bảng 6. Liên quan giữa tiền sử viêm đường sinh dục với nhiễm nấm Candida sp đường sinh dục dưới

Tiền sử VĐSD	Nhiễm nấm *Candida*	Không nhiễm nấm *Candida*	OR 95% CI	p
Có	61	116	1,39 (0,24-1,90)	0,48
Không	55	186		

Nhận xét: Không có mối tương quan có ý nghĩa thống kê giữa tiền sử viêm đường sinh dục với tỷ lệ nhiễm nấm *Candida* spp. đường sinh dục dưới (p>0,05).

Bảng 7. Liên quan giữa phương pháp tránh thai và nhiễm nấm Candida spp. đường sinh dục dưới

Sử dụng biện pháp tránh thai	Nhiễm nấm *Candida*	Không nhiễm nấm *Candida*	OR 95% CI	p
Dụng cụ tử cung	21	34	2,20 (1,20-4,03)	0,009
Biện pháp tránh thai khác	75	268		

Nhận xét: Đối tượng sử dụng dụng cụ tử cung có nguy cơ nhiễm nấm *Candida* spp. đường sinh dục dưới cao gấp 2,20 lần so với sử dụng các biện pháp tránh thai khác, với p<0,01.

IV. BÀN LUẬN

4.1. Tỷ lệ nhiễm nấm *Candida* spp.

Qua khảo sát 398 phụ nữ đến khám viêm đường sinh dục dưới tại Bệnh viện Phụ sản Hải Phòng năm 2023, kết quả nghiên cứu của chúng tôi phát hiện rằng, tỷ lệ nhiễm nấm *Candida* spp. ở phụ nữ đến khám viêm đường sinh dục dưới tại Bệnh viện Phụ sản Hải Phòng là 34,12%. Theo nghiên cứu của Nông Thị Thu Trang (2015), tỷ lệ nhiễm nấm *Candida* spp. ở nhóm đối tượng phụ nữ nông thôn miền núi tại tỉnh Thái Nguyên là 28,0% [5]. Kết quả của các nghiên cứu trên có sự tương đồng với kết quả nghiên cứu của chúng tôi. Lý giải cho tỷ lệ nhiễm nấm *Candida* spp. trong đề tài nghiên cứu của chúng tôi, thấy rằng ngày nay do thông tin đại chúng phát triển, phụ nữ tại Hải Phòng

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[illegible]

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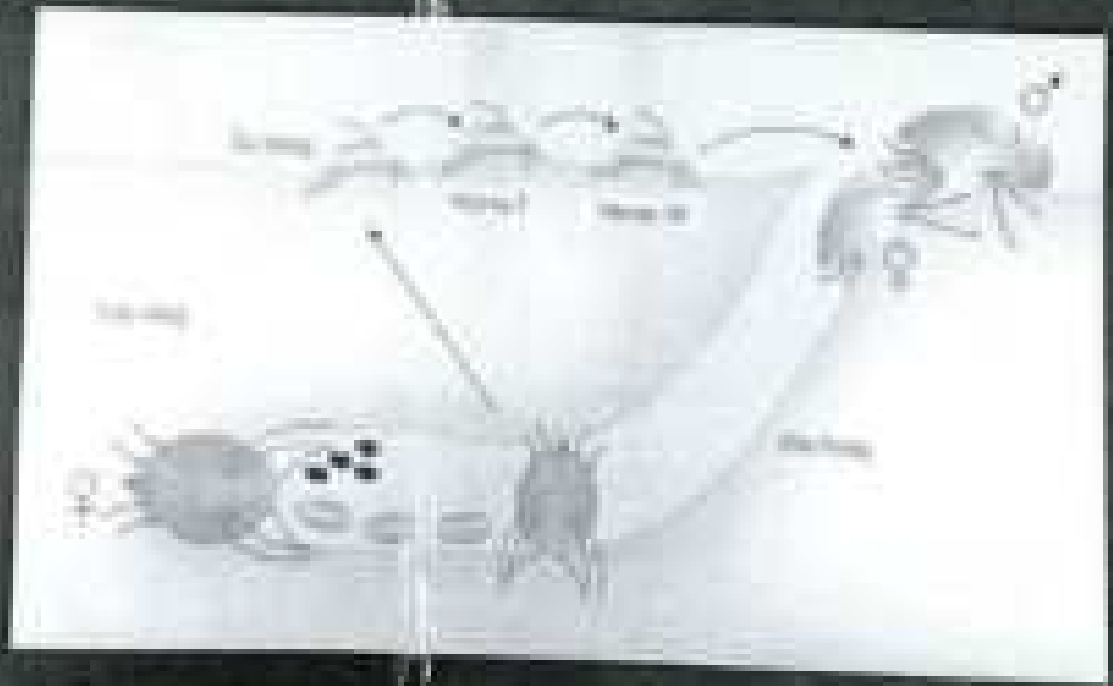

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1. Họ và tên:	NGUYỄN TRƯỜNG GIANG
2. Năm sinh:	16/12/1977 — 3. Giới tính: Nam
4. Nơi sinh:	Hải Phòng
5. Nguyên Quán:	Duy Tiên, Thái Thụy, Thái Bình
6. Địa chỉ liên hệ:	Điện thoại: NR..... Mobile: 0904942135 Fax: ..... Email: truongtgiang161277@gmail
7. Học hàm, học vị:	Năm được công nhận TS: 2024 — Nơi cấp bằng: Việt Nam Năm được phong GS/PGS: ..... — Nơi phong: .....
8. Cơ quan công tác:	Tên cơ quan: Trường Đại học Y Dược Hải Phòng, Bệnh viện Hữu Nghị Việt Tiệp Khoa/Phòng, Bộ môn, Trung tâm: Bộ môn Mô bệnh học, Khoa Giải phẫu bệnh lý Địa chỉ cơ quan: 72A Nguyễn Bỉnh Khiêm, Ngô Quyền, Hải Phòng Điện thoại: ..... Fax: ..... Email: .....

9. Quá trình đào tạo

Bậc đào tạo	Nơi đào tạo	Chuyên ngành/Tên khóa luận, luận văn, luận án	Năm tốt nghiệp
Đại học	Trường Đại học Y Hải Phòng		2002
Thạc sĩ	Trường Đại học Y Hà Nội	Giải phẫu bệnh/ Nghiên cứu đặc điểm hình thái học sang thương biểu mô tế bào thận ở người lớn	2008
Tiến sĩ	Trường Đại học Y Hà Nội	Giải phẫu bệnh/ Nghiên cứu đặc điểm mô bệnh học và một số dấu ấn hóa mô miễn dịch trong sang thương mô tiết niệu	2023

10. Các khoá đào tạo khác (nếu có)

Văn bằng	Tên khoá đào tạo	Nơi đào tạo	Thời gian đào tạo

11. Trình độ ngoại ngữ

Tên ngoại ngữ	Văn bằng/Chứng chỉ	Năm
Tiếng Anh	Cử nhân ngôn ngữ anh	

12. Quá trình công tác *(trước khi về Trường và sau khi về Trường)*

Thời gian (Từ năm ... đến năm ...)	Vị trí công tác	Cơ quan công tác	Địa chỉ cơ quan
9/2002 -6/2009	Bác sỹ GPB	Khoa Giải Phẫu Bệnh. Bệnh Viện Hữu Nghị Việt Tiệp	
6/2009- 6/2015 2015- nay	Phó khoa Giải Phẫu Bệnh Phó trưởng bộ môn	Khoa Giải Phẫu Bệnh. Bệnh Viện Hữu Nghị Việt Tiệp Bộ môn Kỹ thuật Giải phẫu bệnh. Trường Đại học Y Dược Hải Phòng	
6/2015- 6/2016	Phó phụ trách khoa Giải Phẫu Bệnh	Khoa Giải Phẫu Bệnh. Bệnh Viện Hữu Nghị Việt Tiệp	
2016 đến nay	Trưởng khoa Giải Phẫu Bệnh	Khoa Giải Phẫu Bệnh. Bệnh Viện Hữu Nghị Việt Tiệp	
2024- đến nay	Phó trưởng bộ môn	Bộ môn bệnh học. Trường Đại học Y Dược Hải Phòng	

13. Các công trình khoa học đã công bố

13.1. Bài báo khoa học:

- *Tên tác giả: tên của tác giả của bài báo*
- *Tác giả chính: là Tác giả chịu trách nhiệm (corresponding author) hoặc Tác giả liên hệ (corresponding author)*
- *Danh mục: WoS/Scopus hoặc Tạp chí trong nước thuộc HĐGSNN tính điểm*

TT	Tên bài báo	Tên tác giả	Tác giả chính	Tạp chí	Ngày XB	Số, trang	Danh mục	ISSN (DOI)
1	+ Nghiên cứu			*	Y học	11/2025		1859-

	vai trò của yếu tố phân tử P53 trong ung thư đường niệu tại bệnh viện Việt Tiệp Hải Phòng.				Việt Nam, tập 436			1868
2	Mô bệnh học ung thư biểu mô tiết niệu qua mẫu phẫu thuật tại bệnh viện Việt Đức.		x	Y học Việt Nam, tập 497	12/2020			1859-1868
3	Độc lộ dấu ấn hóa mô miễn dịch CK20 trong ung thư biểu mô bàng quang.		x	Y học Việt Nam, tập 504	02/07/2021	219-223		1859-1868

13.2. Bách chuyên khảo, giáo trình – tài liệu dạy học:

- *Tên tài liệu: Sách/ Chương sách*
- *Loại hình: Chuyên khảo/ Tham khảo/ Giáo trình/ Tài liệu hướng dẫn*

TT	Tên tài liệu	Tên tác giả	Chủ biên/Đồng chủ biên	Nhà xuất bản	Năm xuất bản	Loại hình	ISBN
1							
2							

14. Báo cáo Hội nghị - hội thảo khoa học

Kỷ yếu/ Tóm tắt/ Toàn văn

TT	Tên báo cáo	Tên tác giả	Tác giả chính	Tên hội nghị	Thời gian báo cáo (tháng/năm)	Kỷ yếu	ISBN
	Nghiên cứu mô bệnh học ung thư biểu mô tiết niệu qua mẫu sinh thiết nội soi	Nguyễn Trường Giang	x	Báo cáo hội nghị nghiên cứu sinh trường Đại học y Hà	2016	x	

	tại bệnh viện Việt Tiệp Hải Phòng.			nội			
	Nghiên cứu vai trò của yếu tố phân tử P53 trong ung thư đường niệu tại bệnh viện Việt Tiệp Hải Phòng.		x	Hội nghị khoa học kỹ thuật các tỉnh duyên hải bắc bộ lần thứ II	2013		
	Mô bệnh học ung thư biểu mô tiết niệu qua mẫu phẫu thuật tại bệnh viện Việt Đức.			Hội nghị chuyên ngành Giải Phẫu Bệnh	2020		

15. Bằng sở hữu trí tuệ đã được cấp

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TT	Tên và nội dung văn bằng	Số, ML Ký hiệu	Nơi cấp	Năm cấp
1				

16. Công trình KH&CN được ứng dụng, chuyển giao

TT	Tên công trình	Hình thức	Quy mô	Địa chỉ áp dụng	Giá trị	Thời gian
1						
...						

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- *Tình trạng nhiệm vụ: Đã nghiệm thu/ Chưa nghiệm thu/ Không hoàn thành*

17.1. Nhiệm vụ KH&CN đã và đang chủ trì

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					Phê duyệt	Đăng ký kết quả *(nếu có)*	Công nhận kết quả	

17.2. Nhiệm vụ KH&CN đã và đang tham gia

Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình (nếu có)	Tình trạng nhiệm vụ	Ngày			Kinh phí
					Ngày bắt đầu	Công nhận kết quả	Đăng ký lưu giữ	

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TT	Tên giải thưởng	Hình thức khen thưởng	Cấp khen thưởng	Năm tặng thưởng
1				
2				

19. Đào tạo sau đại học

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- *Bậc đào tạo: Tiến sĩ/Thạc sĩ/BS Nội Trú/CKII...*

TT	Họ tên học viên	Vai trò	Bậc đào tạo	Chuyên ngành	Nơi đào tạo	Năm cấp bằng

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Số: 008653

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Căn cứ Thông tư số 41/2011/TT-BYT ngày 14/11/2011 của Bộ trưởng Bộ Y tế hướng dẫn cấp chứng chỉ hành nghề đối với người hành nghề và cấp giấy phép hoạt động đối với cơ sở khám bệnh, chữa bệnh;

Xét đề nghị của phòng Quản lý hành nghề y dược

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Họ và tên: NGUYỄN TRƯỜNG GIANG

Sinh ngày: 10/12/1977

Chứng minh nhân dân số: 010916662

Ngày cấp: 21/08/2012

Nơi cấp: Công an Hải Phòng

Nơi thường trú: Số nhà 1G, ngõ 15, phố Cấp Hàng, phường Dư Hàng, quận Lê Chân, thành phố Hải Phòng

Bác sỹ Y Văn bằng chuyên môn: Bác sỹ Đa khoa CK Giải phẫu bệnh

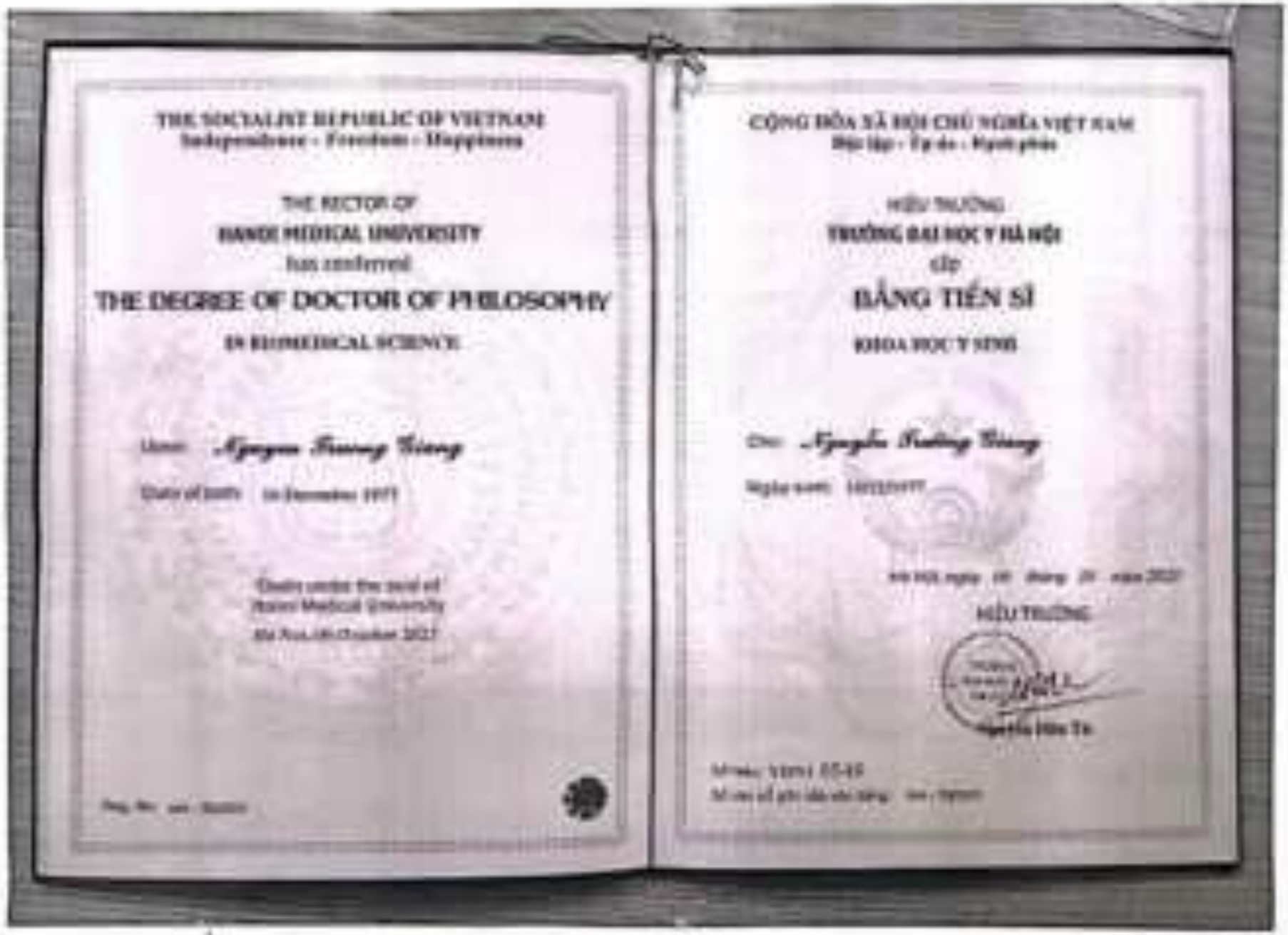
Phạm vi hoạt động chuyên môn: Chuyên khoa sản nghiệp (Giải phẫu bệnh)

Hải Phòng, ngày 01 tháng 12 năm 2014

KT. GIÁM ĐỐC

PHÓ GIÁM ĐỐC

Phạm Thu Xanh



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Benefit From Percutaneous Mitral Balloon Valvuloplasty?. Circulation, 105(12), 1465–1471.
6. **Hernandez Rosa, Bañuelos Carolina, Alfonso Fernando** và cộng sự. (1999). Long-Term Clinical and Echocardiographic Follow-Up After Percutaneous Mitral Valvuloplasty With the Inoue Balloon. Circulation, 99(12), 1580–1586.
7. **Nguyễn Đức Công** (2006). Đánh giá mức độ hở van hai lá bằng phương pháp PISA trên siêu âm Doppler tim ở bệnh nhân hở hai lá thực tổn. Luận văn thạc sỹ y học, Đại Học Y Hà Nội, 2006.
8. **Phạm Thị Hồng Thi** (2005). Nghiên cứu các tổn thương tim trong bệnh lý van hai lá mắc phải bằng siêu âm tim qua t tiễn sỹ y học.
9. **Nguyễn Thanh Sơn** (- Doppler tim qua thấy man tính vừa và nhiều, Đại Học Y Hà Nội.
10. **Langerveld J., Valocz** cộng sự. (2003). 4a dimensional transeso for patients with mitral balloon valvuloplasty. Society of Echocardiogr

ĐẶC ĐIỂM MÔ BỆNH HỌC UNG THƯ BIỂU MÔ T ĐƯỢC PHẪU THUẬT TẠI BỆNH VIỆN HỮU NGHỊ TỪ THÁNG 1/2018 ĐẾN THÁNG 3/201

Nguyễn Trường Giang[1], Lê Minh Quang[1]

TÓM TẮT

Mục tiêu: Tìm hiểu một số đặc điểm về vị trí, tip mô bệnh học, độ mô học và mức độ xâm lấn của ung thư biểu mô tiết niệu (UTBMTN) tại toàn bộ hệ tiết niệu. Mối liên quan giữa sự phân bố vị trí của khối u với độ mô học, tip mô bệnh học và mức độ xâm lấn của khối u trong nhóm bệnh nhân nghiên cứu. ***Đối tượng và phương pháp nghiên cứu:*** Nghiên cứu mô tả cắt ngang, hồi cứu 158 trường hợp UTBMTN được phẫu thuật cắt toàn bộ khối u tại Bệnh viện Hữu nghị Việt Đức trong khoảng thời gian từ tháng 1/2018 đến tháng 3/2019. ***Kết quả:*** Trong 158 trường hợp UTBMTN, tỷ lệ gặp nhiều nhất là bàng quang với 62,7%, thận chiếm 31,6% và niệu quản gặp 5,7%. Sự phân bố của vị trí khối u hệ tiết niệu liên quan có ý nghĩa thống kê với typ mô bệnh học với p=0,000<0,05 và mức độ xâm lấn của khối u (pT) với p=0,013<0,05 nhưng không có mối liên quan với độ mô học của khối u với p = 0,11 > 0,05.

Từ khóa: ung thư biểu mô tiết niệu (UTBMTN), tip mô bệnh học, độ mô học.

SUMMARY

HISTOPATHOLOGICAL CHARACTERISTICS OF PATIENTS WITH UROTHELIAL CARCINOMAS OF URINARY SYSTEM WHO

Background: To investigate some characteristics of location, histopathological grade and invasiveness of t whole urinary system. The distribution of tumor locat grade, histopathological typ invasion in the study gro ***object and method:*** A cr descriptive study of 158 cas undergoing total tumor University Hospital between 2019. ***Result:*** In 158 case the most common rate v kidney accounted for 31.6 5.7%. The distribution of urinary system was sign histopathological type and degree of tumor invasion (p there was no relationship w grade with p = 0.11 > 0.05.

Keywords: ur histopathological type, histo

I. ĐẶT VẤN ĐỀ

Trong các loại ung biểu mô tiết niệu đứng h về thứ 10 cho cả 2 giới

UTBMTN ở niệu quản [1]. UTBMTN là loại ung thư hay gặp nhất ở hệ tiết niệu trong đó 80 đến 90% các trường hợp ung thư ở bàng quang và 5 đến 10% ở đường niệu trên trong khi đó ở niệu đạo có thể gặp nhưng hiếm [1]. Ngày nay có nhiều phương pháp đánh giá khác nhau, tuy nhiên phẫu thuật cắt bỏ toàn bộ khối u là phương pháp điều trị triệt để hơn cả. Với các khối u UTBMTN tại các vị trí của hệ tiết niệu được đánh giá chính xác các đặc điểm mô bệnh học, đồ mô học hay giai đoạn khối u giúp các nhà lâm sàng có hướng theo dõi, điều trị hợp lý nhất. Chính vì vậy, chúng tôi nghiên cứu đề tài này với mục tiêu *"Tìm hiểu một số đặc điểm về vị trí, tập mô bệnh học, độ mô học, mức độ xâm lấn UTBMTN và mối liên quan giữa sự phân bố vị trí của khối u với độ mô học, tập mô bệnh học, mức độ xâm lấn của khối u trong nhóm bệnh nhân nghiên cứu"*.

II. ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU

2.1. Đối tượng nghiên cứu

- Đối tượng nghiên cứu gồm 158 bệnh nhân được phẫu thuật cắt toàn bộ khối u của hệ tiết niệu, có kết quả mô bệnh học là UTBMTN, có đầy đủ hồ sơ bệnh án, tiêu bản và khối nến lưu trữ còn giữ nguyên tính chất khảng nguyên.

- Địa điểm nghiên cứu: khoa giải phẫu bệnh Bệnh viện Hữu nghị Việt Đức

- Thời gian nghiên cứu: từ tháng 1/2018 đến tháng 3/2019.

2.2. Phương pháp nghiên cứu

- Nghiên cứu mô tả cắt ngang, hồi cứu trên các tiêu bản và block parafin của các bệnh nhân và hồ sơ bệnh án lưu trữ.

- Các biến số và chỉ số nghiên cứu thu thập các số liệu về tuổi, giới, vị trí u, tập mô bệnh học, độ mô học và mức độ xâm lấn của khối u.

+ Tuổi chia thành 7 nhóm (≤20; 30-39; 40-49; 50-59; 60-69; 70-79; ≥80)

+ Vị trí khối u: thận, niệu quản, bàng quang, niệu đạo

+ Đánh giá typ mô học, độ mô học: Theo phân loại mô học của WHO 2016 [3].

+ Đánh giá giai đoạn khối u: TNM theo AJCC năm 2017 [4](trích dẫn phần khối u ung thư biểu mô niệu)

- Số liệu được thu thập và xử lý bằng phần mềm thống kê SPSS 16.0

+ Thống kê mô tả biến định lượng bằng các thông số: trung vị (Median), Mode (giá trị có tần số cao nhất) và biểu diễn bằng bảng. Đối với biến định tính thì mô tả bằng tần số, tỷ lệ phần trăm và được biểu diễn bằng bảng. Thống kê phân tích và so sánh các tỉ lệ và mối liên quan bằng kiểm định χ^2. Giá trị p được sử dụng để so sánh và phân tích mối liên quan, nếu $p < 0,05$ là sự khác biệt có ý nghĩa thống kê hoặc có mối liên quan có ý nghĩa thống kê.

III. KẾT QUẢ NGHIÊN CỨU

3.1. Đặc điểm về tuổi và giới

Bảng 3.1. Phân bố độ tuổi theo giới tính

Nhóm tuổi	Nam		Nữ		Tổng	
	n	%	n	%	n	%
≤20	0	0	0	0	0	0
30-39	2	1,5	1	4,2	3	1,9
40-49	5	3,7	1	4,2	6	3,8
50-59	29	21,5	6	25,0	35	22,2
60-69	49	36,3	5	20,8	54	34,2
70-79	37	27,4	8	33,3	45	28,5
≥80	13	9,6	3	12,5	15	9,5
Tổng số	135	100	24	100	158	100
$\bar{x} \pm SD$	66,06 ±10,60		66,42 ±10,53		66,11 ±10,87	
p=0,883>0,05						

Nhận xét: Độ tuổi hay gặp nhất ở cả hai giới là trên 50 tuổi. Độ tuổi trung bình của nam và nữ là không có sự khác biệt với giá trị trung bình là 66,11±10,87.

3.2. Đặc điểm phân bố vị trí khối u ở hệ tiết niệu

Bảng 3.2. Phân bố tỷ lệ của các vị trí của hệ tiết niệu

Vị trí	Thận	Niệu quản	Bàng quang	Niệu đạo	Tổng
n	50	9	99	0	158
%	31,6	5,7	62,7	0	100

Nhận xét: Trong 158 TH thấy tại bàng quang chiếm đa số với 99 TH chiếm 62,7% và ở niệu quản là thấp nhất là 5,7%. không gặp TH nào ở niệu đạo.

3.3. Đặc điểm phân bố tập mô bệnh học

Bảng 3.3. Phân bố tập mô bệnh học của khối u

Typ mô học	Không xâm nhập UTBMTN tế bào nhỏ		UTBMTN xâm nhập			Tổng
	Dị sản	Dị sản	Thông thường	Biến hóa vảy	Khác	n(%)
n	17	11	68	32	30	158
%	10,8	7,0	43,0	20,2	19,0	100

Nhận xét: Những trường hợp u tại chỗ, không xâm nhập chiếm 17,8% và khối u xâm nhập gặp chủ yếu tập mô bệnh học thông thường và tập biến hóa vảy.

3.4. Đặc điểm phân bố độ mô học

Bảng 3.4. Phân bố độ mô học của khối u

Độ mô học	Thấp	Cao	Tổng số
n	17	141	158
%	10.8	89.2	100

Nhận xét: khối u có độ mô học cao chiếm ưu thế với 141 TH (89,2%)

3.5. Mối liên quan giữa vị trí khối u với tập mô bệnh học

Bảng 3.5. Mối liên quan giữa vị trí khối u với tập mô bệnh học

Tập MBH / Vị trí u	Không xâm nhập UTBMTTN thể nhú		UTBMTTN thể xâm nhập			Tổng
	Độ thấp	Độ cao	Thông thường	Biến dạng	Khác	
	n(%)	n(%)	n(%)	n(%)	n(%)	n(%)
Thận	4 (8.0)	4 (8.0)	32(64.0)	10(20.0)	0	50(100)
Niệu quản	0	2(22.2)	7(77.8)	0	0	9(100)
Bàng quang	13(13.1)	9(9.1)	39(39.4)	22(22.2)	30(30.3)	99(100)
Tổng số(%)	17(10.8)	11(7.0)	68(43.0)	32(20.3)	30(19.0)	158(100)
						p=0.000

Nhận xét: Tại tất cả các vị trí hai loại mô thì UTBMTTN thể xâm nhập thường có tỷ lệ cao và độ mô học cao tương đương nhau với p=0,000<0,05.

3.6. Mối liên quan giữa vị trí u và độ mô học khối u

Bảng 3.6. Mối liên quan vị trí u và độ mô học

Độ mô học / Vị trí u	Thấp	Cao	Tổng
	n(%)	n(%)	n(%)
Thận	4(8.0)	46 (92.0)	50(100)
Niệu quản	0	9(100)	9(100)
Bàng quang	13(13.1)	86(86.9)	99(100)
Tổng số(%)	17(10.8)	141(89.2)	158(100)
			p=0.210

Nhận xét: vị trí khối u liên quan không có ý nghĩa thống kê với độ mô học (p>0,110)

3.7. Mối liên quan giữa vị trí u với mức độ xâm lấn của khối u

Bảng 3.7. Mối liên quan giữa vị trí u với mức độ xâm lấn của khối u

Mức độ xâm lấn / Vị trí u	Không xâm nhập cơ		Xâm nhập cơ			Tổng
	pTa	pT1	pT2	pT3	pT4	
	n(%)	n(%)	n(%)	n(%)	n(%)	n(%)
Thận	4(8.0)	4(8.0)	32(64)	10(20.0)	0	50(100)
Niệu quản	0(0.0)	2(22.2)	7(77.8)	0(0.0)	0	9(100)
Bàng quang	13(13.1)	9(9.1)	39(39.4)	22(22.2)	30(30.3)	99(100)
Tổng số(%)	17(10.8)	11(7.0)	68(43.0)	32(20.3)	30(19.0)	158(100)
						p=0.000

Nhận xét: Các khối u ở thận và niệu quản có tỷ lệ xâm nhập cơ cao hơn tại bàng quang có ý nghĩa thống kê với p=0,013<0,05.

IV. BÀN LUẬN

4.1. Đặc điểm về độ tuổi và giới tính. Đặc điểm phân bố theo nhóm tuổi trong nghiên cứu của chúng tôi thấy tập trung vào những nhóm tuổi trên 50 chiếm tới 146 TH (94,3%), trong đó nhóm tuổi 60-69 chiếm tỷ lệ cao nhất với 54 TH (34,2%) và độ tuổi trung bình chẩn của hai giới 66,11±10,87 tuổi. Kết quả nghiên cứu của chúng tôi phù hợp với một số tác giả trong và ngoài nước đều cho rằng độ tuổi tập trung vào thập niên 60 của bệnh nhân. Theo Bertz và cs [5] cho rằng độ tuổi trung bình của cả hai giới là 71,7 tuổi và dao động từ 37 đến 87 tuổi. Tương tự, các nghiên cứu đều cho rằng độ tuổi mắc UTBMTTN tập trung vào nhóm tuổi trên 50 và thập niên 60 chiếm tỷ lệ cao. Một số nghiên cứu nước ngoài cao hơn có thể lý giải do chế độ ăn uống, đặc biệt các yếu tố nguy cơ cao như uống rượu và hút thuốc lá ở Việt Nam năm trong nhóm cao trên thế giới. Việt Nam là nước đang phát triển, đây là nơi tập trung các ngành công nghiệp sản xuất, suy nhiễn nhiều độ môi trường, trong bị bảo hộ lao động bảo vệ sức khoẻ người lao động còn hạn chế nên tỷ lệ mắc bệnh nghề nghiệp thường cao.

Phân bố theo giới trong nghiên cứu của chúng tôi thấy tỷ lệ nam giới mắc chiếm 84,7% và nữ giới 15,3% và tỷ lệ nam/ nữ 5,5/1. Trong

các nhóm khối u ở các vị trí khác nhau như bàng quang. Thận hay niệu quản đều có tỷ lệ nam chiếm ưu thế. Kết quả trên phù hợp với nhiều nghiên cứu trong nước như Nguyễn Văn Hưng và cs [6] có tỷ lệ nam/ nữ là 5,8/1 hay Nguyễn Vương và cs [7] là 4,3/1. Một số tác giả nước ngoài có tỷ lệ thấp hơn như Kouroucer và cs [8] cho biết tỷ lệ nam/nữ là 3,4/1 nhưng Hoker và cs [9] lại cho biết tỷ lệ nam/ nữ là ngang nhau. Mặc dù tỷ lệ nam/ nữ biến động theo từng nghiên cứu khác nhau nhưng phần lớn các nghiên cứu đều cho rằng tỷ lệ mắc bệnh ở nam giới cao hơn nữ giới.

4.2. Đặc điểm phân bố vị trí khối u của hệ tiết niệu. Kết quả nghiên cứu của chúng tôi thấy có tới 92,7% tại vị trí bàng quang trong khi đó tại vị trí thận 31,8% hay niệu quản 5,7%. Kết quả này thấp hơn so với nghiên cứu của Nguyễn Phúc Cường và cs [2] với 81,2% tại bàng quang hoặc Nguyễn Văn Hưng và cs [6] 91,8%. Một tác giả khác William C.B và cs [4] nghiên cứu 20 năm cho rằng UTBHTN tại bàng quang thậm chí niệu quản có tỷ lệ 11:4:1. Để lý giải kết quả trên có thể nguyên nhân chính do chỉ định phẫu thuật rộng rãi hoặc điều kiện phẫu thuật còn hạn chế cũng như nhóm nghiên cứu của chúng tôi tập trung chủ yếu vào các mẫu phẫu thuật. Ngày nay, cùng với sự tiến bộ của khoa học kỹ thuật đặc biệt các kỹ thuật thăm dò chức năng nội soi phát hiện ung thư sớm, do vậy các khối u ở bàng quang được phát hiện sớm cũng như phương pháp điều trị các khối u đơn giản hơn giảm ngay cả phẫu thuật cắt bỏ bàng quang triệt căn, trong khi đó các khối u ở thận và niệu quản thường khó phát hiện sớm hơn.

4.3. Đặc điểm về độ mô học, tập mô bệnh học, mức độ xâm lấn của khối u và mối liên quan với vị trí của khối u. Đối với nhóm khối u không xâm nhập, phân loại của WHO 2016 chia các khối u biểu mô thể nhú được phân độ mô học cao và độ mô học thấp [3].

+ Với những trường hợp UTBHTN thể nhú, độ mô học thấp gồm các nhú mảnh: chia nhánh trên diện rộng. Ở độ phóng đại thấp, các nhú có cấu trúc khá thật tự nhưng ở độ phóng đại vừa, một số nhú mất cực tính biểu mô cũng với nhân không đều và đa hình ở mức độ nhẹ. Nhân chia có thể có hoặc không, nhưng nhân không điển hình và có thể tìm thấy ở vùng xa màng đáy.

+ Với UTBHTN thể nhú, độ mô học cao: Các nhú có thể hòa nhập với nhau nên trông mở u đặc hơn. Các rối loạn về sự biệt học như kích thước nhân không đều, nhân đa hình rõ không đều thường được nhìn thấy rõ ràng ngay ở độ phóng đại thấp. Hạt nhân nổi bật và cũng không đều, nhiều nhân nhỏ (không điển hình và không đều). Chiều dày của biểu mô u rất khác nhau và một số TH có nhân không bắt màu rõ ràng. Người ra còn cần một số dấu ấn hoá mô miễn dịch đánh giá bổ sung nhằm có kết luận chính xác hơn.

Trong nghiên cứu của chúng tôi nhận thấy không có TH nào ở niệu quản, ở vị trí thận có 50 TH thì chỉ có 04 TH (8%) có độ mô học thấp và tại bàng quang với 99 TH chỉ có 13 TH (13,1%) còn lại chủ yếu là có độ mô học cao. Một số tác giả như Nguyễn Vương và cs [7] hay Lê Trung Thọ và cs [1] cho rằng tỷ lệ khối u có độ mô học cao và độ mô học thấp là tương đương nhau. Tác giả như Kouroucer và cs [8] cho biết 68% khối u có độ mô học thấp và 32% có độ mô học cao. Ngược lại, tác giả Weaco và cs [1] cho rằng khối u có độ mô học thấp 16,9% và độ mô học cao là 83,6%. Tóm lại kết quả tỷ lệ độ mô học thay đổi tan các nghiên cứu khác nhau tuỳ thuộc cỡ mẫu hay đối tượng nghiên cứu.

Đánh giá tập mô học của các khối u xâm nhập, đối với các vị trí ở bàng quang, những khối u xâm nhập chúng tôi nhận thấy các khối u có đặc điểm bao gồm các tập mô bệnh học khác nhau như tập thông thường, tập biệt hoá vảy và một số tập mô khác như biệt hoá tế, biệt hoá tuyến, kém biệt hoá... Tuy nhiên với những khối u ngoài bàng quang như ở các vị trí đài bể thận hay niệu quản chỉ có tập mô học thông thường chiếm ưu thế và tiếp theo là biệt hoá vảy trong khi đó không nhận thấy tập mô học khác. Chúng tôi nhận thấy có mối liên quan giữa vị trí khối u hệ tiết niệu, tại vị trí bàng quang có thể gặp nhiều tập mô học khác nhau trong khi đó tại các vị trí khác ngoài bàng quang chỉ gặp tập mô học thông thường hay biệt hoá vảy với p= 0,000 <0,05. Kết quả nghiên cứu phù hợp với tác giả Nguyễn Văn Hưng và cs [6] cho rằng biệt hoá vảy chiếm 13,8% và tập nhú hay tập thông thường cũng như trong những khối u không xâm nhập luôn chiếm ưu thế. Trong nghiên cứu của chúng tôi chiếm tới 86,8% và các tập còn lại chiếm 38,2% trong đó typ biệt hoá vảy chiếm 20,2% cao hơn tác giả giả Nguyễn Văn Hưng và cs [6] nhưng tương tự một số tác giả khác như Gary D.S và Sauter. G [3] đều cho rằng khoảng 20%. Ở vị trí ngoài bàng quang, theo Nguyễn Văn Hưng và cs cho rằng chỉ có các tập khác chỉ có biệt hoá vảy trong khi các tập mô học khác không tìm thấy, kết quả này cũng tương tự tác giả khác như Gary D.S và Sauter. G [3] cho rằng chỉ có khoảng 6% là tập mô học khác. Tóm lại, ở

vị trí người bàng quang chủ yếu chỉ có tập mô học thông thường và có một tỷ lệ nhỏ là tập mô học khác, kết quả này hoàn toàn phù hợp với nghiên cứu của chúng tôi.

Trong số 158 trường hợp trong nghiên cứu, giai đoạn khối u chưa xâm nhập cơ gồm 58 TH (37,3%), trong đó tại thận, niệu quản có tỷ lệ thấp với lần lượt có 14 TH (28%) gồm 8 TH ở giai đoạn pTa và 6 TH ở giai đoạn pT1+is tại bàng quang chiếm tỷ lệ cao hơn gồm 42 TH (42,4%). Trong khi đó giai đoạn xâm nhập cơ tăng cao ở nhóm vị trí u tại thận, niệu quản và không tăng hay tăng không đáng kể ở ở bàng quang với p=0,013<0,05. Kết quả này chúng tôi cũng phù hợp với nghiên cứu của Nguyễn Văn Hưng và cs [6] với 46 TH ghi nhận có 10 TH (21,7%) ở giai đoạn không xâm nhập cơ. Điều này cũng được lý giải bởi các khối u được phẫu thuật thường ở giai đoạn muộn hơn so với các mẫu nội soi hay khó phát hiện và khi phát hiện được thường ở giai đoạn xâm lấn.

V. KẾT LUẬN

Nghiên cứu 158 trường hợp UTBHTN được phẫu thuật cắt toàn bộ khối u thấy vị trí hay gặp nhất là bàng quang với 62,7%, thận chiếm 31,6%, niệu quản chiếm 5,7% và không gặp trường hợp nào tại niệu đạo. Trong tất cả các vị trí thì các trường hợp u xâm nhập chiếm 62,2%, độ mô học cao chiếm 69,2%, u không xâm nhập chiếm 37,8% và độ mô học thấp chỉ chiếm 30,8%. Tỷ lệ các khối u xâm nhập cơ tại thận chiếm 72,9% và niệu quản chiếm 66,7% là các tỷ lệ có ý nghĩa thống kê so với tại bàng quang chiếm 57,8% với p=0,013<0,05.

TÀI LIỆU THAM KHẢO

1. Lê Thanh Xuân (2020), "Đặc điểm mô bệnh học và sự bộc lộ các dấu ấn hoá mô miễn dịch CK20, P53, Ki67 trong ung thư biểu mô niệu đường niệu", luận văn thạc sỹ Y học, đại học Y Hà Nội, trang 88.
2. Nguyễn Phúc Cương, Nguyễn Vũ Lênh, and Nguyễn Phương Hồng (2002), "Nghiên cứu hình ảnh giải phẫu bệnh của ung thư biểu mô tế bào chuyển", Báo cáo khoa học tại bệnh viện Việt Đức Hà Nội, trang 26.
3. Moch H, Humphrey PA, Ulbright TM et al. (2016), "WHO classification of tumours of the urinary system and male genital organs. 4th Edition.World Health Organization", International Agency for Research on Cancer (IARC),vol. 8, pp.
4. Amin MB and Edge SB (2017), "AJCC cancer staging manual", American Springer,vol. 24.
5. Berry S, Otto W, Davidsger S et al. (2014), "Combination of CK20 and Ki-67 immunostaining analysis predicts recurrence, progression, and cancer-specific survival in pT1 urothelial bladder cancer", European urology,vol. 65(1), pp. 219-225.
6. Nguyễn Văn Hưng and Nguyễn Thị Hồng Diệp (2010), "Nghiên cứu mô bệnh học, một số sinh chứng lâm sàng và cận lâm sàng của ung thư biểu mô tế bào chuyển", Tạp chí Y học thực hành,vol. 4, pp. 714.
7. Trịnh Tiến Phong and Nguyễn Vượng (2010), "Nghiên cứu đặc điểm giải phẫu bệnh u biểu mô đường niệu của bàng quang", Luận văn thạc sĩ Y học, Hà Nội,vol. pp.
8. Rajeevsagar A (2017), "Histopathologic Evolution of Urothelial Carcinoma Recurrence in Transurethral Resection of the Urinary Bladder: 28 Consecutive Cases And Literature Review", Asian Pacific journal of cancer prevention: APJCP,vol. 18(7), pp. 459.
9. Rabbani GP, Blume BA, Klein L et al. (1999), "The influence of gender on incidence and outcome of patients with bladder cancer in Harlem", Journal of the National Medical Association,vol. 91(3), pp. 149.

ĐÁNH GIÁ KẾT QUẢ CHẨN ĐOÁN VÀ ĐIỀU TRỊ VỠ EO TỤY

Thái Nguyên Hưng*

TÓM TẮT

Mục tiêu nghiên cứu: 1.Mô tả đặc điểm lâm sàng và cận lâm sàng của vỡ eo tụy. 2.Đánh giá kết quả chẩn đoán và điều trị vỡ eo tụy. **Đối tượng và phương pháp nghiên cứu:** [illegible] + Nghiên cứu mô tả hồi cứu. + Tất cả những bệnh nhân [illegible] không phân biệt tuổi,giới,được chẩn đoán vỡ eo tụy, được phẫu thuật vỡeoặc điều trị tại BV Việt Đức. + Thời gian: Từ tháng 2013 đến tháng 2017. **Kết quả nghiên cứu:** Có 24 bệnh nhân vỡ eo tụy được đưa vào NC bao gồm: 23 nam (95,8%), nữ 1 (4,2%), tuổi trung bình 38,2 (từ 8 - 68), nguyên nhân vỡ eo tụy do tai nạn giao thông 16 BN (66,7%), tai nạn lao động 1 BN (4,1%), tai nạn sinh hoạt 7 BN (29,2%). Chẩn đoán sớm: 100% các bệnh nhân đều đau bụng, đau thượng vị 62,5%, đau dưới sườn trái 12,5%, đau dưới sườn phải 16,7%, đau nhiều phía 8,3%, đau khắp bụng 33,3%, bụng chướng 83,3%, hội chứng bạch cầu [illegible] > 15.000/mm³ 79,2%. Có 95,8% amylase máu tăng. Siêu âm phát hiện vỡ tụy 9/24 BN (37,5%), chụp cắt lớp vi tính (CLVT) phát hiện vỡ tụy 100% trong đó vỡ eo tụy đơn thuần là 70,8% còn lại

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2014;337(1-2):14-17. doi:10.1016/j.jns.2013.11.007
5. **Meyer SA, Copeland D, Bernardini GL, et al.** Cost and Outcome of Mechanical Ventilation for Life-Threatening Stroke. Stroke.2008;31(10):2346-2353. doi:10.1161/01.STR
6. **Walcott BP, Miller** Outcomes in Severe Ischemic Stroke. Neuro 26. doi:10.1007/s12028-

BỘC LỘ DẤU ẤN HÓA MÔ MIỄN DỊCH CK TRONG UNG THƯ BIỂU MÔ BÀNG QUAN

Nguyễn Trường Giang[1],

TÓM TẮT

Mục tiêu: Nhận xét một số đặc điểm của dấu ấn miễn dịch CK 20 và mối liên quan với độ mô học, giai đoạn trong khối u bàng quang phẫu thuật tại bệnh viện Việt Đức. **Đối tượng và phương pháp nghiên cứu:** Hồi cứu 99 trường hợp ung thư biểu mô bàng quang qua các mẫu bệnh phẩm phẫu thuật tại bệnh viện Việt Đức. **Kết quả:** Dấu ấn CK 20 âm tính với 32 trường hợp (32,3%); dương tính ổ (<10% tế bào u) có 27 trường hợp (27,3%), dương tính lan tỏa có 40 trường hợp (40,4%). Dấu ấn CK 20 có mối liên quan với độ mô học với p=0,000<0,05 và có mối liên quan với giai đoạn bệnh với p=0,01<0,05. Các mối liên quan có ý nghĩa thống kê.

Từ khóa: Ung thư biểu mô bàng quang, CK20.

SUMMARY

EXPRESSION OF CYTOKERATIN 20 IN UROTHELIAL CARCINOMA OF BLADDER

Objectives: To evaluate some features of CK 20 immunomarker and its relationship with histological grade, stage in surgical bladder tumor at Viet Duc hospital. **Subjects and research methods:** A retrospective study was perform in 99 cases of bladder carcinoma through surgical samples at Viet Duc hospital. **Results:** CK 20 marker was negative in 32 cases (32.3%), focal positive (<10% tumor cells) had 27 cases (27.3%), diffusely positive had 40 cases (40.4 %). CK 20 marker was related to histological grade with p=0.000<0.05 and related to disease stage with p=0.01<0.05. The relationships are statistically significant.

Keywords: Urothelial carcinoma of bladder, cytokeratin 20.

I. ĐẶT VẤN ĐỀ

Nguyễn Sỹ Lánh cho rằng quang chiếm 81,2% khối Tổ chức y tế thế giới nă loại ung thư đứng thứ 7 và chiếm 3,2% tổng số khoảng 70-80% bệnh nh thư bàng quang hiện tại lần hoặc đầu xâm lấn (T1) [2]. Cùng với việc p mô bệnh học thì các yếu của khối u cũng có giá tr độ tái phát hay tiến triển chỉ dương tính ở lớp tế b tế bào trung gian của lớ Khi mức độ bộc lộ vượt c có thể gợi ý ung thư tá triển, vì trong khối u n tính ở toàn bộ biểu mô nghiên cứu đề tài này *tình trạng bộc lộ dấu ấn chiều với độ mô học, g bệnh trong ung thư biểu*

II. ĐỐI TƯỢNG VÀ PHƯƠ

2.1. Đối tượng ngh 99 bệnh nhân UTBQ đã quang chửa u và vớt nạc các khối nến lưu trữ tạ bệnh viện Hữu Nghị Việ đến tháng 3/2019.

2.1.1 Tiêu chuẩn lự

- Không có đủ tiêu bản, khối nến bệnh phẩm cũng như thông tin hành chính.

2.2.4. Các biến số nghiên cứu

- Tuổi, giới
- Typ mô học, độ mô học, giai đoạn của khối u
- Mức độ bắt lấ dấu ấn Ck20

2.2.5. Tiêu chuẩn đánh giá

- Giới: có hai biến số là nam và nữ
- Tuổi: phân thành 7 nhóm (≤29; 30-39; 40-49; 50-59; 60-69; 70-79; ≥80)
- Đánh giá độ mô học: Căn cứ WHO 2016 [2] các u typ nhũ được phân độ mô học cao và độ mô học thấp, các trường hợp u xâm nhập và biến thể của nó được xếp vào nhóm độ mô học cao.
- Đánh giá typ mô học: Căn cứ bảng phân loại mô học của WHO 2016 [2] (kích dẫn khối u ung thư biểu mô đường niệu xâm nhập và không xâm nhập):

Ung thư BMĐN xâm nhập

+ UTBM đường niệu xâm nhập biệt hóa thành các trường khác nhau gồm:

- Biệt hóa vảy
- Biệt hóa tuyến
- Biệt hóa nguyên bào nuôi
+ Biến thể ổ, tổ và ổ lớn.
+ Biến thể vi nang
+ Biến thể vi nhú
+ Biến thể giống lymphoepithelioma
+ Biến thể dạng tương bào/tế bào nhẫn/lan tỏa
+ Biến thể dạng sarcoma
+ Biến thể tế bào khổng lồ
+ Biến thể kèm biệt hóa
+ Biến thể giàu lipid
+ Biến thể tế bào sáng
+ U xuất phát từ các ống tuyến

ung thư biểu mô đường niệu không xâm nhập

+UTBMĐN tại chỗ

+UTBMĐN nhú không xâm nhập độ thấp

+UTBMĐN nhú không xâm nhập độ cao

-Đánh giá giai đoạn khối u: Theo WHO 2016

TX	Không đánh giá được u nguyên phát
T0	Không có u nguyên phát
Ta	UTBM nhú không xâm nhập
Tis	UTBM tại chỗ: U phẳng
T1	U xâm nhập mô liên kết dưới biểu mô
T2	U xâm nhập lớp cơ
T2a	U xâm nhập lớp cơ phía nông (nửa trong)
T2b	U xâm nhập lớp cơ phía sâu (nửa ngoài)
T3	U xâm nhập mô quanh bàng quang
T3a	Vi thể mới phát hiện được
T3b	Đại thể đã phát hiện được (khối u ngoài bàng quang)
T4	U xâm nhập bất cứ cơ quan nào: tiền liệt tuyến, tử cung, âm đạo, thành chậu, thành bụng
T4a	U xâm nhập tiền liệt tuyến, tử cung hoặc âm đạo
T4b	U xâm nhập thành chậu hoặc thành bụng

Đánh giá dấu ấn hóa mô miễn dịch Ck20:

+ Âm tính: Ck20 chỉ bắt lẻ tẻ giới hạn trong lớp tế bào bề mặt, hoặc dưới 3 tế bào ở lớp trung gian của biểu mô đường niệu.

+ Dương tính: Chọn ngưỡng cắt 10% tế bào u để chia làm 2 loại:

- Dương tính ít: Ck20 bộc lộ ở không liên tục hơn hoặc thành ổ >3 tế bào ở lớp trung gian hoặc lan tỏa trong biểu mô đường niệu và Ck20 dương tính <10% tế bào u

- Dương tính lan tỏa khi Ck20 dương tính ≥ 10% tế bào u bắt màu ở vùng biệt hóa nhiều nhất.

III. KẾT QUẢ NGHIÊN CỨU

3.1.Phân bố tuổi và giới

Bảng 1. Phân bố nhóm tuổi theo giới tính

	Nam		Nữ		Tổng	
Nhóm tuổi	n	%	n	%	n	%
<=29	0	0	0	0	0	0
30-39	7	7,7	1	10	1	10
40-49	1	5,6	0	0	1	5,6
50-59	21	23,6	3	30	24	24,7
60-69	28	29,3	3	30	28	29,3
70-79	25	26,2	3	30	28	26,3
≥80	5	10,1	1	10	10	10,1
Tổng số	89	100	13	100	44	100
X ± SD	65,83 ±11,559		64,92 ±14,356		65,71 ±11,787	

Nhận xét: Tỷ lệ nam/ nữ 6,9/1. Nhóm tuổi thường gặp: 50-59 (24 trường hợp), 60-69 (28 trường hợp) và nhóm 70-79 (29 trường hợp).

Độ tuổi trung bình của cả hai giới là 65,71±11,787, trong đó ở nam là 65,83 ±11,559 và ở nữ 64,92 ±14,356. Tỷ lệ mắc bệnh ở các nhóm tuổi giữa nam và nữ không có sự khác biệt. p>0,736>0,05.

3.2. Đặc điểm dấu ấn CK20

Bảng 3.2. Tỷ lệ biểu lộ dấu ấn miễn dịch CK20 theo typ mô học

Typ mô học		CK20 (-)	CK20 (+)		Tổng
			Ít	Lan tỏa	
Nhú đơn thuần	n	31	17	33	81
	%	38,3	21	40,7	100
Khác	n	1	10	7	18
	%	5,6	55,6	38,8	100
Tổng		32	27	40	99
p			0,001		

Nhận xét: Ở nhóm typ nhú đơn thuần, tỷ lệ CK20(+) (61,7%) cao hơn CK20(-) (38,3%). Ở nhóm còn lại, tỷ lệ CK20(+) (94,4%) cũng cao hơn CK20(-) (5,6%) với p = 0,001.

3.3. Mối liên quan CK 20 với độ mô học

Bảng 3.3. Mối liên quan giữa dấu ấn miễn dịch CK20 với độ mô học

Độ mô học		CK20 (-)	CK20 (+)		Tổng
			Ít	Lan tỏa	
Cao	n	17	26	38	81
	%	21,0	32,1	46,9	100
Thấp	n	15	1	2	18
	%	83,3	5,6	11,1	100
Tổng	n	32	27	40	99
p			0,000		

Nhận xét: Nhóm độ mô học cao có tỷ lệ CK20 (+) (79%) cao hơn so với nhóm độ mô học thấp (16,7%). Hầu hết các trường hợp (83,3%) ở nhóm độ mô học thấp có CK20 (-) với p = 0,000.

3.4. Mối liên quan dấu ấn CK20 với giai đoạn bệnh

Bảng 3.4. Mối liên quan giữa dấu ấn miễn dịch CK20 với giai đoạn bệnh

Giai đoạn		CK20 (-)	CK20 (+)		Tổng
			Ít	Lan tỏa	
Không xâm nhập	n	23	08	11	42
	%	54,8	19,0	26,2	100
Xâm nhập	n	09	19	29	57
	%	15,8	33,3	50,9	100
Tổng	n	32	27	40	99
p			0,001		

Nhận xét: Ở nhóm xâm nhập cơ, đa số 46/57 (94,2%) trường hợp có CK20 (+). Ở nhóm không xâm nhập, tỷ lệ CK20(+) (45,2%) thấp hơn tỷ lệ CK20(-) (54,8%) với p = 0,001.

IV. BÀN LUẬN

4.1. Tuổi và giới. Trong nghiên cứu của chúng tôi với 99 BN có độ tuổi trung bình của nhóm đối tượng nghiên cứu là khoảng 65 từ 31 đến 85 tuổi. Độ tuổi trung bình chung của cả nam và nữ là 65,71±11,707, của nam giới mắc là 65,81±11,559, của nữ giới là 64,6 ±14,308. Bệnh nhân trong nhóm từ 50 – 59 tuổi mắc cao nhất có 24 trường hợp chiếm tỷ lệ 24,2%, nhóm từ 60 – 69 tuổi có 28 trường hợp chiếm tỷ lệ 28,3%, nhóm từ 70-79 tuổi có 25 trường hợp chiếm tỷ lệ 25,3%. Không có trường hợp nào dưới 30 tuổi. Trong nghiên cứu này tỷ lệ mắc bệnh không thấy có sự khác biệt giữa hai giới với p=0,736>0,05. Đánh giá về nhóm tuổi thì phần lớn các tác giả đều có nhận định chung độ tuổi mắc trung bình khoảng trên 60 tuổi, như tác giả Lê Thanh Xuân [3] cho biết độ tuổi trung bình là 62,73 ± 11,16, trong khi đó cho nam giới 60,91 ± 9,08 và của nữ giới là 69,62 ± 11,18. Theo tác giả Nguyễn Văn Hưng và Nguyễn Thị Hồng Diệp, độ tuổi trung bình của các đối tượng nghiên cứu là 66,3; tuổi thấp nhất là 27, cao nhất là 84, nhóm tuổi hay gặp nhất là 50-59 chiếm 31,5% [4]. Tuy nhiên một số tác giả nước ngoài có độ tuổi cao hơn với khoảng 70 tuổi như theo tác giả Berta và cs[5] cho thấy độ tuổi trung bình cả 2 giới là 71,7 và dao động từ 39-87 tuổi. Nhìn chung các tác giả nước ngoài đều cho thấy độ tuổi mắc bệnh cao hơn và thường phát hiện ở giai đoạn sớm hơn chưa xâm nhập rơ. Để từ giai đoạn này cũng phải thấy một điều rất cơ bản là việc đất nước ta còn là đất nước đang phát triển và công nghiệp hóa, hiện đại hóa đất nước nên không tránh khỏi người dân tiếp xúc nhiều với hóa chất công nghiệp như các điều kiện bản hộ

lao động còn hạn chế cũng như những thói quen thuốc lá và rượu bia gây ảnh hưởng rất khá rõng mắc bệnh cao. Bên cạnh đó việc khám bệnh định kỳ và tầm soát khối u cũng không được chúng ta quan tâm nhiều trong khi đó ở các nước phát triển việc khám sức khỏe định kỳ được quan tâm và các thiết bị phương tiện hiện đại. Do vậy cũng là điều dễ hiểu độ tuổi cao hơn và phát hiện giai đoạn sớm hơn so với chúng ta.

4.2. Dấu ấn miễn dịch CK20 và mối liên quan. CK20 chỉ dương tính ở lớp tế bào đỏ bề mặt hoặc một vài tế bào trung gian của lớp biểu mô bình thường, tuy nhiên khi mức độ bộc lộ vượt quá các giới hạn trên thì có thể gợi ý ung thư biểu mô đường niệu tiến triển, vì trong khối u này dấu ấn CK20 có thể dương tính ở toàn bộ lớp biểu mô. Một số nghiên cứu cho thấy có sự liên quan giữa mức độ bộc lộ CK20 tăng theo độ mô học và giai đoạn [6].

Theo bảng 3.2 đối với bộc lộ dấu ấn CK20 với các khối u bộc lộ âm tính trong nghiên cứu của chúng tôi có 31 ca (31,3%) thấp hơn của Lê Thanh Xuân [3] có tới 26/51 ca không bộc lộ CK20 chiếm 51% hay tác giả Desai và cs nghiên cứu trên 135 ca thấy trong nhóm u giai đoạn ta có 48,8% bộc lộ bình thường hay âm tính. Ngược lại theo một số tác giả cho kết quả tương tự nghiên cứu của chúng tôi như Hamden và cs nghiên cứu các khối u chưa xâm nhập có kết quả bộc lộ âm tính 28,2% hoặc như tác giả Burge và cs [7] nghiên cứu 71 BN thấy 48% bộc lộ bình thường. Bên cạnh đó tác giả Mumtaz và cs [8] lại cho tỷ lệ thấp hơn nhiều 12,6%. Do vậy tỷ lệ âm tính của dấu ấn CK20 cũng thay đổi theo từng nghiên cứu.

Đối với những khối u bộc lộ dương tính với CK20, nghiên cứu của chúng tôi cũng như nhiều nghiên cứu khác lựa chọn đánh dấu 10% để chia làm 2 nhóm dương tính ổ và dương tính lan tỏa. Nghiên cứu của Hamden và cs cho thấy nhóm u có kiểu hình bộc lộ CK20 bất thường với 68,3% còn tác giả Mumtaz và cs [8] tỷ lệ các u có kiểu hình bộc lộ dương tính lan tỏa và dương tính ổ lần lượt là 56,7% và 32,6%. Bên cạnh đó Burge và cs [7] cho kết quả với 80% các trường hợp bộc lộ bất thường. Các kết quả trên khá tương đồng với kết quả nghiên cứu của chúng tôi cho thấy dấu ấn CK20 dương tính với 67 ca trong đó dương tính ổ có 27 ca (27,3%) và dương tính lan tỏa có 40 ca (40,4%). Tuy nhiên một nghiên cứu trong nước của tác giả Lê Thanh Xuân [3] cho kết quả với kiểu hình bộc lộ CK20 dương tính ổ là 16 ca (31,4%) và khối u dương tính lan tỏa với CK20 chỉ có 10 ca (17,6%), thấp hơn nghiên cứu của chúng tôi và các tác giả nước ngoài.

Đồng thời đối với các typ mô học dấu ấn CK 20 bộc lộ âm tính chủ yếu với typ nhú chiếm tới 31/32 ca âm tính. Đối với các typ còn lại gồm 18 ca, dấu ấn CK20 tập trung chủ yếu là dương tính trong khi đó chỉ có 01ca (5,6%) bộc lộ âm tính. Và trong nghiên cứu này chúng tôi cũng nhận thấy có mối liên quan có ý nghĩa thống kê giữa các typ mô học với bộc lộ mức độ CK20 với giá trị p= 0,003<0,05.

Trong bảng 3.3 đối với khối u có độ mô học thấp trong nghiên cứu của chúng tôi thấy có 39 ca được phân tích dấu ấn CK20 trong đó có 25 ca âm tính (83,3%) chiếm tỷ lệ cao. Ngược lại chỉ 03 ca (16,7%) dương tính chiếm tỷ lệ thấp trong đó có 01 ca (5,6%) dương tính ổ và 02 ca (11,1%) dương tính lan tỏa. Kết quả này cũng có phần nào tương đồng với tác giả Lê Thanh Xuân [3] lại cho rằng nhóm u có độ mô học thấp có kiểu hình bộc lộ CK20 chiếm phần lớn (72,7%) ca âm tính. Và số ca có khối u dương tính chiếm 27,3% trong đó với CK20 dương tính ổ chiếm tỷ lệ cao hơn: 7 ca chiếm 21,2% và có 02 ca dương tính lan tỏa với CK20 chiếm 6,1%. Mặc dù vậy với kết quả này đều có ý nghĩa thống kê với p < 0,05.

Đối với khối u có độ mô học cao trong nghiên cứu của chúng tôi nhận thấy số ca âm tính giảm có 17 ca (21%) âm tính và số ca dương tính chiếm phần lớn với 64 ca (79%). Kết quả này tương đồng với tác giả Lê Thanh Xuân [3] cũng cho rằng trong nhóm u độ cao, chỉ có 02 TH âm tính với dấu ấn CK20. Tương tự như vậy là Phạm Thuần Manh và Lê Trung Đức đánh giá kiểu hình bộc lộ tính thường với CK20 (chỉ giới hạn ở tập tế bào đỏ hoặc vài nếp ở các tế bào thuộc lớp trung gian) và bộc lộ bất thường (bộc lộ dương tính cục bộ đến lan tỏa trên toàn bộ lớp biểu mô hoặc mất bộc lộ). Kết quả cho thấy trong nhóm u độ cao, tỉ lệ kiểu hình bộc lộ bình thường (âm tính) chiếm 11,3%. Một số tác giả nước ngoài khác như tác giả Mumtaz và cs [8] còn cho kết quả thấp hơn với tỷ lệ âm tính là 8,3% và tỉ lệ bộc lộ dương tính chiếm tỷ lệ xuất trội trong đó dương tính lan tỏa của CK20 là 46,8%, tỉ lệ dương tính ổ là 22,9%.

Đánh giá về giai đoạn khối u ung thư biểu mô đường niệu trong bảng 3.4. Trong nghiên cứu của chúng tôi với 99 bệnh nhân thấy đối với giai đoạn chưa xâm nhập sớ pT1 có 42 ca trong đó 21 ca (50,0%) âm tính, 19 ca (45,2%) dương tính thì có 06 ca dương tính ổ và 11 ca dương tính lan tỏa. kết quả của chúng tôi có khác biệt với tác giả Hamden và cs. khi nghiên cứu trên 51 trường hợp các u giai đoạn chưa xâm nhập có

cũng thấy kiểu hình bộc lộ bất thường (dương tính) hay gặp hơn với 41 ca (80,4%), kiểu hình bộc lộ bình thường (âm tính) chỉ gặp ở 10 ca (19,6%). Tuy nhiên kết quả của chúng tôi lại phù hợp với tác giả Desai và cs khi nghiên cứu số lượng bệnh nhân cao hơn với trên 120 ca lại cho rằng trong nhóm u giai đoạn Ta có 46,8% bộc lộ bình thường hay âm tính. Trong nghiên cứu của chúng tôi cho thấy ở giai đoạn xâm nhập pT3-4 có 57 ca thì số ca âm tính lại thấp khi chỉ có 39 ca (15,8%) và số ca dương tính chiếm ưu thế với 48 ca (84,2%) trong đó có 19 ca dương tính ổ và 29 ca dương tính lan tỏa. Kết quả này cho thấy có mối liên quan giữa giai đoạn khối u với mức độ bộc lộ dấu ấn CK20 có ý nghĩa thống kê với p=0,001<0,05. Cũng trong nghiên cứu của Yin và Leong[5] nhận thấy mối liên quan giữa bộc lộ CK20 dương tính với độ mô học cũng như giai đoạn bệnh học của u (p = 0,001), đồng thời nghiên cứu chỉ ra mối liên quan giữa sự bộc lộ bất thường của CK20 với khả năng tái phát, lan truyền khối u.

V. KẾT LUẬN

Dấu ấn miễn dịch CK20 có tỷ lệ bộc lộ cao ở những u không cấu trúc nhú (94,4%), có độ mô học xấu (79%), thuộc giai đoạn xâm nhập cơ (94,2%) hơn là ở những u có cấu trúc nhú đơn thuần (61,7%; p = 0,003), có độ mô học thấp (16,7%; p = 0,000) và giai đoạn không xâm nhập cơ (45,2%; p = 0,001).

TÀI LIỆU THAM KHẢO

1. **Nguyễn Phúc Cường, Nguyễn Sỹ Lánh, và Nguyễn Phương Hồng (2002)**, "Nghiên cứu hóa mô giá trị chẩn bệnh của ung thư biểu mô đa sắc thái," Báo cáo khoa học bệnh viện Việt Đức 1978.
2. **Moch H, Humphrey PA, Ulbright TM et al (2016)**, "WHO classification of tumours of the urinary system and male genital organs. 4th Edition World Health Organization," International Agency for Research on Cancer (IARC), vol. 8.
3. **Lê Thanh Duẩn (2010)**, "Đặc điểm giải phẫu bệnh học và sự bộc lộ các dấu ấn hoá mô miễn dịch CK20, P53, Ki67 trong ung thư biểu mô nhú đường mật," Luận văn thạc sỹ Y học, Đại học y Hà Nội.
4. **Nguyễn Văn Hưng và Nguyễn Thị Hồng Điệp (2010)**, "Nghiên cứu mô bệnh học, miễn dịch bộc lộ dấu ấn ung thư CK20 và p53 trong ung thư biểu mô tế bào nhỏ," Tạp chí Y học thực hành, vol. 4, p. 716.
5. **Bertz S, Otto W, Denzinger S et al(2014)**, "Combination of CK20 and Ki-67 immunostaining predicts recurrence, progression, and cancer-specific survival in pT1 urothelial bladder cancer," European urology, vol. 65(1), pp. 218-224.
6. **Xian X, Hu S, Deng F-M et al(2017)**, "Practical applications of immunohistochemistry in the diagnosis of genitourinary tumors," Archives of pathology & laboratory medicine, vol. 141(9), pp. 1181-1194.
7. **Burger M, Denzinger S, Hartmann A et al (2007)**, "Nuclear protein nuclear mitotic apparatus protein 1 (NuMA1) identifies urothelial cancer more accurately than CK20, Ki67 and histological grade," British journal of cancer, vol. 96(11), pp. 1771-1778.
8. **Mumtaz S, Hashmi AA, Hassan SH et al(2014)**, "Diagnostic utility of p63 and CK20 immunohistochemical expression pattern in urothelial malignancies," International archives of medicine, vol. 7(1), p. 39.
9. **Yin M and Leong AS-Y(2004)**, "Histologic grading of noninvasive papillary urothelial tumors: validation of the 1998 WHO/ISUP system by immunophenotyping and follow-up," American journal of clinical pathology, vol. 121(5), pp. 679-687.

ĐÁNH GIÁ KẾT QUẢ ĐIỀU TRỊ PHẪU THUẬT XUẤT HUYẾT TIÊU HÓA CAO DO UNG THƯ HANG MÔN VỊ DẠ DÀY

Thái Nguyên Hưng[1], Bùi Thanh Thiệu[2]

TÓM TẮT

Xuất huyết tiêu hóa (XHTH) do ung thư hang môn vị dạ dày là một cấp cứu ngoại khoa ngày càng xuất hiện với tỉ lệ cao. Bên cạnh những trường hợp XHTH

...ông, triệu chứng lâm sàng không có dạng, nghiệm nào. Nhiều trường hợp bệnh nhân XHTH đến muộn, mất máu nặng nề, mạch nhỏ khó, phải xử trí cấp cứu, hồi sức với mổ. Cắt dạ dày với hạch là phương pháp chủ yếu trong điều trị ung thư dạ dày (UTDD) tuy nhiên trong những trường hợp bệnh nhân đến muộn, thiếu máu nặng, mạch huyết áp không ổn định, số mổ mắc phải thuật còn gặp nhiều khó khăn đòi hỏi rất dạ dày cắt cắt cần hay chỉ cắt dạ dày tạm cầm cầm máu. Để việc chúng tôi tiến hành nghiên cứu này với 2 mục tiêu: [1] Mô tả đặc điểm lâm sàng, cận lâm sàng của bệnh nhân xuất huyết tiêu hóa cao do ung thư hang môn vị dạ dày. [2]Đánh giá kết quả sớm đầu tư phẫu thuật xuất huyết tiêu hóa cao do ung

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Ngày duyệt bài: 12.7.2021

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Năm được phong GS/PGS: ..... Nơi phong: .....

8. Cơ quan công tác:

Tên cơ quan: Trường Đại học Y Dược Hải Phòng

Khoa/Phòng, Bộ môn, Trung tâm: Bộ môn Sinh lý bệnh – Dị ứng – Miễn dịch, Khoa Y

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Điện thoại: 0225 3734 907 Fax: 0225 733 315

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9. Quá trình đào tạo

Bậc đào tạo	Nơi đào tạo	Chuyên ngành/Tên luận án, luận văn, luận án	Năm tốt nghiệp
Đại học	Đại học Y Hà Nội	Bác sỹ chuyên ngành Sinh lý bệnh	2020
Thạc sĩ	Học viện Quân y	Chuyên ngành: Sinh lý bệnh Tên luận văn: Nghiên cứu đặc điểm lâm sàng và hiệu quả miễn dịch liệu pháp đặc hiệu bằng di nguyên trong hen phế quản do Dermatophagoides - Pteronyssinus	2006
Tiến sĩ	Học viện Quân y	Chuyên ngành: Khoa học y sinh Tên luận án: Nghiên cứu dự phòng bệ và tác dụng không ung thư của không thể đơn dòng Nimotuzumab gắn ^{131}I trên chuột mang khối ung thư đầu cổ người	2019

10. Các khoá đào tạo khác (nếu có)

Văn bằng	Tên khoá đào tạo	Nơi đào tạo	Thời gian đào tạo
Chứng chỉ	Trung cấp lý luận chính trị	Trường chính trị Tô Hiệu	08/2018-08/2019

11. Trình độ ngoại ngữ

Tên ngoại ngữ	Văn bằng/Chứng chỉ	Năm
Cử nhân ngôn ngữ Anh	Bằng Đại học	2020

12. Quá trình công tác *(trước khi sự Trường và sau khi sự Trường)*

Thời gian (Từ năm ... đến năm...)	Vị trí công tác	Cơ quan công tác	Địa chỉ cơ quan
Từ 2003 – 2018	Giảng viên, Bộ môn Sinh lý bệnh – Dị ứng – Miễn dịch	Trường Đại học Y Dược Hải Phòng	72A Nguyễn Bỉnh Khiêm, Đằng Giang, Ngô Quyền, Hải Phòng
Từ 2018 đến nay	Giảng viên chính, Bộ môn Sinh lý bệnh – Dị ứng – Miễn dịch	Trường Đại học Y Dược Hải Phòng	72A Nguyễn Bỉnh Khiêm, Đằng Giang, Ngô Quyền, Hải Phòng
Từ 2011 - 2023	Phó trưởng khoa Dị ứng - Miễn dịch lâm sàng	Bệnh viện Đại học Y Hải Phòng	229C Lạch Tray, Ngô Quyền, Hải Phòng
2020 đến nay	Phó trưởng bộ môn Sinh lý bệnh – Miễn dịch – Dị ứng	Trường Đại học Y Dược Hải Phòng	72A Nguyễn Bỉnh Khiêm, Đằng Giang, Ngô Quyền, Hải Phòng

13. Các công trình khoa học đã công bố

13.1. Bài báo khoa học:

- *Tên tác giả: tên các tác giả của bài báo*
- *Tác giả chính: là Tác giả chủ nhiệm (first author) hoặc Tác giả liên hệ (corresponding author)*
- *Danh mục: WoS/Scopus hoặc Tạp chí trong nước được HĐGSNN tính điểm*

TT	Tên bài báo	Tên các giả	Tác giả chính	Tạp chí	Ngày XB	Số, trang	Danh mục	ISSN (DOI)
1	Nghiên cứu phân bố sinh học của phức hợp không thể dung nitrotetrazolium gây dòng vị phóng xạ I^{131} trên chuột nuôi trong khối ung	Nguyễn Thị Kim Hương, Nguyễn Linh Toàn, Phạm Hợp Quyền, Cấn Văn Mão, Hồ Anh Sơn	x	Y học Việt Nam	Tháng 10 – Số 2 2016	12-15		

	thư đầu có nguồn							
2	Đánh giá phân bố của ^{125}I-Nimotuzumab trên chuột thiếu hụt miễn dịch mang khối ung thư thanh quản người bằng spect	Nguyễn Thị Kim Hương, Nguyễn Thị Thu, Nguyễn Linh Toàn, Phạm Huy Quyền, Hồ Anh Sơn	x	Y dược học Quân sự	Vol 41, N°8, tháng 8/2016	103-112		

13.2. Sách chuyên khảo, giáo trình – tài liệu dạy học:

- *Tên tài liệu: Sách/ Chương sách*
- *Loại hình: Chuyên khảo/ Tham khảo/ Giáo trình/ Tài liệu hướng dẫn*

TT	Tên tài liệu	Tên tác giả	Chủ biên/Đồng chủ biên	Nhà xuất bản	Năm xuất bản	Loại tính	ISBN
1							
2							
...							

14. Báo cáo Hội nghị – hội thảo khoa học

Ký yếu: Tóm tắt/ Toàn văn

TT	Tên báo cáo	Tên tác giả	Tác giả chính	Tên hội nghị	Thời gian báo cáo (tháng/năm)	Ký yếu	ISBN
			x				

15. Bằng sở hữu trí tuệ đã được cấp

Liệt kê các văn bằng bảo hộ: độc quyền sáng chế, giải pháp hữu ích, kiểu dáng công nghiệp, thiết kế bố trí, giống cây trồng...

TT	Tên và nội dung văn bằng	Số, Mã, Ký hiệu	Nơi cấp	Năm cấp
1				
2				
...				

16. Công trình KH&CN được ứng dụng, chuyển giao

TT	Tên công trình	Hình thức	Quy mô	Địa chỉ áp dụng	Giá trị	Thời gian
1						
...						

17. Nhiệm vụ KH&CN các cấp

- *Loại hình: Đề tài/ Dự án / Đề án*
- *Tình trạng nhiệm vụ: Đã nghiệm thu/ Chưa nghiệm thu/ Không hoàn thành*

17.1. Nhiệm vụ KH&CN đã và đang chủ trì

Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình *(nếu có)*	Tình trạng nhiệm vụ	Ngày			Kinh phí
					Phê duyệt	Đăng ký kết quả *(nếu có)*	Công nhận kết quả	
Nghiên cứu độc tính dược chất cao lá khế trên chuột		Đề tài cấp cơ sở	Trường Đại học Y Dược Hải Phòng	Đã nghiệm thu				
Thực trạng dị ứng thuốc tại khoa dị ứng – MDLS Bệnh viện đại học Y hải phòng từ năm 2020 - 2021		Đề tài cấp cơ sở	Trường Đại học Y Dược Hải Phòng	Đã nghiệm thu				
Mô hình gây tăng lipid máu trên chuột thực nghiệm bằng p407		Đề tài cấp cơ sở	Trường Đại học Y Dược Hải Phòng	Đã nghiệm thu				
Mô hình gây tăng lipid máu trên chuột thực nghiệm bằng hỗn hợp giàu cholesterol		Đề tài cấp cơ sở	Trường Đại học Y Dược Hải Phòng	Đã nghiệm thu				
		Đề tài cấp cơ sở	Trường Đại học Y Dược Hải Phòng	Chưa nghiệm thu				

17.2. Nhiệm vụ KH&CN đã và đang tham gia

Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình *(nếu có)*	Tình trạng nhiệm vụ	Ngày			Kinh phí
					Nghiệm thu	*Công nhận kết quả*	*Đăng ký tổ quả*	

18. Giải thưởng về KH&CN trong và ngoài nước

TT	Tên giải thưởng	Hình thức khen thưởng	Cấp khen thưởng	Năm tặng thưởng
1				
2				
...				

19. Đào tạo sau đại học

+ *Vai trò hướng dẫn: hướng dẫn 1/ hướng dẫn 2*
+ *Bậc đào tạo: Tiến sĩ/Thạc sĩ/BS Nội Trú/CKII...*

TT	Họ tên học viên	Vai trò	Bậc đào tạo	Chuyên ngành	Nơi đào tạo	Năm cấp bằng
1	Trần Thị Thu Hồng	Hướng dẫn 2	Thạc sĩ	Miễn dịch học	Đại học Y Hà Nội	2023
2	Nguyễn Khánh Linh	Hướng dẫn 1	Thạc sĩ	Sinh lý bệnh	Đại học Y Hà Nội	2024

NHỮNG THÔNG TIN KHÁC VỀ CÁC HOẠT ĐỘNG KHOA HỌC VÀ CÔNG NGHỆ

(Tham gia các tổ chức hiệp hội ngành nghề, thành viên Ban biên tập các Tạp chí khoa học trong và ngoài nước; Thành viên các hội đồng quốc gia, quốc tế...)

Hà Nội, ngày 31 tháng 09 năm 2025

XÁC NHẬN CỦA ĐƠN VỊ

NGƯỜI KHAI

(Ký, ghi rõ họ tên)

Nguyễn Thị Kim Thoa

THỦ TRƯỞNG

PGS.TS. Trần Thị Thanh Mai

SOCIALIST REPUBLIC OF VIETNAM
Independence - Freedom - Happiness

THE MILITARY MEDICAL UNIVERSITY

confers

THE DEGREE OF DOCTOR OF PHILOSOPHY

in Medicine

Upon: Nguyen Thi Kim Hoang

Date of birth: August 7, 1978

Given under the seal of

The President of the Military Medical University

Serial number: 0982

Reference number: 326/2019-A016

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

HỌC VIỆN QUÂN Y

cấp

BẰNG TIẾN SĨ

Y học

Cho: Nguyễn Thị Kim Hoàng

Ngày, tháng, năm sinh: 07/8/1978

Hà Nội, ngày 12 tháng 12 năm 2020

GIÁM ĐỐC

Trung tướng Đỗ Quyết

Số hiệu: 0982

Số vào sổ gốc cấp văn bằng: 326/2019-A016

BỘ Y TẾ
Số: 001253 /BYT-CCHN

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

CHỨNG CHỈ HÀNH NGHỀ KHÁM BỆNH, CHỮA BỆNH

BỘ TRƯỞNG BỘ Y TẾ

Căn cứ Luật khám bệnh, chữa bệnh ngày 23/11/2009;
Căn cứ Nghị định số 87/2011/NĐ-CP ngày 27/9/2011 của Chính phủ quy định chi tiết và hướng dẫn thi hành một số điều của Luật khám bệnh, chữa bệnh;
Căn cứ Thông tư số 41/2011/TT-BYT ngày 14/11/2011 của Bộ trưởng Bộ Y tế hướng dẫn cấp chứng chỉ hành nghề đối với người hành nghề và cấp giấy phép hoạt động đối với cơ sở khám bệnh, chữa bệnh;
Xét đề nghị của Cục trưởng Cục Quản lý khám, chữa bệnh - Bộ Y tế.

CẤP CHỨNG CHỈ HÀNH NGHỀ KHÁM BỆNH, CHỮA BỆNH

Họ và tên: NGUYỄN THỊ KIM HƯỜNG.
Ngày tháng năm sinh: 07/08/1976.
Giấy chứng minh nhân dân số: 030956141.
Ngày cấp: 21/12/2009. Nơi cấp: Công an Hải Phòng.
Chỗ ở hiện nay: 18 Đường Ngang, Hộ Lăng, phường Đông Hải, quận Hải An, thành phố Hải Phòng.
Văn bằng chuyên môn: Bác sỹ.
Phạm vi hoạt động chuyên môn: Khám bệnh, chữa bệnh chuyên khoa Hị ong - Miễn dịch lâm sàng.

Hà Nội, ngày 16 tháng 11 năm 2013
KT. BỘ TRƯỞNG
THỨ TRƯỞNG

Nguyễn Thị Xuyên

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

BIÊN BẢN
NGHIỆM THU ĐỀ TÀI KHCN CẤP CƠ SỞ NĂM 2023

Tên đề tài: Mô hình gây tăng lipid máu trên chuột thực nghiệm bằng hỗn hợp giàu Cholesterol

Chủ nhiệm đề tài: Nguyễn Thị Kim Hương

Thành viên tham gia: Nguyễn Thị Kim Hương, Phùng Chí Thiện, Phạm Thị Thanh Dung

Giảng viên hướng dẫn (nếu có): .....

Đơn vị: Sinh lý bệnh - Dị ứng - Miễn dịch

Căn cứ Quyết định số: 2550 /QĐ - YHHP ngày 08 tháng 12 năm 2023 của Hiệu trưởng trường Đại học Y Dược Hải Phòng về việc thành lập Tiểu ban Khoa học công nghệ nghiệm thu đề tài nghiên cứu khoa học cấp cơ sở năm 2023, Tiểu ban đã tiến hành họp để đánh giá, nghiệm thu đề tài vào hồi 13h30 ngày 17 tháng 12 năm 2023 tại trường Đại học Y Dược Hải Phòng.

Các thành viên có mặt:

1. PGS.TS. Đặng Văn Chức — Trưởng tiểu ban
2. PGS.TS. Nguyễn Huy Diện — Phó Trưởng tiểu ban
3. TS. Phạm Thị Thu Trang — Ủy viên
4. TS. Trần Thị Thuý Hà — Ủy viên Thư ký

Thư ký hành chính: ThS. Vũ Thuỳ Dung

Các thành viên vắng mặt:

.....

.....

NỘI DUNG NGHIỆM THU:

1. Đọc quyết định thành lập Tiểu ban: **TS. Trần Thị Thúy Hà**
2. Trưởng Tiểu ban điều khiển buổi nghiệm thu
3. Chủ nhiệm đề tài trình bày tóm tắt báo cáo tổng kết đề tài *(có bản sao kèm văn bản theo)*.

4. Các thành viên Tiểu ban nhận xét, góp ý (có bản nhận xét kèm theo):
5. Các thành viên trong Tiểu ban và những người tham dự buổi nghiệm thu trao đổi về nội dung, phương pháp, kết quả nghiên cứu của đề tài; và thống nhất một số ý kiến sau:

.....

.....

.....

.....

.....

6. Đánh giá kết quả:

6.1. Ban kiểm phiếu gồm:

- **TS. Trần Thị Thúy Hà**
- **ThS. Vũ Thùy Dung**

6.2. Tiểu ban đã bỏ phiếu đánh giá kết quả như sau:

Tổng số phiếu phát ra : 09 phiếu
Tổng số phiếu thu vào : 09 phiếu
Số phiếu hợp lệ : 09 phiếu
Số phiếu không hợp lệ : 0 phiếu

6.3. Kết quả đánh giá:

Xuất sắc : 02 phiếu
Khá : 02 phiếu
Đạt : 0 phiếu
Không đạt : 0 phiếu

Kết quả đề tài đạt loại: Xuất sắc

7. Kết luận:

Thông qua đề tài

.....

Hải Phòng, ngày 03 tháng 11 năm 2023

Trưởng Tiểu ban
(Ký và ghi rõ họ tên)

Đặng Văn Thuần

Thư ký
(Ký và ghi rõ họ tên)

TS. Trần Thị Thúy Hà

LÝ LỊCH KHOA HỌC

1. Họ và tên:	VŨ VĂN THÁI
2. Năm sinh: 04-08-1976	3. Giới tính: Nam
4. Nơi sinh:	Hải Phòng
5. Nguyên Quán:	Xã Thành Lợi, huyện Vụ Bản, tỉnh Nam Định
6. Địa chỉ liên hệ:	164 Lê Lai, Máy Chai, Ngô Quyền, TP. Hải Phòng Điện thoại: Mobile: 0988191310 Fax: Email: vvthai@hpmu.edu.vn
7. Học hàm, học vị:	Năm được công nhận TS: 2015 Nơi cấp bằng: Viện Sốt rét - Ký sinh trùng - Côn trùng Trung ương Năm được phong GS/PGS: Nơi phong:
8. Cơ quan công tác:	Tên cơ quan: Trường Đại học Y Dược Hải Phòng. Khoa/Phòng, Bộ môn, Trung tâm: Khoa Kỹ thuật Y học, Bộ môn Kỹ thuật Ký sinh trùng Địa chỉ cơ quan: 72A Nguyễn Bỉnh Khiêm, Đằng Giang, Ngô Quyền, TP. Hải Phòng Điện thoại: 0225.373.1907 Fax: 84.225.373.1315 Email: contact@hpmu.edu.vn

9. Quá trình đào tạo

Bậc đào tạo	Nơi đào tạo	Chuyên ngành/Tên khóa luận, luận văn, luận án	Năm tốt nghiệp
Đại học	Đại học Y Hải Phòng	Y Khoa	2000
Thạc sỹ	Đại học Y Hà Nội	Ký sinh trùng Y học	2004
Tiến sỹ	Viện Sốt rét Ký sinh trùng-Côn trùng Trung ương	Ký sinh trùng-Côn trùng Y học	2015
TSKH			

10. Các khoá đào tạo khác (nếu có)

Văn bằng	Tên khoá đào tạo	Nơi đào tạo	Thời gian đào tạo

Chứng chỉ bồi dưỡng nghiệp vụ sư phạm	Bồi dưỡng nghiệp vụ sư phạm	Đại học Sư phạm Hà Nội 2	04/2015 - 06/2015
Chứng chỉ bồi dưỡng chức danh nghề nghiệp	Bồi dưỡng chức danh nghề nghiệp Giảng viên chính hạng II	Đại học Sư phạm Hà Nội 2	06/2017 - 08/2017
Chứng chỉ bồi dưỡng chức danh nghề nghiệp	Bồi dưỡng chức danh nghề nghiệp Giảng viên cấp hạng I	Đại học Sư phạm Đại học Huế	03/2021 - 05/2021
Chứng chỉ ứng dụng công nghệ thông tin cơ bản	Ứng dụng công nghệ thông tin cơ bản	Đại học Hoàng hải Việt Nam	11/2020

11. Trình độ ngoại ngữ

Tên ngoại ngữ	Văn bằng/Chứng chỉ	Năm
Ngôn ngữ Anh	Cử nhân, ngành ngôn ngữ Anh	2012

12. Quá trình công tác *(trước khi về Trường và sau khi về Trường)*

Thời gian (Từ năm .. đến năm..)	Vị trí công tác	Cơ quan công tác	Địa chỉ cơ quan
2001-2018	Giảng viên	BM. Ký sinh trùng	Trường đại học Y Dược HP
2018-2022	Giảng viên chính	BM. Ký sinh trùng	Trường đại học Y Dược HP
2023-nay	Giảng viên chính	BM. KT Ký sinh trùng, Khoa KTYH	Trường đại học Y Dược HP

13. Các công trình khoa học đã công bố

13.1. Bài báo khoa học:

- *Tên tác giả: tên các tác giả của bài báo*
- *Tác giả chính: là Tác giả thứ nhất (first author) hoặc Tác giả liên hệ (corresponding author)*
- *Danh mục: Web/Scopus hoặc Tạp chí trong nước được HDGSNN tính điểm*

TT	Tên bài báo	Tên tác giả	Tác giả chính	Tạp chí	Ngày XB	Số, trang	Danh mục	ISSN (DOI)
1	Thực trạng nhiễm	Vũ Văn	x	Tạp chí Y học	2022	113-	x	

	giun truyền qua đất ở học sinh tại hai xã/vùng Tiểu học thành phố Hà Tĩnh, năm 2021	Thái, Nguyễn Thị Nguyệt		Việt Nam. Tập 513/tháng 2022 (phần 1). Công trình nghiên cứu khoa học Trường Đại học Y Dược Hải Phòng, trang 113-120.		120.		
2	Thực trạng chất lượng phòng xét nghiệm của các bệnh viện tuyến huyện, tuyến tỉnh tại Hải Dương năm 2022	Cao Văn Tuyển, Vũ Văn Thái, Đinh Thị Xuyến, Đinh Thị Diệu Hằng, Ngô Thị Thảo, Ngô Quỳnh Diệp		Tạp chí Y dược Việt Nam. Tập 526/tháng 2023, Hội nghị Khoa học lần thứ 26 Hội Hóa sinh Y học Hà Nội và các tỉnh phía Bắc	2023	187-192.		
3	Thực trạng và một số yếu tố liên quan đến nhiễm nấm Candida spp. ở phụ nữ viêm đường sinh dục dưới tại bệnh viện Phụ Sản Hải Phòng năm 2023	Nguyễn Thị Huyền Sương, Đinh Thị Thanh Mai, Vũ Văn Thái, Vũ Thị Thanh Hiền, Đinh Thị Minh Tâm, Trịnh Văn Khương		Tạp chí Y học Việt nam, tập 543, tháng 12/2024 trang 180-186	2024	180-186		
	Tỷ lệ và đặc điểm không khỏng sinh của các vi khuẩn	Ngô Thị Ánh Tuyết,		Tạp chí Y học Việt nam, tập 546,	2025	169-174		

	phẫu lập được từ bệnh phẩm lưu trong tại bệnh viện Trung ương Thái Nguyên năm 2023-2024	Nguyễn Hữu Trung, Võ Văn Thái, Nguyễn Thị Huyền, Hoàng Anh, Lương Thị Hồng Nhung		tháng 01/2025				

11.2. Sách chuyên khảo, giáo trình – tài liệu dạy học:
- *Tên tài liệu: Sách/ Chương sách*
- *Loại hình: Chuyên khảo/ Tham khảo/ Giáo trình/ Tài liệu hướng dẫn*

TT	Tên tài liệu	Tên tác giả	Chủ biên/Đồng chủ biên	Nhà xuất bản	Năm xuất bản	Loại sách	ISBN
1	Thực hành Ký sinh trùng, dành cho đối tượng đại học	Đinh Thị Thanh Mai, Võ Văn Thái	x	Y học	2019	Sách giáo khoa	978-604-66-1174-5
2	Ký sinh trùng y học, giáo trình đào tạo đại học	Đinh Thị Thanh Mai, Võ Văn Thái, Võ Thị Thanh Hiền	x	Y học	2022	Sách giáo khoa	978-604-66-1885-0
3	Ký sinh trùng y học, giáo trình giảng dạy sau đại học	Đinh Thị Thanh Mai, Võ Văn Thái, Võ Thị Thanh Hiền	x	Y học	2025	Sách giáo khoa	

14. Báo cáo Hội nghị - hội thảo khoa học

Kỷ yếu: Tóm tắt/ Toàn văn

TT	Tên báo cáo	Tên tác giả	Tác giả chính	Tên hội nghị	Thời gian báo cáo (tháng/năm)	Kỷ yếu	ISBN
			x				

15. Bằng sở hữu trí tuệ đã được cấp

Lĩnh vực văn bằng bảo hộ: độc quyền sáng chế, giải pháp hữu ích, kiểu dáng công nghiệp, thiết kế bố trí, giống cây trồng...

TT	Tên và nội dung văn bằng	Số, Mã, Ký hiệu	Nơi cấp	Năm cấp
1				
2				
...				

16. Công trình KH&CN được ứng dụng, chuyển giao

TT	Tên công trình	Hình thức	Quy mô	Địa chỉ áp dụng	Giá trị	Thời gian
1						
...						

17. Nhiệm vụ KH&CN các cấp

- *Loại hình: Đề tài/ Dự án/ Đề án*
- *Tình trạng nhiệm vụ: Đã nghiệm thu/ Chưa nghiệm thu/ Không hoàn thành*

17.1. Nhiệm vụ KH&CN đã và đang chủ trì

Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình (nếu có)	Tình trạng nhiệm vụ	Ngày			Kinh phí
					Phê duyệt	Đăng ký kết quả (nếu có)	Công nhận kết quả	

17.2. Nhiệm vụ KH&CN đã và đang tham gia

Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình (nếu có)	Tình trạng nhiệm vụ	Ngày			Kinh phí
					Nghiệm thu	Công nhận kết quả	Đăng ký kết quả	

18. Giải thưởng về KH&CN trong và ngoài nước

TT	Tên giải thưởng	Hình thức khen thưởng	Cấp khen thưởng	Năm tặng thưởng
1				

2				
...				

19. Đào tạo sau đại học

+ *Hai mô hướng dẫn: hướng dẫn 1/ hướng dẫn 2*
+ *Đã đào tạo: Tiến sĩ/Thạc sĩ/BS NT/CKII/...*

TT	Họ tên học viên	Vai trò	Bậc đào tạo	Chuyên ngành	Nơi đào tạo	Năm cấp bằng
1	Nguyễn Thị Nguyệt	Hướng dẫn 1	Thạc sĩ	Kỹ thuật xét nghiệm Y học	Trường đại học Y Dược Hải Phòng	2022
2	Cao Văn Tuyển	Hướng dẫn 1	Thạc sĩ	Kỹ thuật xét nghiệm Y học	Trường đại học Y Dược Hải Phòng	2024
3	Ngô Thị Ánh Tuyết	Hướng dẫn 2	Thạc sĩ	Kỹ thuật xét nghiệm Y học	Trường đại học Y Dược Hải Phòng	2025
4						

NHỮNG THÔNG TIN KHÁC VỀ CÁC HOẠT ĐỘNG KHOA HỌC VÀ CÔNG NGHỆ

(Tham gia các tổ chức hội nghề nghiệp: thành viên Ban biên tập các Tạp chí khoa học trong và ngoài nước; Thành viên các hội đồng quốc gia, quốc tế; ...)

Hải Phòng, ngày 13 tháng 04 năm 2023

XÁC NHẬN CỦA ĐƠN VỊ

TRƯỞNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

PHÓ HIỆU TRƯỞNG

PGS.TS. Đoàn Thị Thanh Mai

NGƯỜI KHAI

(Ký, ghi rõ họ tên)

Vũ Văn Thái

BẢN SAO

BỘ Y TẾ
Số: 0022772/BYT-CCHN

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

CHỨNG CHỈ HÀNH NGHỀ KHÁM BỆNH, CHỮA BỆNH

BỘ TRƯỞNG BỘ Y TẾ

Căn cứ Luật khám bệnh, chữa bệnh ngày 23/11/2009;
Căn cứ Nghị định số 87/2011/NĐ-CP ngày 27/9/2011 của Chính phủ quy định chi tiết và hướng dẫn thi hành một số điều của Luật khám bệnh, chữa bệnh;
Căn cứ Thông tư số 41/2011/TT-BYT ngày 14/11/2011 của Bộ trưởng Bộ Y tế hướng dẫn cấp chứng chỉ hành nghề đối với người hành nghề và cấp giấy phép hoạt động đối với cơ sở khám bệnh, chữa bệnh;
Xét đề nghị của Cục trưởng Cục Quản lý khám, chữa bệnh - Bộ Y tế,

CẤP CHỨNG CHỈ HÀNH NGHỀ KHÁM BỆNH, CHỮA BỆNH

ĐÃ THU LỆ PHÍ

Họ và tên: VŨ VĂN THÁI.
Ngày tháng năm sinh: 04/8/1976.
Giấy chứng minh nhân dân số: 030953364.
Ngày cấp: 04/7/2007. Nơi cấp: Công an Hải Phòng.
Chỗ ở hiện nay: Số 164 Lê Lai, phường Máy Chai, quận Ngô Quyền, thành phố Hải Phòng.
Văn bằng chuyên môn: Bác sỹ.
Phạm vi hoạt động chuyên môn: Chuyên khoa Chẩn đoán hình ảnh.

Hà Nội, ngày 15 tháng 8 năm 2014

KT. BỘ TRƯỞNG
THỨ TRƯỞNG

CHỨNG THỰC
BẢN SAO ĐÚNG VỚI BẢN CHÍNH
Số chứng thực: 2876
Ngày 03 tháng 7 năm 2015

PHÓ CHỦ TỊCH
Nguyễn Mạnh Bang

Nguyễn Thị Xuyên

THE SOCIALIST REPUBLIC OF VIETNAM

THE DIRECTOR OF
NATIONAL INSTITUTE OF MALARIOLOGY, PARASITOLOGY AND ENTOMOLOGY

confers

THE DEGREE OF DOCTOR OF PHILOSOPHY

in MEDICINE

Upon: Mr. Tu Tien Thai

Born on: 04 August 1976

Given under the seal of
The National Institute of Malariology, Parasitology and Entomology
This Twenty third day of January 2018

Serial number:
Reference number: 36

CỘNG HOÀ XÃ HỘI CHỦ NGHĨA VIỆT NAM

VIỆN TRƯỞNG
VIỆN SỐT RÉT - KÝ SINH TRÙNG - CÔN TRÙNG TRUNG ƯƠNG

Cấp

BẰNG TIẾN SĨ

Y HỌC

Cho: Ông Tư Tiến Thái

Sinh ngày: 04/8/1976

Hà Nội, ngày 23 tháng 01 năm 2018

VIỆN TRƯỞNG

PGS.TS. Trần Thanh Dương

CHỨNG THỰC
BẢN SAO ĐÚNG VỚI BẢN CHÍNH
Số chứng thực: 1210
Quyển số: 01/SCT/BS
UBND PHƯỜNG ĐỐNG ĐA

PHÓ CHỦ TỊCH
Hoàng Tiến Thái

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

BIÊN BẢN
NGHIỆM THU ĐỀ TÀI KHCN CẤP CƠ SỞ NĂM 2023

Tên đề tài: Thực trạng và một số yếu tố liên quan đến hệ thống quản lý chất lượng xét nghiệm tại các phòng xét nghiệm của tỉnh Hải Dương năm 2023

Chủ nhiệm đề tài: Vũ Văn Thái

Thành viên tham gia: Cao Văn Tuyển, Đinh Kim Xuyến

Giảng viên hướng dẫn (nếu có):

Đơn vị: Khoa Kỹ thuật Y học

Căn cứ Quyết định số 2330/QĐ - YDHP ngày 08 /12/ 2023 và Quyết định 2363/QĐ – YDHP ngày 12/12/2023 của Hiệu trưởng trường Đại học Y Dược Hải Phòng về việc thành lập; bổ sung thành viên Tiểu ban KHCN đánh giá, nghiệm thu đề tài cơ sở năm 2023 và bảo vệ khoa học tại Hội nghị KHCN trường Đại học Y Dược Hải Phòng. Tiểu ban đã tiến hành họp để đánh giá, nghiệm thu đề tài vào hồi 13h30 ngày 17 tháng 12 năm 2023 tại trường Đại học Y Dược Hải Phòng.

Các thành viên có mặt:

1. PGS.TS. Phạm Văn Nhiên
2. PGS.TS. Dương Thị Hương
3. PGS.TS. Trịnh Thị Lý
4. TS. Lê Thị Diệu Hiền

Thư ký hành chính: ThS. Hoàng Thị Thuần

Các thành viên vắng mặt:

.....

.....

NỘI DUNG NGHIỆM THU:

1. Đọc quyết định thành lập Tiểu ban: TS. Lê Thị Diệu Hiền
2. Trưởng Tiểu ban điều khiển buổi nghiệm thu.
3. Chủ nhiệm đề tài trình bày tóm tắt báo cáo tổng kết đề tài *(có bản tóm tắt kèm theo)*.
4. Các thành viên Tiểu ban nhận xét, góp ý *(có bản nhận xét kèm theo)*.

5. Các thành viên trong Tiểu ban và những người tham dự buổi nghiệm thu trao đổi về nội dung, phương pháp, kết quả nghiên cứu của đề tài; và thống nhất một số ý kiến sau:

Đạt. Không chỉnh sửa

6. Đánh giá kết quả:

6.1. Ban kiểm phiếu gồm:
- TS. Lê Thị Diệu Hiền
- ThS. Hoàng Thị Thuận

6.2. Tiểu ban đã bỏ phiếu đánh giá kết quả như sau:

Tổng số phiếu phát ra : 12 phiếu
Tổng số phiếu thu vào: 12 phiếu
Số phiếu hợp lệ : 12 phiếu
Số phiếu không hợp lệ : 0 phiếu

6.4 Kết quả đánh giá:

Xuất sắc : 02 phiếu
Khá : 0 phiếu
Đạt : 02 phiếu
Không đạt : 0 phiếu

Kết quả đề tài đạt loại: Xuất sắc

7. Kết luận:

Nghiệm thu đề tài

Hải Phòng, ngày 7 tháng 12 năm 2023

Trưởng Tiểu ban
(Ký và ghi rõ họ tên)

Phạm Văn Nhiên

Thư ký
(Ký và ghi rõ họ tên)

Lê Thị Diệu Hiền

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

BIÊN BẢN
NGHIỆM THU ĐỀ TÀI KHCN CẤP CƠ SỞ NĂM 2023

Tên đề tài: Thực trạng và một số yếu tố liên quan đến nhiễm nấm Candida spp. ở phụ nữ viêm đường sinh dục dưới tại bệnh viện Phụ sản Hải Phòng, năm 2023

Chủ nhiệm đề tài: Đinh Thị Thanh Mai

Thành viên tham gia: Vũ Văn Thái, Vũ Thị Thanh Hiền, Nguyễn Thị Huyền Sương, Đinh Thị Minh Thư, Trịnh Văn Khương

Giảng viên hướng dẫn (nếu có): .....

Đơn vị: Kỹ sinh trùng

Căn cứ Quyết định số: 2550 /QĐ - YDHP ngày 08 tháng 12 năm 2023 của Hiệu trưởng trường Đại học Y Dược Hải Phòng về việc thành lập Tiểu ban Khoa học công nghệ nghiệm thu đề tài nghiên cứu khoa học cấp cơ sở năm 2023, Tiểu ban đã tiến hành họp để đánh giá, nghiệm thu đề tài vào hồi 15 ngày 15 tháng 12 năm 2023 tại trường Đại học Y Dược Hải Phòng.

Các thành viên có mặt:

1. PGS. Nguyễn Thị Thường Liên
2. TS. Phan Văn Thường
3. TS. Nguyễn Thị Yến
4. TS. Nguyễn Thị Phương Thảo

Thư ký hành chính: ThS. Phan Thị Hương Thảo

Các thành viên vắng mặt:

.....

.....

NỘI DUNG NGHIỆM THU:

1. Đọc quyết định thành lập Tiểu ban: **TS. Nguyễn Thị Thùy Linh**
2. Trưởng Tiểu ban điều khiển buổi nghiệm thu.
3. Chủ nhiệm đề tài trình bày tóm tắt báo cáo tổng kết đề tài *(có bản sao toàn văn kèm theo)*.
4. Các thành viên Tiểu ban nhận xét, góp ý *(có bản nhận xét kèm theo)*.

5. Các thành viên trong Tiểu ban và những người tham dự buổi nghiệm thu trao đổi về nội dung, phương pháp, kết quả nghiên cứu của đề tài; và thống nhất một số ý kiến sau:

Nội dung phù hợp với tên đề tài.
Kết quả đáp ứng được mục tiêu

6. Đánh giá kết quả:

6.1. Ban kiểm phiếu gồm:

- **TS. Nguyễn Thị Thùy Linh**
- **ThS. Phạm Thị Phương Thảo**

6.2. Tiểu ban đã bỏ phiếu đánh giá kết quả như sau:

Tổng số phiếu phát ra : 04 phiếu
Tổng số phiếu thu vào : 04 phiếu
Số phiếu hợp lệ : 04 phiếu
Số phiếu không hợp lệ : 0 phiếu

6.3. Kết quả đánh giá:

Xuất sắc : 04 phiếu
Khá : 0 phiếu
Đạt : 0 phiếu
Không đạt : 0 phiếu

Kết quả đề tài đạt loại: Xuất sắc

7. Kết luận:

Nghiệm thu đề tài

Hải Phòng, ngày 03 tháng 12 năm 2021

Trưởng Tiểu ban	**Thư ký**
(Ký và ghi rõ họ tên)	*(Ký và ghi rõ họ tên)*
Nguyễn Thị Phương Thảo	**TS. Nguyễn Thị Thùy Linh**

ISSN1859 - 1868

TẠP CHÍ

Y HỌC VIỆT NAM

Năm thứ bảy mươi

VIETNAM MEDICAL JOURNAL

THÁNG 12 - SỐ ĐẶC BIỆT
2024

TẬP 545

CÔNG TRÌNH NGHIÊN CỨU KHOA HỌC CHÀO MỪNG KỶ NIỆM 45 NĂM NGÀY THÀNH LẬP TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG 1979-2024

TỔNG HỘI Y HỌC VIỆT NAM
TẠP CHÍ Y HỌC VIỆT NAM
6KA Bà Triệu - Hoàn Kiếm - Hà Nội; Tel: 024-39431866
Email: tapchiyhocvietnam@gmail.com; Website: tapchiyhocvietnam.vn; vmj.vn

TẠP CHÍ
Y HỌC VIỆT NAM
VIETNAM MEDICAL JOURNAL

TỔNG BIÊN TẬP

Nguyễn Thị Xuyên

PHÓ TỔNG BIÊN TẬP

Nguyễn Thị Ngọc Dung
Nguyễn Văn Kính
Nguyễn Việt Nhung

HỘI ĐỒNG CỐ VẤN

Hoàng Bảo Châu (Chủ tịch Hội đồng)
Trần Quán Anh
Lê Đức Hinh
Nguyễn Văn Hiếu
Phạm Gia Khánh
Phạm Gia Khải
Phan Thị Phi Phi
Đặng Văn Phước
Trần Quy
Đỗ Kim Sơn
Tân Thị Kim Thanh
Trần Hữu Thắng
Nguyễn Việt Tiến
Nguyễn Khánh Trạch
Lê Ngọc Trọng
Đỗ Đức Vân

BAN BIÊN TẬP

Hồng Bàng
Quý Châu
Trần Văn Cường
Trần Hữu Dàng
Trần Bình Giang
Trần Thị Nhị Hà
Trịnh Đình Hải
Lê Trung Hải
Nguyễn Trần Hiển
Lê Thị Hợp
Tống Thị Song Hương
Nguyễn Gia Khánh
Lương Ngọc Khuê
Phạm Đức Mục
Hoàng Thị Bích Ngọc
Bùi Đức Phú
Nguyễn Minh Phương
Nguyễn Huy Quang
Đỗ Quyết
Nguyễn Tiến Quyết
Trương Hồng Sơn
Đinh Ngọc Sỹ
Công Quyết Thắng
Nguyễn Văn Thường
Trần Phan Chung Thủy
Trần Văn Thuấn
Nguyễn Quốc Trường
Ong Thế Viêm
Lê Gia Vinh

BAN THƯ KÝ

Tạ Thị Kim Oanh (Trưởng ban)
Nguyễn Tiến Dũng
Đặng Thị Mỹ Hạnh

TÒA SOẠN QUẢN LÝ VÀ PHÁT HÀNH
TỔNG HỘI Y HỌC VIỆT NAM
68A Bà Triệu - Hoàn Kiếm - Hà Nội Tel: 024.39431866 - 0913070336
Email: tapchiyhocvietnam@gmail.com; Website: tapchiyhocvietnam.vn - vmj.vn

GPXB: Số 2914/GP-BTTTT, Ngày 03/6/2016 của Bộ Thông tin và Truyền thông; in tại Xí nghiệp in - Nhà máy Z176 Bộ Quốc Phòng

HỘI ĐỒNG KHOA HỌC
CÔNG TRÌNH NGHIÊN CỨU KHOA HỌC
TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

CHỦ TỊCH HỘI ĐỒNG

PGS.TS. Nguyễn Văn Khải

PHÓ CHỦ TỊCH HỘI ĐỒNG

PGS.TS. Phạm Văn Linh
GS.TS. Phạm Minh Khuê

ỦY VIÊN HỘI ĐỒNG

GS.TS. Phạm Văn Thức
PGS.TS. Phạm Văn Mạnh
PGS.TS. Đinh Thị Thanh Mai
TS. Phạm Thanh Hải
PGS. TS. Nguyễn Thị Thắm
TS. Cao Đức Tuấn
TS. Nguyễn Hải Ninh
TS. Phạm Văn Thương
TS. Võ Mạnh Tân
PGS.TS Nguyễn Thị Thu Phương
PGS.TS. Vũ Văn Quang
TS. Nguyễn Thị Thu Hiền
TS. Nguyễn Hàng Cường

THƯ KÝ HỘI ĐỒNG

Nguyễn Thị Thuý Linh
Nguyễn Thị Hoa
Bùi Thị Hương
Đồng Thị Phương Thuỷ
Nguyễn Thị Lương
Nguyễn Mai Anh

THỰC TRẠNG VÀ MỘT SỐ YẾU TỐ LIÊN QUAN ĐẾN NHIỄM NẤM *CANDIDA SPP.* Ở PHỤ NỮ VIÊM ĐƯỜNG SINH DỤC DƯỚI TẠI BỆNH VIỆN PHỤ SẢN HẢI PHÒNG NĂM 2023

Nguyễn Thị Huyền Sương[1], Đinh Thị Thanh Mai[1], Vũ Văn Thắ[1], Vũ Thị Thanh Hiền[1], Đinh Thị Minh Thơ[1], Trịnh Văn Khương[1]

TÓM TẮT

Nghiên cứu mô tả cắt ngang trên 398 phụ nữ đến khám viêm đường sinh dục dưới tại Bệnh viện Phụ sản Hải Phòng. Kết quả nghiên cứu cho thấy: Tỷ lệ nhiễm nấm *Candida spp.* chung là 24,12%, nhiễm cao nhất ở nhóm tuổi 25 – <35 (39%); trình độ học vấn THPT (63,07%) và nghề nghiệp công nhân (40,45%). 100% đối tượng tham gia nghiên cứu sử dụng nước máy trong sinh hoạt; phụ nữ có sử dụng dung dịch vệ sinh nhiễm 77,89%; phụ nữ sinh 2 con nhiễm nấm *Candida spp.* cao với 41,21%; người đã từng viêm sinh dục nhiễm 57,29%; sử dụng dụng cụ tử cung nhiễm 16,03% Nhóm phụ nữ không sử dụng dung dịch vệ sinh có nguy cơ nhiễm nấm *Candida spp.* gấp 1,91 lần so với các nhóm khác, với p< 0,05. Nhóm phụ nữ sử dụng dụng cụ tử cung có nguy cơ nhiễm nấm *Candida spp.* gấp 2,2 lần so với các nhóm khác, với p< 0,05.

Từ khóa: nấm candida spp., viêm đường sinh dục dưới.

SUMMARY

SITUATION AND RELATED FACTORS OF *CANDIDA SPP.* INFECTION IN WOMEN WITH LOWER GENITAL TRACT INFLAMMATION AT HAI PHONG OBSTETRICS AND GYNECOLOGY HOSPITAL IN 2023

A cross-sectional study was conducted on 398 women undergoing examinations for lower genital tract inflammation at Hai Phong Obstetrics and Gynecology Hospital. The research results revealed that the overall prevalence of Candida spp. infection was 24.12%, with the highest rates observed in the following groups: age group 25 – <35 (39%); high school education level (63.07%); and occupation as a laborer (40.45%). All study participants used tap water for daily activities; 77.89% of women using hygiene solutions were infected; women who had given birth to two children had a high Candida spp. infection rate of 41.21%; those with a history of previous genital inflammation showed a 57.29% infection rate; and the use of intrauterine devices resulted in a 16.03% infection rate. The group of women not using hygiene solutions had a 1.91 times higher risk of Candida spp. infection compared to other groups, with p < 0.05. Women using intrauterine devices had a 2.2 times higher risk of Candida spp. infection compared to other groups, with p < 0.05.

Keywords: Candida spp. fungus, lower genital tract inflammation.

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I. ĐẶT VẤN ĐỀ

Tác nhân gây viêm đường sinh dục có thể kể tới như vi khuẩn lậu (*Chlamydia*), trùng roi (*Trichomonas*), nấm (*Candida*). Tỉ

lệ gây viêm âm đạo do nấm *Candida* spp. chiếm từ 11,3-17,4%, trong đó *Candida albicans* chiếm 80% đến 92% [1]. Nấm *Candida* spp. là nguyên nhân phổ biến hàng đầu gây viêm đường sinh dục ở phụ nữ lứa tuổi sinh đẻ [2]. Theo ước tính của Tổ chức Y tế Thế giới (WHO) năm 2018 có khoảng 75% phụ nữ đã từng bị mắc viêm sinh dục do nấm *Candida* spp. trong độ tuổi sinh sản tập trung nhiều ở các nước đang phát triển trong đó có Việt Nam [3].

Viêm đường sinh dục dưới do nấm *Candida* spp. tuy không gây nguy hiểm đến tính mạng người bệnh, nhưng là nguyên nhân chủ yếu gây ra khối rối loạn lâm sàng ảnh hưởng đến sức khoẻ, khả năng lao động và hạnh phúc gia đình [1]. Trong những năm gần đây, cùng với việc sử dụng không hợp lý rộng, thuốc chống viêm Corticoid, các thuốc kháng nấm một cách rộng rãi và kéo dài thiếu kiểm soát, tiền sử quan hệ tình dục, thói quen vệ sinh..., đã gây ra những vấn đề đáng lo ngại trong điều trị bệnh viêm âm đạo do nấm. Việc nghiên cứu các yếu tố liên quan đến bệnh viêm âm đạo do nấm Candida đóng vai trò rất quan trọng, giúp các thầy thuốc lâm sàng trong việc điều trị và tư vấn cho người bệnh phòng tránh nấm có hiệu quả giúp giảm tỷ lệ mắc nấm cũng như giảm tái phát nấm.

Với mong muốn góp phần làm tốt hơn trong công tác chăm sóc sức khỏe ở đối tượng phụ nữ trong độ tuổi sinh sản và phòng ngừa bệnh do nấm *Candida* spp. gây ra, chúng tôi tiến hành nghiên cứu: **"Thực trạng và một số yếu tố liên quan đến nhiễm nấm *Candida* spp. ở phụ nữ đến khám viêm đường sinh dục dưới tại Bệnh viện Phụ sản Hải Phòng năm 2023"** với các mục tiêu sau: *Xác định tỷ lệ nhiễm Candida spp. ở phụ nữ đến khám viêm đường sinh dục dưới tại Bệnh viện Phụ sản Hải Phòng năm 2023 và mô tả một số yếu tố liên quan đến nhiễm nấm Candida spp. ở đối tượng nghiên cứu.*

Trên cơ sở kết quả nghiên cứu đề xuất các biện pháp kiểu hiệu chỉnh phòng chống bệnh.

II. ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU

2.1. Đối tượng nghiên cứu

Gồm 398 phụ nữ đến khám viêm đường sinh dục dưới tại Bệnh viện Phụ sản Hải Phòng.

Tiêu chuẩn lựa chọn: phụ nữ đến khám có dấu hiệu ra khí hư âm đạo bất thường, ngứa tại âm hộ, âm đạo, đồng ý tham gia nghiên cứu.

Tiêu chuẩn loại trừ: phụ nữ đang kinh kinh, đang ra máu âm đạo, thụt rửa âm đạo trong vòng 48 giờ trước khi đến khám, đang không mắc toàn thân hoặc đã thuốc kháng nấm trong vòng 2 tuần trước khi đến khám, đối tượng có vấn đề về tâm thần.

2.2. Địa điểm và thời gian nghiên cứu

Địa điểm nghiên cứu: Bệnh viện Phụ sản Hải Phòng.

Thời gian nghiên cứu: Từ tháng 02/2023 đến tháng 10/2023.

2.3. Thiết kế nghiên cứu: Theo phương pháp nghiên cứu mô tả cắt ngang.

2.4. Cỡ mẫu, chọn mẫu

2.4.1. Cỡ mẫu

Cỡ mẫu nghiên cứu cho tỷ lệ nhiễm Candida spp: Chúng tôi áp dụng công thức tính cỡ mẫu nghiên cứu:

$$n = Z^2_{1-\alpha/2} \frac{pq}{d^2}$$

Trong đó: n: cỡ mẫu cần phải điều tra; $Z_{1-\alpha/2}$: hệ số tin cậy, với α = 0,05, độ tin cậy 95% thì $Z_{1-\alpha/2}$ = 1,96; q: là tỷ lệ phụ thuộc vào p (q= 1-p); d: độ chính xác mong muốn

là 0,03; p = 0,5 theo kết quả nghiên cứu của Mai Thúy Anh [4].

Như vậy, thay vào công thức tính cỡ mẫu tối thiểu là 385 người. Thực tế, chúng tôi đã tiến hành nghiên cứu cho 398 phụ nữ (trong diện nghiên cứu).

Cỡ mẫu điều tra kiến thức về thực hành về bệnh viêm đường sinh dục do nấm Candida: Phỏng vấn kiến thức, thực hành về bệnh viêm đường sinh dục dưới do nấm Candida spp. của chính đối tượng nghiên cứu.

2.4.2. Cách chọn mẫu

Chúng tôi chọn mẫu nghiên cứu thuận tiện, không xác suất đưa toàn các tiêu chí lựa chọn để đưa vào nghiên cứu. Mỗi ngày sẽ phụ nữ đến khám và làm xét nghiệm viêm đường sinh dục dưới tại Bệnh viện Phụ sản Hải Phòng khoảng 20 người. Các ngày trong tuần chúng tôi sẽ tiến hành xét nghiệm và phỏng vấn các đối tượng nghiên cứu.

2.5. Kỹ thuật, công cụ và quy trình thu thập số liệu

2.5.1. Công cụ thu thập thông tin

Dụng cụ khám lâm sàng

Dụng cụ soi trực tiếp, thuốc Gram: Kính hiển vi quang học, lam kính, lá kính, đầu côn, que tăm bông vô khuẩn....

Qua phỏng vấn kiến thức, thực hành phòng chống nhiễm trùng đường sinh sản để đánh giá yếu tố liên quan đến viêm đường sinh dục dưới do nấm Candida spp.

Bộ câu hỏi gồm 3 phần: hành chính, kiến thức và thực hành.

2.5.2. Kỹ thuật thu thập thông tin

Xét nghiệm nấm soi tươi và nhuộm Gram theo hướng dẫn thực hành của Bộ y tế QĐ 1519/QĐ- BYT ngày 20/04/2017) để đánh giá tỷ lệ nhiễm nấm đường sinh dục dưới.

Kỹ thuật điều tra về kiến thức, thực hành của bệnh nhân để xác định yếu tố liên quan.

2.5.3. Các bước triển khai

Nhóm nghiên cứu được tập huấn kỹ trước khi triển khai nghiên cứu gồm: cách thu thập mẫu dịch âm đạo, kỹ thuật xét nghiệm, kỹ thuật phỏng vấn.

Sau khi thu thập, các mẫu dịch âm đạo sẽ được xét nghiệm ngay bằng kỹ thuật soi tươi để xác định tỷ lệ nhiễm nấm âm đạo.

Các kết quả xét nghiệm dịch âm đạo tìm nấm được ghi vào phiếu xét nghiệm.

2.6. Xử lý và phân tích số liệu

Số liệu thu thập trong nghiên cứu được xử lý theo phương pháp thống kê sinh học và sử dụng phần mềm SPSS 20.0.

2.7. Đạo đức nghiên cứu

Nghiên cứu được sự đồng ý của Ban Giám hiệu trường Đại học Y Dược Hải Phòng và Ban Lãnh đạo Bệnh viện Phụ sản Hải Phòng. Nghiên cứu được tiến hành trên cơ sở tự tự nguyện đồng ý tham gia nghiên cứu sau khi đã được giải thích rõ mục tiêu nghiên cứu. Các đối tượng nghiên cứu sẽ tự ký tên vào phiếu chấp thuận tham gia trước khi tiến hành nghiên cứu. Nghiên cứu không thực hiện thủ thuật xâm lấn gì có hại cho người tham gia. Các số liệu nghiên cứu sẽ được bảo mật hoàn toàn, số liệu chỉ phục vụ cho mục đích nghiên cứu.

III. KẾT QUẢ NGHIÊN CỨU

3.1. Tỷ lệ nhiễm nấm *Candida* spp. ở phụ nữ đến khám viêm đường sinh dục dưới tại Bệnh viện Phụ sản Hải Phòng năm 2023

Hình 1. Tỷ lệ nhiễm nấm Candida spp. ở đối tượng nghiên cứu (n=398)

Nhận xét: Tỷ lệ nhiễm nấm *Candida* spp. ở đối tượng tham gia nghiên cứu là 24,12%.

Bảng 1. Phân bố bệnh nhân nhiễm nấm Candida spp. theo nhóm tuổi

Nhóm tuổi	Số lượng (n=96)	Tỷ lệ (%)
18 - <25	12	12,5
25 - <35	48	50
≥35	36	37,5
Tổng	96	100

Nhận xét: Tỷ lệ nhiễm nấm *Candida* spp. ở nhóm tuổi 25 - <35 là 50%.

Bảng 2. Phân bố bệnh nhân nhiễm nấm Candida spp. theo số lần sinh con

Số lần sinh con	Số lượng (n= 96)	Tỷ lệ (%)
≤ 1	34	35,68
2	40	41,21
≥ 3	22	23,11
Tổng	96	100

Nhận xét: Đối tượng nghiên cứu có số lần sinh 2 con nhiễm tỷ lệ nhiễm nấm *Candida* spp. cao 41,21%, nhóm đối tượng có số lần sinh con ≤ 1 và ≥ 3 có tỷ lệ nhiễm nấm *Candida* spp. lần lượt là 35,68% và 23,11%.

Bảng 3. Phân bố bệnh nhân nhiễm nấm Candida spp. theo tỷ lệ sử dụng dụng cụ tránh thai

Biện pháp tránh thai	Nhiễm nấm *Candida* (n=96)	
	Số lượng (n= 96)	Tỷ lệ (%)
Dụng cụ tử cung	21	21,87
Khác	75	78,13
Tổng	96	100

Nhận xét: Tỷ lệ nhiễm nấm *Candida* spp. ở nhóm đối tượng sử dụng các biện pháp tránh thai khác là 78,13%.

3.2. Một số yếu tố liên quan đến nhiễm nấm *Candida* spp. ở đối tượng nghiên cứu

Bảng 4. Liên quan giữa nhiễm nấm Candida spp. đường sinh dục dưới với lứa tuổi

Nhóm tuổi	Nhiễm nấm Candida		OR (95% CI)	p
	Có	Không		
18-<35	60	180	0,99 (0,62-1,59)	0,91
≥35	36	113		

Nhận xét: Không có mối liên quan giữa tỷ lệ nhiễm nấm *Candida* spp. đường sinh dục dưới và tuổi (p>0,05).

Bảng 5. Liên quan giữa nhiễm nấm Candida spp. đường sinh dục dưới

Sử dụng DDVS	Nhiễm nấm *Candida*	Không nhiễm nấm *Candida*	OR 95% CI	p
Không	30	58	1,91 (1,13-3,20)	0,01
Có	66	244		

Nhận xét: Đối tượng không sử dụng dung dịch vệ sinh có nguy cơ nhiễm nấm *Candida* spp. đường sinh dục dưới cao gấp 1,91 lần có ý nghĩa thống kê với p<0,05.

Bảng 6. Liên quan giữa tiền sử viêm đường sinh dục với nhiễm nấm Candida spp. đường sinh dục dưới

Tiền sử VDSD	Nhiễm nấm *Candida*	Không nhiễm nấm *Candida*	OR 95% CI	p
Có	41	116	1,19 (0,74-1,93)	0,45
Không	55	186		

Nhận xét: Không có mối tương quan có ý nghĩa thống kê giữa tiền sử viêm đường sinh dục với tỷ lệ nhiễm nấm *Candida* spp. đường sinh dục dưới (p>0,05).

Bảng 7. Liên quan giữa phương pháp tránh thai và nhiễm nấm Candida spp. đường sinh dục dưới

Sử dụng biện pháp tránh thai	Nhiễm nấm *Candida*	Không nhiễm nấm *Candida*	OR 95% CI	p
Dụng cụ tử cung	37	34	2,20 (1,20-4,02)	0,009
Biện pháp tránh thai khác	73	268		

Nhận xét: Đối tượng sử dụng dụng cụ tử cung có nguy cơ nhiễm nấm *Candida* spp. đường sinh dục dưới cao gấp 2,20 lần so với sử dụng các biện pháp tránh thai khác, với p<0,05.

IV. BÀN LUẬN

4.1. Tỷ lệ nhiễm nấm Candida spp.

Qua khảo sát 398 phụ nữ đến khám viêm đường sinh dục dưới tại Bệnh viện Phụ sản Hải Phòng năm 2023, kết quả nghiên cứu của chúng tôi phát hiện rằng, tỷ lệ nhiễm nấm *Candida* spp. ở phụ nữ đến khám viêm đường sinh dục dưới tại Bệnh viện Phụ sản Hải Phòng là 24,12%. Theo nghiên cứu của tác Nông Thị Thư Trang (2015), tỷ lệ nhiễm nấm *Candida* spp. ở nhóm đối tượng phụ nữ nông thôn miền núi tại tỉnh Thái Nguyên là 28,0% [5]. Kết quả của các nghiên cứu trên có sự tương đồng với kết quả nghiên cứu của chúng tôi. Lý giải cho tỷ lệ nhiễm nấm *Candida* spp. trong đề tài nghiên cứu của chúng tôi, thấy rằng ngày nay do thông tin đại chúng phát triển, phụ nữ tại Hải Phòng

có thể dễ dàng tiếp cận được với các nguồn tin về bệnh lý viêm đường sinh dục, quan tâm hơn tới các vấn đề về sức khoẻ sinh sản, đồng thời có điều kiện nâng tỷ lệ nhiễm nấm *Candida* spp. ở phụ nữ tới khám viêm đường sinh dục dưới tại Bệnh viện Phụ sản Hải Phòng có sự tương đồng với kết quả tại các nghiên cứu trong cộng đồng.

Theo nghiên cứu của chúng tôi tỷ lệ phụ nữ tham gia nghiên cứu cao nhất ở nhóm tuổi từ 25-<35 với 46,48%, tiếp với là nhóm tuổi ≥35 chiếm 37,44% và nhóm tuổi chiếm tỷ lệ thấp nhất là 18-<25 với 16,08%. Như vậy, độ tuổi trong nghiên cứu này tập trung ở lứa tuổi sinh đẻ tốt và nhóm tuổi lao động trẻ. Kết quả này tương tự với nhận định của các nghiên cứu của Trịnh Thị Mỹ Ngọc [6].

Nghiên cứu của chúng tôi cho thấy tỷ lệ nhiễm nấm ở đối tượng nghiên cứu có số lần sinh 2 con chiếm 41,21% cao hơn so với đối tượng có số lần sinh con ≤1 (35,56%) và ≥3 (11,11%). Kết quả này có sự tương đồng với nghiên cứu của tác giả Bùi Đình Long (2017) [7].

Trong đó tỷ lệ nhiễm nấm *Candida* spp. là 21,87% các trường hợp có dùng dụng cụ tử cung tránh thai". Mặc dù vòng tránh thai tốt nhưng và các dụng cụ tử cung nói chung đơn giản là an toàn, tuy nhiên do một số yếu tố như dụng cụ thủ thuật chưa đảm bảo, vệ sinh vùng kín không sạch, điều kiện vệ sinh môi trường chưa tốt... tạo điều kiện cho vi khuẩn và nấm tấn công.

4.2. Một số yếu tố liên quan đến nhiễm nấm *Candida* spp.

Phân tích của chúng tôi cho thấy chưa có mối liên quan có ý nghĩa thống kê giữa tỷ lệ nhiễm nấm *Candida* spp. và tuổi (p>0,05). Kết quả của chúng tôi khác với kết quả của tác giả Phan Anh Tuấn và cộng sự cho thấy tỷ lệ bệnh nhân viêm âm đạo do nấm *Candida* spp. thường gặp ở nhóm tuổi 24 – 40. Nhận thấy ở phụ nữ khi tuổi càng cao, các đặc điểm sinh lý, hành vi thay đổi theo hướng tốt lợi có thể dẫn đến giảm tình trạng viêm âm đạo do nấm *Candida* spp., hay ở nhóm phụ nữ ở độ tuổi lao động trẻ tỷ lệ nhiễm nấm đường sinh dục có xu hướng tăng do nhu cầu về sinh lý cao tạo điều kiện cho các bệnh viêm đường sinh dục phát triển.

Thói quen vệ sinh ở phụ nữ là yếu tố có liên đề phòng ngừa viêm đường sinh dục dưới do *Candida* spp. Ngày nay, có nhiều sản phẩm giúp kiểm soát, tiêu diệt hoặc hạn chế các tác nhân gây bệnh, đó đó giúp giảm tỷ lệ mắc bệnh. Sử dụng các dung dịch vệ sinh phụ nữ có hiệu quả làm trong giảm tỷ lệ viêm đường sinh dục dưới do nấm *Candida* spp. Nghiên cứu của chúng tôi cho thấy, đối tượng không sử dụng dung dịch vệ sinh có nguy cơ viêm đường sinh dục dưới do nấm *Candida* spp. cao gấp 1,91 lần so với nhóm có sử dụng dung dịch vệ sinh (p<0,05).

Xét về tiền sử sản phụ khoa, tổng sinh mắc bị cách lúc sinh khiến sự sản nhảy của các yếu tố gây bệnh để dàng hơn, dẫn đến làm tăng nguy cơ mắc viêm nhiễm đường sinh dục ở người phụ nữ. Nghiên cứu của tác giả Bùi Đình Long (2017) trên phụ nữ có chồng tại hai công ty may tỉnh Nghệ An tỷ lệ phụ nữ chưa sinh lần nào nhiễm 8,6% [7] thấp hơn so với phụ nữ đã từng sinh con. Kết quả của chúng tôi cho thấy không có mối liên quan giữa tỷ lệ viêm đường sinh dục dưới do nấm *Candida* spp. với số lần sinh con (p>0,05). Kết quả này có sự tương đồng với nghiên cứu của tác giả Mai Thuý Anh (2018) [4]. Một khác, tỷ lệ viêm đường sinh dục dưới ở phụ nữ tại Việt Nam là cao. Ảnh hưởng của yếu tố nội tiết cũng như những môi trường thuận lợi ở những người có tiền

sử viêm viêm đường sinh dục dưới sẽ làm tăng nguy cơ mắc bệnh. Tuy nhiên kết quả của chúng tôi không thấy mối liên quan có ý nghĩa thống kê giữa tỷ lệ đường sinh dục dưới do nấm *Candida* spp. và tiền sử viêm âm đạo, âm hộ (p>0,05).

Nghiên cứu của chúng tôi như thấy phụ nữ sử dụng dụng cụ tử cung có nguy cơ viêm đường sinh dục dưới do nấm *Candida* spp. cao gấp 2,2 lần so với nhóm sử dụng biện pháp tránh thai khác (p<0,05). Dật dụng cụ tử cung là phương pháp ngừa thai được sử dụng phổ biến do đạt hiệu quả cao (97%) và duy trì được trong thời gian dài, trung bình từ 5-10 năm. Tuy nhiên phương pháp này không có tác dụng ngừa ngừa lây nhiễm các bệnh viêm đường sinh dục, nó thể gây tăng dịch tiết âm đạo tạo điều kiện cho các vi khuẩn và nấm phát triển.

V. KẾT LUẬN

Tỷ lệ nhiễm nấm *Candida* spp. chung là 24,12%, nhiễm cao nhất ở: nhóm tuổi 25 – <35 (39%); phụ nữ sinh 2 con nhiễm nấm *Candida* spp. cao với 41,21%; sử dụng dụng cụ tử cung nhiễm 16,03%.

Nhóm phụ nữ không sử dụng dung dịch vệ sinh có nguy cơ nhiễm nấm *Candida* spp. gấp 1,91 lần so với các nhóm khác, với p< 0,05.

Nhóm phụ nữ sử dụng dụng cụ tử cung có nguy cơ nhiễm nấm *Candida* spp. gấp 2,2 lần so với các nhóm khác, với p< 0,05.

VI. KHUYẾN NGHỊ

Tuyên truyền cho các đối tượng về sức khỏe sinh sản, tình dục, có thể sử dụng các biện pháp tránh thai khác thay cho dụng cụ tử cung để hạn chế các bệnh viêm âm đạo do nấm *Candida* spp.

Tham vấn cho các phụ nữ tới khám phụ khoa nên sử dụng dung dịch vệ sinh và lau khô cơ quan sinh dục sau khi đi vệ sinh, mặc quần áo thoáng mát, thay quần áo mỗi ngày.

VII. LỜI CẢM ƠN

Một phần kinh phí thực hiện nghiên cứu này được tài trợ bởi Trường Đại học Y Dược Hải Phòng, mã số đề tài: HPMU.DT.23.19.

TÀI LIỆU THAM KHẢO

1. Trường Đại học Y khoa Phạm Ngọc Thạch (2016), Sản phụ khoa, Nhà xuất bản Đại học Quốc gia TP.HCM, tr. 123- 143.
2. Lê Hoài Chương (2013), Khảo sát những nguyên nhân gây viêm nhiễm đường sinh dục dưới ở phụ nữ đến khám phụ khoa tại bệnh viện Phụ sản Trung ương, Y học Thực hành, 868(2), 66-69.
3. Alan H. D, Lauren N (2013), Benign disorders of the vulva & vagina. Current obstetric & gynecologic diagnosis & treatment, p. 631 -655.
4. Trịnh Mai Anh, Nghiên cứu tỷ lệ viêm âm đạo do nấm Candida ở phụ nữ mang thai bị đái tháo đường tại bệnh viện Quân Thái Bình, Đại học Y dược Huế, 2018.
5. Nông Thị Tha Trang, Nghiên cứu một số đặc điểm dịch tễ học viêm nhiễm đường sinh dục dưới ở phụ nữ nông thôn miền núi tỉnh Thái Nguyên và hiệu quả giải pháp can thiệp 2015, Đại học Thái Nguyên: Thái Nguyên.
6. Trịnh Thị Mỹ Ngọc, Tỷ lệ viêm âm đạo do nấm Candida và yếu tố liên quan ở phụ nữ có thai ba tháng cuối tại Phan Thiết - Bình Thuận 2009, Đại học Y Dược Thành phố Hồ Chí Minh, Hồ Chí Minh.
7. Bùi Minh Long (2017), Thực trạng và một số yếu tố liên quan tới viêm nhiễm đường sinh dục dưới ở phụ nữ 15-49 tuổi có chồng tại 2 công ty may tỉnh Nghệ An và hiệu quả can thiệp, in Vệ sinh xã hội học và Tổ chức y tế. Viện Vệ sinh Dịch tễ Trung Ương, Hà Nội.

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được đều cho thấy tỷ lệ phân bố của kiểu gen trong quần thể và mối liên quan đến mức độ tăng thành phần lipid máu. Từ đó, tạo điều kiện làm tiền đề cho các nghiên cứu về dự hình gen APOE với quy mô lớn hơn trong tương lai.

V. KẾT LUẬN

Đặc điểm dạ hình rs429210 gen APOE trong quần thể rối loạn lipid máu được nghiên cứu có tỷ lệ allen A chiếm ưu thế, kiểu gen AA và CA phổ biến hơn so với CC. Có mối liên quan giữa kiểu gen CA với sự gia tăng nồng độ triglycerid máu.

TÀI LIỆU THAM KHẢO

1. **Aviram Ramkhet M., Valle Y., Casillas-Muñoz F.,** (2002), "Analysis of the APOE Gene and Apolipoprotein E Serum Levels in a Mexican Population with Acute Coronary Syndrome: Association with the Single Nucleotide Variants rs1042031, rs6754, rs429358, and rs7412", Genet Res (Camb), 2022, p. 4961388.
2. **Chasman D. I., Paré G., Mora S.,** (2009), "Forty-three loci associated with plasma lipoprotein size, concentration, and cholesterol content in genome-wide analysis", PLoS Genet, 5(11), p. e1000730.
3. **Elisaviesic T., Thanassoulis G., de Graaf J.,** (2012), "Physiological Basis for the Superiority of Apolipoprotein B Over Low-Density Lipoprotein Cholesterol and Non-High-Density Lipoprotein Cholesterol as a Marker of Cardiovascular Risk", J Am Heart Assoc, 11(19), p. e025858.
4. **Gu Q. L., Nan Y., Lee Y. H.,** (2012), "Association between polymorphism in the APOB gene and hypertension in the Chinese Yugur population", Biol Trace Res, 147(1), p. 66-71.
5. **Liu C., Yang J., Han W.,** (2021), "Polymorphisms in ApoB gene are associated with risk of myocardial infarction and serum ApoB levels in a Chinese population", Int J Clin Exp Med, 8(8), pp. 1271-7.
6. **Rickardsen T. O., Wang O., Sandbæk K.,** (2021), "Effects of apolipoprotein B on lifespan and risks of major diseases including type 1 diabetes: a mendelian randomization analysis using summary-level data", Genet Epidemiol, 45(8), pp. 833-845.
7. **Grundy Scott M., Stone Neil J., Bailey Alison L.,** (2019), "2018 AHA/ACC/AACVPR/AAPA/ABC/ACPM/ADA/AGS/APhA/ASPC/NLA/PCNA Guideline on the Management of Blood Cholesterol: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines", Circulation, 139(25), pp. e1082-e1143.
8. **Mikhail Kazi Khalil, Sayyid Ibbo Hamassalemi Jyoti A.,** (2013), "Complex Mode Association Study Reveals a Non-Functional Apolipoprotein B Variant Influencing Childhood Low-Density Lipoprotein Levels But Not Cardiovascular Events", Circulation. Cardiovascular Genetics, 6(1), pp. 71-81.
9. **Tashiro Tanya M., Mylonakis Eleni, Zwicki Albert V.,** (2010), "Biological, clinical and population relevance of 95 loci for blood lipids", Nature, 466(7307), pp. 707-713.

TỶ LỆ VÀ ĐẶC ĐIỂM KHÁNG KHÁNG SINH CỦA CÁC VI KHUẨN PHÂN LẬP ĐƯỢC TỪ BỆNH PHẨM LÂM SÀNG TẠI BỆNH VIỆN TRUNG ƯƠNG THÁI NGUYÊN NĂM 2023-2024

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TÓM TẮT

Mục tiêu: Xác định tỷ lệ phân bố các loại vi khuẩn gây bệnh phân lập được từ bệnh nhân điều trị nội trú tại bệnh viện Trung ương Thái Nguyên và đánh giá mức độ kháng kháng sinh của các vi khuẩn thường gặp. **Phương pháp:** Nghiên cứu hồi cứu mô tả cắt ngang trên mẫu bệnh phẩm từ 01/01/2023 đến 31/12/2023 và tiến cứu từ 01/01/2024 đến 31/03/2024. **Kết quả:** Tỷ lệ phân lập vi khuẩn chung toàn bệnh viện là 17,96%. Vi khuẩn Gram dương: Staphylococcus epidermidis (16,43%), Staphylococcus aureus (10,33%) và Enterococcus spp. (4,18%). Vi khuẩn Gram âm: E. coli (15,99%), Klebsiella pneumoniae (12,8%), Acinetobacter baumannii (10,4%), Pseudomonas aeruginosa (7,03%), Proteus mirabilis (3,65%), Enterobacter cloacae (3,45%) và Haemophilus influenzae (1,98%). S. aureus, S. pneumoniae, Enterococcus spp. và K. pneumoniae đề kháng cao với nhiều loại kháng sinh, như penicillin, cefoperazon, quinolon... P. aeruginosa, A. baumannii và P. mirabilis đề kháng với tất cả kháng sinh thử nghiệm với tỷ lệ thấp (<15%). Xét nghiệm vi khuẩn gây bệnh thường gặp là S. pneumoniae, S. aureus, E. coli, K. pneumoniae, A. baumannii, P. aeruginosa, P. mirabilis và H. influenzae. Các vi khuẩn M. influenzae, S. aureus, S. pneumoniae, K. pneumoniae, E. coli, P. mirabilis đều có tỷ lệ kháng kháng sinh cao, trong khi P. aeruginosa và A. baumannii còn nhạy cảm ở mức tương đối với nhiều kháng sinh.

Từ khóa: Vi khuẩn, kháng kháng sinh, phân lập

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SUMMARY

RATE AND CHARACTERISTICS OF ANTIBIOTICS RESISTANCE OF BACTERIA ISOLATED FROM CLINICAL SAMPLES AT THAI NGUYEN CENTRAL HOSPITAL IN 2023-2024

Objective: Determine the distribution rate of pathogenic bacteria isolated from inpatients at Thai Nguyen Central Hospital and evaluate the antibiotic resistance level of common bacteria. **Methods:** Retrospective cross-sectional descriptive study design from June 1, 2023 to December 31, 2023 and prospective study from January 1, 2024 to May 31, 2024. **Results:** The isolation rate of common bacteria in the hospital was 17.86%. In the group of Gram-positive bacteria: S. pneumoniae (48.65%), S. aureus (40.36%) and Enterococcus spp. (4.98%). Gram-negative bacteria: E. coli (25.05%), Klebsiella pneumoniae (12.8%), A. baumannii (10.4%), P. aeruginosa (10.03%), Proteus mirabilis (3.43%), Enterobacter cloacae (3.43%) and Hemophilus influenzae (1.88%). S. aureus, S. pneumoniae, Enterococcus spp. and Klebsiella pneumoniae were highly resistant to many antibiotics, such as penicillin, carbapenem, cephalosporin... P. aeruginosa, A. baumannii and Proteus mirabilis were resistant to all tested antibiotics at a rate of less than 40%. **Conclusion:** The common bacteria were S. pneumoniae, S. aureus, E. coli, Klebsiella pneumoniae, A. baumannii, P. aeruginosa, Proteus mirabilis và H. influenzae. S. aureus, S. pneumoniae, Enterococcus spp. and Klebsiella pneumoniae were highly resistant to many antibiotics, such as penicillin, carbapenem, cephalosporin... P. aeruginosa, A. baumannii and Proteus mirabilis were resistant to all tested antibiotics at a rate of less than 40%. **Keywords:** Bacteria, antibiotic resistance, isolation

I. ĐẶT VẤN ĐỀ

Tình trạng đề kháng và mức độ kháng kháng sinh của các vi khuẩn gây bệnh ngày càng gia tăng tới độ khó kiểm soát, là vấn đề y tế toàn cầu, thu hút được sự quan tâm đặc biệt của các nhà quản lý và bác sỹ điều trị lâm sàng.

Một báo cáo mới của Tổ chức Y tế Thế giới (WHO) cho thấy mức độ kháng thuốc cao ở vi khuẩn gây nhiễm trùng máu đe dọa tính mạng, cũng như đang sớt đề kháng với điều trị ở một số vi khuẩn gây nhiễm trùng thông thường ở hầu hết các khu vực trên thế giới giai đoạn 2018-2020. Vi khuẩn thường xuyên gây nhiễm trùng máu đe dọa tính mạng người bệnh như Klebsiella pneumoniae và Acinetobacter spp. Những bệnh nhiễm trùng nặng cần điều trị bằng kháng sinh cuối cùng, chẳng hạn như carbapenems. Tuy nhiên, 8% nhiễm trùng máu do Klebsiella pneumoniae gây ra đã được báo cáo là kháng carbapenems, gây khó khăn trong kiểm soát, tăng nguy cơ tử vong do nhiễm trùng [1]. Ở Việt Nam, hầu hết các bệnh viện (BV) đang phải đối mặt với khả năng lan rộng các vi khuẩn (VK) kháng với nhiều loại kháng sinh (KS) nghiêm trọng hơn so với châu Âu. Để điều trị đạt hiệu quả tốt nhất cần phải căn cứ vào kết quả định danh, kháng sinh đồ của từng loại vi khuẩn. Mục đích của nghiên cứu này là xác định tình trạng phân lập và tỉnh nhạy cảm của một số vi khuẩn gây bệnh thường gặp từ đó giúp bác sĩ lựa chọn loại và liều kháng sinh điều trị phù hợp.

II. ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU

2.1. Đối tượng nghiên cứu. Tất cả các chủng vi khuẩn phân lập được từ các mẫu bệnh phẩm của bệnh nhân điều trị nội trú tại Bệnh viện Trung ương Thái Nguyên từ ngày 01/06/2023 đến ngày 31/05/2024 đều được chọn nghiên cứu. Các chủng vi khuẩn này được định danh và chỉ định làm kháng sinh đồ.

2.2. Phương pháp nghiên cứu

Thiết kế nghiên cứu: Nghiên cứu mô tả cắt ngang (hồi cứu từ 01/01/2023 đến 30/12/2023 và tiến cứu từ 01/01/2024 đến 31/12/2024)

Cỡ mẫu và phương pháp chọn mẫu: Chọn mẫu thuận tiện, có chủ đích. Chọn toàn bộ các chủng vi khuẩn đã được phân lập, định danh có thông tin đầy đủ từ hai phần mềm WinLiet trong thời gian hồi cứu và mẫu bệnh phẩm vi sinh lâm sàng có chỉ định cấy khuẩn.

2.3. Phân tích và xử lý số liệu: Nhập, xử lý và phân tích số liệu theo phương pháp thống kê, xử lý số liệu bằng phần mềm SPSS 22.0 với các thuật toán thống kê y học.

III. KẾT QUẢ NGHIÊN CỨU

3.1. Tỷ lệ các loại vi khuẩn phân lập được từ bệnh phẩm lâm sàng. Trong thời gian nghiên cứu, 14.420 mẫu bệnh phẩm được gửi phân lập, định danh vi khuẩn và làm kháng sinh đồ, trong đó 2.598 mẫu bệnh phẩm có kết quả cấy khuẩn dương tính (17,96%), 11.822 mẫu (82,04%) cho kết quả âm tính. Trong nghiên cứu, vi khuẩn Gram dương chiếm 47,3% và vi khuẩn Gram âm chiếm 52,7%. Trong đó S. pneumoniae (48,65%) và S. aureus (40,36%) là hai vi khuẩn Gram dương chiếm tỷ lệ cao nhất. Các vi khuẩn Gram âm thường gặp gồm: E. coli (25,05%); K. pneumoniae (12,8%); A. baumannii (10,4%); P. aeruginosa (10,03%); Proteus mirabilis (3,43%); Enterobacter cloacae (3,43%) và Hemophilus influenzae (1,88%).

3.2. Mức độ đề kháng kháng sinh của một số vi khuẩn gây bệnh thường gặp

3.2.1. Mức độ đề kháng kháng sinh của S. Pneumonie: S. pneumoniae đề kháng cao > 90% với các kháng sinh: Linezolid, Tigecycline, Rifampicin; chưa ghi nhận tương tác của kháng

với Nowfloxacin. S. Pneumoniae còn nhạy cảm với Tetracyclins, Erythromycin và Clindamycin (> 80%). Các khủng sinh còn lại đều có tỉ lệ kháng dưới 20%.

Biểu đồ 3.1: Tỷ lệ kháng kháng sinh của E. pneumoniae

3.2.2. Mức độ nhạy cảm kháng sinh của vi khuẩn S. aureus

Biểu đồ 3.2: Mức độ nhạy cảm kháng sinh của vi khuẩn S. aureus

S. aureus đề kháng tất cả các nhóm kháng sinh với tỷ lệ khác nhau. Trong đó, tỉ lệ kháng cao > 80% với Rifampicin, Tigecyclins, các kháng sinh nhóm Carbapenem hay Cephalosporin tỷ lệ kháng trung >59 %, penicillin là kháng sinh có tỷ lệ nhạy cảm cao nhất với 41,3%. S. aureus kháng methicillin (MRSA) là 12/49 chủng (31,25%).

3.2.3. Mức độ nhạy cảm kháng sinh của vi khuẩn Enterococcus spp.

Bảng 3.1. Mức độ nhạy cảm kháng sinh của vi khuẩn Enterococcus spp.

Kháng sinh	Kí hiệu	Mức độ nhạy cảm KS (%)		
		Kháng (R)	Nhạy cảm (S)	Trung gian (I)
Ampicillin	AMP	65	29	6
Ciprofloxacin	CIP	11,1	84,1	11,8
Nitrofurantoin	NIT	59	8	41
Tetracycline	TCY	17,5	80	2,5
Erythromycin	ERY	2,5	84,5	13
Penicillin	PEN	3,7	82	47,5
Levofloxacin	LVX	8	62,5	37,5
Vancomycin	VAN	31,7	54	68,3
Linezolid	LNZ	2,5	54	95,9
Tigecycline	TGC	56,9	0	3,6
Daptomycin	DA	0	15,8	84,2

Enterococcus spp. kháng cao > 50% với các kháng sinh Tigecycline (94,4%); Ampicilin (65,2%); Nitrofurantoin(59%); chưa ghi nhận trường hợp vi khuẩn đề kháng Daptomycin, Linezolacin.

3.2.4. Mức độ đề kháng kháng sinh của một số vi khuẩn Gram âm thường gặp

Biểu đồ 3.3. Mức độ đề kháng kháng sinh của một số vi khuẩn Gram âm thường gặp

Mức độ đề kháng kháng sinh của một số vi khuẩn E. coli:

100% chủng E. coli đề kháng trung gian với Cefuroxime, Ceftriaxone và gần tuyệt đối với Chloramphenicol 99%. Mức độ đề kháng cao với Meropenem (80,1%), Nitrofurantin (70,9%); Fosfomycin (70,6%). Tỉ lệ các chủng E. coli sinh ESBL và không sinh ESBL lại bệnh viện Trung ương Thái Nguyên lần lượt là 17,23% và 87,31%.

Mức độ nhạy cảm kháng sinh của vi khuẩn Klebsiella pneumoniae:

Trong nhóm kháng sinh Beta – lactam được kháng cao, Klebsiella pneumoniae kháng cao nhất với Meropenem (62,3%); 100% chủng vi khuẩn đề kháng trung gian với Ertapenem, Ceftriaxone, Ceftriaxone. K. pneumoniae kháng cao với nhóm Aminoglycosid (Tobramycin- 30%; Gentamicin- 40,8%; Amikacin- 42,7%); nhóm Quinlon (Ciprofloxacin- 27,9%; Norfloxacin- 33,8%); nhóm phosphonic 27%; nhóm Sulfonamide 35,8% và nhóm Nitrofuran 69,2%.

Biểu đồ 3.4. Tỷ lệ mọc khuẩn Gram âm sinh ESBL

Kết quả nghiên cứu sinh ESBL phù thấy: Có 61/230 chủng E. coli sinh ESBL (17,23%) và 18/203 chủng K. pneumoniae sinh ESBL (5,79%).

Mức độ nhạy cảm kháng sinh của vi khuẩn Pseudomonas aeruginosa: Pseudomonas aeruginosa kháng tất cả các nhóm kháng sinh, tuy nhiên tỷ lệ kháng ở hầu hết các kháng sinh không đáng kể. Ceftriaxone và Ceftazidin là hai kháng sinh có tỷ lệ nhạy cảm cao lần lượt là 53,5% và 57,7%.

Mức độ nhạy cảm kháng sinh của vi khuẩn Acinetobacter baumanii: Acinetobacter baumanii kháng với các nhóm kháng sinh, tỷ lệ kháng cao nhất với Trimethoprim - Sulfamethoxazole (93,2%). Các kháng sinh thuộc nhóm Cephalosporin có tỷ lệ kháng thấp < 30% (Ceftriaxone: 7,1%; Ceftazidime: 7,2%; Cefepime: 9,5%). Hầu hết các kháng sinh thử nghiệm còn nhạy cảm chỉ từ 20 - 30 %.

Mức độ nhạy cảm kháng sinh của vi khuẩn Proteus mirabilis:

Biểu đồ 3.3: Mức độ nhạy cảm kháng sinh của vi khuẩn Proteus mirabilis

Proteus mirabilis có khả năng kháng kháng sinh đáng kể, đặc biệt là với các beta-lactam như Meropenem, Ceftriaxone, Ceftazidime đều kháng với tỷ lệ trên 50%, Ampicillin và Trimethoprim - Sulfamethoxazole là hai loại kháng sinh còn nhạy cảm cao trong điều trị Proteus mirabilis (tỷ lệ nhạy cảm là 46,5% và 44,8%).

Mức độ nhạy cảm kháng sinh của Hemophilus influenzae:

Bảng 3.2: Mức độ nhạy cảm kháng sinh của Hemophilus influenzae

Kháng sinh	Ký hiệu	Mức độ nhạy cảm RS (%)		
		Kháng (R)	Nhạy cảm (S)	Trung gian (I)
Ampicillin	AMP	0	0	100
Ceftriaxone	CRO	0	0	100
Imipenem	IPM	0	0	100
Ciprofloxacin	CIP	0	0	100
Trimethoprim-Sulfamethoxazole	SXT	0	0	100
Amoxicillin-clavulanic acid/Augmentin	AMC	0	0	100
Azithromycin	AZM	0	0	100
Ceftriaxone	CRO	0	0	100
Ampicillin/Sulbactam	SAM	0	0	100
Levofloxacin	LVX	0	0	100

Hemophilus influenzae không tăng giải quyết độ (100%) với các nhóm kháng sinh điều trị tại bệnh viện như Ampicillin, Ceftriaxone, Ciprofloxacin, Azithromycin, Ceftriaxone (tỷ lệ đề kháng 0%). Chỉ có một tỷ lệ nhỏ đơn nhạy cảm với Imipenem, Trimethoprim-Sulfamethoxazole, Amoxicillin-clavulanic acid/Augmentin, Ampicillin/Sulbactam và Levofloxacin lần lượt là 3,8%, 5,3%, 33,3%, 20% và 20%.

IV. BÀN LUẬN

Tỷ lệ cấy khuẩn dương tính với 14.428 mẫu bệnh phẩm là 17,56%. Kết quả nghiên cứu có sự tương đồng với nghiên cứu Ayrollet Adane năm 2020, tỷ lệ vi khuẩn phân lập được từ các mẫu bệnh phẩm lâm sàng chiếm 15,1% [2]. Trong số các vi khuẩn phân lập được, chủ yếu là vi khuẩn Gram âm (chiếm 82,7%). Kết quả nghiên cứu thu được có sự gần giống với nghiên cứu của tác Trần Minh Trí năm 2024, các vi khuẩn đơn dành được đa phần là các vực khuẩn Gram âm chiếm 69,6% [1]. Tỷ lệ vi khuẩn Gram âm gây bệnh phù hợp trong bối cảnh hiện nay khi các nhóm vi khuẩn Gram dương đang có xu hướng giảm dần nhỏ cho các căn nguyên vi khuẩn Gram âm và vi khẩn. Trong nhóm vi khuẩn Gram dương, S. pneumoniae chiếm tỷ lệ cao nhất (40,41%); tiếp theo là S. aureus với (40,38%). Trong nhóm vi khuẩn Gram âm, tỷ lệ vi khuẩn gây bệnh cao nhất là E. coli (21,89%) tiếp đến là K. pneumoniae (21,8%); A. baumanni (15,4%) và P. aeruginosa (11,03%); chiếm tỷ lệ ít hơn là Proteus mirabilis (5,03%), Enterobacter cloacae với (3,49%) và Hemophilus influenzae (1,98%). Theo tác giả Phạm Thị Ngọc Hạo, kết quả phân lập tại BV Đa khoa Thành phố Cần Thơ từ năm 2018 - 2023 cho thấy K. pneumoniae (20,9%) và E. coli (21,0%) là hai chủng thường gặp nhất tiếp theo là A. baumanni và P. aeruginosa với tỷ lệ lần lượt: (7,8% và 10,0%) [4]. Sự khác biệt về thứ tự từng loại vi khuẩn phân lập từ các nghiên cứu cho thấy sự khác biệt về phân bố vi khuẩn gây bệnh thường gặp tại các khoa lâm sàng ở các địa điểm và tỷ lệ khác nhau.

Về mức độ đề kháng kháng sinh, kết quả cho thấy vi khuẩn E. aureus kháng với tất cả các

nhóm kháng sinh được khảo sát. Kháng sinh có tỷ lệ kháng cao nhất là Tigecyclin (98%) và thấp nhất là Chloramphenicol (1,3%). S. aureus chỉ có tỷ lệ nhạy cảm cao > 50% với hai loại kháng sinh Penicillin (61,3%) và Oxacillin (51,9%). Clindamycin và nhóm Macrolid với đại diện Erythromycin, Azithromycin đều có tỷ lệ kháng sinh thấp hơn 30%; tỷ lệ này tương đồng với nghiên cứu tổng quan ở Châu Phi, tại Đại học Gondar năm 2022 với tỷ lệ kháng Clindamycin ở các chủng S. aureus 15,8% [3]. Với kháng sinh nhóm Carbapenem, đây là nhóm kháng sinh nằm hữu nhất để điều trị các bệnh nhiễm trùng thứ nay đã kháng tỷ lệ tương đối cao (>60%): Ertapenem (56,7%), Imipenem (56,0%), Meropenem (55,7%). Kết quả này tương đồng với nghiên cứu của Nguyễn Thị Loan tại Bệnh viện Thanh Nhàn với 62,9% vi khuẩn đề kháng kháng sinh nhóm này [6].

Streptococcus pneumoniae đề kháng cao >99% với các kháng sinh Linezolid, Tigecyclin, Vancomycin; chưa ghi nhận trường hợp nào kháng với Moxifloxacin. Các kháng sinh có tỷ lệ kháng thấp như Tetracyclin (9,2%); Erythromycin (4,9%) và Clindamycin (6,6%). Kết quả nghiên cứu có sự tương đồng với công bố của Thro Chanta Hlaga và cộng sự năm 2021, Streptococcus pneumoniae kháng Tetracyclin với tỷ lệ 20,5%; Erythromycin với 21,3% [7].

Trong nghiên cứu phân lập được tổng số 359 chủng E. coli, trong đó có 61 chủng (17,29%) sinh ESBL. Kết quả này thấp hơn nhiều so với nghiên cứu của tương Hồng Loan (2020) thực hiện tại Bệnh viện Đại học Y Dược TP Hồ Chí Minh, tỷ lệ E. coli sinh ESBL là 61,5%. Có giải sự khác nhau về tỷ lệ E. coli sinh ESBL giữa các nghiên cứu có thể do sự khác biệt về tiêu chuẩn chọn mẫu trong nghiên cứu.

Với Klebsiella pneumoniae, tỷ lệ sinh ESBL là 8,76%. Tỷ lệ này có sự khác biệt so với nghiên cứu của Đặng Thị Sen và cộng sự tại BVĐK Thái Bình và bệnh viện Sản Nhi, Nghệ An (lần lượt là 15,8% và 14%). Các biện pháp kiểm soát nhiễm khuẩn tại mỗi bệnh viện có thể khác nhau, BVĐK Tỉnh Thái Nguyên có thể và các biện pháp kiểm soát nhiễm khuẩn hiệu quả hơn, dẫn đến tỷ lệ vi khuẩn sinh ESBL thấp hơn. Tỷ lệ đề kháng của Klebsiella pneumoniae với các kháng sinh nhóm Beta – lactam: Cefotaxime(44,9%); Ceftazidime (34,7%); Cefepime(41,7%); Imipenem (11,2%) [8].

Pseudomonas aeruginosa kháng Ciprofloxacin với tỷ lệ 33,8%; 36,8% số chủng kháng với Tobramycin, với nhóm kháng sinh cephalosporin thế hệ 3 và 4 kháng với Ceftazidim và 11% kháng với Cefepime. Tỷ lệ kháng với kháng sinh nhóm Quinolon thế hệ 2 Ciprofloxacin cũng ở mức 17,8%. Với nhóm Aminoglycosid, 21,3% Pseudomonas aeruginosa kháng với Gentamicin và 36,1% kháng Meropenem tỷ lệ này không khác biệt nhiều với một nghiên cứu tại BV Từ Dũ: Trực khuẩn Pseudomonas aeruginosa kháng Gentamicin với tỉ lệ 36,7%; và kháng Meropenem với 22,1%, không khác biệt nhiều so với kết quả của chúng tôi (26,2%) [4]. Một nghiên cứu tại BV huyện Củ Chi cho thấy tỷ lệ vi khuẩn kháng Ciprofloxacin cao gấp hai lần (38,1%) so với nghiên cứu của chúng tôi [3]. Điều kiện môi trường như vệ sinh, kiểm soát nhiễm khuẩn hoặc đặc điểm dân số, địa lý khác nhau có thể là lý do giải thích cho sự khác nhau này.

Acinetobacter baumannii tại BV Trung ương Thái Nguyên có tỷ lệ nhạy cảm ở mức trung bình với nhóm Beta – lactam, đại diện là Cefotaxime 32,9%; Piperacillin- tazobactam 44,1%; Cefepime 43,2% và Ceftazidime 47,4%. Tỷ lệ Proteus mirabilis kháng Ampicillin, Ceftazidime, Gentamicin, Ciprofloxacin, Trimethoprim - Sulfamethoxazole trong nghiên cứu của chúng tôi lần lượt là 11,3%; 63,8%; 25,8%; 18,2% và 14,9%) thấp hơn so với một nghiên cứu được tiến hành tại Tasania (75%; 42,9%; 26,6%; 28,3% và 84,8%), trong đó đáng chú ý là tỷ lệ kháng Ceftazidime trong nghiên cứu của chúng tôi cao hơn nghiên cứu tại Tasania (9)Vi khuẩn ở các khu vực khác nhau có thể phát triển các cơ chế kháng thuốc khác nhau do sự khác biệt về môi trường và thói quen sử dụng kháng sinh.

Haemophilus influenzae đề kháng tương đối thấp như hoàn toàn với các nhóm kháng sinh đầu tiên tại bệnh viện như Ampicillin, Ceftazidime, Ciprofloxacin, Azithromycin, Ceftriaxone, tỷ lệ đề kháng (0%). Theo tác giả Đỗ Tú Uyên và cộng sự năm 2018, hơn một nửa số chủng H. influenzae đề kháng với ampicillin hoặc Trimethoprim - sulfamethoxazole, cụ thể với ampicillin vào năm 2007 đã ghi nhận là 60,6%, với Amoxicillin - clavulanate năm 2007 là 27,3% và 2017 là 34,8%. Sự gia tăng về tỉnh đề kháng với các kháng sinh này sau đó có thể do kết quả của việc sử dụng kháng sinh không hợp lý, cần quan sát điều kháng sinh theo thực hành chung hiện ưu tiên cho các nhóm thuốc kháng khuẩn khác.

V. KẾT LUẬN

Qua nghiên cứu 1443 mẫu bệnh phẩm lâm sàng từ các bệnh nhân điều trị nội trú, kết quả cấy nhuẩn dương tính là 37,95%, trong đó vi khuẩn Gram âm chiếm 52,7%. Các vi khuẩn gây bệnh thường gặp nhất là S. pneumoniae (22,83%), S. aureus(19,11%), E. coli (13,67%),

Klebsiella pneumoniae (13,81%), A. baumannii (8,11%), P. aeruginosa (7,92%) và Proteus mirabilis (3,97%). Kết quả kháng sinh đồ cho thấy H. influenzae, S. aureus, S. pneumoniae, K. pneumoniae, E. coli có tỷ lệ đề kháng cao 40-92% với nhiều kháng sinh. P. aeruginosa và A. baumannii còn nhạy cảm ở mức tương đối từ 28-89% với nhiều kháng sinh.

VI. KHUYẾN NGHỊ

Trước tình hình vi khuẩn đa kháng thuốc như hiện nay, xác định rõ được sự phân bố, cập nhật liên tục tình hình đề kháng kháng sinh của các vi khuẩn gây bệnh thường gặp sẽ có ý nghĩa rất lớn trong việc sử dụng kháng sinh trong điều trị. Vì vậy, cần thường xuyên có những nghiên cứu, giám sát tình hình kháng sinh của vi khuẩn, ưu tiên lựa chọn điều trị kháng sinh cho từng loại vi khuẩn theo kết quả kháng sinh đồ.

Các tác giả xây dựng khi sử dụng kháng sinh nên căn cứ vào các chủng vi khuẩn thường gặp và mức độ đề kháng kháng sinh của vi khuẩn để lựa chọn kháng sinh ban đầu thích hợp và hiệu quả kháng sinh đồ.

TÀI LIỆU THAM KHẢO

1. **Wikis, Report Indicates** Increasing Antibacterial Resistance Lists, engl. 2021.
2. **Adams A, Bailey E, Tannhat RS.** Microbiological Profile and Drug Resistance Pattern of Pathogens Among Patients Who Visited the University of Gondar Comprehensive Specialized Hospital, Ethiopia. Infect Drug Resist. 2020;13:4665–4678.
3. **Trí Đỗ Trần Hoàn, Hạnh Phạm Thị Hồng, Trâm Nguyễn Thị Ngọc.** Một số đặc điểm nhiễm khuẩn của vi khuẩn gây bệnh tại thị huyện Cù Lao Dung năm 2020. Tạp chí khoa học Trường Đại học Quốc tế Hồng Bàng. 2021; 12:76.
4. **Nga Phạm Thị Nguyệt, Chi Nguyễn Trí Bảo, Hân Trương Thị Bích,** Mức độ đề kháng kháng sinh của một số vi khuẩn Gram âm thường gặp tại Bệnh viện Thành phố Cần Thơ từ năm 2019 – 2020. Tạp chí y học thực hành. 2021; 1133:113.
5. **Assefa M, Endalkan Gebremam** Resistant Staphylococcus aureus Strains in Africa: A Systematic Review. Int J Microbiol. 2022 Apr 19.
6. **Lâm Nguyễn Thị.** Sự đề kháng kháng sinh của các chủng Staphylococcus aureus và Escherichia coli phân lập từ bệnh nhân được điều trị tại khoa hồi sức tích cực - Bệnh Viện Nhân. Tạp chí khoa học và công nghệ Đại học Thái Nguyên. 2021; 206:206.
7. **Hoàn N, Zhang X, Dilnaz TP, Hasnain BF, Sanlia CL.** Population structure, serotype distribution and antibiotic resistance of Streptococcus pneumoniae causing invasive disease in children, Australia. Microb Genom. 2023 Jul; 9(7).
8. **Sao Đặng Thị và cộng sự.** Tổng quan về tình hình kháng kháng sinh của một số vi khuẩn thường gây bệnh trên lâm sàng tại Việt Nam từ 2017-2021. Tạp chí y học. 2022; 31:142.
9. **H. H. Kuntsevich, et al.** Pyrimorph: virulence, epidemical agents and antimicrobial resistance of a sanitary cane mutant vs. wildtype "Saccharis". Trop Med Int Health. 2017; 22(4): 414-464.

KHẢO SÁT ĐẶC ĐIỂM LÂM SÀNG, CẬN LÂM SÀNG VÀ KẾT QUẢ ĐIỀU TRỊ BỆNH LÝ HẸP CỬA MŨI SAU TẠI BỆNH VIỆN NHI ĐỒNG 1

Lương Hữu Đăng[1], Lê Minh Tú[1], Trần Thị Thanh Hồng[1], Nguyễn Tuấn Nhơ[2]

TÓM TẮT

Đặt vấn đề: Hẹp cửa mũi sau là một bệnh lý bẩm sinh, tập trung khi trẻ sơ sinh tắc mũi phải ngưng bú, khó thở trong khoảng một vài giây. Phẫu thuật tạo hình cửa mũi sau là cần thiết để bảo đảm sự thông khí đầy đủ của đường hô hấp trên của trẻ. Việc phát hiện bệnh lý hẹp cửa mũi sau, bảo thời mang bé, có các phương pháp điều trị khác nhau đảm bảo điều trị và tiên lượng của bệnh nhi. **Mục tiêu và phương pháp nghiên cứu:** Nghiên cứu mô tả

Among Patients Who Visited the University of Gondar Comprehensive Specialized Hospital, Ethiopia. Infect Drug Resist. 2020;13:4665–4678.

3. Trí Đỗ Trần Hoàn, Hạnh Phạm Thị Hồng, Trâm Nguyễn Thị Ngọc. Một số đặc điểm nhiễm khuẩn của vi khuẩn gây bệnh tại thị huyện Cù Lao Dung năm 2020. Tạp chí khoa học Trường Đại học Quốc tế Hồng Bàng. 2021; 12:76.

4. Nga Phạm Thị Nguyệt, Chi Nguyễn Trí Bảo, Hân Trương Thị Bích, Mức độ đề kháng kháng sinh của một số vi khuẩn Gram âm thường gặp tại Bệnh viện Thành phố Cần Thơ từ năm 2019 – 2020. Tạp chí y học thực hành. 2021; 1133:113.

5. Assefa M, Endalkan Gebremam Resistant Staphylococcus aureus Strains in Africa: A Systematic Review. Int J Microbiol. 2022 Apr 19.

6. Lâm Nguyễn Thị. Sự đề kháng kháng sinh của các chủng Staphylococcus aureus và Escherichia coli phân lập từ bệnh nhân được điều trị tại khoa hồi sức tích cực - Bệnh Viện Nhân. Tạp chí khoa học và công nghệ Đại học Thái Nguyên. 2021; 206:206.

7. Hoàn N, Zhang X, Dilnaz TP, Hasnain BF, Sanlia CL. Population structure, serotype distribution and antibiotic resistance of Streptococcus pneumoniae causing invasive disease in children, Australia. Microb Genom. 2023 Jul; 9(7).

8. Sao Đặng Thị và cộng sự. Tổng quan về tình hình kháng kháng sinh của một số vi khuẩn thường gây bệnh trên lâm sàng tại Việt Nam từ 2017-2021. Tạp chí y học. 2022; 31:142.

9. H. H. Kuntsevich, et al. Pyrimorph: virulence, antibiotic agents and antimicrobial resistance of a sanitary cane mutant vs. wildtype "Saccharis". Trop Med Int Health. 2017; 22(4): 414-464.

[1]Trường Đại học Y Dược, chuyên ngành Nhi khoa I
[2]Bệnh viện Nhi đồng 1
Chịu trách nhiệm chính: Lương Hữu Đăng
Email: luonghuudang1612@ump.edu.vn

Ngày nhận bài: 21.10.2020
Ngày phản biện khoa học: 22.11.2020
Ngày duyệt bài: 30.12.2020

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

Hải Phòng, ngày 23 tháng 01 năm 2024

Số: 25/QĐ-YDHP

QUYẾT ĐỊNH

Về việc thành lập Hội đồng chấm luận văn thạc sĩ cho học viên lớp cao học khoá 2022-2024 ngành Kỹ thuật xét nghiệm y học

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Căn cứ quyết định số 2153/QĐ-TTg ngày 11/11/2013 của Thủ tướng chính phủ về việc đổi tên Trường Đại học Y Hải Phòng thành Trường Đại học Y Dược Hải Phòng;

Căn cứ quyết định số 44/QĐ-TTg ngày 25/03/2004 của Thủ tướng Chính Phủ về việc giao nhiệm vụ đào tạo Thạc sĩ cho Trường Đại học Y Hải Phòng;

Căn cứ quyết định số 7736/QĐ-BGDĐT ngày 24 tháng 06 năm 2019 của Bộ trưởng Bộ Giáo dục & Đào tạo về việc giao chuyển ngành đào tạo thạc sĩ ngành Kỹ thuật xét nghiệm y học;

Căn cứ thông tư số 23/2021/TT- BGDĐT ngày 30 tháng 08 năm 2021 của Bộ trưởng Bộ Giáo dục & Đào tạo về việc ban hành Quy chế tuyển sinh và đào tạo trình độ thạc sĩ;

Căn cứ Quy định số 2946/QĐ- YDHP ngày 30/12/2022 về việc ban hành kèm theo Quy định đào tạo trình độ thạc sĩ của Trường Đại học Y Dược Hải Phòng;

Theo đề nghị của Ông Trưởng phòng Quản lý đào tạo sau đại học, Trưởng khoa Kỹ thuật Y học

QUYẾT ĐỊNH:

Điều 1: Thành lập Hội đồng chấm luận văn thạc sĩ cho học viên lớp Cao học khoá 2022 - 2024 Ngành: Kỹ thuật xét nghiệm y học Mã số: 8720601

Về đề tài: Tỷ lệ và đặc điểm không không sinh của các vi khuẩn phân lập được từ bệnh phẩm lâm sàng tại Bệnh viện Trung ương Thái Nguyên năm 2023-2024.

Của học viên: Ngô Thị Ánh Tuyết

Người hướng dẫn khoa học: 1. TS. Nguyễn Đức Trung
2. TS. Vũ Văn Thái

Gồm các ông bà khoa học có tên sau

1- PGS.TS. Phạm Văn Linh	Trường DHYDHPhòng	CN: SLB-MD	Chủ tịch HĐ
2- TS. Nguyễn Hàng Cường	Trường DHYDHPhòng	CN: Vi sinh	Phản biện 1
3- TS. Trần Đức	BVĐK Việt tiệp	CN: Vi sinh	Phản biện 2
4- TS. Võ Thị Thanh Thiều	Trường DHYDHPhòng	CN: KST	Ủy viên
5- TS. Phạm Thị Lài	Trường DHYDHPhòng	CN: Huyết học	Ủy viên Thư ký

Điều 2: Ủy quyền cho Ông Chủ tịch Hội đồng chấm luận văn và phòng Quản lý đào tạo Sau đại học tổ chức bảo vệ luận văn theo quy định hiện hành và giải thể sau khi hoàn thành nhiệm vụ.

Điều 3: Các Ông (Bà) Trưởng phòng: Quản lý đào tạo Sau đại học, Tài chính kế toán, Trưởng khoa Kỹ thuật y học, các thành viên có tên trong điều 1 và học viên: **Ngô Thị Ánh Tuyết** căn cứ quyết định thi hành./.

Nơi nhận:
- Như điều 3;
- Bộ GD&ĐT (để b/c);
- Lưu VT, QLĐTSĐH.

HIỆU TRƯỞNG

PHÓ HIỆU TRƯỞNG

TS.TT. Phạm Văn Linh

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

Số: 342/QĐ-YDHP

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

Hải Phòng ngày 26 tháng 12 năm 2021

QUYẾT ĐỊNH

Về việc học viên được công nhận tên đề tài và cán bộ hướng dẫn khoa học cao học khoá 18 (2021 - 2024)

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Căn cứ Quyết định số 86/1998/QĐ-TTg ngày 23 tháng 01 năm 1998 của Thủ tướng Chính phủ về việc thành lập Trường Đại học Y Hải Phòng;

Căn cứ quyết định số 2113/QĐ-TTg ngày 13/11/2013 của Thủ tướng chính phủ về việc đổi tên Trường Đại học Y Hải Phòng thành Trường Đại học Y Dược Hải Phòng;

Căn cứ quyết định số 7830/QĐ-BGDĐT, ngày 25 tháng 12 năm 2006 của Bộ trưởng Bộ Giáo dục & Đào tạo về giao chuyên ngành đào tạo thạc sĩ Nội khoa, Nhi khoa;

Căn cứ thông tư số 23/2021/TT- BGDĐT ngày 30 tháng 8 năm 2021 của Bộ trưởng Bộ Giáo dục & Đào tạo về việc ban hành Quy chế tuyển sinh và đào tạo trình độ thạc sĩ;

Căn cứ quyết định số 1734/QĐ- YDHP ngày 07/12/2021 về việc ban hành Quy định đào tạo thạc sĩ của Trường Đại học Y Dược Hải Phòng;

Xét đề nghị của Trưởng phòng Quản lý đào tạo Sau đại học và Hội đồng thông qua đề cương luận văn thạc sĩ

QUYẾT ĐỊNH:

Điều 1. Danh sách học viên Cao học khoá 18 (2022 - 2024) ngành Kỹ thuật xét nghiệm y học, Mã số: 8720601 của Trường Đại học Y Dược Hải Phòng được công nhận tên đề tài và cán bộ hướng dẫn.

(có danh sách kèm theo)

Điều 2. Học viên cao học và cán bộ hướng dẫn được hưởng các quyền lợi theo quy định đào tạo Sau đại học hiện hành của Nhà trường.

Điều 3. Các ông (bà) Trưởng phòng Quản lý đào tạo Sau đại học, tài chính kế toán, các cán bộ hướng dẫn và học viên có tên trong điều 1 căn cứ quyết định thi hành./.

Nơi nhận:
- Như điều 3;
- Lưu: VT, QLĐTSĐH.

KT. HIỆU TRƯỞNG
PHÓ HIỆU TRƯỞNG

PGS.TS. Phí Ngọc Thắng

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

DANH SÁCH
HỌC VIÊN, TÊN ĐỀ TÀI VÀ CÁN BỘ HƯỚNG DẪN KHOA HỌC CAO HỌC KHÓA 10 (2022 – 2024)
NGÀNH KỸ THUẬT XÉT NGHIỆM Y HỌC
(Kèm theo Quyết định số 1822/QĐ-YDHP ngày 28 tháng 12 năm 2023)

TT	Họ và tên học viên	Tên đề tài	Cán bộ hướng dẫn
1	Ngô Thị Ánh Tuyết	Tỷ lệ và đặc điểm vi khuẩn gây bệnh của các vi khuẩn phân lập được từ bệnh phẩm tăm sáng tại Bệnh viện Trung ương Thái Nguyên năm 2021 – 2024	1.TS. Nguyễn Đức Trung – Trường ĐH Thái Nguyên CN: Vi sinh – Hướng dẫn thứ nhất 2.TS. Võ Văn Thới - Trường ĐHYD Hải Phòng CN: Ký sinh trùng - Hướng dẫn thứ hai
2	Nguyễn Thị Ly	Nghiên cứu đặc điểm chỉ số Anti – Mullerian hormone (AMH), Antral Follicle Count (AFC), Ovarian Response Prediction Index (ORPI) của phụ nữ được chỉ định thụ tinh trong ống nghiệm tại Bệnh viện Quốc tế Hải phòng 2023 - 2024	1.TS. Phạm Thu Xuân- BV Quốc tế Sài Sơn H.Phòng CN: Sản - Hướng dẫn thứ nhất 2.TS. Nguyễn Hùng Cường -Trường ĐHYD Hải Phòng CN: Vi sinh - Hướng dẫn thứ hai
3	Vũ Thị Hải Hà	Xây dựng danh mục xét nghiệm dựa hàu tiêu thăng, công nhận kết quả giữa các cơ sở y tế tỉnh Hải Dương.	1.TS. Nguyễn Hùng Cường Trường ĐHYD Hải Phòng CN: Vi sinh - Hướng dẫn thứ nhất 2. TS. Ngô Thị Thảo - Bệnh viện Phụ sản II Phòng CN: Hoá sinh - Hướng dẫn thứ hai
4	Hoa Thị Hồng Anh	Đặc trưng nhiễm và thành phần loài nấm Aspergillus, Penicillium ở một số vị thuốc sử dụng tại cơ sở thành **BMPS-GE** năm 2024".	1. TS. Đào Thu Hằng Trường ĐHYD Hải Phòng CN: Sinh lý - Hướng dẫn thứ nhất 2. Ts. Vũ Thị Thanh Hiền Trường ĐHYD Hải Phòng CN: Ký sinh [illegible] hướng dẫn thứ hai

[illegible] TRƯỜNG ĐẠI HỌC Y DƯỢC

[illegible] TRƯỜNG ĐẠI HỌC Y DƯỢC

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Số: 630/QĐ-YDHP

CỘNG HOÀ XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

Hải Phòng, ngày 5 tháng 4 năm 2021

QUYẾT ĐỊNH

Về việc thành lập Hội đồng đánh giá đề cương luận văn Thạc sĩ cho học viên Cao học khoá 3 (2019 - 2021) ngành Kỹ thuật xét nghiệm Y học

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Căn cứ quyết định số 06/QĐ-TTg ngày 25/01/1969 của Thủ tướng chính phủ về việc thành lập Trường Đại học Y Hải Phòng

Căn cứ quyết định số 2113/QĐ-TTg ngày 13/12/2013 của Thủ tướng chính phủ về việc đổi tên Trường Đại học Y Hải Phòng thành Trường Đại học Y Dược Hải Phòng

Căn cứ quyết định số 447/2004/QĐ-TTg ngày 23/03/2004 của Thủ tướng Chính Phủ về việc giao nhiệm vụ đào tạo Thạc sĩ cho Trường Đại học Y Hải Phòng;

Căn cứ quyết định số 1770/QĐ-BGDĐT ngày 24 tháng 6 năm 2019 của Bộ trưởng Bộ Giáo dục và Đào tạo về việc giao đào tạo thạc sĩ ngành Kỹ thuật xét nghiệm Y học;

Căn cứ thông tư số 15/2014/ TT- BGDĐT ĐT ngày 15 tháng 05 năm 2014 của Bộ trưởng Bộ Giáo dục và Đào tạo về việc ban hành Quy chế đào tạo trình độ Thạc sĩ;

Theo đề nghị của Ông (Bà): Trưởng phòng Đào tạo Sau đại học, Trưởng khoa Kỹ thuật Y học;

QUYẾT ĐỊNH:

Điều 1. Thành lập Hội đồng đánh giá đề cương luận văn Thạc sĩ cho học viên Cao học khoá 3 (2019 - 2021) Ngành: Kỹ thuật xét nghiệm y học Mã số: 8720601
Về đề tài: Thực trạng, kiến thức, thực hành và một số yếu tố liên quan đến nhiễm giun truyền qua đất ở học sinh tiểu học thành phố Hà Tĩnh, năm 2021
Của học viên: **Nguyễn Thị Nguyệt**
Người hướng dẫn khoa học:
TS.BS. Võ Văn Thái

Gồm các ông bà có tên sau:

1. GS.TS. Phạm Văn Thức	Chuyên ngành: DC- MD LS	Chủ tịch hội đồng
2. PGS.TS. Bùi Thị Thanh Mai	Chuyên ngành: KST	Ủy viên - Thư ký
3. TS.BS. Trần Quang Cảnh	Chuyên ngành: Vi sinh	Ủy viên
4. TS.BS. Hoàng Văn Phòng	Chuyên ngành: Huyết học	Ủy viên
5. TS.BS. Võ Văn Thái	Chuyên ngành: KST	Ủy viên

Điều 2. Ủy quyền cho Ông Chủ tịch Hội đồng và Phòng đào tạo Sau đại học tổ chức đánh giá đề cương luận văn theo quy định hiện hành.

Điều 3. Các Ông (Bà) trưởng phòng: Đào tạo Sau đại học, Tài chính kế toán, Khoa Kỹ thuật Y học, các thành viên có tên trong danh sách ở điều 1 và học viên: Nguyễn Thị Nguyệt căn cứ quyết định thi hành./.

Nơi nhận:
- Như điều 3;
- Lưu VT, SĐH.

HIỆU TRƯỞNG

PGS.TS. Nguyễn Văn Tới

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

Số: 3[illegible]/QĐ-YDHP

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

Hải Phòng, ngày 30 tháng 12 năm 2021

QUYẾT ĐỊNH
Về việc học viên được công nhận tên đề tài và cán bộ hướng dẫn khoa học cao học khoá 17 (2021 – 2023)

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

Căn cứ Quyết định số 08/1999/QĐ-TTg ngày 21 tháng 01 năm 1999 của Thủ tướng Chính phủ về việc thành lập Trường Đại học Y Hải Phòng;

Căn cứ quyết định số 2135/QĐ-TTg ngày 13/12/2013 của Thủ tướng chính phủ về việc đổi tên Trường Đại học Y Hải Phòng thành Trường Đại học Y Dược Hải Phòng;

Căn cứ quyết định số 1776/QĐ-BGDĐT, ngày 24 tháng 6 năm 2019 của Bộ trưởng Bộ Giáo dục & Đào tạo về giao chuyên ngành đào tạo ngành Kỹ thuật xét nghiệm Y học trình độ thạc sĩ;

Căn cứ thông tư số 15/2021/ TT- BGDĐT ngày 30 tháng 8 năm 2021 của Bộ trưởng Bộ Giáo dục & Đào tạo về việc ban hành Quy chế tuyển sinh và đào tạo trình độ thạc sĩ;

Căn cứ quyết định số 1734/QĐ- YDHP ngày 03/12/2021 về việc ban hành Quy định đào tạo thạc sĩ của Trường Đại học Y Dược Hải Phòng;

Xét đề nghị của Trưởng phòng Quản lý đào tạo Sau đại học và Hội đồng thông qua đề cương luận văn thạc sĩ

QUYẾT ĐỊNH:

Điều 1. Danh sách học viên Cao học khoá 17 (2021 – 2023) ngành Kỹ thuật xét nghiệm Y học, Mã số: 8720601 của Trường Đại học Y Dược Hải Phòng được công nhận tên đề tài và cán bộ hướng dẫn.

(có danh sách kèm theo)

Điều 2. Học viên cao học và cán bộ hướng dẫn được hưởng các quyền lợi theo quy định đào tạo Sau đại học hiện hành của Nhà trường.

Điều 3. Các ông (bà) Trưởng phòng Quản lý đào tạo Sau đại học, tài chính kế toán, các cán bộ hướng dẫn và học viên có tên trong điều 1 căn cứ quyết định thi hành./.

Nơi nhận:
- Như điều 3;
- Lưu: VT, QLĐTSDH.

KT. HIỆU TRƯỞNG
PHÓ HIỆU TRƯỞNG

TS. Phạm Văn Linh

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

DANH SÁCH
HỌC VIÊN, TÊN ĐỀ TÀI VÀ CÁN BỘ HƯỚNG DẪN KHOA HỌC CAO HỌC KHOÁ 17 (2021 – 2023)
NGÀNH KỸ THUẬT XÉT NGHIỆM Y HỌC
(Kèm theo Quyết định số 2809-QĐ/ĐHYHP ngày 30 tháng 12 năm 2022)

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THỰC TRẠNG NHIỄM GIUN TRUYỀN QUA ĐẤT Ở HỌC SINH TẠI HAI TRƯỜNG TIỂU HỌC THÀNH PHỐ HÀ TĨNH, NĂM 2021

Vũ Văn Thái[1], Nguyễn Thị Nguyệt[2]

TÓM TẮT

Chúng tôi tiến hành với nghiên cứu phân bằng phương pháp Kato-Katz cho 652 học sinh ở trường tiểu học Nguyễn Du và trường tiểu học Thạch Linh, thành phố Hà Tĩnh năm 2021. Kết quả: Tỷ lệ nhiễm giun truyền qua đất chung tại 2 trường tiểu học được nghiên cứu là khá thấp 9,7%, trong đó, tỷ lệ nhiễm giun đũa là rất nhỏ (0,3%), giun tóc 4,4%, giun móc(mỏ) 4,9 %. Tỷ lệ nhiễm ở nam và nữ và các nhóm tuổi là không có sự khác biệt. Đơn nhiễm 1 loại giun chiếm tỷ lệ cao nhất 8,0 %, đa nhiễm 2 loại giun 2,0 %, đa nhiễm 3 loại giun 1,0 %. Cường độ nhiễm trứng giun trong bình(gram phân ở toàn dân cho trứng giun đũa: 150,34 ± 99,80 epg; trứng giun tóc 105,34 ± 57,33 epg; trứng giun móc(mỏ) 120,33 ± 63,07 epg. Cường độ nhiễm ở nam và nữ không có sự khác biệt

Từ khóa: giun truyền qua đất, học sinh, Hà Tĩnh.

SUMMARY

SITUATION OF SOIL TRANSMITTED HELMINTH INFECTION IN PUPILS AT TWO PRIMARY SCHOOL IN HA TINH CITY, IN 2021

We conducted cross-sectional by Kato-Katz method for 652 pupils in Nguyen Du and Thach Linh primary school in Ha Tinh city, in 2021. Results showed that: The prevalence of intestinal helminth infections among pupils was low at 9.7%. In particular, A. lumbricoides infection accounted for the highest rate of 4.7%, T. trichiura 4.4% and Hookworm 4.9%. There was no difference in worm infection rates between male and female, ages. 8.0% was single infection, 2.0% and 1.0% was mixed infections. Intensity of infection pupils were mild. The intensity of A. lumbricoides infection was 150.34 eggs per gram, the intensity of T. trichiura infection was 105.34 eggs per gram, the intensity of hookworm infection was 120.33 eggs per gram. There was no difference in the intensity of infection in the sexes.

Key words: Soil transmitted helminth, pupils, Ha Tinh.

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I. ĐẶT VẤN ĐỀ

Việt Nam nằm trong vùng nhiệt đới gió mùa, khí hậu nóng ẩm quanh năm là điều kiện thuận lợi cho mầm bệnh giun sán phát triển. Tập quán và ý thức của người dân chưa tuyệt đối với môi trường là 1 nhiễm cộng hòa mầm bệnh ký sinh trùng làm mầm bệnh giun sán lưu hành với tỷ lệ cao nhất là các bệnh giun đường ruột. Theo điều tra của Viện Sốt rét - Ký sinh trùng - Côn trùng, 95% người Việt Nam mang mầm bệnh giun đường ruột, trong đó một người có thể nhiễm từ 1 - 3 loài giun [1].

Tại xã Kỳ Xuyên có tỷ nhiễm giun truyền qua đất nhất. Các loại giun truyền qua đất phổ biến ở trẻ em là: giun đũa, giun tóc, giun móc, trong đó có nhiều trẻ bị nhiễm phối hợp hai hoặc ba loại giun.

Giun chỉ đều chủ yếu đường tiêu hóa, gây thiếu máu, giảm protein máu thứ phát, ảnh hưởng đến phát triển trí tuệ và còn gây ra nhiều biến chứng nguy hiểm như: tắc ruột do giun, giun chui ống mật [1], [2]. Xuất phát từ thực tế đó chúng tôi tiến hành nghiên cứu đề tài với 2 mục tiêu:

1. Xác định tỷ lệ nhiễm giun truyền qua đất ở học sinh tại hai trường tiểu học Thạch Linh và trường tiểu học Nguyễn Du, thành phố Hà Tĩnh, năm 2021.

2. Xác định cường độ nhiễm giun truyền qua đất ở học sinh tiểu học tại địa điểm nghiên cứu.

II. ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU

2.1. Địa điểm nghiên cứu

Nghiên cứu được tiến hành ở trường tiểu học Nguyễn Du và trường tiểu học Thạch Linh, thành phố Hà Tĩnh.

2.2. Đối tượng nghiên cứu

Toàn bộ học sinh từ lớp 1 đến lớp 5 tại trường tiểu học trên.

2.3. Thời gian nghiên cứu

Từ tháng 01/2021 – 10/2021

2.4. Phương pháp nghiên cứu.

Thiết kế nghiên cứu:

Dùng phương pháp nghiên cứu mô tả cắt ngang (cross-sectional study)

Cỡ mẫu

Chúng tôi áp dụng công thức tính cỡ mẫu:

Trong đó:

$$n = Z^2_{1-\alpha/2}\frac{p.q}{d^2}$$

n: cỡ mẫu tối thiểu cần điều tra

$Z_{1-\alpha/2}$: hệ số tin cậy, mức α = 0.05, độ tin cậy 95% thì $Z_{1-\alpha/2}$ = 1.96

p: theo kết quả nghiên cứu trước của bộ môn Ký sinh trùng trường Đại học Y Dược Hải Phòng là 0,25 [3]

q: là tỷ số phụ thuộc và q (q = 1- p)

d: độ chính xác mong muốn là 0.05

Như vậy, cỡ mẫu tối thiểu của nghiên cứu là 288. Vậy tối thiểu nghiên cứu là 288 x 2 = 576 học sinh. Để đảng trên 40 chính xác chúng tôi nâng tách nghiên cứu 612 học sinh, trong đó ở trường tiểu học Thạch Linh là 295 học sinh và trường tiểu học Nguyễn Du là 317 học sinh.

Chọn mẫu:

- Phương pháp chọn mẫu: Chọn mẫu ngẫu nhiên phân tầng:

- Cách chọn mẫu: Mỗi trường có 5 khối lớp (lớp 1, 2, 3, 4, 5), chúng tôi chọn chia đều mỗi khối 02 lớp để trở thành nghiên cứu.

2.5. Kỹ thuật thu thập số liệu

Kỹ thuật xét nghiệm phân

Xét nghiệm phân theo kỹ thuật Kato – Katz (theo quy trình của WHO, 1994) [4] để xác định tỷ lệ và cường độ nhiễm giun đũa, giun tóc, giun móc/mỏ của học sinh.

2.6. Phương pháp phân tích và xử lý số liệu

Số liệu thu thập trong nghiên cứu được phân tích và xử lý theo phương pháp thống kê y sinh học và sử dụng phần mềm SPSS 20.0.

2.7. Đạo đức trong nghiên cứu

Đề tài được thông qua Hội đồng Y đức trường Đại học Y Dược Hải Phòng và được sự nhất trí và ủng hộ của Ban giám hiệu nhà trường, phụ huynh học sinh. Học sinh tự nguyện tham gia vào nghiên cứu. Các số liệu, thông tin được đảm bảo tính bí mật, chỉ nhằm mục đích phục vụ cho nghiên cứu. Các kết quả nghiên cứu, ý kiến đề xuất được sử dụng vào mục đích phục vụ sức khỏe cộng đồng, người ra không phục vụ mục đích nào khác.

III. KẾT QUẢ NGHIÊN CỨU

3.1. Tỷ lệ nhiễm giun truyền qua đất ở học sinh tại hai trường tiểu học Nguyễn Du và Thạch Linh

Bảng 3.1. Tỷ lệ nhiễm giun truyền qua đất ở học sinh

Kết quả Trường	Số mẫu NC	Nhiễm chung		Giun đũa		Giun tóc		Giun móc/mỡ	
		(+)	(%)	(+)	(%)	(+)	(%)	(+)	(%)
Thạch Linh	157	20	12,7	14	8,9	14	8,9	11	7,0
Nguyễn Du	280	21	7,5	16	5,7	5	1,8	13	4,6
Tổng	437	41	9,4	30	6,9	19	4,4	24	5,5
p		< 0,05		< 0,05		< 0,05		> 0,05	

Nhận xét: - Tỷ lệ nhiễm giun chung của học sinh tại 2 trường thấp (9,4%), trong đó trường tiểu học Thạch Linh là 12,7% cao hơn trường tiểu học Nguyễn Du là 7,5%, sự khác biệt có ý nghĩa thống kê với p < 0,05.

- Tỷ lệ nhiễm giun đũa và giun tóc của học sinh Trường tiểu học Thạch Linh đều cao hơn ở học sinh trường tiểu học Nguyễn Du (8,1% và 8,1% so với 5,7% và 1,8%), sự khác biệt có ý nghĩa thống kê với p < 0,05.

- Tỷ lệ nhiễm giun móc/mỡ của học sinh Trường tiểu học Thạch Linh cao hơn ở học sinh trường tiểu học Nguyễn Du (5,8% so với 4,2%), sự khác biệt chưa có ý nghĩa thống kê với p > 0,05.

Bảng 3.2. Tỷ lệ nhiễm giun truyền qua đất theo khối lớp tại hai trường nghiên cứu

Khối lớp	Trường	Mẫu NC	Giun đũa		Giun tóc		Giun móc/mỡ	
			n	%	n	%	n	%
Lớp 1	Thạch Linh	31	4	12,9	3	9,7	2	6,5
	Nguyễn Du	70	1	1,9	2	3,6	2	2,9
	Tổng	101	7	6,9	5	4,7	4	3,7
p			> 0,05		> 0,05		> 0,05	
Lớp 2	Thạch Linh	76	7	9,2	6	7,9	7	9,2
	Nguyễn Du	56	4	7,1	2	3,6	3	5,4
	Tổng	132	11	8,3	8	6,1	10	7,6
p			> 0,05		> 0,05		> 0,05	
Lớp 3	Thạch Linh	66	8	12,1	9	13,6	6	9,1
	Nguyễn Du	69	3	4,3	1	1,4	6	8,7
	Tổng	135	11	8,1	10	7,4	12	8,9
p			> 0,05		< 0,05		> 0,05	
Lớp 4	Thạch Linh	66	3	4,5	4	6,1	1	1,5
	Nguyễn Du	67	4	6,0	0	0,0	2	2,4

	Tổng	169	7	4,7	4	2,7	3	2,0
p			> 0,05				> 0,05	
Lớp 1	Thạch Linh	59	2	3,4	1	1,6	1	1,8
	Nguyễn Du	71	2	2,7	0	0,0	2	2,7
	Tổng	127	4	3,1	1	1,6	3	2,3
p			> 0,05				> 0,05	

Nhận xét: – Cả hai trường đều có tỷ lệ nhiễm giun đũa, giun tóc và giun móc/mỏ cao ở khối lớp 1, 2 và 3, nhiễm cuộn ở khối lớp 4, 5.

– Tỷ lệ nhiễm giun đũa và giun tóc cao nhất là khối lớp 3 là 12,1% và 13,8%, sự khác biệt có ý nghĩa thống kê với $p < 0,05$. Tỷ lệ nhiễm giun móc/mỏ cao nhất là khối lớp 3 là 8,6%, sự khác biệt không có ý nghĩa thống kê với $p > 0,05$.

Bảng 3.3. Tỷ lệ nhiễm giun truyền qua đất theo giới tính của học sinh tại hai trường nghiên cứu

Trường	Giới	Mẫu NC	Giun đũa		Giun tóc		Giun móc/mỏ	
			n	%	n	%	n	%
Thạch Linh	Nam	131	16	11,8	13	11,1	10	7,6
	Nữ	158	9	5,8	9	5,5	7	4,4
	Tổng	291	24	8,2	24	8,2	17	5,8
p			> 0,05		> 0,05		> 0,05	
Nguyễn Du	Nam	107	8	4,1	4	2,1	8	4,1
	Nữ	170	8	4,7	1	0,6	7	4,1
	Tổng	277	16	4,3	5	1,4	15	4,2
p			> 0,05		> 0,05		> 0,05	
Tổng cộng	Nam	238	24	7,1	19	5,9	18	7,0
	Nữ	328	16	4,8	10	3,0	14	4,3
	Tổng	602	40	6,1	29	4,4	32	4,9
p			> 0,05		> 0,05		> 0,05	

Nhận xét: Nhìn chung ở cả hai trường, tỷ lệ nhiễm giun đũa, giun tóc và giun móc/mỏ ở nam cao hơn nữ (7,1%; 5,9% và 7,0% so với 4,8%; 3,0%; 4,3%), tuy nhiên sự khác biệt chưa có ý nghĩa thống kê với $p > 0,05$.

Bảng 3.4. Tỷ lệ đơn nhiễm và đa nhiễm giun truyền qua đất của học sinh tại hai trường nghiên cứu

Trường / Nội dung	Thạch Linh		Nguyễn Du		Chung		P
	n	%	n	%	n	%	
Số nhiễm giun	36	7,6	27	12,2	63	9,7	<0,05
Nhiễm 1 loại	16	5,4	23	6,4	39	6,0	<0,05
Giun đũa	24	8,1	16	4,3	40	6,1	<0,05
Giun tóc	24	8,1	5	1,4	29	4,4	<0,05
Giun móc/ mỏ	17	3,8	13	4,2	32	4,9	<0,05
Nhiễm 2 loại	11	3,7	2	0,8	13	2,0	<0,05
Giun đũa + giun tóc	18	6,1	4	1,1	22	3,4	<0,05
Giun đũa + giun móc/mỏ	11	3,7	4	1,1	15	2,3	<0,05
Giun tóc + giun móc/mỏ	9	3,1	3	0,8	12	1,8	<0,05
Nhiễm 3 loại Đũa + tóc + móc/mỏ	9	3,1	3	0,8	12	1,8	<0,05

Nhận xét:

- Qua kết quả xét nghiệm cô trùng giun được phân bố nhiễm 1 loại, nhiễm 2 loại và nhiễm 3 loại ở cả 2 trường tiểu học.

- Đơn nhiễm: 1 loại giun nhiễm tỷ lệ cao nhất 6,0%; đa nhiễm 2 loại giun 2,0%, đa nhiễm 3 loại giun 1,8%.

- Tỷ lệ đơn nhiễm 1 loại giun ở trường tiểu học Nguyễn Du cao hơn trường tiểu học Thạch Linh (6,4% so với 5,4%), sự khác biệt không có ý nghĩa thống kê với $p > 0,05$. Trong khi đó, tỷ lệ đa nhiễm 2 loại giun và 3 loại giun ở trường tiểu học Thạch Linh cao hơn trường tiểu học Nguyễn Du (3,7% và 3,1% so với 0,8% và 0,8%), sự khác biệt có ý nghĩa thống kê với $p < 0,05$.

3.2. Cường độ nhiễm giun truyền qua đất ở học sinh tại địa điểm nghiên cứu

Bảng 3.5. Cường độ nhiễm giun tại hai trường nghiên cứu

Kết quả / Trường	Tổng số mẫu PC	Số trứng trung bình/ 1 gram phân		
		Giun đũa	Giun tóc	Giun móc/mỏ
Thạch Linh	469	158,31 ± 29,67	108,13 ± 17,17	129,53 ± 36,62
Nguyễn Du	195	127,20 ± 13,0	89,59 ± 10,09	113,51 ± 11,06
Tổng	652	136,16 ± 79,05	105,38 ± 57,13	126,21 ± 65,07
P		> 0,05	> 0,05	> 0,05

Nhận xét:

- Cường độ nhiễm 3 loại giun của địa bàn nghiên cứu đều thuộc vào nhóm độ nhiễm nhẹ. Số trứng trung bình/1 gam phân của giun đũa là 158,16 ± 79,05; giun tóc 105,38 ± 57,13; giun móc/mỏ 126,21 ± 65,07.

- Cường độ nhiễm giun đũa, giun tóc và giun móc/mỏ ở trường tiểu học Thạch Linh đều cao hơn trường tiểu học Nguyễn Du (150,31 ± 28,87; 109,33 ± 12,51; 129,53 ± 16,62so với 127,29 ± 13,0; 99,79 ± 10,09; 120,21 ± 65,07). Sự khác biệt này chưa có ý nghĩa thống kê với $p > 0,05$.

Bảng 3.6. Cường độ nhiễm giun theo giới tính tại hai trường nghiên cứu

Kết quả Giới	Tổng số NC	Số trứng trung bình/ 1 gam phân		
		Giun đũa	Giun tóc	Giun móc/mỏ
Nam	322	150,09 ± 71,44	97,08 ± 36,42	121,00 ± 55,34
Nữ	339	117,71 ± 66,5	114,34 ± 73,39	113,04 ± 79,44
p		> 0,05	> 0,05	> 0,05

Nhận xét: - Cường độ nhiễm trứng giun đũa, trứng giun tóc và trứng giun móc/mỏ ở học sinh nam cao hơn học sinh nữ (150,09 ± 71,44; 97,08 ± 36,42 và 121,00 ± 55,34 so với 117,71 ± 66,5; 114,34 ± 73,39 và 113,04 ± 79,44). Tuy nhiên, sự khác biệt không có ý nghĩa thống kê với $p > 0,05$.

IV. BÀN LUẬN

4.1. Tỷ lệ nhiễm giun truyền qua đất

Tỷ lệ nhiễm giun truyền qua đất chung ở 2 trường tiểu học Thạch Linh và Nguyễn Du là 9,7 %. Trong đó, trường tiểu học Nguyễn Du là 7,8 % và trường tiểu học Thạch Linh là 12,2 %. Tỷ lệ này thấp hơn so với các kết quả nghiên cứu gần đây: Tỷ lệ nhiễm giun sán được Nguyễn Văn Đề công công tại nghiên cứu năm 2015 ở học sinh tiểu học của đảo tại Đất tại khu vực Hòn Lớn là 25,2% [5]. Năm 2018 một nghiên cứu ở Ethiopia cho thấy tỷ lệ nhiễm giun đường ruột vẫn cao khu vực còn tới đến 36,2% [1].

Về cơ cấu thành phần loài, nhiễm tới bị nhiễm trong nghiên cứu của chúng tôi như sau: Giun đũa nhiễm chung của cả 2 trường là 6,1 %; Giun tóc là 4,4 %; Giun móc/mỏ là 4,9%. Kết quả của nghiên cứu này tương đương với kết quả nghiên cứu của Nguyễn Phương Huyền, Nguyễn Thị Liên Anh (2014), tỷ lệ nhiễm cao nhất là giun đũa chiếm 5,16%, tiếp đó là giun móc/mỏ 2,16% và giun tóc 1,3% [6]. Nghiên cứu Sandipan Ganguly, Mainul Barkotaki, Sumallya Karmakar (2011), trên 6421 trẻ em trong đó giun đũa là phổ biến nhất (nhiễm 69,6%), tiếp theo là giun móc (tỷ lệ hiện mắc: 22,8%) và T. trichiura (4,8%) [7].

Tỷ lệ nhiễm giun đũa, giun tóc và giun móc/mỏ cao ở khối lớp 1, 2 và 3, nhiễm thấp ở khối lớp 4, 5. Tỷ lệ nhiễm giun đũa và giun tóc cao nhất là khối lớp 3 là 12,1% và 13,0%. So sánh kết quả nghiên cứu của chúng tôi với các nghiên cứu khác trên thế giới và Việt nam: Một nghiên cứu tại Ethiopia năm 2018 với kết quả tỷ lệ nhiễm ở 2 nhóm tuổi 6 - 8 và 9 - 11 không có sự khác biệt rõ lần lượt là 11,1% và 16,2%[1]. Nghiên cứu của Nguyễn Thanh Tùng, Vũ Thị Lươn và cộng sự tại Hà Giang năm 2018, cho thấy học sinh lớp 1 (6 tuổi) nhiễm tỷ lệ cao nhất là 24,8% và thấp nhất là học sinh lớp 2 (7 tuổi) nhiễm 17,6% [8].

Tỷ lệ nhiễm giun truyền qua đất theo giới, nhìn chung ở cả hai trường, tỷ lệ nhiễm giun đũa, giun tóc và giun móc/mỏ ở nam cao hơn nữ (7,3%; 5,9% và 5,8% so với 4,9%; 3,0%;

4,2%). Nghiên cứu của Vũ Văn Thái, Nguyễn Thị Huyền Sương tại Quảng Yên, Quảng Ninh (2020), tỷ lệ nhiễm giun đũa ở trẻ cao hơn cao (19,0%) so với 16,3%). Trong khi đó, tỷ lệ nhiễm giun tóc ở nam cao hơn nữ (20,3% so với 18,0%) [3]

Kết quả bảng 3.4 cho biết qua (3) mẫu xét nghiệm có trứng giun được phân tổ nhiễm 1 loại, nhiễm 2 loại và nhiễm 3 loại ở cả 2 trường của học. Đơn nhiễm 1 loại giun chiếm tỷ lệ cao nhất 6,0%; đa nhiễm 2 loại giun 2,8%, đa nhiễm 3 loại giun 1,8%. Kết quả các chúng tôi thấp hơn nghiên cứu của Vũ Văn Thái, Nguyễn Thị Huyền Sương tại Quảng Yên, Quảng Ninh (2020), đơn nhiễm 1 loại giun chiếm tỷ lệ cao nhất 29,3%; đa nhiễm 2 loại giun 3,4%, không có trường hợp nào đa nhiễm 3 loại giun [3].

4.2. Cường độ nhiễm giun truyền qua đất

Tất cả những trường hợp nhiễm giun trong nghiên cứu này đều ở mức độ nhiễm nhẹ, không có trường hợp nào nhiễm với mức độ trung bình và nặng. Cường độ nhiễm trứng giun trung bình/1 gam phân của trứng giun đũa là 134,14 ± 78,01; trứng giun tóc 105,39 ± 57,12; trứng giun móc/mỏ 120,21 ± 65,07. Cường độ nhiễm trứng giun đũa, giun tóc và giun móc/mỏ ở trường tiểu học Thanh Linh đều cao hơn trường tiểu học Nguyễn Du (138,31 ± 20,67; 100,33 ± 12,37; 120,51 ± 16,62 so với 127,30 ± 13,8; 90,70 ± 18,09; 120,21 ± 65,07). Kết quả của nghiên cứu này tương đương với nghiên cứu của Vũ Văn Thái, Nguyễn Thị Huyền Sương (2021, cường độ nhiễm trung ở địa điểm nghiên cứu ở mức độ nhẹ: Cường độ nhiễm trứng giun đũa là 134 trứng/1g phân, cường độ nhiễm trứng giun tóc là 105 trứng/1g phân. Không có sự khác biệt theo giới về cường độ nhiễm [3]. Cường độ nhiễm trứng giun đũa, trứng giun tóc và trứng giun móc/mỏ ở học sinh nam cao hơn học sinh nữ (150,00 ± 71,44; 97,00 ± 36,42 và 123,00 ± 55,34 so với 117,71 ± 86,5; 114,34 ± 75,30 và 115,69 ± 79,44).

V. KẾT LUẬN

Tỷ lệ nhiễm giun truyền qua đất

- Tỷ lệ nhiễm giun chung tại 2 trường tiểu học được nghiên cứu khá thấp: 9,7%, trong đó, tỷ lệ nhiễm giun đũa là cao nhất (6,1%); giun tóc 4,4%, giun móc/mỏ: 4,3%

- Tỷ lệ nhiễm ở nam và nữ và các nhóm tuổi không có sự khác biệt.

- Đơn nhiễm 1 loại giun chiếm tỷ lệ cao nhất 6,0%; đa nhiễm 2 loại giun 2,8%, đa nhiễm 3 loại giun 1,8%

Cường độ nhiễm giun truyền qua đất

- Cường độ nhiễm trứng giun trong kinh/gram phân ở mức độ nhẹ: trứng giun đũa: 136,14 ± 79,01epg; trứng giun tóc 105,39 ± 57,12epg, trứng giun móc/mỏ 120,21 ± 65,07epg. Cường độ nhiễm ở nam và nữ không có sự khác biệt.

VI. KIẾN NGHỊ

Cần mở rộng điều tra tình trạng nhiễm giun truyền qua đất ở học sinh tiểu học trên toàn tỉnh. Tính và cung cấp tổng thuốc tẩy giun để giảm tỷ lệ nhiễm và cường độ nhiễm giun trên học sinh.

TÀI LIỆU THAM KHẢO

1. Viện Sốt rét - Ký sinh trùng - Côn trùng Trung ương (2016). Báo cáo tổng kết công tác phòng chống các bệnh kí sinh trùng tại Việt Nam năm 2016.

2. Đinh Thị Thanh Mai, Vũ Văn Thái, Vũ Thị Thanh Hiền và cs (2021). Ký sinh trùng y học, trường Đại học Y Dược Hải Phòng, Nhà xuất bản Y học, Hà nội 2021.

3. Vũ Văn Thái, Nguyễn Thị Huyền Hương và cs (2021), "Thực trạng và một số yếu tố liên quan ở học sinh tiểu học, Quảng Yên, tỉnh Quảng Ninh năm 2019-2020", Tạp chí phòng Y học Việt Nam năm 2021, số , tr.
4. Đinh Thị Thanh Mai, Vũ Văn Thái và cs (2017), Thực hành Kỹ sinh trùng, trường Đại học Y Dược Hải Phòng, Nhà xuất bản y học, Hà nội 2017.
5. Nguyen Van Da, Bui Khac Hung, Le Van Duyet (2016) "Prevalence of Soil-Transmitted Helminths and Molecular Classification of Hookworm Species in School Eye Primary Schoolchildren in Dak Lak Province, Southern Vietnam", Korean Journal Parasitology, 54, 47) : 47p.
6. Nguyễn Phương Huyền, Nguyễn Thị Kiều Anh (2016), "Thực trạng và một số yếu tố liên quan đến nhiễm giun truyền qua đất ở trẻ 12 - 24 tháng tuổi tại 2 huyện ngoại thành Hà Nội, năm 2016", Tạp chí Y học dự phòng.
7. Sandipan Ganguly, Sherad Barkataki, Sumaliya Karmakar (2013) High prevalence of soil-transmitted helminth infections among primary school children, Uttar Pradesh, India, p 32-45.
8. Nguyễn Thanh Tùng, Vũ Thị Luan và cs (2018), "Tình hình nhiễm và các yếu tố liên quan đến nhiễm giun truyền qua đất ở học sinh tiểu học tỉnh Hậu Giang năm 2018".

NHẬN XÉT KẾT QUẢ GIẢM ĐAU CỦA PHƯƠNG PHÁP ĐIỆN CHÂM KẾT HỢP KÉO GIÃN CỘT SỐNG BẰNG MÁY TRÊN BỆNH NHÂN ĐAU THẦN KINH HÔNG TO DO THOÁT VỊ ĐĨA ĐỆM TẠI BỆNH VIỆN LÊ CHÂN - HẢI PHÒNG NĂM 2021

Đoàn Mỹ Hạnh[1], Nguyễn Thị Thuý Dung[1]

TÓM TẮT[*]

Mục tiêu: 1. Mô tả đặc điểm lâm sàng, cận lâm sàng của bệnh nhân đau thần kinh hông to do thoát vị đĩa đệm. 2. Nhận xét kết quả giảm đau của phương pháp Điện châm kết hợp Kéo giãn cột sống bằng máy trên bệnh nhân đau thần kinh hông to do thoát vị đĩa đệm. *Đối tượng và phương pháp:* Nghiên cứu mô tả can thiệp lâm sàng, so sánh trước và sau điều trị. Kết quả: Sau điều trị điểm VAS trung bình (TB) giảm từ 5.77 ± 1.19 xuống 2.69 ± 0.79 điểm (p <0.05), nghiệm pháp Lasegue tăng từ 46.09 ± 9.67 lên 68.31 ± 6.12 độ (p <0.05), sự cải thiện chức năng sinh hoạt hàng ngày (ODI) TB giảm được 2.22 ± 0.71 điểm (p< 0.05). Không phát hiện tác dụng không mong muốn trong quá trình điều trị.

Từ khóa: Điện châm, Kéo giãn cột sống, Thoát vị đĩa đệm.

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HỘI HÓA SINH Y HỌC HÀ NỘI VÀ CÁC TỈNH PHÍA BẮC

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THỰC TRẠNG MỨC CHẤT LƯỢNG PHÒNG XÉT NGHIỆM CỦA CÁC BỆNH VIỆN TUYẾN HUYỆN, TUYẾN TỈNH TẠI HẢI DƯƠNG NĂM 2022

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TÓM TẮT

Mục tiêu: Đánh giá thực trạng thực hiện bộ tiêu chí đánh giá mức chất lượng phòng xét nghiệm của các phòng xét nghiệm thuộc các bệnh viện tuyến huyện, tuyến tỉnh tại Hải Dương theo quyết định 2429/QĐ-SYT. *Đối tượng và phương pháp nghiên cứu:* Nghiên cứu mô tả cắt ngang trên 27 phòng xét nghiệm thuộc 12 trung tâm y tế tuyến huyện và 12 bệnh viện tuyến tỉnh trên địa bàn Hải Dương về hệ thống quản lý chất lượng xét nghiệm theo Bộ tiêu chí đánh giá mức chất lượng phòng xét nghiệm y học (Quyết định 2429/QĐ-SYT). Các dữ liệu được phân tích trên phần mềm SPSS 26. *Kết quả:* 19/27 PXN đã triển khai xây dựng hệ thống QLCL xét nghiệm. Tỷ lệ % số điểm đạt trung bình chung là 62,59%, tương đương "Mức 2". Có 96,3% PXN không đạt đủ 12/15 tiêu chí bắt buộc (*) và 100% PXN không đạt đủ 18/18 tiêu chí bắt buộc (***). Chỉ có 3,7% PXN được đánh giá xếp loại đạt "Mức 2". *Kết luận:* Kết quả thực hiện bộ tiêu chí đánh giá mức chất lượng phòng xét nghiệm của các cơ sở y tế tuyến huyện và tuyến tỉnh của tỉnh Hải Dương còn nhiều hạn chế, đặc biệt là các tiêu chí bắt buộc (tiêu chí *) còn quản lý quá trình xét nghiệm.

Từ khóa: Hệ thống QLCL xét nghiệm, Bộ tiêu chí 2429, Quyết định 2429, Hải Dương

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SUMMARY

THE CURRENT STATUS OF THE QUALITY LEVEL OF MEDICAL LABORATORIES IN DISTRICT-LEVEL AND PROVINCIAL-LEVEL HOSPITALS IN HAI DUONG PROVINCE IN 2022

Objectives: This study aims to evaluate the current status of implementing the set of criteria for evaluating medical laboratory quality levels of medical laboratories in district-level and provincial-level hospitals in Hai Duong Province, based on Decision 2429/QĐ-SYT. *Subjects and methods:* A cross-sectional descriptive study was conducted, utilizing data gathered from all 27 medical laboratories in 12 district-level healthcare centers and 12 provincial-level hospitals in Hai Duong Province. The evaluation focused on the quality management system of the laboratories according to the criteria for evaluating the level of quality in medical laboratories (Decision 2429/QĐ-SYT). The data were analyzed using SPSS 26th software. *Results:* Out of the surveyed medical laboratories, 19/27 had implemented the construction of the laboratory quality management system. The average percentage of

points achieved is 40,29%, equivalent to "Level 2". 98.3% of the laboratories did not meet all 15 mandatory criteria (*), and 100% of them did not meet all 18 mandatory criteria (***). Only 1.7% of the laboratories met the criteria for a "Level 2" rating. Conclusion: The results of implementing the set of criteria to evaluate laboratory quality levels of district and provincial medical facilities in Hai Duong province are still limited, especially the mandatory criteria (criteria *) of the process management.

Keywords: Laboratory Quality management system, set of criteria 2429, Decision 2429, Hai Duong

I. ĐẶT VẤN ĐỀ

Nâng cao năng lực hệ thống quản lý chất lượng xét nghiệm là yêu cầu cấp thiết để nâng cao chất lượng khám, chữa bệnh. Từ nhiều năm qua, Chính phủ và Bộ Y tế đã thực hiện nhiều giải pháp để đảm bảo và nâng cao chất lượng xét nghiệm thông qua việc ban hành các văn bản pháp quy, các hướng dẫn xây dựng và đánh giá hệ thống quản lý chất lượng xét nghiệm cho các phòng xét nghiệm [1],[2],[3],[4]. Tại Hải Dương, hiện chưa có nghiên cứu toàn diện đánh giá hệ thống quản lý chất lượng xét nghiệm trên toàn tỉnh, chưa có sự công nhận kết quả xét nghiệm lẫn nhau giữa các cơ sở y tế [5],[6]. Để có cơ sở trong việc hỗ trợ các phòng xét nghiệm nâng cao năng lực hệ thống quản lý chất lượng xét nghiệm, Trường Đại học Kỹ thuật Y tế Hải Dương triển khai đề tài: "Thực trạng mức chất lượng phòng xét nghiệm của các bệnh viện tuyến huyện, tuyến tỉnh tại Hải Dương năm 2022" với mục tiêu: *Đánh giá thực trạng thực hiện bộ tiêu chí đánh giá mức chất lượng phòng xét nghiệm của các phòng xét nghiệm thuộc các bệnh viện tuyến huyện, tuyến tỉnh tại Hải Dương theo quyết định 2429/QĐ-BYT.*

II. ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU

2.1. Đối tượng nghiên cứu

Toàn bộ 27 phòng xét nghiệm (15 phòng xét nghiệm thuộc 12 Bệnh viện tuyến tỉnh và 12 phòng xét nghiệm thuộc 12 Bệnh viện tuyến huyện) trên địa bàn tỉnh Hải Dương.

Tiêu chuẩn chọn mẫu: Phòng xét nghiệm thuộc các bệnh viện tuyến tỉnh và tuyến huyện trên địa bàn tỉnh Hải Dương có đồng ý tham gia nghiên cứu.

Tiêu chuẩn loại trừ: Phòng xét nghiệm không đồng ý tham gia nghiên cứu.

2.2. Phương pháp nghiên cứu

Thiết kế nghiên cứu: Nghiên cứu mô tả cắt ngang được thực hiện từ tháng 3/2022 đến tháng 5/2022.

Cỡ mẫu: 27 phòng xét nghiệm thuộc 12 bệnh viện tuyến tỉnh và 12 bệnh viện huyện trên địa bàn tỉnh Hải Dương.

Chỉ số và biến số trong nghiên cứu: 169 tiêu chí trong bộ tiêu chí đánh giá mức chất lượng phòng xét nghiệm y học theo số Quyết định số 2429/QĐ-BYT.

Phương pháp nghiên cứu: Sử dụng bảng kiểm đánh giá theo quyết định 2429/QĐ-BYT với các mức độ đánh giá và cho điểm như sau: Mỗi tiêu chí có một thang điểm nhất định, tổng số điểm tối đa của 169 tiêu chí là 268 điểm. Có 4 phương án đánh giá cho các tiêu chí là: "Đạt", "Đạt một phần", "Không đạt" hoặc "Không áp dụng". Phương pháp xếp mức chất lượng căn cứ theo tỷ lệ % số điểm phòng xét nghiệm đạt được cùng các tiêu chí bắt buộc (*) và (***). Có 6 mức chất lượng bao gồm: chưa xếp mức, mức 1, mức 2, mức 3, mức 4 và mức 5.

Phương pháp thu thập số liệu: Số liệu được thu thập theo bảng kiểm đánh giá mức

lượng PXN theo quyết định 2429/QĐ-

phương pháp xử lý số liệu: Xử lý số liệu g phần mềm SPSS 26.

ết QUẢ NGHIÊN CỨU

3.1. Thông tin chung về các phòng xét nghiệm. Trong tổng số 27 PXN (15 PXN thuộc 12 bệnh viện tuyến tỉnh, 12 PXN thuộc 12 bệnh viện tuyến huyện) có 4 PXN thuộc bệnh viện hạng I, 16 PXN thuộc bệnh viện hạng III và 7 PXN thuộc bệnh viện hạng II.

Bảng 1. Thực trạng triển khai hệ thống quản lý chất lượng theo phân tuyến

Hệ thống QLCL	Thực trạng	Tuyến tỉnh		Tuyến huyện		P
		n	%	n	%	
à lượng triển khai hệ thống QLCL	Chưa triển khai	5	33.3	3	25.0	0.65
	Triển khai theo 2429	7	46.7	8	66.7	
	Triển khai theo ISO 15189	3	20.0	1	8.3	
ập dụng hệ thống tài liệu QLCL	Chưa xây dựng	5	33.3	4	33.3	0.01
	Xây dựng chưa đầy đủ	3	20.0	8	66.7	
	Xây dựng cơ bản đầy đủ	7	46.7	0	0.0	
Duy trì hồ sơ QLCL	Không duy trì	6	40.0	7	58.3	0.09
	Duy trì không đầy đủ	2	13.3	4	33.3	
	Duy trì tương đối đầy đủ	7	46.7	1	8.3	
ủa chuẩn ISO 15189	Đạt chứng chỉ ISO 15189	2	13.33	0	0	

Nhận xét: 19/27 (70.4%) PXN đã định ng triển khai xây dựng hệ thống QLCL ăng theo quyết định 2429 và ISO 15189, 7% PXN tuyến huyện và 46.3% PXN ỉnh xây dựng theo Quyết định 2429. 7% PXN tuyến tỉnh đã xây dựng cơ bản đủ hệ thống tài liệu. Tuy nhiên, ở tuyến huyện, chưa có PXN nào xây dựng được đầy đủ hệ thống tài liệu QLCL và 58.3% không duy trì hồ sơ QLCL. Cả 02 PXN tuyến tỉnh đã đạt chứng chỉ ISO 15189:2012.

3.2. Kết quả đánh giá theo bộ tiêu chí 2429 của các phòng xét nghiệm

Bảng 2. Tỷ lệ % số điểm đạt của từng chương theo phân tuyến

Chương	Tuyến tỉnh (%)	Tuyến huyện (%)	p	Mean
Chương I (Tổ chức quản lý)	45,69	31,16	0.19	38,41
Chương II (Tài liệu hệ sơ)	58,67	52,50	0.53	55,59
Chương III (Nhân sự)	44,33	45,03	0.94	44,68
Chương IV (Dịch vụ khách hàng)	48,72	34,62	0.58	41,67
Chương V (Trang thiết bị)	32,78	66,18	0.28	49,98
Chương VI (Đánh giá nội bộ)	32,82	11,54	0.08	22,18
Chương VII (Quản lý mua sắm)	51,81	33,78	0.03	42,30
Chương VIII (Quá trình XN)	47,69	30,18	0.33	41,44
Chương IX (Quản lý thông tin)	31,21	48,10	0.74	49,66
Chương X (SKPH, HDKP, HQPN)	35,00	18,85	0.18	26,83
Chương XI (Cải tiến liên tục)	18,75	4,96	0.11	11,61
ương XII (Cơ sở vật chất và an toàn)	82,81	34,81	0.18	58,81
Chung	45,55	33,84	0.21	40,29

Nhận xét: Tỷ lệ % số điểm đạt ở các chương của tuyến tỉnh phần lớn là cao hơn tuyến huyện (11/12 chương). Tỷ lệ % số điểm đạt trung bình chung của 2 tuyến là 40,29%. Tỷ lệ % số điểm đạt cao nhất của tuyến tỉnh và tuyến huyện thuộc chương XII với tỷ lệ lần lượt là 62,81% và 54,81%. Tỷ lệ % số điểm đạt thấp nhất của tuyến tỉnh và tuyến huyện thuộc chương XI với tỷ lệ lần lượt là 18,25% và 4,96%

Bảng 3. Một số tiêu chí (*), (***) có số lượng PXN đạt thấp

Mã tiêu chí	Nội dung tiêu chí	Số PXN đạt		
		Tuyến tỉnh	Tuyến huyện	Tổng
Tiêu chí (*)				
8.8	Thực hiện nội kiểm định tính	3	0	3
8.9	Thực hiện nội kiểm bán định lượng	2	0	2
8.10	Thực hiện nội kiểm tại chuẩn	2	0	2
11.4	Theo dõi chỉ số chất lượng	1	0	1
Tiêu chí (***)				
8.3	PXN có quy trình nhận mẫu	3	0	3
8.16	PXN thực hiện các nhận giá trị sử dụng/thẩm định phương pháp xét nghiệm.	0	0	0
10.6	Thực hiện hành động khắc phục và lưu hồ sơ	2	0	2
11.7	Các hành động cải tiến liên tục được soát xét định kỳ.	1	1	2
12.2	Sổ tay có toàn đầy đủ nội dung	2	0	2

Nhận xét: Trong số 169 tiêu chí có 4 tiêu chí (*) và 3 tiêu chí (***) có tỷ lệ đạt rất thấp, chỉ có 3 PXN/ 27 PXN đạt được các tiêu chí này. Các tiêu chí này phần lớn thuộc chương VIII (Quản lý quá trình xét nghiệm). Hầu hết các PXN tuyến huyện không đạt được các tiêu chí này (Duy nhất có 1/12 PXN đạt). 100% PXN của các Bệnh viện tuyến tỉnh, tuyến huyện không đạt được tiêu chí 8.16.

Bảng 4. Tổng hợp xếp mức chất lượng theo kết quả đánh giá

Phân loại	Mức chất lượng	Tuyến tỉnh		Tuyến huyện	
		n	%	n	%
Xếp mức theo tỷ lệ % số điểm đạt	Chưa xếp mức	1	6,67	0	0
	Mức 1	6	40	6	50
	Mức 2	4	26,67	6	50
	Mức 3	3	20	0	0
	Mức 4	1	6,67	0	0
	Mức 5	0	0	0	0
Xếp mức khi kết hợp các tiêu chí (*), (***)	Chưa xếp mức	14	93,33	12	100
	Mức 1	0	0	0	0
	Mức 2	1	6,67	0	0

	Mức 3	0	0	0	0
	Mức 4	0	0	0	0
	Mức 5	0	0	0	0

...nhận xét: Nếu tính theo số điểm đạt trên ...số 258 điểm của 169 tiêu chí. Có 6 ...ội tuyến huyện đạt mức 1 và 6 PXN đạt ...ức 2.

...ở 12 Bệnh viện tuyến tỉnh: 1 PXN chưa ...mức, 6 PXN đạt mức 1, 4 PXN đạt mức ...3 PXN đạt mức 3 và 1 PXN đạt mức 4.

...iêu bắt buộc đạt các tiêu chí (*) và ...**), thì có 1 PXN tuyến tỉnh đạt mức 2, ...PXN còn lại đều chưa được xếp mức.

...ẢN LUẬN

4.1. Thông tin chung về các phòng xét ...ghiệm

Qua bảng 1 thấy các PXN trên địa bàn ...à Hải Dương đã rất đầu quan tâm đến hệ ...ống QLCL. Có 70,4% PXN đã có định ...ướng xây dựng hệ thống QLCL. Trong đó, ...một số PXN có sự đầy tư hiệu quả. Tuy ...iên, vẫn còn một số tình trạng như: Các ...XN chưa có định hướng triển khai xây ...ựng hệ thống QLCL (28,6%), chưa hết tuy ...ây dựng hệ thống tài liệu về QLCL. Đặc ...iệt, có tới 48,1% các PXN chưa đưa hệ ...ống hồ sơ QLCL vào vận hành. 22,2% ...XN đưa vào vận hành nhưng chưa hiệu quả ...iệc vận hành ngắt quãng hệ thống hồ sơ, ...ỉ có 02 PXN tuyến tỉnh đã đạt chứng chỉ ...SO 15189:2012.

Điều này cho thấy sự quan tâm lãnh đạo, ...ỉ đạo về công tác quản lý chất lượng phòng ...ét nghiệm đặc biệt quan trọng và có ý nghĩa ...ớn trong việc thực hiện các tiêu chí chất ...ượng phòng xét nghiệm. Tuy nhiên cần đặc ...iệt lưu ý đến các tiêu chí có dấu 1* và tiêu ...í 3* (mặc dù có 02 PXN đạt ISO 15189 ...hưng chỉ có 01PXN được xếp mức chất ...ượng).

4.2. Kết quả đánh giá theo bộ tiêu chí 2429 của Bộ Y tế

Theo kết quả nghiên cứu tại bảng 2 cho thấy tỷ lệ % số điểm đạt ở từng chương và tính theo từng số điểm cần đạt trong bộ tiêu chí 2429-BYT cho thấy ở 27 PXN của các bệnh viện tuyến tỉnh, tuyến Huyện trên địa bàn Tỉnh Hải dương là chưa đạt theo kỳ vọng mong muốn (số điểm trung bình mới đạt 48,29%). Trong số 12 chương của Bộ tiêu chí 2429-BYT có 10 chương không đạt mức trung bình. Điều này đặt ra yêu cầu cần quan tâm nhiều hơn về chất lượng đối với các PXN, cần tiến hành đồng bộ ở cả 12 thành tố chất lượng (tức 12 chương theo yêu cầu đánh giá).

Qua kết quả bảng 4 cho thấy, mức chất lượng chung của các PXN có sự quan tâm lãnh đạo chỉ đạo và định hướng tốt (thể hiện qua các tiêu chí có liên quan đến công tác tổ chức, quản lý hồ sơ, quản lý quá trình xét nghiệm, vật chất an toàn...) thì cho ra kết quả đánh giá mức chất lượng tốt hơn, không phân biệt tuyến huyện hay tuyến Tỉnh.

Khi kết hợp đánh giá tỷ lệ % số điểm đạt và các tiêu chí bắt buộc (tiêu chí *) thì phần lớn các PXN không đạt đủ số lượng tiêu chí bắt buộc (Bảng 3). Chỉ duy nhất 01 PXN đạt đủ tiêu chí (*). 100% các PXN không đạt đủ tiêu chí (***). Do vậy, kết quả chung chỉ có 01 PXN đạt mức 2, tất cả 26 PXN còn lại không được xếp mức [3]. Xuất phát từ những vấn đề thực tiễn như vậy, việc đánh giá kết luận mức chất lượng các phòng xét nghiệm có thể điều chỉnh, cân nhắc xếp loại đối với các tiêu chí 1*, và tiêu chí 3*.

So sánh với kết quả nghiên cứu của Trung tâm kiểm chuẩn Đại học Y Dược

Thành Phố Hồ Chí Minh năm 2022 cho thấy 2/10 PXN khu vực Đông Nam bộ, Tây Nguyên và Duyên hải miền Trung có tỷ PXN không xếp mức chiếm 40,95%, mức 1 chiếm 0,95%, mức 2 chiếm 36,67%, mức 3 chiếm 2,86%, mức 4 chiếm 13,33% và mức 5 chiếm 5,24% [3]. Kết quả của các PXN chưa xếp mức chất lượng có liên quan đến tiêu chí 1* và tiêu chí 3*.

Do vậy, nội dung tiếp theo triển khai hỗ trợ các PXN trên địa bàn tỉnh Hải Dương là rất cần thiết để góp phần nâng cao năng lực và mức chất lượng cho các PXN nhằm tiến tới liên thông kết quả xét nghiệm trên toàn tỉnh, hạn chế tối đa các phiền hà các chi phí không cần thiết của Người bệnh.

V. KẾT LUẬN VÀ KIẾN NGHỊ

19/27 PXN đã triển khai xây dựng hệ thống QLCL xét nghiệm. Tỷ lệ % số điểm đạt trung bình chung là 48,28% (tương đương mức 2).

Có 96,3% PXN không đạt đủ 15/15 tiêu chí bắt buộc (*) và 100% PXN không đạt đủ 18/18 tiêu chí bắt buộc (***). Chỉ có 3,7% PXN được xếp loại đạt "Mức 2".

Kết quả thực hiện bộ tiêu chí đánh giá mức chất lượng phòng xét nghiệm của các cơ sở y tế tuyến huyện và tuyến tỉnh của tỉnh Hải Dương còn nhiều hạn chế, đặc biệt là các tiêu chí * của quá trình xét nghiệm. Kết quả đánh giá thực trạng này giúp các cơ sở y tế nhìn nhận lại đúng về thực trạng QLCL XN tại đơn vị mình và là cơ sở để Trường Đại học Kỹ thuật Y tế Hải Dương tiếp tục triển khai các giải pháp để nâng cao năng lực hệ thống QLCL xét nghiệm cho các PXN trên địa bàn.

Qua kết quả đã trình bày trên, nhóm nghiên cứu xin đề xuất với các ban ngành chức năng, với Bộ y tế xem xét có thể điều chỉnh cách thức hoặc có hướng dẫn chi tiết cách vận hành, đánh giá chất lượng phòng xét nghiệm cho phù hợp với hoàn cảnh thực tiễn, điều kiện của các phòng xét nghiệm thuộc tuyến Huyện, tuyến Tỉnh tại Việt Nam.

TÀI LIỆU THAM KHẢO

1. **Bộ Y tế (2013)**, Thông tư 01/2013/TT-BYT ngày 11/01/2013, Hướng dẫn thực hiện quản lý chất lượng xét nghiệm tại cơ sở khám chữa bệnh.
2. **Chính phủ (2016)**, Quyết định số 316/QĐ-TTg của Thủ tướng Chính phủ: Phê duyệt Đề án tăng cường năng lực hệ thống quản lý chất lượng xét nghiệm y học giai đoạn 2016 - 2025.
3. **Bộ Y tế (2017)**, Quyết định số 2429/QĐ-BYT ngày 12 tháng 6 năm 2017 của Bộ trưởng Bộ Y tế về việc Ban hành Tiêu chí đánh giá mức chất lượng phòng xét nghiệm y học.
4. **Bộ Y tế (2018)**, Tài liệu hướng dẫn đánh giá việc thực hiện tiêu chí đánh giá mức chất lượng phòng xét nghiệm Y học.
5. **Đinh Thị Diệu Hằng và cs (2018)**, "Thực trạng chất lượng xét nghiệm một số chỉ số hoá sinh máu tại các bệnh viện tuyến tỉnh Hải Dương năm 2018", Tạp chí Y học Việt Nam, Số chuyên đề tập 478, tr 40-44.
6. **Đinh Thị Diệu Hằng và cs (2018)**, "Thực trạng chất lượng xét nghiệm một số chỉ số hoá sinh máu tại các bệnh viện tuyến huyện Hải Dương năm 2018", Đề tài cấp cơ sở Trường Đại học Kỹ thuật Y tế Hải Dương.
7. **Trung tâm kiểm chuẩn chất lượng xét nghiệm y học – Trường Đại học Y Dược thành phố Hồ Chí Minh (2013)**, "Tình hình thực hiện ngoại kiểm và kết quả đánh giá theo Quyết định 2429/QĐ-BYT của các đơn vị Khu vực Duyên Hải Miền Trung, Tây Nguyên và Đông Nam Bộ", Báo cáo tại hội nghị "Thực trạng và giải pháp nâng cao năng lực hệ thống QLCLXN tại tỉnh Hải Dương" ngày 29 tháng 06 năm 2013.

KÝ SINH TRÙNG

NHÀ XUẤT BẢN Y HỌC

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG
BỘ MÔN KÝ SINH TRÙNG

THỰC HÀNH KÝ SINH TRÙNG

(DÀNH CHO ĐỐI TƯỢNG ĐẠI HỌC)

NHÀ XUẤT BẢN Y HỌC
HÀ NỘI - 2015

Đồng chủ biên:

TS. ĐINH THỊ THANH MAI

TS. VŨ VĂN THÁI

Ban biên soạn:

PGS.TS. PHẠM VĂN HÁN

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TS. BÙI QUANG PHÚC

TS. NGUYỄN THỊ HƯƠNG BÌNH

TS. NGUYỄN THU HƯƠNG

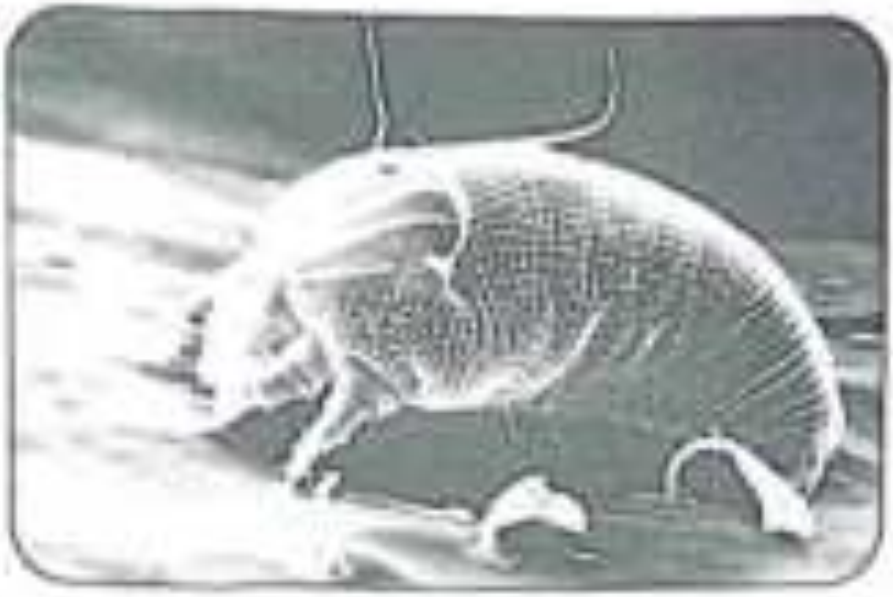
ThS. VÕ THỊ THANH HIỀN

BS. NGUYỄN THỊ MINH HOA

Thư ký biên soạn:

ThS. VÕ THỊ THANH HIỀN

CN. BÙI THỊ HỒNG ÁNH



Thực hành
KÝ SINH TRÙNG

Dù: 200.0000

Mã số sách chuẩn quốc tế

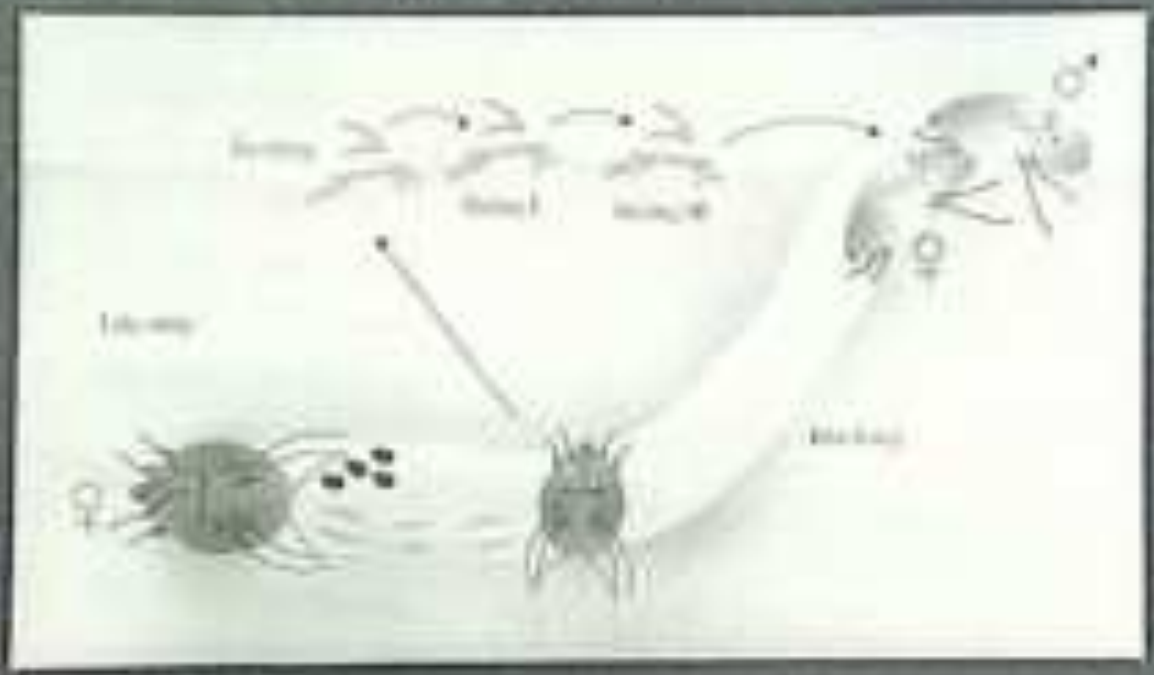
ISBN: 978-604-66-1174-5

NHÀ XUẤT BẢN Y HỌC

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG
BỘ MÔN KÝ SINH TRÙNG
Chủ biên: PGS.TS. Đinh Thị Thanh Mai
TS. Vũ Văn Thái
TS. Võ Thị Thanh Hiền

KÝ SINH TRÙNG Y HỌC

(Giáo trình đào tạo đại học)



NHÀ XUẤT BẢN Y HỌC

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG
BỘ MÔN KÝ SINH TRÙNG

Chủ biên: PGS.TS. Đinh Thị Thanh Mai
TS. Vũ Văn Thái
TS. Võ Thị Thanh Hiền

KÝ SINH TRÙNG Y HỌC

(GIÁO TRÌNH ĐÀO TẠO ĐẠI HỌC)

NHÀ XUẤT BẢN Y HỌC
HÀ NỘI - 2021

HỘI ĐỒNG DUYỆT TÀI LIỆU GIẢNG DẠY
CỦA TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

GS.TS. Phạm Văn Thức	Chủ tịch Hội đồng
PGS.TS. Trần Quang Phục	Phản biện 1
TS. Đào Thu Hằng	Phản biện 2
PGS.TS. Đặng Văn Chức	Ủy viên
TS. Nguyễn Thị Phương Mai	Ủy viên

BỘNG CHỦ BIÊN:
PGS.TS. Đinh Thị Thanh Mai
TS. Vũ Văn Thái
TS. Võ Thị Thanh Hiền

BAN BIÊN SOẠN:
PGS.TS. Đinh Thị Thanh Mai
TS. Vũ Văn Thái
TS. Võ Thị Thanh Hiền
BS. Nguyễn Thị Huyền Sương
ThS. Trịnh Văn Khương

THƯ KÝ:
BS. Nguyễn Thị Huyền Sương
ThS. Trịnh Văn Khương

KÝ SINH TRÙNG Y HỌC

(Giáo trình đào tạo đại học)

NHÀ XUẤT BẢN Y HỌC - BỘ Y TẾ

LÝ LỊCH KHOA HỌC

1. Họ và tên:	NGUYỄN THỊ PHƯƠNG THẢO
2. Năm sinh: 1985	3. Giới tính: Nữ
4. Nơi sinh: Tiên Lãng, Hải Phòng	
5. Nguyên Quán: Khởi Nghĩa, Tiên Lãng, Hải Phòng	
6. Địa chỉ liên hệ: Điện thoại: NR..... Mobile: 0396911693 Fax: ..... Email: ntpthao@hpmu.edu.vn	
7. Học hàm, học vị: Năm được công nhận TS: 2024 Nơi cấp bằng: Việt Nam Năm được phong GS/PGS: ..... Nơi phong:	
8. Cơ quan công tác: Tên cơ quan: Trường Đại học Y Dược Hải Phòng Khoa/Phòng, Bộ môn: Bộ môn Hóa sinh, Khoa Y Địa chỉ cơ quan: 72A Nguyễn Bỉnh Khiêm, Đằng Giang, Ngô Quyền, Hải Phòng Điện thoại: ..... Fax: ..... Email:	
9. Quá trình đào tạo	

Bậc đào tạo	Nơi đào tạo	Chuyên ngành/Tên khóa luận, luận văn, luận án	Năm tốt nghiệp
Đại học	Trường Đại học Y Dược Hải Phòng	Bác sĩ đa khoa	2009
Thạc sĩ	Trường Đại học Y Hà Nội	Hóa sinh y học/ Đánh giá nước đồ sau chữa gen Lamin A bệnh nhân ung thư phổi không tế bào nhỏ	2013
Tiến sĩ	Trường Đại học Y Hà Nội	Hóa sinh y học/ Xác định đột biến gen GLA, GAA và đặc điểm di truyền của bệnh Fabry và Pompe	2024
TSKH			

10. Các khoá đào tạo bồi dưỡng (nếu có)

Văn bằng	Tên khoá đào tạo	Nơi đào tạo	Thời gian đào tạo

11. Trình độ ngoại ngữ

Tên ngoại ngữ	Văn bằng/Chứng chỉ	Năm
Tiếng Anh	Văn bằng 2 Cử nhân Ngôn ngữ Anh	2017

12. Quá trình công tác *(trước khi về Trường và sau khi về Trường)*

Thời gian (Từ năm ... đến năm ...)	Vị trí công tác	Cơ quan công tác	Địa chỉ cơ quan
10/2009-7/2010	Giảng viên tập sự - sư giảng	Bộ môn Hóa - Hóa sinh Trường Đại học Y Hải Phòng nay đổi tên thành Bộ môn Hóa sinh, Trường Đại học Y Dược Hải Phòng	72A Nguyễn Bỉnh Khiêm, Đằng Giang, Ngô Quyền, Hải Phòng
7/2010-11/2020	Giảng viên - giảng dạy		
11/2020-đến nay	Giảng viên chính giảng dạy		

13. Các công trình khoa học đã công bố

13.1. Bài báo khoa học:

- *Tên tác giả: ghi các tác giả của bài báo*
- *Tác giả chính: là Tác giả chịu trách nhiệm (Corresponding author)*
- *Danh mục: ISI/Scopus hoặc Tạp chí trong nước theo WOS/SCI sinh phẩm*

TT	Tên bài báo	Tên tác giả	Tác giả chính	Tạp chí	Ngày XB	Số, trang	Danh mục	ISSN (DOI)
1	Nghiên cứu phát hiện mRNA LncRNA trong máu, nước bọt ung thư và bệnh lý bệnh nhân ung thư phổi không tế bào nhỏ	Nguyễn Thị Phương Thảo, Phạm Thiện Ngọc	x	Tạp chí Ung thư học Việt Nam	2013	430-434	Tạp chí trong nước	1859-400
2	Nghiên cứu quy trình sống	Nguyễn Thị	X	Tạp chí Y học thực	2014	Số 986,	Tạp chí	1859-1663

	[illegible] bệnh Fabry, Pompe, MPS I và Gaucher bằng phương pháp sắc khối phổ song song	Phương Thảo, Nguyễn Văn Hùng, Hoàng Thị Thanh Huyền		hành		trang 175-177	trong nước	
5	Phát hiện đột biến gen GLA ở một gia đình mắc bệnh Fabry ở Việt Nam	Nguyễn Thị Phương Thảo, Nguyễn Thị Phương Mai, Đào Mạnh Tiến, Nguyễn Văn Hùng, Hoàng Thị Ngọc Lan, Tạ Thanh Vân	x	Tạp chí Y học Việt Nam	11/2019	Tập 484, trang 645-650	Tạp chí trong nước	1829-1868
6	Đánh giá kết quả học tập môn Hóa sinh của sinh viên Y khoa theo hệ tín chỉ và hệ niên chế tại trường Đại học Y Dược Hải Phòng			Tạp chí Y học Việt Nam	11/2019	Tập 484, trang 645-650	Tạp chí trong nước	1859-1868

	năm 2018							
7	Chẩn đoán trước sinh cho 02 thai phụ có đột biến GAA gây bệnh Pompe	Nguyễn Thị Phương Thảo, Nguyễn Quỳnh Thư, Hoàng Thị Ngọc Lan, Tạ Thành Văn	x	Tạp chí Y học Việt Nam	2020	Số 496, trang 205-210	Tạp chí trong nước	1859-1868
8	Xác định đột biến gen GAA và đặc điểm di truyền của bệnh Pompe	Nguyễn Thị Phương Thảo, Vũ Chí Dũng, Nguyễn Ngọc Khánh, Lê Thị Phương, Trần Văn Khánh, Hoàng Thị Ngọc Lan, Tạ Thành Văn	x	Tạp chí Nghiên cứu y học Trường Đại học Y Hà Nội	31/03/2021	18-24	Tạp chí trong nước	2354-080X (https://doi.org/10.32852/tcncyh.v1i663.3459)
13.2. Bệnh chuyên khoa, giáo trình – sử dụng đọc học: – *Tên tài liệu: Sách/ Chương sách* – *Loại hình: Chuyên khảo/ Tham khảo/ Giáo trình/ Tài liệu hướng dẫn*								
TT	**Tên tài liệu**	**Tên tác giả**	**Chủ biên/Đồng chủ biên**	**Nhà xuất bản**	**Năm xuất bản**	**Loại hình**	**ISBN**	

1	Hồi sinh đại cương	Nguyễn Thị Phương Mai, Nguyễn Thị Phương Thảo	Nguyễn Thị Phương Mai	Y học, Hà Nội	2024	Giáo trình	978-604-66-6824-4
2	Hồi sinh	Nguyễn Thị Phương Mai, Nguyễn Thị Phương Thảo	Nguyễn Thị Phương Mai	Y học, Hà Nội	2024	Giáo trình	978-604-669-6481-0

14. Báo cáo Hội nghị - hội thảo khoa học

Kỷ yếu: Toàn tập/ Tuyển tập

TT	Tên báo cáo	Tên tác giả	Tác giả chính	Tên hội nghị	Thời gian báo cáo (tháng/năm)	Kỷ yếu	ISBN
1	Phân biệt đặc điểm GLA ở một gia đình mắc bệnh Fabry ở Việt Nam	Nguyễn Thị Phương Thảo, Đào Minh Nhi, Hoàng Thị Ngọc Lan, Tạ Thanh Vân	x	Hội nghị Khoa học và Công nghệ toàn toàn ngành Y tế lần thứ XX	11/2020		
2	Chẩn đoán trước sinh cho 02 thai phụ có đột biến GAA gây bệnh Pompe	Nguyễn Thị Phương Thảo, Nguyễn Quỳnh Trang, Hoàng Thị Ngọc Lan, Tạ Thanh Vân	x	Hội nghị Khoa học toàn quốc lần thứ 24 Hội Hồi sinh Y học Việt Nam	11/2020	Tạp chí y học Việt Nam, số chuyên đề	1859-1868

15. Bằng sở hữu trí tuệ đã được cấp

Liệt kê các văn bằng bảo hộ: Độc quyền sáng chế, giải pháp hữu ích, kiểu dáng công nghiệp, thiết kế bố trí, giống cây trồng...

TT	Tên và nội dung văn bằng	Số, Mã, Ký hiệu	Nơi cấp	Năm cấp

1				
2				
...				

16. Công trình KH&CN được ứng dụng, chuyển giao

TT	Tên công trình	Hình thức	Quy mô	Địa chỉ áp dụng	Giá trị	Thời gian
1						
...						

17. Nhiệm vụ KH&CN các cấp

- *Loại hình: Đề tài/ Dự án / Đề án*
- *Tình trạng nhiệm vụ: Đã nghiệm thu/ Chưa nghiệm thu/ Không hoàn thành*

17.1. Nhiệm vụ KH&CN đã và đang chủ trì

Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình (nếu có)	Tình trạng nhiệm vụ	Ngày			Kinh phí
					Phê duyệt	Đăng ký bắt đầu (nếu có)	Công nhận kết quả	
Nghiên cứu phát hiện miRNA LncX trong mô ung thư của bệnh nhân ung thư phổi không tế bào nhỏ		Đề tài cơ sở	Trường Đại học Y Dược Hải Phòng	Đã nghiệm thu	2015		Đạt	3.000.000đ
Nghiên cứu phát hiện miRNA LncX trong máu của bệnh nhân ung thư phổi		Đề tài cơ sở	Trường Đại học Y Dược Hải Phòng	Đã nghiệm thu	2014		Đạt	4.000.000đ

không tế bào nhỏ								
Nghiên cứu phát hiện mtDNA LuuX trong bệnh bạch huyết của bệnh nhân ung thư phổi không tế bào nhỏ		Đề tài cơ sở	Trường Đại học Y Dược Hải Phòng	Đã nghiệm thu	2018		Đạt	4.000.000đ
Điều trị một trường hợp chẩn đoán trước sinh cho một cặp vợ chồng mang đột biến gen GAA gây bệnh Pompe		Đề tài cơ sở	Trường Đại học Y Dược Hải Phòng	Đã nghiệm thu	2017		Đạt	4.000.000đ
Phát hiện đột biến gen GAA ở bệnh nhân được chẩn đoán lâm sàng là mắc bệnh		Đề tài cơ sở	Trường Đại học Y Dược Hải Phòng	Đã nghiệm thu	2018		Đạt	4.000.000đ

Pompe tại Việt Nam								
Phát hiện đột biến gen GLA ở một gia đình mắc bệnh Fabry ở Việt Nam		Đề tài cơ sở	Trường Đại học Y Dược Hải Phòng	ĐB nghiên cứu	2019		Đạt	4.000.000đ
Kết quả học tập môn Hóa sinh của sinh viên Y khoa theo hệ tín chỉ và hệ niên chế tại trường Đại học Y Dược Hải Phòng năm 2018		Đề tài cơ sở	Trường Đại học Y Dược Hải Phòng	ĐB nghiên cứu	2019		Đạt	4.000.000đ
Phát hiện đột biến gen GAA gây bệnh Pompe ở Việt Nam		Đề tài cơ sở	Trường Đại học Y Dược Hải Phòng	ĐB nghiên cứu	2020		Đạt	4.000.000đ
Xây dựng phả hệ gia đình bệnh nhân có đột biến gen GAA		Đề tài cơ sở	Trường Đại học Y Dược Hải Phòng	ĐB nghiên cứu	2021		Đạt	4.000.000đ

gây bệnh Paragonimus								
Mô tả các đột biến gen GAA gây bệnh Paragonimus ở Việt Nam		Đề tài cơ sở	Trường Đại học Y Dược Hải Phòng	Đã nghiệm thu	2022		Đạt	4.000.000đ
Phân biệt người bình mang gen trong các gia đình có bệnh nhân Paragonimus		Đề tài cơ sở	Trường Đại học Y Dược Hải Phòng	Đã nghiệm thu	2023		Đạt	4.000.000đ
Liên quan giữa chỉ số TyG và HbA1C ở bệnh nhân đái tháo đường type 2 điều trị tại bệnh viện Hữu nghị Việt Tiệp		Đề tài cơ sở	Trường Đại học Y Dược Hải Phòng	Đang tiến hành	2024			6.000.000đ
17.2. Nhiệm vụ KH&CN đã và đang thực hiện								
Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình (nếu có)	Tình trạng nhiệm vụ	Ngày			Kinh phí
					Nghiệm thu	Công nhận kết quả	Hủy kết quả	

Xác định hàm lượng chloramp henicol trong thực phẩm bằng phương pháp sắc ký lỏng khối phổ		Đề tài cơ sở	Trường Đại học Y Dược Hải Phòng	Hội nghiệm thu	2016	Đạt		4.000.000đ
Nghiên cứu sàng lọc một số bệnh tích đọng các chất trong lysosome ở bệnh nhân gan to, lách to, phì đại cơ tim chưa rõ nguyên nhân ở Việt Nam	29/2016/BYT-NĐT	Đề tài hợp tác theo Nghị định thư	Hội Y Tế	Hội nghiệm thu	2017	Đạt		

18. Giải thưởng về KH&CN trong và ngoài nước

TT	Tên giải thưởng	Hình thức khen thưởng	Cấp khen thưởng	Năm tặng thưởng
1				
2				
...				

19. Đào tạo sau đại học

- *Họ tên người hướng dẫn: hướng dẫn 1/ hướng dẫn 2*
- *Bậc đào tạo: Thạc sĩ/Tiến sĩ/Bác sĩ CK II/Bác sĩ CK I...*

TT	Họ tên học viên	Vai trò	Bậc đào tạo	Chuyên ngành	Nơi đào tạo	Năm cấp bằng

NHỮNG THÔNG TIN KHÁC VỀ CÁC HOẠT ĐỘNG KHOA HỌC VÀ CÔNG NGHỆ

(Tham gia các tổ chức hiệp hội ngành nghề; thành viên Ban biên tập các Tạp chí khoa học trong và ngoài nước; Thành viên các hội đồng quốc gia, quốc tế, ...)

_____, ngày ____ tháng ____ năm ____

XÁC NHẬN CỦA ĐƠN VỊ

PHÓ HIỆU TRƯỞNG

PGS.TS. Trần Thị Thanh Hải

NGƯỜI KHAI

(Họ tên và chữ ký)

Nguyễn Thị Phương Thảo

THE SOCIALIST REPUBLIC OF VIETNAM
Independence - Freedom - Happiness

THE RECTOR OF
HANOI MEDICAL UNIVERSITY
has conferred
THE DEGREE OF DOCTOR OF PHILOSOPHY
IN BIOMEDICAL SCIENCE

Upon: *Nguyen Thi Phuong Thao*

Date of birth: 11 June 1989

Given under the seal of
Hanoi Medical University
Ha Noi, 07 February 2024

Reg. No: ... Number

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

HIỆU TRƯỞNG
TRƯỜNG ĐẠI HỌC Y HÀ NỘI
cấp
BẰNG TIẾN SĨ
KHOA HỌC Y SINH

Cho: *Nguyễn Thị Phương Thảo*

Ngày sinh: 11/06/1989

Hà Nội, ngày 07 tháng 02 năm 2024
HIỆU TRƯỞNG

...Nghiêm Hữu Đức

Số hiệu: VMU 00609
Số vào sổ gốc cấp văn bằng: ... Number

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BỘ Y TẾ
Số: 002615 58 /BYT-CCHN

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

CHỨNG CHỈ HÀNH NGHỀ KHÁM BỆNH, CHỮA BỆNH

BỘ TRƯỞNG BỘ Y TẾ

Căn cứ Luật khám bệnh, chữa bệnh ngày 23/11/2009;
Căn cứ Nghị định số 83/2011/NĐ-CP ngày 27/9/2011 của Chính phủ quy định chi tiết và hướng dẫn thi hành một số điều của Luật khám bệnh, chữa bệnh;
Căn cứ Thông tư số 41/2011/TT-BYT ngày 14/11/2011 của Bộ trưởng Bộ Y tế hướng dẫn cấp chứng chỉ hành nghề đối với người hành nghề và cấp giấy phép hoạt động đối với cơ sở khám bệnh, chữa bệnh;
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Ngày cấp: 05/4/2002. Nơi cấp: Công an Hải Phòng.
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Văn bằng chuyên môn: Bác sỹ.
Phạm vi hoạt động chuyên môn: Chuyên khoa Tai mũi họng. Tỉnh Hải.

Hà Nội, ngày 11 tháng 5 năm 2015
KT. BỘ TRƯỞNG
THỨ TRƯỞNG

Nguyễn Thị Xuyên

Năm thứ sáu mươi tư

Y HỌC VIỆT NAM

VIETNAM MEDICAL JOURNAL

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HỘI HÓA SINH Y HỌC VIỆT NAM

THÁNG 11 - SỐ CHUYÊN ĐỀ
2020

TẬP 498

TỔNG HỘI Y DỌC VIỆT NAM
VIETNAM MEDICAL ASSOCIATION

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BAN BIÊN TẬP

HỘI NGHỊ KHOA HỌC TOÀN QUỐC LẦN THỨ 24
HỘI HÓA SINH Y HỌC VIỆT NAM

TRƯỞNG BAN BIÊN TẬP:

PGS.TS Hoàng Thị Bích Ngọc

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PGS.TS Nguyễn Gia Bình

PGS.TS Nguyễn Nghiêm Luật

THƯ KÝ BAN BIÊN TẬP:

TS Hoàng Thu Hà

TS Đặng Thị Tuyết Minh

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19. Nghiên cứu nồng độ lipid 2 [illegible] trong huyết tương ở bệnh nhân [illegible]
[illegible]
Lê Thanh Hà, Phạm Văn Trúc

21. Nghiên cứu nồng độ cholin 2 [illegible]
[illegible]
Hà Thị Hạnh Hoàng Vũ Quang Hợp, Lê Thanh Hà, Phạm Văn Trúc

23. Sự kết hợp [illegible]
[illegible]
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24. Nghiên cứu tác dụng điều chỉnh rối loạn lipid máu của chế phẩm [illegible]
[illegible]
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Hoàng Thị Phương Lan, Nguyễn Văn Long

25. Nghiên cứu nồng độ cystatin C huyết tương ở bệnh nhân đái tháo đường typ 2 tại Bệnh viện Trung ương Thái Nguyên
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Hoàng Thị Ngọc Lan, Tạ Thành Văn

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26. Nghiên cứu nồng độ [illegible] trong huyết thanh ở [illegible]

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Lê Thanh Hà, Phạm Văn Trúc

27. Nghiên cứu nồng độ [illegible]

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Hà Thị Hạnh Hoạt, Vũ Thương Hiệp, Lê Thanh Hà, Phạm Văn Trúc

28. Sự kết hợp [illegible]

[illegible]

Nguyễn Minh Hiền, Đỗ Thị Thu Hương

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Hoàn Thị Phương Loan, Nguyễn Văn Long

30. Nghiên cứu nồng độ cystatin C huyết tương ở bệnh nhân đái tháo đường typ 2 tại Bệnh viện Trung ương Thái Nguyên

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Nguyễn Thế Giang, Cao Xuân Cương, Đào Thị Thu Hương

31. Xây dựng thư viện pha [illegible]

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Lê Thị Huyền, Trần Thị Hoài Ban,

Trần Mạnh Hải, Nguyễn Thượng Linh

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Hoàng Thị Ngọc Lan, Tạ Thành Văn

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...

...

...

...

...

CHẨN ĐOÁN TRƯỚC SINH CHO 2 THAI PHỤ CÓ ĐỘT BIẾN GEN GAA GÂY BỆNH POMPE

Ngô Ỷ Thị Phương Thảo[1], Đào Hồng Nhi[1], Nguyễn Quốc Thư[1], Hoàng Thị Ngọc Lan[1], Tạ Thành Văn[2]

...

Từ khóa: Pompe, GAA, ...

...

Ngày nhận bài: 5/10/2020

Ngày phản biện khoa học: 15/10/2020

Ngày duyệt bài: 28/10/2020

SUMMARY

PRENATAL DIAGNOSIS FOR 2 PREGNANT WOMEN WHO HAVE GAA GENE MUTATIONS

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[illegible]

[illegible]

I. ĐẶT VẤN ĐỀ

[illegible]

II. ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU

1. Đối tượng:

[illegible]

2. Phương pháp nghiên cứu

- Mô tả cắt ngang
- Chọn [illegible]
- Nuôi cấy [illegible]
- Tách DNA và kỹ thuật [illegible]
- Lấy mẫu xác định [illegible]

Phân tích chuỗi, kiểm tra nồng độ và độ tinh sạch của DNA. [illegible]

3. KẾT QUẢ NGHIÊN CỨU

3.1. Kết quả tách DNA tổng số

[illegible]

Bảng 3.1. Kết quả đo nồng độ và độ tinh sạch DNA tổng số [illegible]

STT	Mẫu số lượng	Nồng độ [illegible]	Tỷ lệ OD260/280
1	[illegible]	[illegible]	1.87
2	[illegible]	[illegible]	1.92
3	[illegible]	[illegible]	2.04
4	[illegible]	[illegible]	1.98
5	[illegible]	[illegible]	1.91
6	[illegible]	[illegible]	1.94

[illegible]

3.2. Kết quả phản ứng PCR

[illegible]

Hình 1: Hình ảnh điện di sản phẩm PCR [illegible] gen GAA trên gel agarose

1: Marker	2: [illegible]	3: [illegible]	4: [illegible]	5: [illegible]	6: [illegible]
7: [illegible]	8: [illegible]	9: [illegible]	10: [illegible]	11: [illegible]	12: [illegible]
13: [illegible]	14: [illegible]	15: [illegible]	16: [illegible]	17: [illegible]	

Sản phẩm PCR được giải trình tự bằng phương pháp giải trình tự thế hệ và so sánh với trình tự gen GenBank để tìm đột biến gen GAA.

- Kết quả giải trình tự gen của gia đình mã số VN-0001 ghi nhận đột biến dị hợp tử số [illegible], tại C trong [illegible]

Hình 2: Hình ảnh kết quả giải trình tự mục tiêu, đột biến c.[illegible]

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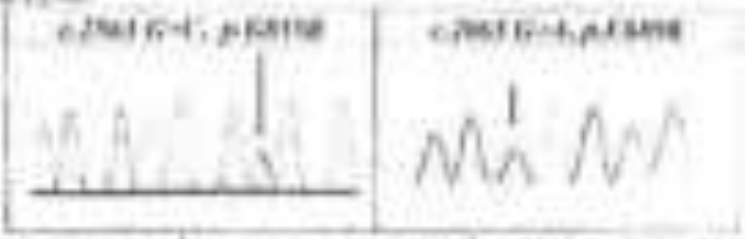
Bảng 2: Kết quả giải trình tự gen [illegible]

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	c.[illegible]	c.[illegible]	c.[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

[illegible]



Hình 1: Hình ảnh kết quả giải trình tự đột biến c.2561 G>C và c.2562 G>A

Bệnh nhân	VN-0054-1	VN-0056-2	VN-0046-1 [illegible]
Đột biến	c.2561 G> A p.(R854K)	c.2561 G> A p.(R854K)	c.2561 G> A p.(R854K) c.2562 G> A p.(R854K)
Đồng hợp tử	Dị hợp tử	Dị hợp tử	Dị hợp tử

Cả 3 trường hợp đều phát hiện đột biến c.2561 G>C (p.R854K) ở trạng thái dị hợp tử. Riêng có 01 bệnh nhân có đột biến c.2562 G>A, p.R854K ở trạng thái dị hợp tử.

IV. BÀN LUẬN

Từ 3 thai phụ mang đột biến [illegible] chúng tôi đã tiến hành chọc ối, [illegible] dịch ối và phân tích trình tự gen để tìm đột biến. Kết quả phát hiện được đột biến c.[2040+1G>T] ở gen [illegible] có mã số VCV 0055 và đột biến c.2561 G>T (p.R854I); c.2562 G>A, p.R854K ở gen [illegible] có mã số VN-0056.

Đột biến c.[2040+1G>T] [illegible] nghiên cứu này đã được báo cáo ở một bệnh nhân mắc bệnh Pompe ở Đài Loan trong nghiên cứu [illegible] của Hwang HP và cộng sự năm 2013[4] và sau VII Chaves và cộng sự năm 2017 [5]. Một [illegible] bệnh nhân [illegible] Pompe chủ khởi phát [illegible] ở Đài Loan. Đột biến này [illegible] được [illegible] là đột biến vị [illegible] gây bệnh (Mutation pathogenic) khi Clinvar[6] - ClinVar là [illegible] đột biến [illegible] Đột biến này được [illegible] là gây [illegible] trong [illegible] nhỏ RNA, dẫn đến không sống hợp protein hoặc tổng hợp protein [illegible] đến [illegible] dẫn đến sự [illegible] trong [illegible] Đây là [illegible] đột biến của đột biến có kết hợp với [illegible] đột biến khác có thể [illegible] gây ra [illegible] Pompe[7].

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[illegible]

[illegible]

[illegible]

5. KẾT LUẬN

[illegible]

TÀI LIỆU THAM KHẢO

1. P. S. M. [illegible] Manual [illegible] Robert D. [illegible] et al (2000). Pumps: theory, diagnosis and management guidelines. Comut Mech. 8 (5): 267-288.
2. V. J. Amorim MD, Hermann FEP, et al. (2000). Frequency of pharynx damage from ill in the Netherlands: implications for diagnosis and genetic counselling. Eur J Hum Genet. 7 (6): 713-716.
3. J. M. A. M. Arnold & J. J. Rotter Pumps Director National Organization for rare disorders.
4. C. P. Hwang MP, Ho W.L. et al. (2011). Pumps disease: induced pluripotent stem cell for pathogenesis modelling, drug testing and

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disease marker identification. Nucl Med Comun, 28(2):91.

8. N. L. Vill 4 Mem, 4 S 4 Ann et al (2019 April). Long-term physical activity and disease-onset Pompe disease documented by newborn screening and treated case with. The journal of pediatrics, 166 (4), 987-991.e982.

9. Yi.L. H. Ying Yu et al. (2016). [illegible] patients with infantile-onset Pompe disease: a muscle magnetic resonance imaging study. Orphanet J Rare Dis, 11 (1), 67.

10. P. M. Kroos MJ, van Vliet L, et al. (2008) Update of the Pompe disease mutation database with 107 sequence variants and a format for severity rating. Hum Mutat, 29 (6).

11. E. B. Stefania Zampieri, Silvia Pegoraro, et al. (2011 April). Lysosomal autophagy in [illegible] disease type II [illegible] of the half-[illegible] of acid [illegible] glucosidase. [illegible].

12. M. B. D Barash (2005). [illegible] Available Online: [illegible] 2 Web Struct, 2(1-3), 757-760.

13. L. J. Chen Y, Huang M, et al (2017 [illegible] [illegible] and [illegible] [illegible] [illegible] Common Molecular Types for [illegible] Biomarkers. J Urol, 197, 1-9.

14. F. M. Vanderbi Tajouri, Natalie Adams et al. (2007). Structural and functional studies on Pompe disease and a [illegible] of acid [illegible]. J Biol Chem, 282, 649-658.

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Xác định đột biến trên gen *SCN1B* ở bệnh nhân mắc hội chứng Brugada

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Phẫu thuật tạo hình tổn thương bàn tay do rắn độc cắn

Thực trạng năng lực đào tạo sau đại học chuyên khoa nội, ngoại, sản, nhi và truyền nhiễm của một số cơ sở đào tạo ở Việt Nam năm 2021

Tập 164, Số 3, Tháng 3 Năm 2023

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[2]Bệnh viện Nhi Trung ương
[3]Trường Đại học Y Hà Nội

Pompe là bệnh dị truyền hiếm gặp thuộc nhóm các bệnh rối loạn dự trữ trong tiêu thể. Nguyên nhân của bệnh được xác định là do đột biến gen GAA. Sản phẩm thiếu hụt enzyme alpha glucosidase A trong tiêu thể tế bào, từ đó gây ứ đọng glycogen trong tế bào. Cho đến nay đã có gần 700 đột biến gen GAA gây bệnh Pompe được báo cáo. Xác định đột biến gen GAA và phát hiện người lành mang gen có ý nghĩa rất lớn trong tư vấn di truyền, hạn chế sinh ra những trẻ bị bệnh. Mục tiêu của nghiên cứu này là phát hiện đột biến gen GAA trên các đối tượng nguy cơ cao và phát hiện người lành mang gen trên các thành viên gia đình có bệnh nhân Pompe. Chúng tôi tiến hành đo hoạt độ enzyme GAA cho 14 bệnh nhân có triệu chứng lâm sàng gợi ý Pompe, giải trình tự gen GAA cho các bệnh nhân có hoạt độ enzyme thấp và 02 cặp vợ chồng có tiền sử sinh con Pompe tìm đột biến. Sau khi xác định đột biến gen sẽ tiến hành dự phòng cho các thành viên trong gia đình và giải trình tự gen cho ca sinh tiếp theo để phát hiện người lành mang gen. Sau khi tiến hành nghiên cứu, chúng tôi phát hiện 10 đột biến gen GAA trong đó có 02 đột biến chưa được công bố, phát hiện 2/03 thành viên trong 02 gia đình có bệnh nhân Pompe là người lành mang gen bệnh.

Từ khóa: Pompe, đột biến, alpha-glucosidase A (GAA).

I. ĐẶT VẤN ĐỀ

Pompe là bệnh dị truyền hiếm gặp thuộc nhóm các bệnh rối loạn dự trữ trong tiêu thể tế bào (Lysosomal storage diseases – LSDs). Nguyên nhân của bệnh được xác định là do đột biến gen GAA nằm trên nhiễm sắc thể 17, dẫn đến thiếu hụt α-Glucosidase A – enzyme có vai trò thủy phân glycogen trong tiêu thể tế bào, hậu quả là glycogen không được giáng hóa, ứ đọng trong tế bào, trong mô.[1]

Tỷ lệ mắc bệnh Pompe dao động từ 1/40.000 đến 1/300.000 dân số sống, phụ thuộc vào chủng tộc hoặc vùng địa lý được nghiên cứu.[1,2]

Theo cập nhật của HGMD đến tháng 4 năm 2021 đã có gần 700 đột biến gen GAA được ghi nhận là nguyên nhân gây bệnh Pompe các đột biến xuất hiện với tỷ lệ khác nhau ở các quốc gia khác nhau và ngày càng có nhiều đột biến gây bệnh mới được báo cáo.[3]

Triệu chứng của bệnh Pompe rất khác nhau tùy vào thể bệnh, nhưng thường gặp nhất là các triệu chứng về sự chậm yếu cơ, bú kém, dễ sặc, giảm trương lực cơ, khó thở khi gắng sức hoặc suy hô hấp... Nếu được chẩn đoán xác định sớm việc điều trị có hiệu quả cao, kéo dài tuổi thọ và nâng cao chất lượng cuộc sống cho bệnh nhân.[1]

Pompe có thể khởi phát ở mọi lứa tuổi, từ sơ sinh đến người già, việc phát hiện

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hiện người làm mang gen để đưa ra tư vấn di truyền phù hợp có ý nghĩa lớn trong việc hạn chế sinh ra những đứa trẻ bị bệnh.

Ở Việt Nam có rất ít nghiên cứu về vấn đề này, dẫn đến chẩn đoán và điều trị muộn, dẫn đến hiệu quả điều trị không cao. Vì những lý do trên, chúng tôi tiến hành nghiên cứu với mục tiêu: *Xác định các đột biến gen GAA và phát hiện người lành mang gen bệnh trong các gia đình có bệnh nhân mắc bệnh Pompe tại Việt Nam.*

II. ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP

1. Đối tượng

Những bệnh nhân có triệu chứng lâm sàng gợi ý đến bệnh Pompe hoặc có tiền sử sinh con mắc bệnh Pompe và các thành viên trong gia đình của họ.

2. Phương pháp

Thiết kế nghiên cứu: Mô tả chum của bệnh.

Cỡ mẫu: 14 bệnh nhân có triệu chứng lâm sàng gợi ý của bệnh Pompe và 02 cặp vợ chồng có tiền sử sinh con mắc bệnh Pompe, và 70 thành viên trong gia đình của họ.

Chỉ số nghiên cứu: hoạt độ enzyme GAA, các đột biến gen GAA

Quy trình của thành nghiên cứu: đo hoạt độ enzyme GAA trong máu cho 14 bệnh nhân có triệu chứng lâm sàng gợi ý Pompe bằng phương pháp đo khối phổ song song UHPLC-MS/MS từ giọt máu khô trên giấy thấm. Với những bệnh nhân có hoạt độ enzyme GAA thấp, chúng tôi tiến hành phân tích gen GAA để tìm đột biến bằng phương pháp giải trình tự gen thế hệ mới (NGS) trên máy giải trình tự gen của hãng Illumina (Mỹ) tại Trung tâm Gen - protein, Trường Đại học Y Hà Nội.

3. Đạo đức nghiên cứu

Nghiên cứu đã được thông qua Hội đồng đạo đức của Bệnh viện Nhi Trung ương (Số 2173/BVNTW-HĐĐD, ngày 22/09/2021), văn đối tượng tự nguyện tham gia nghiên cứu.

III. KẾT QUẢ

1. Đặc điểm chung của đối tượng tham gia nghiên cứu

Trong số 14 bệnh nhi có triệu chứng yếu cơ, tiền sử tham gia sàng lọc bệnh Pompe, có tuổi khởi phát trung bình là 0 ± 4,2 tháng, trong đó có 12 bệnh nhi dưới 6 tháng tuổi, chiếm 85,7%, bệnh nhân có triệu chứng khởi phát sớm nhất là khi 6 ngày tuổi. Tỷ lệ nam/nữ là 1:1.

2. Kết quả đo hoạt độ enzyme

Kết quả đo hoạt độ enzyme GAA của 14 bệnh nhi có triệu chứng lâm sàng gợi ý tham gia nghiên cứu nằm trong khoảng 0,01 - 6,8 µmol/h/L, trung bình là 0,91 ± 1,26 µmol/h/L, tất

cả các bệnh nhân đều có hoạt độ enzyme thấp hơn giá trị tham chiếu (19,92 ± 8,49 µmol/h/L); trong đó có 6 bệnh nhân có hoạt độ enzyme còn lại thể hiện 10% so với giá trị tham chiếu, chiếm 35,7%, có biệt số trường hợp hoạt độ enzyme còn lại rất thấp, tới 0,01 µmol/h/L.

3. Kết quả giải trình tự gen

Chúng tôi tiến hành phân tích GAA cho 14 bệnh nhi có triệu chứng lâm sàng gợi ý và 02 cặp vợ chồng có tiền sử sinh con Pompe. Kết quả giải trình tự gen GAA được thể hiện qua bảng 1

Bảng 1. Kết quả giải trình tự gen GAA của các bệnh nhân

STT	Thay đổi nucleotid	Thay đổi acid amin	Vị trí	Loại đột biến	Tần suất
1	c.925T>C	p.Tyr309His	E3	Sai nghĩa	4
2	c.[redacted]T	p.Leu240fs	E4	Dịch khung	1
3	c. 1411_1414del	p.Ile471Phefs	E9	Dịch khung	1
4	c.2043+1G>T	[redacted]	Intron 18	Chỗ nối	3
5	c.1633G>C	p.Asp545His	E14	Sai nghĩa	7
6	c.1933G>A	p.Asp645Asn	E14	Sai nghĩa	1
7	c.1726G>A	p.Gly576Lys	E14	Sai nghĩa	1
8	c.2173C>T	p.Arg725Ala	E18	Sai nghĩa	1
9	c.2960 G>C	p.Gly855Arg	E18	Sai nghĩa	2
10	c.2818-2819delTinsCAG	p.Ser940fs	E20	Dịch khung	2

Chúng tôi thu được 10 đột biến, bao gồm 06 đột biến sai nghĩa, 03 đột biến dịch khung và 01 đột biến tại vị trí nối, phần lớn các đột biến đều đã được báo cáo trong các nghiên cứu trước đó về Pompe, nhưng chúng tôi cũng ghi nhận 02 đột biến chưa từng được báo cáo trước đây là đột biến c.925T>C, p.Tyr309His và c.2818-2819delTCinsCAG, p.Ser940fs.[11,12]

Khi dùng phần mềm in silico để dự đoán khả năng gây bệnh của đột biến sai nghĩa c.925T>C, p. Tyr309His, chúng tôi thu được kết quả như sau:

Bảng 2. Kết quả dự đoán khả năng gây bệnh của đột biến c.925T>C, p. Tyr309His bằng các phần mềm tin sinh

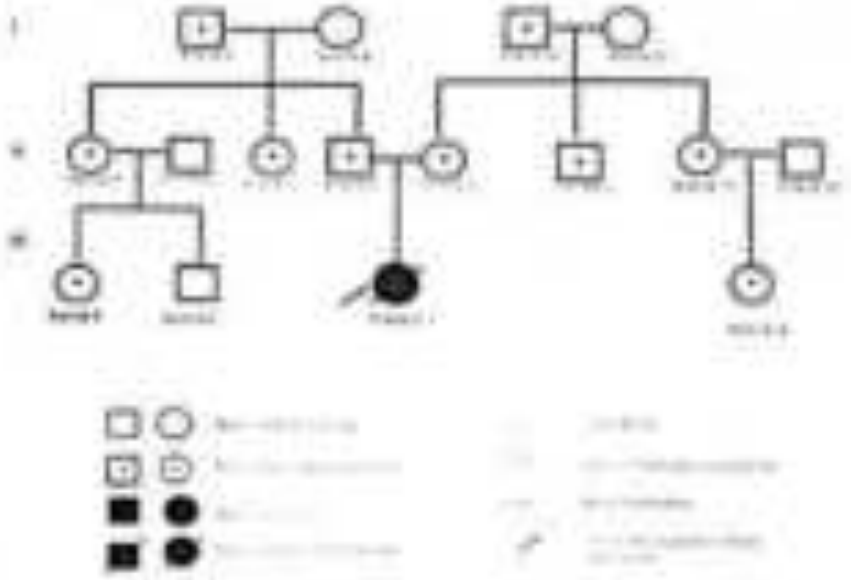
	SIFT	PolyPhen-2	Mutation Taster
Điểm	0,14	1,0	
Dự đoán	Khả năng gây bệnh ở mức độ thấp	Khả năng gây bệnh rất cao	Gây bệnh

Các phần mềm tin sinh đều dự đoán đột biến c.925T>C, p. Tyr309His có khả năng gây bệnh Pompe với các mức độ khác nhau.

4. Phát hiện người lành mang gen bệnh các thành viên gia đình bệnh nhân Pompe

Chúng tôi tiến hành giải trình tự gen cho 70

thành viên trong 05 gia đình có bệnh nhân Pompe. Sử dụng kết hợp giữa xét nghiệm gen bệnh và lập phả hệ của các gia đình.



Hình 1. Phả hệ gia đình mã số Pom 16.3

Trong số 72 thành viên trong 05 gia đình có bệnh nhân Pompe, chúng tôi phát hiện 30 thành viên mang đột biến gen GAA thể dị hợp tử, không có biểu hiện bệnh. Tỷ lệ mang đột biến ở thế hệ I là từ 50 - 100%, các đột biến đều có từ thế hệ I, di truyền cho thế hệ II, rồi từ thế hệ II di truyền cho thế hệ III. Cả 05 gia đình có tất cả các thành viên trong thế hệ II mang gen bệnh. Không phát hiện đột biến de novo nào trong nghiên cứu này.

IV. BÀN LUẬN

Về đặc điểm chung của đối tượng nghiên cứu

Về tuổi khởi phát của bệnh Pompe: có 12/14 bệnh nhân khởi phát trước 1 tuổi, như vậy phần lớn các bệnh nhân trong nghiên cứu này là Pompe thể khởi phát sớm (IOPD). Tuổi khởi phát trung bình là 9 ± 4.2 tháng tuổi, tương tự như trong các nghiên cứu khác về IOPD như nghiên cứu của Marsden năm 2016.[4]

Về giới tính: nữ trong nghiên cứu của chúng tôi là 1:1, phù hợp với quy luật di truyền gen lặn trên NST thường.

Về kết quả hoạt độ enzyme GAA

14 bệnh nhân trong nghiên cứu của chúng tôi đều có hoạt độ enzyme GAA thấp hơn giá trị tham chiếu. Có tới 9/14 bệnh nhân có hoạt độ enzyme còn lại nhỏ hơn 3% so với giá trị tham chiếu. Tất cả các bệnh nhân này đều xuất hiện triệu chứng khởi phát trước 6 tháng tuổi. Điều này phù hợp với mô tả trong các nghiên cứu trước đây về Pompe: trong IOPD, hoạt độ enzyme còn lại nhỏ hơn 3% giá trị tham chiếu, còn trong LOPD hoạt độ enzyme còn lại trong khoảng 3-20% giá trị tham chiếu.

Kết quả hoạt độ enzyme của chúng tôi cũng tương tự trong nghiên cứu của Lukacs và cộng sự năm 2018 ở Thái Lan[5], cả về tỉ lệ giữa nghiên cứu của Lukacs là trên các bệnh nhân IOPD, còn trong nghiên cứu của chúng tôi và cả bệnh nhân IOPD và LOPD nên làm cho hoạt độ enzyme trung bình cao hơn. Một khác, các đột biến GAA khác nhau cũng sẽ làm thay đổi hoạt

đột enzyme GAA với các mức độ khác nhau.

Về kết quả phân tích gen GAA

Khi giải trình tự gen GAA cho 14 bệnh nhi, chúng tôi thu được 9 đột biến. 7 bệnh nhân ở thể đồng hợp tử và 7 bệnh nhân ở thể dị hợp tử kép. Trong đó, có 2 đột biến chưa từng được công bố trên cơ sở dữ liệu về Pompe đó là đột biến vô nghĩa c.6251T>C, p.Tyr209Ter và đột biến dịch khung c.2818-2819delTCinsCAG. Đột biến điểm c.6251T>C xảy ra trên *planet* của enzyme, là miền chịu trách nhiệm phân giải peptid tín hiệu nên đột biến này có thể ảnh hưởng đến quá trình vận chuyển tiền chất vào lysosome, rồi đó ảnh hưởng đến quá trình tổng hợp enzyme. Nghiên cứu của chúng tôi phát hiện 04 bệnh nhân có đột biến này, trong đó có 02 bệnh nhân có kiểu gen giống nhau nhưng hoạt độ enzyme và tuổi khởi phát khác nhau. Tương tự, khi dự đoán khả năng gây bệnh của đột biến này bằng các phần mềm tin sinh học cho kết quả khác nhau: phần mềm SIFT dự đoán khả năng gây bệnh thấp trong khi phần mềm PolyPhen-2 và MutationTaster dự đoán khả năng gây bệnh cao, do đó cần có thêm các nghiên cứu thực nghiệm để hiểu rõ hơn cơ chế gây giảm hoạt độ enzyme của đột biến này. Đột biến c.2818-2819delTCinsCAG làm cặp 2 nucleotide là T và C, đồng thời thêm 3 nucleotide (CAG), dẫn đến dịch khung từ vị trí p.940 và kéo dài một kết thúc, dẫn đến tổng hợp protein dài hơn, do đó cũng không còn chức năng enzyme. Trong nghiên cứu của chúng tôi phát hiện 03 bệnh nhân có đột biến này ở thể dị hợp tử kép có biểu hiện lâm sàng khác nhau, cho thấy sự kết hợp các đột biến khác nhau sẽ dẫn đến ảnh hưởng khác nhau về hoạt độ enzyme và từ đó biểu hiện lâm sàng cũng khác nhau.

Đột biến c.1933 G>C, Asp645His là đột biến gặp với tần số cao nhất trong nghiên cứu của chúng tôi (7/14 bệnh nhân). Đột biến này đã được ghi nhận là đột biến gây bệnh ở cả thể đồng hợp tử và dị hợp tử kép.[7] Ba bệnh nhân mang đột biến này thể dị hợp tử trong nghiên cứu này đều khởi phát sớm và có hoạt độ enzyme rất thấp. Các bệnh nhân mang đột biến này dị hợp tử kép có biểu hiện lâm sàng rất khác nhau.

Theo các nghiên cứu trước đây các đột biến GAA được báo cáo thường tập trung ở ba vùng quan trọng là: exon 2- nơi chứa mã mở đầu; exon 12 và 11 - nơi chứa vị trí xúc tác enzyme; và exon 14 - là vùng được bảo tồn cao.[7] Trong nghiên cứu này, chúng tôi phát hiện được các đột biến ở exon 2, exon 9, exon 14, exon 15, exon 16 và exon 18, trong đó exon 14 là các vùng có 8/36 đột biến cao. Chúng tôi không phát hiện được các đột biến ở exon 2, 10 và 11, có thể là do cỡ mẫu quá nhỏ, nên cần có các nghiên cứu tiếp theo với cỡ mẫu lớn hơn để lập bản đồ đột biến gen GAA tại Việt Nam.

Phát hiện nguồn lành mang gen bệnh trên các thành viên gia đình bệnh nhân

Khi phân tích tình tự gen và tập phả hệ cho 08 gia đình chúng tôi nhận thấy các đột biến đều có tư thế hệ I ông bà truyền cho thế hệ II, rồi từ thế hệ II truyền cho thế hệ 3. Theo tỷ thuyết với các bệnh lý truyền gen lặn trên NST thường, xác suất sinh ra người lành mang gen là 50% cho mỗi lần mang thai, tuy nhiên, trong nghiên cứu này chúng tôi thấy rất nhiều gia đình đã có sinh con sinh ra từ bố mẹ bình thường và mẹ bố mang gen đều mang gen bệnh. Do đó, ý nghĩa của việc phát hiện người lành mang gen để đưa ra các tư vấn di truyền cho các thành viên mang gen trong gia đình, nên xét nghiệm càng sớm càng tốt, sàng lọc trên quần thể, chẩn đoán trước sinh và sàng lọc sơ sinh để hạn chế tỷ lệ mắc những dịch kể là bệnh.

III. KẾT LUẬN

Pompe là bệnh di truyền gen lặn trên nhiễm

sắc thể thường, rất đặc biệt gen GAA. Trong nghiên cứu này, chúng tôi đã phân tích tình trạng gen 14 bệnh nhân có hoạt độ GAA thấp và 02 cặp vợ chồng có tiền sử sinh con mắc Pompe, xác định được 2 đột biến mới c.622T>C (p.Tyr208His) và 2818-2819insTC (c.U.AG) (p.Il e940Ser). Đã tiến đột biến có ảnh hưởng gây bệnh khi dự đoán bằng các phần mềm tin sinh học. Chúng tôi cũng phát hiện SNP đồng hợp trong 08 gia đình có bệnh nhân Pompe là nguyên liệu mang gen lặn để đưa ra tư vấn di truyền cho các đối tượng mang gen bệnh.

TÀI LIỆU THAM KHẢO

1. ACMG Work Group on Management of Pompe Disease: Kishnani PS, Corzo D, Nicolino M, Byrne B, Mandel H, Hwu WL, Leslie N, Spencer C, Bali D, Prater S, Chen YT. Recombinant human acid [alpha]-glucosidase: major clinical benefits in infantile-onset Pompe disease. Neurology. 2007 Jan 16;68(2):99-109. doi: 10.1212/01.wnl.0000251268.41188.04. Epub 2006 Dec 20. PMID: 17151340.

2. Ausems MG, Verlaan M, Bijvoet AG, Couthino P, Bakker HD, Lindhout D, de Coo RF. Beta-sarcoglycan deficiency is associated with severe childhood recessive limb-girdle muscular dystrophy. Neurology. 1999 Jun 10;52(9):1795-802. doi: 10.1212/wnl.52.9.1795. PMID: 10371537.

3. Cardiff UAMD. The Human Gene Mutation Database. https://www.hgmd.cf.ac.uk/ac/gene.php?gene=GAA.

4. Lara-Kohler R, Pena LDM, Pompe Disease in Adults: Recognition, Evaluation, Diagnosis and Management. Neurol Clin. 2018 Nov;36(4):779-794. doi: 10.1016/j.ncl.2018.06.008. Epub 2018 Aug 31. PMID: 30366557.

5. Lara-Kohler R, Pena LDM, Pompe disease in adults: recognition, evaluation, diagnosis and management. Neurol Clin. 2018 Nov;36(4):779-794. doi: 10.1016/j.ncl.2018.06.008. Epub 2018 Aug 31. PMID: 30366557.

6. Li Tunaca BOSdF, SD Ilyasov, et al. Novel GAA mutations in patients with Pompe disease. Gene. 2015;561:134-132.

7. Arnold J J Reuser AJvdP, Yin-Hsiu Chien, et al. GAA variants and phenotypes among 1,079 patients with Pompe disease: Data from the Pompe Registry. Hum Mutat. 2018;40(11). doi: 10.1002/humu.23618.

8. Lin C Y, Liu. Identification of a de novo point mutation resulting in infantile form of Pompe's disease. Biochem Biophys Res Commun. 1995;205(2):888-93. doi: 10.1006/bbrc.1995.3418.

9. Lukiana Ngiwatara DW, et al. Clinical course, mutations and its functional characteristics of infantile-onset Pompe disease in Thailand. BMC Medical Article. 2018;20:156.

10. Nishimoto BRR CS, Rasset A, Tanner A, et al. Genetic landscape and novel disease mechanisms from a large LOAD cohort of 4868 patients. Ann Clin Transl Neurol. 2018;5(12):1574-1587. doi: 10.1002/acn3.649.

11. Moisdon D. Infantile onset Pompe disease: A report of physician narratives from an epidemiologic study. Genetics in Medicine. 2008;7:147-150.

12. Yasuyuki Funahara NF, Narutoshi Yamazaki, et al. A molecular analysis of the GAA gene and clinical spectrum in 38 patients with Pompe disease in Japan. Mol Genet Metab Rep. 2018;14:3-8. doi: 10.1016/j.ymgmr.2017.10.009.

Summary

DETECTION OF GAA GENE MUTATIONS AND INHERITED TRAIT OF POMPE DISEASE

Pompe is a rare genetic disease that belongs to Lysosomal storage diseases. It began by mutation in the GAA gene, leading to a deficiency of the lysosomal alpha glucosidase A enzyme, thereby causing glycogen storage in the cells. To date, about to 700 GAA gene mutations have been reported. Detecting GAA gene mutation and carriers has great significance in genetic counseling. This study aims to detect GAA gene mutations and inherited traits of Pompe disease. We screen 14 patients by measuring GAA activity from DBS, then analyzed the gene sequence of 14 patients with low GAA activity and 02 parents who have children with Pompe disease to detect mutations. We detected 18 GAA gene mutations, including 02 mutations that have not been reported previously, and 06 carriers from 6 families with GAA gene mutation.

Keywords: Pompe disease, mutation, GAA.

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

BIÊN BẢN
NGHIỆM THU ĐỀ TÀI KHCN CẤP CƠ SỞ NĂM 2023

Tên đề tài: Phát hiện người lành mang gen trong các gia đình có bệnh nhân Pompe

Chủ nhiệm đề tài: ThS. Nguyễn Thị Phương Thảo

Thành viên tham gia: Nguyễn Thị Phương Mai, Vũ Chí Dũng, Trần Văn Khánh, Hoàng Thị Ngọc Lan, Tạ Thành Văn

Giảng viên hướng dẫn (nếu có):

Đơn vị: Bộ môn Hóa sinh

Căn cứ Quyết định số: 2550/QĐ - YDHP ngày 08 tháng 12 năm 2023 của Hiệu trưởng trường Đại học Y Dược Hải Phòng về việc thành lập Tiểu ban Khoa học công nghệ nghiệm thu đề tài nghiên cứu khoa học cấp cơ sở năm 2023. Tiểu ban đã tiến hành họp để đánh giá nghiệm thu đề tài vào hồi 8h00 ngày 19 tháng 12 năm 2023 tại trường Đại học Y Dược Hải Phòng.

Các thành viên có mặt:

1. GS.TS. Phạm Minh Khuê	Trưởng tiểu ban
2. PGS.TS. Hoàng Đức Hạ	Phó trưởng tiểu ban
3. TS. Vũ Thị Thu Trang	Ủy viên
4. TS. Đỗ Quang Anh	Ủy viên
5. TS. Cao Đức Tuấn	Ủy viên thư ký

Thư ký đánh chính: Ths. Cáp Minh Đức

Các thành viên vắng mặt:

NỘI DUNG NGHIỆM THU:

1. Đọc quyết định thành lập Tiểu ban: *TS. Cao Đức Tuấn*
2. Trưởng Tiểu ban điều khiển tuổi nghiệm thu.
3. Chủ nhiệm đề tài trình bày tóm tắt báo cáo tổng kết đề tài (có bản báo cáo tóm tắt kèm theo)
4. Các thành viên Tiểu ban nhận xét, góp ý (có bản nhận xét kèm theo)

5. Các thành viên trong Tiểu ban và những người tham dự buổi nghiệm thu trao đổi về nội dung, phương pháp, kết quả nghiên cứu của đề tài, và thống nhất một số ý kiến sau:

- Nghiên cứu có ý nghĩa
- Kiến nghị ứng nghiệm cao

6. Đánh giá kết quả:

6.1. Ban kiểm phiếu gồm:
- TS. Cao Đức Tuấn
- Ths. Cấp Minh Đức

6.2. Tiểu ban đã tiến hành đánh giá kết quả như sau:

Tổng số phiếu phát ra: 5 phiếu
Tổng số phiếu thu vào: 5 phiếu
Số phiếu hợp lệ: 5 phiếu
Số phiếu không hợp lệ: 0 phiếu

6.3. Kết quả đánh giá:

Xuất sắc: 4 phiếu
Khá: 1 phiếu
Đạt: 0 phiếu
Không đạt: 0 phiếu

Kết quả đề tài đạt loại: Xuất sắc

7. Kết luận:

Nhất trí

Hải Phòng, ngày 13 tháng 12 năm 2021

Trưởng Tiểu ban
(Ký và ghi rõ họ tên)

GS.TS. Phạm Minh Khoa

Thư ký
(Ký và ghi rõ họ tên)

TS. Cao Đức Tuấn

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

BIÊN BẢN
NGHIỆM THU ĐỀ TÀI KHCN CẤP CƠ SỞ NĂM 2022

Tên đề tài: Mô tả các đột biến gen GAA gây bệnh Pompe ở Việt Nam

Chủ nhiệm đề tài: ThS. Nguyễn Thị Phương Thảo

Đơn vị: BM. Hoá sinh

Căn cứ Quyết định số: 2763/QĐ - YDHP ngày 19 tháng 12 năm 2022 của Hiệu trưởng trường Đại học Y Dược Hải Phòng về việc thành lập Hội đồng Khoa học nghiệm thu đề tài NCKH cấp cơ sở năm 2022, Hội đồng đã tiến hành họp để đánh giá, nghiệm thu đề tài vào hồi 10h00 ngày 27 tháng 12 năm 2022 tại trường Đại học Y Dược Hải Phòng.

Các thành viên Hội đồng có mặt:

1. GS.TS. Phạm Minh Khuê - Chủ tịch Hội đồng
2. PGS.TS. Nguyễn Văn Mùi - Ủy viên
3. PGS.TS. Trịnh Thị Ly - Ủy viên
4. TS. Nguyễn Đức Thi - Ủy viên
5. TS. Võ Văn Thái - Ủy viên
6. TS. Phạm Văn Thương - Ủy viên
7. TS. Phạm Thanh Hải - Ủy viên

Thư ký: ThS. Hoàng Thị Thuần

Các thành viên Hội đồng vắng mặt: Không

Các cán bộ tham gia thực hiện chính: **Nguyễn Thị Phương Mai**

NỘI DUNG NGHIỆM THU:

1. Đọc quyết định thành lập Hội đồng: *ThS. Hoàng Thị Thuần*
2. Chủ tịch hội đồng điều khiển buổi nghiệm thu.
3. Chủ nhiệm đề tài trình bày tóm tắt báo cáo tổng kết đề tài *(có bản báo cáo tóm tắt kèm theo)*.
4. Các phản biện đọc bản nhận xét *(có bản nhận xét kèm theo)*.
5. Các thành viên trong hội đồng và những người tham dự buổi nghiệm thu đã trao đổi về nội dung, phương pháp và kết quả nghiên cứu của đề tài; Hội đồng thống nhất một số ý kiến sau:

   - Tên đề tài đề nghị: Mô tả một số đột biến gen GAA gây bệnh Pompe ở khu vực phía Bắc

6. Hội đồng đã bỏ phiếu đánh giá kết quả như sau:

Ban kiểm phiếu của Hội đồng gồm:

1. TS. Vũ Văn Thái
2. ThS. Hoàng Thị Thuận

Tổng số phiếu phát ra : 07 phiếu
Tổng số phiếu thu vào : 07 phiếu
Số phiếu hợp lệ : 07 phiếu
Số phiếu không hợp lệ : 0 phiếu

Kết quả đánh giá:

Xuất sắc : 0 phiếu
Khá : 04 phiếu
Đạt : 03 phiếu
Không đạt : 0 phiếu

Kết quả đề tài đạt loại: Khá

7. Kết luận của Hội đồng: **Nghiệm thu đề tài**

Hải Phòng, ngày 27 tháng 12 năm 2023

CHỦ TỊCH HỘI ĐỒNG
(Ký và ghi rõ họ tên)

GS.TS. Phạm Minh Khuê

THƯ KÝ HỘI ĐỒNG
(Ký và ghi rõ họ tên)

ThS. Hoàng Thị Thuận

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

BIÊN BẢN
NGHIỆM THU ĐỀ TÀI KHCN CẤP CƠ SỞ NĂM 2021

Tên đề tài: Xây dựng phả hệ gia đình bệnh nhân có đột biến gen GAA gây bệnh Pompe

Chủ nhiệm đề tài: Nguyễn Thị Phương Thảo

Đơn vị: BM. Hóa sinh

Căn cứ Quyết định số: 1787/QĐ-YDHP ngày 08 tháng 12 năm 2021 của Hiệu trưởng trường Đại học Y Dược Hải Phòng về việc thành lập Hội đồng Khoa học nghiệm thu đề tài NCKH cấp cơ sở năm 2021, Hội đồng đã tiến hành họp để đánh giá, nghiệm thu đề tài vào hồi 14 giờ ngày 16 tháng 12 năm 2021 tại Trường Đại học Y Dược Hải Phòng.

Các thành viên Hội đồng có mặt:

1.	PGS.TS. Nguyễn Văn Hùng	Chủ tịch Hội đồng
2.	PGS.TS. Đặng Văn Chức	Thành viên
3.	TS. Bạch Thị Như Quỳnh	Thành viên
4.	TS. Đào Thu Hồng	Thành viên
5.	TS. Phạm Thanh Tải	Thành viên
6.	TS. Võ Thị Thanh Hiền	Thành viên

Thư ký: CN. Đồng Thị Phương Thuỷ

Các thành viên Hội đồng vắng mặt: PGS.TS. Đỗ Thị Tình

Các cán bộ tham gia thực hiện chính: Nguyễn Thị Phương Mai

NỘI DUNG NGHIỆM THU:

1. Đọc quyết định thành lập Hội đồng: CN. Đồng Thị Phương Thuỷ
2. Chủ tịch hội đồng điều khiển buổi nghiệm thu
3. Chủ nhiệm đề tài trình bày tóm tắt báo cáo tổng kết đề tài (*nội dung của toàn văn kèm theo*)
4. Các phản biện đọc bản nhận xét (*có bản nhận xét kèm theo*)
5. Các thành viên trong hội đồng và những người tham dự buổi nghiệm thu đã trao đổi về nội dung, phương pháp và kết quả nghiên cứu của đề tài. Hội đồng thống nhất một số ý kiến sau:
   - Đáp ứng yêu cầu của đề cương
   - Nên đăng ký lưu ngân hàng gentouch

6. Hội đồng đã bỏ phiếu đánh giá kết quả như sau:

Ban kiểm phiếu của Hội đồng gồm:

1. TS. Vũ Thị Thanh Hiền
2. CN. Đồng Thị Phương Thúy

Tổng số phiếu phát ra : 06 phiếu

Tổng số phiếu thu vào : 06 phiếu

Số phiếu hợp lệ : 06 phiếu

Số phiếu không hợp lệ : 06 phiếu

Kết quả đánh giá:

Xuất sắc : 1 phiếu

Khá : 5 phiếu

Đạt : 0 phiếu

Không đạt : 0 phiếu

Kết quả đề tài đạt loại: KHÁ

7. Kết luận của Hội đồng: Thông qua đề tài

Hải Phòng, ngày 15 tháng 12 năm 2021

CHỦ TỊCH HỘI ĐỒNG

PGS.TS. Nguyễn Văn Hùng

THƯ KÝ HỘI ĐỒNG

Đồng Thị Phương Thúy

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC
HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

BIÊN BẢN
NGHIỆM THU ĐỀ TÀI KHCN CẤP CƠ SỞ NĂM 2020

Tên đề tài: Phát hiện đột biến GAA gây bệnh Pompe tại Việt Nam

Chủ nhiệm đề tài: ThS. Nguyễn Thị Phương Thảo

Đơn vị: Bộ Môn Hoá Sinh

Căn cứ Quyết định số: 1725/QĐ – YDHP ngày 07 tháng 12 năm 2020 của Hiệu trưởng trường Đại học Y Dược Hải Phòng về việc thành lập Hội đồng Khoa học nghiệm thu đề tài NCKH cấp cơ sở năm 2020, Hội đồng đã tiến hành họp để đánh giá, nghiệm thu đề tài vào hồi 8h00 ngày 19 tháng 12 năm 2020 tại trường Đại học Y Dược Hải Phòng

Các thành viên Hội đồng có mặt:

1. PGS. TS. Phạm Minh Khuê — Trưởng tiểu ban
2. PGS. TS. Vũ Sỹ Khảng — Ủy viên
3. PGS. TS. Đặng Văn Chức — Ủy viên
4. PGS. TS. Vũ Thị Kim Loan — Ủy viên
5. TS. Bạch Thị Như Quỳnh — Ủy viên
6. TS. Ngô Thị Quỳnh Mai — Ủy viên

Tổ thư ký: *Ths. Nguyễn Minh Ngọc*

Các thành viên Hội đồng vắng mặt:

1. TS. Nguyễn Thị Thu Phương

Các cán bộ tham gia thực hiện chính: ThS. Nguyễn Thị Phương Thảo; Nguyễn Thị Phương Mai, Trần Thị Thương Hoài

Thị Ngọc Lan, Tạ Thành Văn

NỘI DUNG NGHIỆM THU:

1. Đọc quyết định thành lập Hội đồng: *Ths. Nguyễn Minh Ngọc*
2. Chủ tịch hội đồng điều khiển buổi nghiệm thu.
3. Chủ nhiệm đề tài trình bày tóm tắt báo cáo tổng kết đề tài *(có bản các thành viên kèm theo)*
4. Các phản biện đọc bản nhận xét *(có bản nhận xét kèm theo)*.
5. Các thành viên trong hội đồng và những người tham dự buổi nghiệm thu đã trao đổi về nội dung, phương pháp và kết quả nghiên cứu của đề tài, Hội đồng thống nhất một số ý kiến sau:
   - Phương pháp hiện đại, đáng tin cậy
   - Đề tài có ý nghĩa thực tiễn

6. Hội đồng đã bỏ phiếu đánh giá kết quả như sau:

Ban kiểm phiếu của Hội đồng gồm:

1. PGS.TS. Đặng Văn Chức
2. Ths. Nguyễn Minh Ngọc

Tổng số phiếu phát ra: 06 phiếu

Tổng số phiếu thu vào: 06 phiếu

Số phiếu hợp lệ: 06 phiếu

Số phiếu không hợp lệ: 0 phiếu

Kết quả đánh giá:

Xuất sắc : 0 phiếu

Khá : 6 phiếu

Đạt : 0 phiếu

Không đạt : 0 phiếu

Kết quả đề tài đạt loại: Khá

7. Kết luận của Hội đồng: **Nghiệm thu đề tài**

Hải Phòng, ngày 19 tháng 12 năm 2020

CHỦ TỊCH HỘI ĐỒNG
(Ký và ghi rõ họ tên)

PGS. TS. Phạm Minh Khoa

THƯ KÝ HỘI ĐỒNG
(Ký và ghi rõ họ tên)

Ths. Nguyễn Minh Ngọc

XÁC NHẬN CỦA
CƠ QUAN QUẢN LÝ ĐỀ TÀI

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

PHÓ HIỆU TRƯỞNG

TS. Phạm Văn Mạnh

LÝ LỊCH KHOA HỌC

1. Họ và tên: VŨ THÚY HÀ			
2. Năm sinh: 1991		3. Giới tính: Nữ	
4. Nơi sinh: Trần Nguyên Hãn, Lê Chân, Thành phố Hải Phòng			
5. Nguyên Quán: Dũng Tiến, Vĩnh Bảo, Hải Phòng			
6. Địa chỉ liên hệ: Điện thoại: 0348333699 Email: vuha@hpmu.edu.vn			
7. Học hàm, học vị: Năm được công nhận TS: 2015 Nơi cấp bằng: Trường ĐH Okayama, Nhật Bản Năm được phong GS/PGS: Nơi phong:			
8. Cơ quan công tác: Tên cơ quan: Trường Đại học Y Dược Hải Phòng Khoa/Phòng, Bộ môn, Trung tâm...: Bộ môn Mô-bệnh học, khoa Y Địa chỉ cơ quan: 72A, Nguyễn Bỉnh Khiêm, Ngô Quyền, Hải Phòng Điện thoại: 02253.731.907 Fax: 02253.733.115 Email: contact@hpmu.edu.vn			
9. Quá trình đào tạo			
Bậc đào tạo	Nơi đào tạo	Chuyên ngành/Tên khóa luận, luận văn, luận án	Năm tốt nghiệp
Đại học	ĐH Y Dược Hải Phòng	Bác sĩ đa khoa	2019
Tiến sĩ	Trường sau đại học Y khoa, Nha khoa và Khoa học Dược, Đại học Okayama, Nhật Bản	Tên luận án: Apoptosis-dependent mtDNA-adducting complex 3B could be a new potential therapeutic target in endometriosis.	2025
10. Các khoá đào tạo khác (nếu có)			
Văn bằng	Tên khoá đào tạo	Nơi đào tạo	Thời gian đào tạo

Chứng chỉ	Bồi dưỡng nghiệp vụ sư phạm	Đại học Huế	8/2019-11/2019
Chứng chỉ đào tạo lâm sàng	Kỹ thuật trong lấy thụ tinh trong ống nghiệm	Đại học Y Hà Nội	3/2020-11/2020

11. Trình độ ngoại ngữ

Tên ngoại ngữ	Văn bằng/Chứng chỉ	Năm
Tiếng Anh	B2 Cambridge	2017

12. Quá trình công tác *(trước khi về Trường và sau khi về Trường)*

Thời gian *(Từ năm ... đến năm...)*	Vị trí công tác	Cơ quan công tác	Địa chỉ cơ quan
Từ 10/2019 đến nay	Giảng viên	BM Y Dược Hải Phòng	TDA, Nguyễn Bỉnh Khiêm, Ngô Quyền, Hải Phòng

13. Các công trình khoa học đã công bố

13.1. Bài báo khoa học:

- *Tên tác giả: tên này tác giả của bài báo*
- *Tác giả chính: là Tác giả thư sinh (first author) hoặc Tác giả liên hệ (corresponding author)*
- *Danh mục: WoS/Scopus hoặc Tạp chí trong nước được HĐGSNN tính điểm*

TT	Tên bài báo	Tên tác giả	Tác giả chính	Tạp chí	Ngày XB	Số, trang	Danh mục	ISSN (DOI)
1	Đánh giá mối liên quan giữa hình thái phôi nang với tỉ lệ làm tổ ở nhóm bệnh nhân làm thụ tinh ống nghiệm chuyển đơn phôi nang đông lạnh	Vũ Thúy Hà, Nguyễn Mạnh Hà, Nguyễn Đình Tân	x	Tạp chí Y học Việt Nam	2021	Tập 502 Số 2	[HOÀN THÀNH điền]	1859-1868
2	Adenosine Deaminase Family Acting on RNA 1 (ADAR1) May Be a De Novo Target for Endometriosis Treatment	Vu Thuy Ha, Koichiro Nakamura, Kaoruaki Shigeyasu, Kotaro	x	In Vivo	2024	38(2) 683-690	[Wait/ Scopus]	1791-1548

		Kubo, Chiaki Kashiwo, Hiroshi Maeyama						
3	Apolipoprotein-B mRNA-editing complex 2B could be a new potential therapeutic target in endometriosis	Ya Thay Ha, Keiichiro Nakamura, Kentaroh Shigeyasu, Chiaki Kashiwo, Kazuhiro Okamoto, Kosuke Kubo, Yasuhiko Kamada, Hiroshi Maeyama	4	Scientific Reports	2014	14(1) 2498 8	iFirst	2045-2322
4	ADAR1 could be a potential diagnostic target for intrauterine infection patients	Keiichiro Nakamura, Kentaroh Shigeyasu, Ya Thay Ha, Jota Maki, Kazuhiro Okamoto, Hiroshi Maeyama		Scientific Reports	2016	14(20 418	iFirst	2045-2322
5	LDH1 as a potential biomarker for patients with ovarian cancer	Keiichiro Nakamura, Naoyuki Ida, Akira Hirasawa, Kazuhiro Okamoto, Ya Thay		European Journal of Obstetrics and Gynecology and Reproduct	2015	306:8 7-93	iFirst/ Jusp ost	0301-2115, 1872-7654

		Ha, Dao Thi Hai Ly, Hisashi Masuyama		ive Ecology				

13.2. Sách chuyên khảo, giáo trình – tài liệu dịp học:

- *Tên tài liệu: Sách/ Chương sách*
- *Loại hình: Chuyên khảo/ Tham khảo/ Giáo trình/ Tài liệu hướng dẫn*

TT	Tên tài liệu	Tên tác giả	Cơ sở/công ty nhà in/xb	Nhà xuất bản	Năm xuất bản	Loại hình	ISBN
1	\	\	\	\	\	\	\
2							
...							

14. Báo cáo Hội nghị - hội thảo khoa học

Ký yếu: Tóm tắt/ Toàn văn

TT	Tên báo cáo	Tên tác giả	Tác giả chính	Tên kỷ nghị	Thời gian báo cáo (tháng/năm)	Ký yếu	ISBN
1	Thử bọt làm tổ liên (tập: Nguyễn nhận và Diễu tổ.	Nguyễn Đình Tân, Vũ Thủy Hà		Hội nghị tổ sự sinh sản lần Một	12/2018	X	
2	A Case of Macro-Lunisolar Harmonic [Macro-LH]	Thuy Ha Vu., Yasuhiko Kamata, Ryota Okamoto, Keiko Kotani, Chiaki Kashima,Takashi Mitsui, Hisashi Masuyama.	X	Hội nghị Y học sinh sản toàn quốc lần thứ 66, Nhật Bản	11/2023	X	
3	DNA Editing Enzyme APOBEC3B: A	Thuy Ha Vu., Kotoko	X	Đại hội IFFS năm 2025 –	4/2023	X	

	New Potential Therapeutic Target in Endometriosis	Hidemura, Yasuhiko Kawada, Chiaki Kashiwa, Takashi Miwa, Hisaki Maegawa.		Liên đoàn Quốc tế về Sinh sản			

18. Bằng sở hữu trí tuệ đã được cấp

Liệt kê các văn bằng bảo hộ: độc quyền sáng chế, giải pháp hữu ích, kiểu dáng công nghiệp, thiết kế bố trí, giống cây trồng...

TT	Tên và nội dung của bằng	Số, Mã, Ký hiệu	Nơi cấp	Năm cấp
1	\	\	\	\
...				

19. Công trình KH&CN được ứng dụng, chuyển giao

TT	Tên công trình	Hình thức	Quy mô	Địa chỉ áp dụng	Giá trị	Thời gian
1	\	\	\	\	\	\
...						

17. Nhiệm vụ KH&CN các cấp

- *Loại hình: Đề tài/ Dự án / Đề án*
- *Tình trạng nhiệm vụ: Đã nghiệm thu/ Chưa nghiệm thu/ Không hoàn thành*

17.1. Nhiệm vụ KH&CN đã và đang chủ trì

Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình (nếu có)	Tình trạng nhiệm vụ	Ngày			Kinh phí
					Phê duyệt	Hợp đồng ký kết (nếu có)	Công nhận kết quả	
\	\	\	\	\	\	\	\	\

17.2. Nhiệm vụ KH&CN đã và đang tham gia

Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình (nếu có)	Tình trạng nhiệm vụ	Ngày			Kinh phí
					Nghiệm thu	Công nhận kết quả	Đăng ký kết quả	

\	\	\	\	\	\	\	\	\

18. Giải thưởng về KH&CN trong và ngoài nước

TT	Tên giải thưởng	Hình thức khen thưởng	Cấp khen thưởng	Năm tặng thưởng
1	\	\	\	\
...				

19. Đào tạo sau đại học

+ *Vai trò hướng dẫn: hướng dẫn 1/ hướng dẫn 2*
+ *Bậc đào tạo: Tiến sĩ/Thạc sĩ/BSNT/Nội Trú/CKII...*

TT	Họ tên học viên	Vai trò	Bậc đào tạo	Chuyên ngành	Nơi đào tạo	Năm cấp bằng
\	\	\	\	\	\	\

THÔNG TIN KHÁC VỀ CÁC HOẠT ĐỘNG KHOA HỌC VÀ CÔNG NGHỆ

Thành viên Hội Sử học sinh sản Hà Nội
Thành viên Hội Y học sinh sản Nhật Bản
Thành viên Hội Sản phụ khoa Nhật Bản

Hải Phòng, ngày 13 tháng 3 năm 2025

XÁC NHẬN CỦA ĐƠN VỊ

TRƯỞNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

HIỆU TRƯỞNG

PGS.TS. Trần Thị Thanh Mai

NGƯỜI KHAI

(Họ tên và chữ ký)

Vũ Thùy Tú

triệu chứng khó thở, đau ngực, SpO2 thấp khi nhập viện, có áp xe khoang sau hạng, hoặc áp xe nhiều khoang cổ hoặc viêm cân mạc hoại tử là các yếu tố làm tăng khả năng diễn tiến nhiễm trùng cổ sâu nặng.

TÀI LIỆU THAM KHẢO

1. **Yang W, Wu L, Wang Z, et al.** Deep Neck Infection: A Review of 185 Cases in Southern China. Medicine (Baltimore). In press;94(37):e1564. doi:10.1097/md.0000000000001564
2. **Priyadarsini S, Mohapatra G.** A Study on Deep Neck Space Infections. Indian J Otolaryngol Head Neck Surg. Oct 2019;71(Suppl 1):1411-1417. doi:10.1007/s12070-019-01603-4
3. **Tâm Minh Trường.** Nhiễm trùng cổ sâu. Bệ Giảng Tại HD Hạng Thực Hành. Nhà xuất bản Y học; 2018:T.39 (tập 1).
4. **Olaonda OB, Akinlusi BE, Ehunkeye AA, Adebola AR, Iyorgun CA, Ikotibia JT.** Management of deep space infections in a Nigerian teaching hospital: A 4-year review. Niger Med J. Jan-Feb;59(1):13-6. doi:10.4103/2309-1622.94825
5. **Yang SW, Lee MH, Lee YS, Hwang JH, Chen TA, Fang TJ.** Analysis of Life-Threatening Complications of Deep Neck Abscess and the Impact of Empirical Antibiotics. Otol Neurotol. 2008;29(2):249-254. doi:10.1097/MAO.0b013e318164d4f4
6. **Barbot BA, Grzegielewski PT, Bihun YL, Ma A, Serkala IA.** Factors associated with severe deep neck space infections targeting multiple floors. J Otolaryngol Head Neck Surg. 2014;43(1):15. doi:10.1186/s40463-014-0015-0
7. **Wolfswinkel EJ, Weinstock D, Ramos M, Konnerjakowitz K, Tibbs M, Hohenhaus E.** Predictors of poor outcome of deep neck infections. Medicine. Wolters Kluwer Health, Inc. All rights reserved.; 2018;97(11):e0010. doi:10.1097/md.0000000000010010
8. **Trần Anh Mịch, Trần Minh Trường.** Nhiễm trùng cổ sâu khó kiểm nhận đã thảo đường sự kịch kinh kinh tâm lòng và kết quả điều trị với bệnh nhân những đã thảo đường tại 1/2005-2011. Tạp chí Y học thành phố Hồ Chí Minh. 2016;1(1).
9. **Trần Vũ Thùy Dương.** Đánh Giá Thang Điểm LEMSS Trong Chẩn Đoán Viêm Mô Tế Bào Hoại Tử Vùng Đầu Cổ Tại Bệnh Viện Chợ Rẫy. Luận văn Bác sĩ nội trú- Y học | Trường Đại học Y Dược TP Hồ Chí Minh; 2019.
10. **Wojcicki J, Celakowsky P, Tomek I, et al.** Univariate and multivariate models for the prediction of life-threatening complications in the cases of deep neck space infections: retrospective multi-institutional study. J Laryngol Otol. Sep 2017;131(9):779-784. doi:10.1017/s0022215117000153

ĐÁNH GIÁ MỐI LIÊN QUAN GIỮA HÌNH THÁI PHÔI NANG VỚI TỈ LỆ LÀM TỔ Ở NHÓM BỆNH NHÂN LÀM THỤ TINH ỐNG NGHIỆM CHUYỂN HƠN PHÔI NANG ĐÔNG LẠNH

Võ Thùy Hà[1], Nguyễn Mạnh Hà[2], Nguyễn Đình Tâo[2]

TÓM TẮT

Mục tiêu: Nghiên cứu nhằm đánh giá mối liên quan giữa hình thái phôi nang và tỉ lệ làm tổ ở nhóm bệnh nhân làm thụ tinh ống nghiệm và chuyển phôi nang đông lạnh. **Đối tượng và phương pháp:** Chúng tôi đã tiến hành nghiên cứu trên 294 phôi nang đông lạnh được chuyển đơn phôi vào buồng tử cung của các bệnh nhân làm thụ tinh ống nghiệm tại Trung tâm Hỗ trợ sinh sản và công nghệ cao phôi, Bệnh viện Đại học Y Hà Nội giai đoạn 2017-2021. **Kết quả:** Trong 294 chu kỳ chuyển đơn phôi đông lạnh, tỉ lệ làm tổ là 34,0%. Tỉ lệ làm tổ của phôi có chất lượng hình thái tốt và khá (72,2% và 61,8%) cao hơn đáng kể so với tỉ lệ làm tổ của phôi chất lượng hình thái trung bình (34,8%) và xấu (23,3%). Có 3 yếu tố có liên quan khoảng phôi, tuổi sẽ làm nhiễm có tỉ lệ làm tổ mức độ có mối liên quan đến tỉ lệ làm tổ. Tác nhiễm sau khi sử dụng tốt cụ thể, hiệu chỉnh theo mối mạ, tỉ lệ chuyển phôi có độ giãn nở khoảng phôi (H-CH) có liên tỉ lệ làm tổ cao nhất có tỉ lệ làm tổ thấp liên quan với tỉ lệ làm tổ.

Từ khóa: chuyển đơn phôi đông lạnh, hình thái phôi nang, độ giãn nở khoang phôi, khối tế bào nhân, tỉ lệ làm tổ thấp.

SUMMARY

EVALUATING THE ASSOCIATION BETWEEN BLASTOCYST MORPHOLOGY AND IMPLANTATION RATE IN SINGLE BLASTOCYST TRANSFER OF (NVITRO FERTILIZATION PATIENTS

Objectives: Evaluating the association between blastocyst morphology and implantation rate in single blastocyst transfer of (nvitro fertilization patients. **Subjects and methods:** In this cross-sectional study performed at Center of IVF and Tissue engineering - Hanoi Medical University Hospital, the Blastocyst morphology and implantation outcomes of 294 single vitrified embryo transfer cycles were evaluated. **Results:** The overall implantation rate was 34.0%. The implantation rates of very good and good morphological blastocyst groups (72.2% and 61.8%) were significantly higher than that of average

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Ngày phản biện khoa học: 12.12.2020
Ngày duyệt bài: 28.12.2020

morphological group (54.4%), poor morphological group (20.3%), 44.3 criteria of blastocyst morphology (expansion), inner cell mass and blastocoelomic associated with implantation rate. However, after performing logistic regression, adjusting for maternal age, times of embryo transfers, blastocyst expansion, only quality of inner cell mass and trophectoderm were significantly associated with implantation outcome after single-vitrified blastocyst transfer.

Keywords: Single vitrified embryo transfer, Blastocyst morphology, Blastocoele expansion, Inner cell mass, Trophectoderm.

I. ĐẶT VẤN ĐỀ

Mục tiêu của công nghệ hỗ trợ sinh sản (HTSS) nói chung và thụ tinh ống nghiệm (Invitro Fertilization-IVF) nói riêng là chọn và chuyển 01 phôi tốt nhất, đưa đến kết quả một em bé khỏe mạnh đủ tháng. Trong các phương pháp lựa chọn phôi, đánh giá hình thái phôi bằng phôi nang là phương pháp rẻ tiền, không xâm lấn và được thực hiện phổ biến tại các trung tâm. Nhiều nghiên cứu đánh giá mối liên quan của chất lượng hình thái phôi nang và tỷ lệ làm tổ sau chuyển phôi, tuy nhiên, kết quả còn nhiều tranh cãi. Sự khác nhau giữa các nghiên cứu thể hiện cả trong việc xác định yếu tố có mối liên quan đến kết quả làm tổ trong 3 yếu tố để đánh giá hình thái chất lượng phôi nang, gồm độ giãn rộng khoang phôi (BSR khoang phôi), khối tế bào mầm (inner cell mass - ICM) và lá dinh dưỡng (Trophectoderm - TE). Vì các lý do trên, chúng tôi đã quyết định thực hiện đề tài "*Đánh giá mối liên quan giữa hình thái phôi nang với tỷ lệ làm tổ ở nhóm bệnh nhân làm thụ tinh ống nghiệm chuyển đơn phôi nang đông lạnh*" với mục tiêu:

1. Khảo sát hình thái phôi nang ở nhóm bệnh nhân làm thụ tinh ống nghiệm và chuyển đơn phôi đông lạnh tại Bệnh viện Đại học Y Hà Nội giai đoạn 2019-2021.

2. Đánh giá mối liên quan giữa hình thái phôi nang và tỷ lệ làm tổ ở nhóm bệnh nhân trên.

II. ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU

2.1. Đối tượng nghiên cứu. Nghiên cứu được tiến hành tại trung tâm HTSS và công nghệ mô ghép, bệnh viện Đại học Y Hà Nội giai đoạn 2019-2021.

Tiêu chuẩn chọn lựa

- Bệnh nhân điều trị thụ tinh trong ống nghiệm tại Trung tâm hỗ trợ sinh sản và Công nghệ mô ghép có quá trình đến giai đoạn phôi nang, và thực hiện chuyển đơn phôi nang đông lạnh vào buồng tử cung.
- Hồ sơ có thông tin đầy đủ về tên, tuổi, chất lượng phôi trước khi trữ đông.

Tiêu chuẩn loại trừ

- Bệnh nhân sử dụng phôi hiến, noãn hiến.
- Bệnh nhân thất bại làm tổ ≥ 3 lần.
- Bệnh nhân có bệnh lý tại tử cung: u xơ tử cung, polyp tử cung, dính buồng tử cung, lạc nội mạc tử cung.

2.2. Phương pháp nghiên cứu

Nghiên cứu mô tả cắt ngang

Cỡ mẫu của nghiên cứu được tính theo công thức sau:

$$n = Z^2_{(1-\alpha/2)}\frac{P*(1-P)}{d^2}$$

Lựa chọn tỷ lệ làm tổ sau chuyển phôi nang đông lạnh là P = 54,3% của theo kết quả nghiên cứu của Simon năm 2019 [1], thay vào công thức được n = 382.

2.3. Quy trình điều trị của bệnh nhân

- *Quy trình làm sạch:* sinh thiết buồng trứng và chọc hút trứng dưới hướng dẫn của siêu âm. Chuẩn bị niêm mạc cho bệnh nhân và chuyển tới phôi nang dưới hướng dẫn của siêu âm. Hỗ trợ hoàng thể sau chuyển phôi và theo dõi kết quả làm tổ. Sự làm tổ được xác nhận bằng sinh sinh sử thai trong tử cung trên tiêu chí siêu âm sau khi chuyển phôi. Tỷ lệ làm tổ được tính bằng cách lấy số lượng túi thai chia cho số lượng phôi được chuyển.
- *Quy trình phương thử nghiệm:* Phôi được lựa chọn bằng phương pháp hình thái phôi đánh giá tại thời điểm trước khi chuyển phôi.

Bảng 1: Đánh giá hình thái phôi nang theo tiêu chuẩn Gardner 1999

Chỉ tiêu đánh giá	Độ	Đặc điểm
Độ giãn rộng khoang phôi	1	Khoang phôi nang < 50% thể tích của phôi
	2	Phôi nang sớm, khoang ≥ 50% thể tích của phôi
	3	Phôi nang hoàn chỉnh, khoang chiếm đầy thể tích phôi
	4	Phôi nang rất rộng, vùng trong suốt mỏng dần
	5	Phôi nang đang thoát màng
	6	Phôi nang thoát màng hoàn toàn
ICM	A (Tốt)	Có nhiều tế bào, các tế bào xếp chặt
	B	Ít tế bào, các tế bào gắn kết lỏng lẻo với nhau
	C	Rất ít tế bào gắn kết lỏng lẻo với nhau
TE	A (Tốt)	Gồm nhiều tế bào gắn kết vào nhau tạo thành lớp biểu bì dính chặt

	B	100m ở bề mặt phần mềm lòng đáy
	C	Rốn ở bề bên

Xếp loại phối sáu 4 mức theo chất lượng hình thái, phối rất tốt (3-6AA), tốt (3-4AB, 5-6BA,3AA), trung bình (3-4BB, 5-6AC, 5-6CA), và xấu (3-6BC, 1-6CB, 1-6CC, 1-3BB và 2AA), cách phân loại trên gần giống của Izumi [2] và Zhao [3], chỉ khác phân loại phối có BGR 1 và 2. Vì trên thực thể tại trung tâm, những phối có BGR 4) 1-2 không thường xuyên được đánh giá TE và ICM vì khó quan sát chính xác do tại nơi hạn chế của khoang phối.

Thu thập thông tin đối tượng nghiên cứu theo mẫu phiếu thu thập thông tin.

Nhập xử lý số liệu bằng phần mềm SPSS 22.0.

2.4. Đạo đức trong nghiên cứu. Nghiên cứu hồi cứu, không tác động đến quá trình điều trị của bệnh nhân. Nghiên cứu này được tiến hành sau khi đề cương nghiên cứu đã được sự chấp thuận của hội đồng khoa học, đạo đức của Trường Đại học Y Hà Nội. Nghiên cứu nhằm nâng cao hiệu quả chuyển phôi trong IVF. Các thông tin liên quan đến đối tượng nghiên cứu được giữ bí mật, chỉ phục vụ cho mục đích nghiên cứu.

III. KẾT QUẢ NGHIÊN CỨU

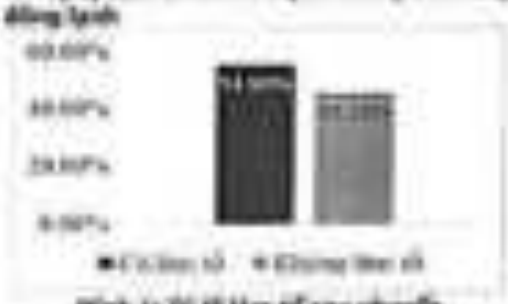
3.1. Đặc điểm của đối tượng nghiên cứu và chu kỳ chuyển phôi

Bảng 2: Đặc điểm đối tượng nghiên cứu

Đặc điểm	Mean ± SD/ n(%)
Tuổi vợ khi chọc trứng	34,34±4,19
Tuổi vợ khi chuyển phôi	34,84±4,19
Số lần chuyển phôi	
1	86,5% (340)
2	10,2% (40)
3	3,3% (13)
Số ngày nuôi cấy trung bình	5,01±0,28
Số noãn thu được	9,10±4,57
Xếp loại chất lượng hình thái phôi chuyển	
AA	14 (3,6%)
AB	86,9% (337)
Trung bình	8,8% (34)
Xấu	0,8% (3)
BGR	
1-2	5,2% (20)
3	34,4% (133)
4	31,8% (123)
5	20,1% (77)
6	7,5% (29)
EDH	
A	36,3% (119)
B	57,9% (190)
C	11,5% (38)
TE	
A	36,3% (119)
B	51,4% (169)
C	12,5% (41)

Trung bình tuổi vợ khi chọc trứng và chuyển phôi là 34,34±4,19 và 34,84±4,19. Trong 394 chu kỳ chuyển phôi, có 340 ca là chuyển phôi lần đầu, chiếm 86,5%, 39 ca chuyển phôi lần 2 chiếm 10,2%, 9 ca chuyển phôi lần 3 chiếm 3,3%, không có ca nào chuyển phôi lần 4 hoặc nhiều hơn. Số noãn thu trung và số noãn thu trưởng bình là 10,08±5,38 và 9,68±4,57. Trong 394 phôi nang đông lạnh được chuyển, có 34 phôi chất lượng tốt tối chiếm tỷ lệ thấp nhất với 14,1%, có 182 phôi chất lượng tốt chiếm 38,6%, có 149 phôi chất lượng trung bình chiếm tỷ lệ nhiều nhất với 38,8% và có 79 phôi chất lượng tốt chiếm 20,6%. Theo BGR khoang phôi, phôi chuyển nhiều nhất là BGR 3 và 4 (34,4% và 31,8%), chiếm tỷ lệ thấp nhất là phôi nang giai đoạn sớm (BGR 1-2) và phôi đã thoát màng (BGR=6), lần lượt là 5,2% và 7,5%. Về ICM, tỷ lệ phôi có ICM loại A chiếm tỷ lệ cao nhất (37,8%). Về TE, phôi cũng chủ yếu ở nhóm TE loại B (51,4%).

Tỷ lệ làm tổ sau chuyển đơn phôi nang đông lạnh



Hình 1: Tỷ lệ làm tổ sau chuyển đơn phôi nang đông lạnh

Trong 394 phôi được chuyển, tỷ lệ làm tổ 34,8% tương ứng 211 phôi; 170 phôi không làm tổ tương ứng với 43,1%.

3.2. Mối liên quan giữa hình thái phôi nang và kết quả làm tổ

Bảng 3: Mối liên quan giữa xếp loại chất lượng hình thái phôi nang và kết quả làm tổ

Chất lượng hình thái	Số lần chuyển	Có làm tổ n(%)	Không làm tổ n(%)	OR (CI95%)	p
Kém	54	32,3 (35)	37,6 (123)	1	

TSK	102	41,8 (53)	58,2 (75)	1,61 [0,28-3,75]	NS
Trung bình	149	54,4 (81)	45,6 (81)	3,18 [1,11-6,30]	*
Xấu	78	25,3 (19)	74,7 (59)	7,67 [3,51-9,77]	**

*NX: p>0,05; *: p<0,05; **: p<0,001*

Nhận xét: Tỉ lệ làm tổ ở nhóm phôi có hình thái rất tốt và tốt là cao nhất, lần lượt là 72,2% và 54,8%. Trong khi đó, tỉ lệ làm tổ ở nhóm phôi chất lượng hình thái xấu là 25,3%, khi chất lượng hình thái phôi giảm dần từ rất tốt đến xấu, tỷ lệ làm tổ giảm rõ rệt. Cụ thể phôi loại trung bình có OR làm tổ giảm 3,18 lần so với phôi có chất lượng rất tốt, con số này ở phôi hình thái xấu là 7,67 lần.

Bảng 4: Mối liên quan giữa từng tiêu chí đánh giá hình thái phôi nang với kết quả làm tổ

	Tỷ lệ làm tổ % (n)	p
Độ giãn rộng khoang phôi		
1/2	20,0% (1/5)*	NS: p1/2-3, p1/2-4, p1/2-5, p3-4, p3-5, p4-5 *: p1/2-6, p3-6, p4-6, p5-6 **: p1/2-7
3	52,3% (34/65)*	
4	68,8% (33/48)*	
5	54,5% (12/22)*	
6	42,9% (3/7)*	
ICM		
A	69,6% (39/56)*	*: pA-C, pB-C
B	55,3% (21/38)*	
C	31,6% (6/19)*	
TE		
A	66,0% (33/50)*	*: pA-B, pB-C
B	57,1% (28/49)*	
C	31,6% (6/19)*	

*NX: p>0,05; *: p<0,05; **: p<0,001*

Nhận xét: Về độ giãn khoang phôi, tỉ lệ làm tổ của phôi có DGK 4 và 5 không có sự khác biệt có ý nghĩa thống kê, lần lượt là 68,8% và 54,5% (p>0,05). Hai nhóm phôi có DGK 4 và 5 đều có tỉ lệ làm tổ cao hơn nhóm phôi có DGK <3 (20,0%). Về ICM, nhóm phôi có chất lượng hình thái ICM loại A có tỷ lệ làm tổ cao nhất (69,6%), cao hơn nhóm có hình thái ICM loại B (55,3%), và cao hơn đáng kể nhóm phôi phôi có hình thái phôi loại C (31,6%). Về TE, nhóm phôi có chất lượng hình thái TE loại A và B có tỷ lệ làm tổ là 66,0% và 57,1%, cao hơn nhóm phôi có hình thái TE loại C (31,6%).

Bảng 5: Mối quy Logistic khả năng làm tổ của phôi theo các yếu tố đánh giá hình thái phôi nang

	Có làm tổ %	Không làm tổ %	OR* (95% CI)	p
Độ giãn rộng khoang phôi				
1+2	20,0%	80,0%	1	
3	52,3%	47,7%	3,85 (0,39-17,34)	NS
4	68,8%	31,3%	7,16 (0,51-19,6)	NS
5	54,5%	45,5%	3,69 (0,27-18,69)	NS
6	42,9%	57,1%	3,11 (0,18-7,71)	NS
ICM				
C	31,6%	68,4%	1	
A	69,6%	30,4%	2,24 (1,13-5,37)	*
B	55,3%	44,7%	1,76 (0,69-3,87)	NS
TE				
C	31,6%	68,4%	1	
A	34,0%	66,0%	2,37 (1,17-7,49)	*
B	42,9%	57,1%	2,47 (1,09-5,37)	*

*NX: p>0,05; *: p<0,05; **: p<0,001*

Hồi quy logistic khả năng làm tổ của phôi và các yếu tố đánh giá hình thái phôi nang được hiệu chỉnh theo tuổi mẹ khi chọc trứng và số lần chuyển phôi. ICM và TE có ảnh hưởng đến tỉ lệ làm tổ của phôi có ý nghĩa thống kê. Cụ thể, ICM loại A có OR làm tổ gấp 2,24 lần OR làm tổ của ICM loại C (CI95% 1,20-6,37; p=0,05). Tỷ lệ làm tổ của phôi có ICM loại B cao hơn ICM loại C, tuy nhiên OR làm tổ khác nhau không có ý nghĩa thống kê. Với TE, tỷ lệ làm tổ tăng lên khi chất lượng TE tăng dần (từ loại C đến loại A). Phôi có TE loại A có OR làm tổ tăng 2,47 lần (CI95% 1,09-5,37; p<0,05) so với OR làm tổ của phôi có TE loại C, con số này là 2,37 lần với phôi có TE loại A (CI95% 1,17-7,49; p=0,05).

IV. BÀN LUẬN

4.1. Tỷ lệ làm tổ sau chuyển đơn phôi nang đông lạnh. Chúng tôi nghiên cứu trên 284 chu kỳ chuyển đơn phôi nang đông lạnh. Tỷ lệ làm tổ là 54,9% (111/394) (tuổi mẹ trung bình là 34,34±4,14). Nghiên cứu đoàn tụ của Dagur 2021 [4] cho tỷ lệ làm tổ là 50,9%, tương đương với tỷ lệ làm tổ của chúng tôi (p>0,05). Nghiên cứu của tác giả có đối tượng và phương pháp có nhiều điểm tương đồng với nghiên cứu của chúng tôi, được thực hiện trên 1785 chu kỳ chuyển đơn phôi nang đông lạnh, và tuổi của bà mẹ tham gia nghiên cứu cũng được giới hạn dưới 41 tuổi.

4.2. Mối liên quan giữa hình thái phôi nang và kết quả làm tổ. Kết quả nghiên cứu

của chúng tôi cho thấy có mối liên quan giữa chất lượng hình thái phôi nang và tỷ lệ làm tổ, tỷ lệ làm tổ của phôi sấu là 23,1%, tăng lên 34,4%, 51,8% và 71,1% ở nhóm phôi có chất lượng hình thái trung bình, tốt và rất tốt (p<0,05). Kết quả của nghiên cứu còn ủng hộ cho giả thuyết của nhiều nghiên cứu trước đó, như nghiên cứu của Evans trên 417 chu kỳ chuyển đơn phôi nang đông lạnh [2].

Sử dụng hồi quy logistic nhị phân đa biến, kết quả cho thấy trong 3 yếu tố đánh giá chất lượng hình thái, ICM và TE là yếu tố quan trọng trong kết quả làm tổ của các chu kỳ chuyển đơn phôi nang. Trong nhiều nghiên cứu trước đây, có sự tranh cãi về việc yếu tố nào trong 3 yếu tố đánh giá chất lượng hình thái có mối liên quan với khả năng làm tổ cũng như các kết quả IVF khác.

ĐGH khoang phôi có vai trò trong giai đoạn đầu của quá trình phôi nang làm tổ, bao gồm quá trình phôi thoát khỏi màng trong suốt, dính vào lớp niệm mạc tử cung [3]. Nhiều nghiên cứu cho rằng ĐGH khoang phôi nang là yếu tố quan trọng trong dự đoán hiệu quả IVF hơn là ICM và TE, như nghiên cứu của Zhan thực hiện trên 1154 chu kỳ chuyển 1-2 phôi nang đông lạnh [3], hay nghiên cứu của Dogan trên 1795 chu kỳ chuyển đơn phôi nang [4] và nghiên cứu của Ozo thực hiện trên có chu kỳ chuyển phôi nang tươi và đông lạnh [5].

ICM có nhiệm vụ biệt hóa thành thai nhi, trong khi TE biệt hóa thành nau thai. Trên cơ sở đó, nhiều nghiên cứu cho rằng ICM vẻ là yếu tố quan trọng hơn trong dự đoán tỷ lệ có thai khi chuyển phôi [7]. Nghiên cứu của Evans chỉ ra ICM và ĐGH là 2 yếu tố có giá trị nhất trong dự đoán khả năng làm tổ của chuyển phôi nang đơn bội. ICM cũng có vai trò trong thúc đẩy sự phát triển của TE thông qua việc kết hợp. Cũng theo Evans, các phôi đơn bội có ICM và TE chất lượng tốt sẽ có khả năng nở rộng trở lại sau khi sinh thiết TE [2].

Tuy nhiên trong các năm gần đây, hầu hết các nghiên cứu gần chỉ ra TE chứ không phải ICM là yếu tố quan trọng trong việc dự đoán khả năng làm tổ. Nghiên cứu của Chen chỉ ra rằng TE là yếu tố quan trọng nhất dự đoán khả năng có thai của chu kỳ chuyển đơn phôi nang đông lạnh [8], vì TE sẽ giúp điều hòa hoạt động bơm của các kênh ion giữa trong và ngoài khoang phôi, tích tụ dịch nội bào và dẫn đến sự giãn nở khoang phôi. Hơn nữa, việc dự TE sẽ biệt hóa thành nau thai mà không phải là thai nhi như ICM, nhưng TE đóng vai trò trong giai đoạn đầu để bắt nước xâm nhập vào niêm mạc tử cung, tạo sự kết nối với hệ miễn dịch của mẹ. TE chất lượng tốt sẽ biết ra hCG sớm- hormon có vai trò trong dung hòa miễn dịch giữa người mẹ và thai nhi.

Trong nghiên cứu của chúng tôi, sau khi dùng hồi quy logistic đa biến hiệu chỉnh các yếu tố đánh giá chất lượng hình thái phôi nang mẫu đông, cả ICM và TE đều có vai trò quan trọng trong kết quả làm tổ. Với TE, phôi có TE loại A hay B đều có tỷ lệ làm tổ cao hơn so với loại C. Với ICM, chỉ phôi có ICM loại A là có tỷ lệ làm tổ cao hơn có ý nghĩa thống kê so với loại C.

4.3. Bàn luận về ưu nhược điểm nghiên cứu, điểm mạnh và điểm yếu. Điểm mạnh ở nghiên cứu của chúng tôi đó là chỉ lựa chọn chu kỳ chuyển 01 phôi nang, nghiên cứu đơn trung tâm, do vậy quy trình và nguyên tắc điều trị giữa các chu kỳ chuyển phôi có tính thống nhất. Đánh giá hình thái phôi nang đều sử dụng thang điểm của Schoolcraft & Gardner, và phôi cũng được đánh giá bởi những chuyên viên phôi được đào tạo chính quản về phương pháp đánh giá hình thái phôi, giảm sự sai khác chủ quan trong đánh giá. Nghiên cứu của chúng tôi có số lượng phôi thuộc nhóm ICM và/hoặc TE loại C lớn hơn 10%. Nhiều nghiên cứu, tỷ lệ phôi có hỗn loại TE và ICM loại C thấp, nhỏ hơn 10%, hoặc thậm chí nhỏ hơn 5%. Điểm yếu của nghiên cứu là do đặc tính của thiết kế nghiên cứu hồi cứu nên tại số là không tránh được. Số lượng các phôi ở nhóm ĐGH có và nhóm ĐGH không tương tự số phôi có chất lượng ICM và/hoặc TE loại C vẫn chưa thực sự đủ lớn (do thực hành lâm sàng sẽ ưu tiên chuyển các phôi có hình thái chất lượng tốt). Một điểm nữa là nghiên cứu chỉ ghi nhận hình thai phôi nang sau rã đông mà ko đánh giá hình thái phôi trước rã đông.

Do vậy, tương lai cần có các nghiên cứu tiếp cứu với số lượng mẫu lớn hơn để đánh giá chính xác sự ảnh hưởng của hình thái phôi nang và kết quả IVF (sau giảm sự ảnh hưởng của các yếu tố gây nhiễu và các biến cục trong kỹ thuật như tỷ lệ sảy thai, sinh non, trị nhẹ cân,...). Bên cạnh đó, ngoài 3 yếu tố có bàn trong đánh giá hình thái phôi nang, một số yếu tố khác liên quan đến động học phôi cũng có thể là yếu tố dự đoán khả năng làm tổ như: thời điểm cắt đầu giai đoạn phôi nang (ngày 4, ngày 5 hoặc ngày 6), tốc độ giãn nở trở lại của phôi sau khi rã đông, sự phát triển của các yếu tố biệt hoá phôi nang sau rã đông cũng nên được cân nhắc đưa vào nghiên cứu.

IV. KẾT LUẬN

Phôi được chia là 4 nhóm chất lượng hình

thai qua rối tổ, rối trung sinh và sẩu, chiếm tỷ lệ lần lượt là 24,0%; 28,0%; 38,0% và 20,0%. Tỷ lệ làm tổ sau chuyển đơn phôi nang đông lạnh là 34,9% (211/384). Đánh giá chất lượng hình thái phôi nang là yếu tố quan trọng giúp chọn lựa và một phôi tốt chuyển trong các chu kỳ chuyển đơn phôi nang đông lạnh. Trong 2 nếu tố đánh giá hình thái phôi nang, nên ưu tiên lựa chọn dựa trên chất lượng ICM rồi TE.

TÀI LIỆU THAM KHẢO

1. Simon C., Gómez C., Cabanillas S. và cộng sự. (2020). In vitro fertilization with preimplantation genetic diagnosis for polygenic inherited disorders. Journal of Assisted Reproduction and Genetics, 37(2), 291–315.
2. Irani M., Reichman D., Robins A. và cộng sự. (2017). Morphologic grading of euploid blastocysts influences implantation and ongoing pregnancy rates. Fertility and Sterility, 107(3), 664–670.
3. Zhan Y.-Y., Ye Y., và Chang R.-M. (2016). Ovarian Medullary Cancer, Trophoblastoma Levels, and Giant Cell Fetal Chorio Pregnancy Outcome in Cultured Blastocyst Transfer Cycles. Chin Med J (Engl), 129(11), 1361–1367.
4. Ozgur K., Berkkanoglu M., Bulut H. và cộng sự. (2020). Blastocyst age, expansion, trophectoderm morphology, and number cryopreserved are variables predicting clinical implantation in single elective frozen embryo transfers in freeze-only IVF. J Assist Reprod Genet, 36(5), 1071–1081.
5. Parks J.C., McCallie B.R., Janesch A.M. và cộng sự. (2011). Blastocyst gene expression correlates with implantation potential. Fertil Steril, 95(5), 1367–1372.
6. Shi Q.-Y., Wang X.-Y., Huang Y. và cộng sự. (2019). Blastocyst expansion degree predicts live birth after single blastocyst transfer for fresh and vitrified/warmed single blastocyst transfer cycles. Fertility and Sterility, 112(3), 508–515.e1.
7. Sukkar S., Cong L., Tanner K. và cộng sự. (2018). Order of the lower cell stage, but not blastulation, predicts live birth in fresh blastocyst single transfers. Human Fertility, 21(3), 204–211.
8. Chen X., Zhang J., Wu K. và cộng sự. (2019). Trophectoderm morphology predicts outcomes of pregnancy in vitrified-warmed single blastocyst transfer cycle in a Chinese population. J Assist Reprod Genet, 36(11), 2475–2481.

TÌNH HÌNH SỬ DỤNG ỨNG DỤNG OURHEALTH TRONG QUẢN LÝ, CHĂM SÓC SỨC KHỎE CÁN BỘ CÔNG TY CÔNG NGHỆ CAO VIETTEL TỪ THÁNG 8 – 11/2021

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TÓM TẮT

Nghiên cứu mô tả cắt ngang nhằm mô tả thực trạng sử dụng ứng dụng OurHealth trong quản lý và chăm sóc sức khỏe cho cán bộ công nhân viên của Tổng Công ty Công nghiệp Công nghệ cao Viettel từ tháng 8 đến tháng 11 năm 2021. Trong khung thời gian nghiên cứu có 65 lượng hoạt giá mỗi tổng 207 lần không tác nhân ứng dụng, chủ yếu thông qua hình thức gọi và nhắn tin trực tiếp với bác sĩ. Nhóm đối tượng có trình độ sau đại học có tỷ lệ sử dụng tác nhân ứng dụng cao hơn nhóm khác. Kết luận: Ứng dụng có yếu tố có lợi cho sức khỏe người sử dụng, đem lại lợi ích cho người bệnh cao khi có sự hỗ trợ của bác sĩ qua ứng dụng. Triển khi tiếp tục bổ sung, hoàn thiện sửa lỗi để ứng dụng sự dụng sự đầu tư ngày một, cho tại các đơn khám của các khám tại khoa khám bệnh. Sau khi tiếp hệ bác sĩ, số lần sự dụng giảm dần và khoảng 1/3 so với thời điểm đầu tư ngay trả về khoảng 1/3 so với thời điểm đầu tư ngay trả về khoảng 1/3 so với thời điểm đầu tư ngay trả về

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Adenosine Deaminase Family Acting on RNA 1 (*ADAR1*) May Be a *De Novo* Target for Endometriosis Treatment

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Abstract. *Background/Aim: Adenosine deaminase family acting on RNA 1 (ADAR1) expression was examined to determine its correlation with endometriosis. The biological functions and inhibitory effects of ADAR1 knockdown were investigated in a human endometrioid cell line. Materials and Methods: ADAR1 was examined in patients with and without endometriosis using reverse transcriptase polymerase chain reaction (RT-PCR), and the apoptotic expression of ADAR1 small interfering RNA (siRNA) was confirmed using flow cytometry. The biological functions and inhibitory effects of ADAR1 knockdown were investigated using RT-PCR in a 12Z immortalized human endometrioid cell line. Results: ADAR1 expression was significantly higher in patients with endometriosis than in those without (p<0.001). ADAR1 siRNA increased early and late apoptosis, compared to the mock (24.210%) and control (10.898) cells. ADAR1 knockdown led to apoptosis through BCL2, BCL2 BIM, CASP7, caspase 3, caspase 7, and caspase 8 expression in the cell lines. Conclusion: ADAR1 is a potential novel therapeutic target in endometriosis.*

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Key Words: ADAR1, endometriosis, apoptosis, potential therapeutic target.

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Endometriosis is a chronic inflammatory disease associated with debilitating chronic pelvic pain, which affects 6%-10% of women of reproductive age (1). The main hypotheses regarding the etiopathogenesis of endometriosis include retrograde menstruation, coelomic metaplasia, and an embryonic origin. Mechanisms involved in this complex and multifactorial disease include estrogen dependence, aberrant inflammatory response, abnormal angiogenesis, and genetic and epigenetic alterations (2).

The aim of the study was to discover new therapeutic targets for endometriosis, focusing on epigenetic factors. One type of epigenetic mechanism is RNA editing, which regulates the post-transcriptional activity of neuronal genes by altering their amino acid sequences, leading to changes in gene expression (3). One such RNA editing process, wherein the conversion of adenosine (A) to inosine (I) in primary RNA transcripts (A-to-I editing) is mediated by adenosine deaminase family acting on RNA (ADAR), binds to mononucleotide dinucleotides in human cells (4). This family includes three enzymes: ADAR1, ADAR2, and ADAR3. ADAR1 and ADAR2 are ubiquitously expressed and exhibit catalytic activity (5-9). ADAR1 suppresses interferon (IFN) expression and IFN-mediated activity, and it is the more abundant gene in humans (10). Li *et al.* reported that high *ADAR1* expression is significantly associated with endometriosis (11). However, the role of *ADAR1* in endometriosis has not yet been investigated in detail. Therefore, this study aimed to explore the role of *ADAR1* in endometriosis and demonstrate the potential of *ADAR1* as a novel therapeutic target for endometriosis.

Materials and Methods

Patients and tissue specimens. The study was approved by the Institutional Ethics Committee of the Okayama University (approval number: K1612-003). Informed consent was obtained from all the participants. All procedures were performed in

accordance with relevant ethical standards and institutional ethics committee regulations. The endometrium group was collected from asymptomatic subjects (none from the perimenses of the ovarian bone, and the non-endometrium group was collected from peritoneal effusion tissue excised during hysteroscopy. Endometriosis lesions were confirmed by histopathology using the revised classification of endometriosis. Twenty infertile patients of reproductive age who underwent surgical treatment at the Qingdao Eye Hospital between April 2019 and October 2021 were recruited into the study after providing informed consent. Subjects were classified into the endometriosis group (n=15) or the control group (n=15). Numbers represent the data from triplicate experiments.

RNA isolation and real-time quantitative PCR analysis. The degree of RNA editing of ADAR1, membrane regulatory factor (MRP) enzyme gene, such as endonuclease activity-associated gene 1 (INO80), nitrous acid inducible gene 1 (AIG1), B-protein kinase B (PKB), MYC, AKT, Apoptosis pathway of Caspase 3, Caspase 7, and Caspase 9 were analyzed using real-time quantitative PCR as previously reported [11]. We added the cytokines IL-1β, IL-6, and IL-8 and performed real-time quantitative PCR. The real-time PCR used the primers: 5'-CCCTTCCAGCCAGCAGCTTC-3' (ADAR1-F), 5'-GGCATCTGCTTGGCCACTT-3' (ADAR1-R); 5'-TCACCGCACT TGCCTTCTCCA-3' (MRP1-F), 5'-GCAGCCAATCTCGCTTCTCG TCC-3' (MRP1-R); 5'-CCACAGCCACAAG CCTCCTCTCC-3' (endothelin-1R)-3'-F); 5'-GCCTCTGCTCCCAGGCCACTT-3' (endothelin-1R)-3'-R); 5'-TCTGCTCCTCAGCCTCTCCTCGCTCC-3' (INO80-F); 5'-TCTGCAGGTGCACCC CTTCTCAC-3' (endothelin-1R)-3'-R); 5'-TCTGAGGTGCACCC CTTCTCAC-3' (endothelin-1R)-3'-R); 5'-CCCT CACCCTCCTCCCTCCACCT-3' (AIG1-F); 5'-GCCCTCTCCCCCCCC CTCCC-3' (AIG1-R); 5'-CCTCCCCCCCCCCCCCCCCC-3' (PKB-F); 5'-CCCCCCCCCCCCCCCCCCCC-3' (PKB-R); 5'-CCCCCCCCCCCCCCCCCCCC-3' (MYC-F); 5'-CCCCCCCCCCCCCCCCCCCC-3' (MYC-R); 5'-CCCCCCCCCCCCCCCCCCCC-3' (AKT-F); 5'-CCCCCCCCCCCCCCCCCCCC-3' (AKT-R); 5'-CCCCCCCCCCCCCCCCCCCC-3' (Caspase 3-F); 5'-CCCCCCCCCCCCCCCCCCCC-3' (Caspase 3-R); 5'-CCCCCCCCCCCCCCCCCCCC-3' (Caspase 7-F); 5'-CCCCCCCCCCCCCCCCCCCC-3' (Caspase 7-R); 5'-CCCCCCCCCCCCCCCCCCCC-3' (Caspase 9-F); and 5'-CCCCCCCCCCCCCCCCCCCC-3' (Caspase 9-R); 5'-CCCCCCCCCCCCCCCCCCCC-3' (GAPDH-F); and 5'-CCCCCCCCCCCCCCCCCCCC-3' (GAPDH-R).

All procedures were performed according to the manufacturer's instructions. The real-time quantitative PCR was performed for gene expression analysis using the The iTaq Universal SYBR Green Assay Kit and the MiniOpticon Real-Time PCR System (Bio-Rad, Hercules, CA, USA), as reported in our previous study [12]. GAPDH was used as a normalization control. The relative expression of each mRNA was determined using the ΔΔCT method. Numbers represent the data from triplicate experiments.

Reagents. ISE immortalized human endometrial cell line was purchased from Applied Biological Materials (Vancouver, Canada). The effect of estrogen was obtained from Fujifilm (Fujifilm, Osaka, Japan). ADAR1 siRNA (siADAR1, sc-77437), control siRNA (siControl, sc-37007), and siRNA transfection reagent kit (81220) were obtained from Santa Cruz Biotechnology (Santa Cruz, CA, USA).

Cell culture and small interfering RNA (siRNA) transfection. ISE immortalized human endometrium cell line was maintained in Dulbecco's modified eagle's medium (DMEM/F12 planed mid Bay Labs Technologies, Carlsbad, CA, USA) supplemented with 15% fetal bovine serum (FBS) in a humidified incubator containing 5% CO_2 at 37°C. All experiments were performed using cells that did not exceed 11-19 passages. Hela-Cell lines were transfected with an universal ADAR1 siRNA control siRNA, or an empty vector (mock) for gene silencing using an siRNA transfection reagent.

3-(4,5-dimethylthiazol-2-yl)-5-(3-carboxymethoxyphenyl)-2-(4-sulfophenyl)-2H-tetrazolium, (assay) cell (MTS) assay. The effect of estrogen and ADAR1 siRNA on the cell proliferation of ISE immortalized human endometrium cell line was evaluated using the MTS assay (Promega, Madison, WI, USA). After the cells were cultured overnight in phenol red-free DMEM/F12 medium supplemented with 10% FBS, they were deprived of 10% FBS, and incubated with the control or estrogen concentration of estrogen. For small interfering RNA (siRNA) transfection, cells were transiently transfected with the control siRNA and ADAR1 siRNA (at 48 h. After incubation with MTS for 1 h, the absorbances were measured at a wavelength of 490 nm using an ELISA plate reader (Bio-Rad). Numbers represent the data from triplicate experiments.

Apoptosis assay. The apoptosis of endometrial cells was evaluated by staining with fluorescein isothiocyanate (FITC)-conjugated annexin V using a MEBCYTO Apoptosis kit (MBL International Corp., Woburn, MA, USA). Furthermore, the apoptosis was analyzed with the FACS cytometer as previously described [13].

Cell growth in monolayers. For evaluation of cell growth in monolayers, cells were plated as a density of 2×10^4 cells/well in 6-well plates containing DMEM/F12 supplemented with 10% FBS. The cell numbers were counted in triplicate after 1, 4, and 6 days using a hemocytometer to assess cell proliferation. Numbers represent the data from triplicate experiments.

Statistical analysis. The GraphPad+ version 2010 software (Hitachi, Chiyoda, Shinkanji, CA, USA) was used to perform statistical analysis. Between group differences were assessed using the Mann-Whitney U-test and χ^2-test, as appropriate. Two-sided p-values<0.05 were considered statistically significant.

Results

ADAR1 expression is positively correlated with endometriosis. ADAR1, IL-1β, IL-6, and IL-8 expressions were examined in endometrium patients and non-endometrium patients by RT-PCR. ADAR1, IL-1β, IL-6, and IL-8 expressions were significantly higher in endometriosis patients than in non-endometriosis patients ($p<0.001$, $p<0.001$, $p<0.001$, and $p<0.001$) (Figure 1A). Furthermore, we examined the relationship between ADAR1 expression and IL-1β, IL-6, and IL-8. We found that ADAR1 expression was significantly correlated to IL-1β (R=0.559, $R^2=0.31$, $p<0.05$), IL-6 (R=0.566, $R^2=0.405$, $p<0.001$), and IL-8 (R=0.686, $R^2=0.307$, $p<0.01$), as shown in Figure 1B.

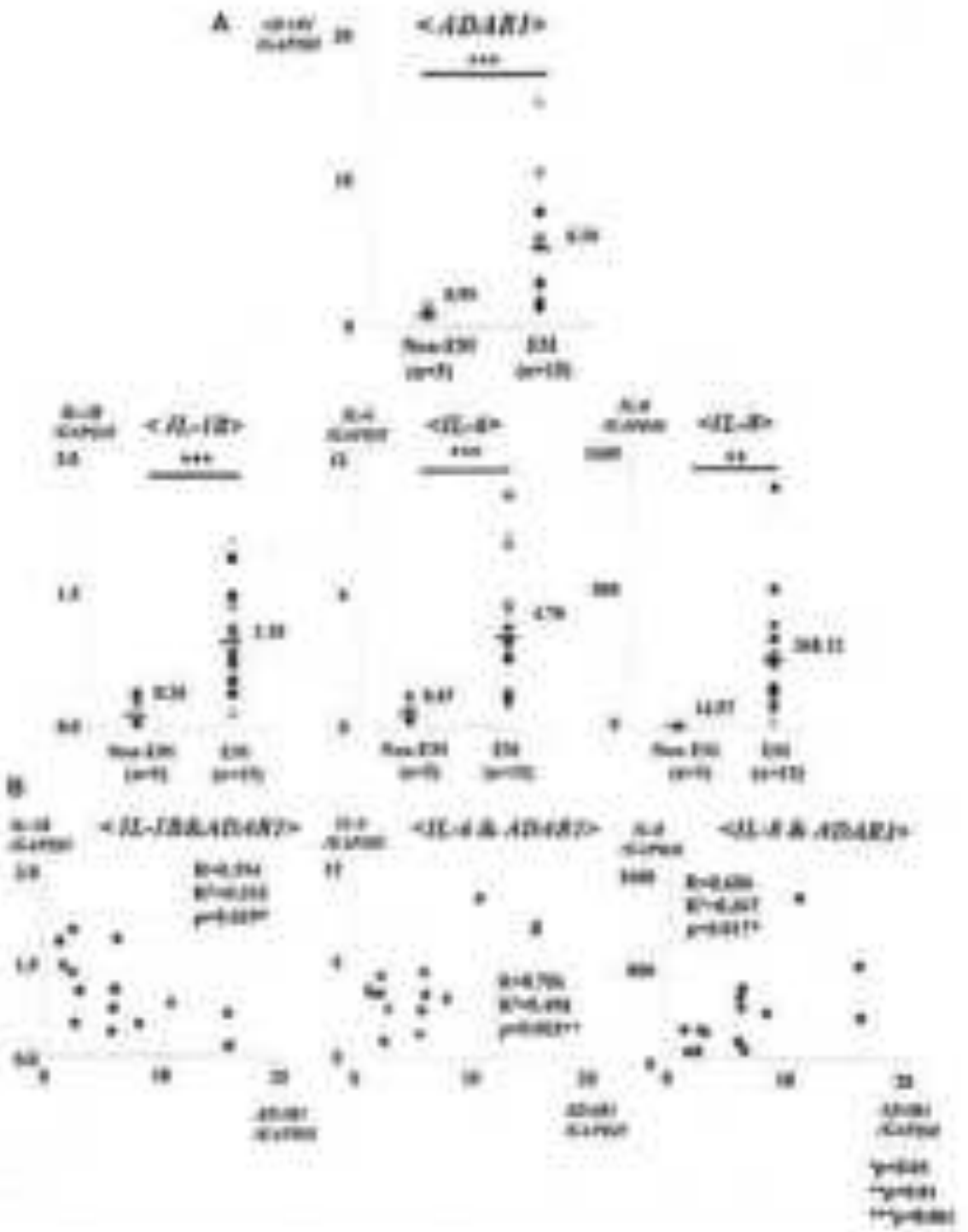

Figure 1. Adhesion skeletonization and ADAR1 mRNA expression in ectopic and eutopic endometrium. (A) Adhesion skeletonization was analyzed by ImageJ software. (B) Expression analysis of ADAR1 in EE, E-A, and E-E with Student's t-test. (C) Correlation analysis of ADAR1 and IL-1β, ADAR1 and IL-6, and ADAR1 and IL-8 in EE.

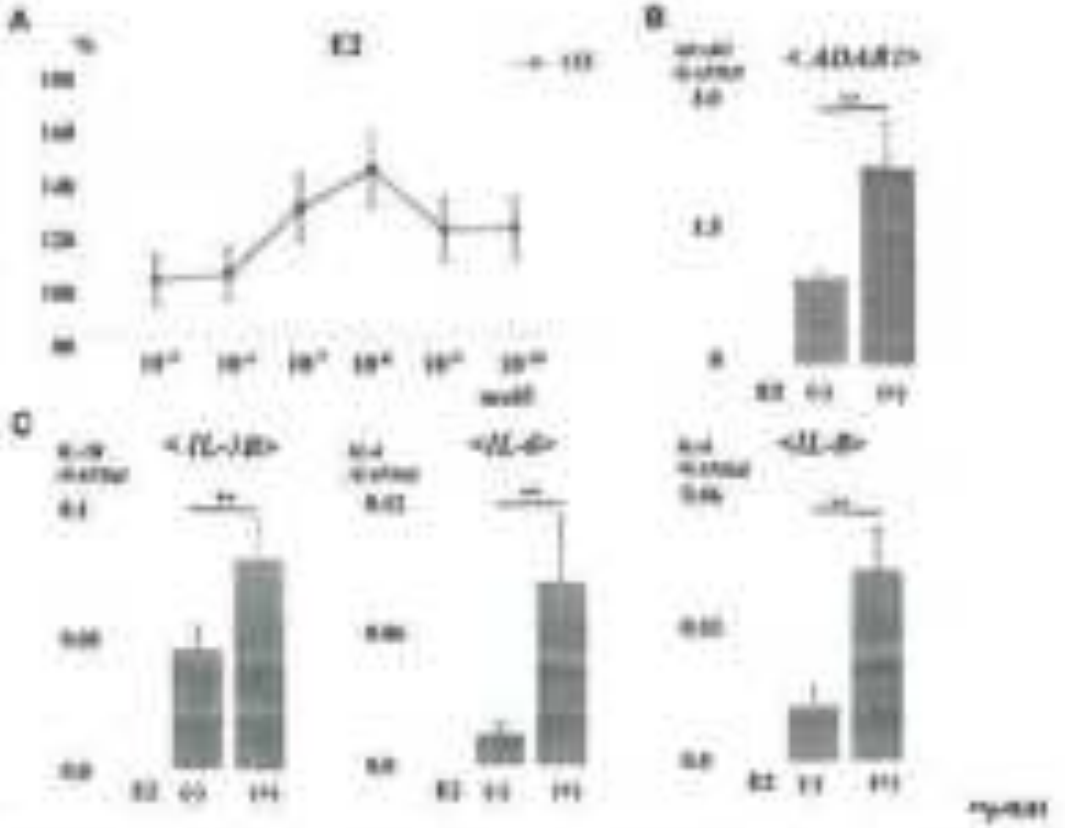

Figure 2. Alterations observed (both) using an ADAR1 knockdown (KD) of IL-1β, IL-6, and IL-8 expression of endometrioid human endometrioid cell line in estrogen. (A) Cell proliferation (MTT assay) in Ishikawa cells exposed to estrogen (10^{-11}–10^{-6} mol/l) for 48 h. (B) Real-time PCR analysis of ADAR1 expression levels by 10^{-8} mol/l E2 and a 72 h interval in human endometrioid cell line (Ishikawa) after 48 h. (C) Real-time PCR analysis of the IL-1β, IL-6, and IL-8 expression levels by 10^{-8} mol/l E2 and a 72 h interval in human endometrioid cell line (Ishikawa) after 48 h. **p<0.01

Estrogen-stimulated ADAR1 expression in immortalized human endometrioid cell line. Estrogen at each concentration induced activation in the 12Z immortalized human endometrioid cell line, as shown in MTT assays (Figure 2A). Therefore, 12Z cells showed potent estrogenic effects. Furthermore, we investigated the changes in ADAR1 and cytokines, such as IL-1β, IL-6, and IL-8, induced by estrogen. The efficiency of ADAR1, IL-1β, IL-6, and IL-8 expressions were confirmed by PCR, as shown in Figure 2B. ADAR1 expression was significantly increased by 10^{-8} mol/l estrogen into the 12Z cell line ($p<0.001$). IL-1β and IL-6 expressions were significantly increased by estrogen in the 12Z cell line ($p<0.008$ and $p<0.05$). Moreover, IL-8 expression was significantly increased by estrogen in the 12Z cell line ($p<0.001$, Figure 2C).

Knockdown of ADAR1 attenuated ADAR1 expression in the immortalized human endometrioid cell line. We decided to perform ADAR1 knockdown in the 12Z cell line to examine expression changes. The knockdown efficiency of ADAR1 was confirmed by performing PCR. ADAR1 expression was significantly decreased by transfection of the ADAR1 siRNA into the 12Z cells (Mock: $p<0.001$ and Control: $p<0.007$), as shown in Figure 3A.

Knockdown of ADAR1 suppressed cell proliferation and increased apoptosis in the immortalized human endometrioid cell line. We determined the effects of ADAR1 on cell proliferation in the immortalized human endometrioid cell line. We performed an MTT assay after transient transfection of the ADAR1 siRNA into the 12Z cell line. The number of viable cells decreased to 40.9% (Mock)

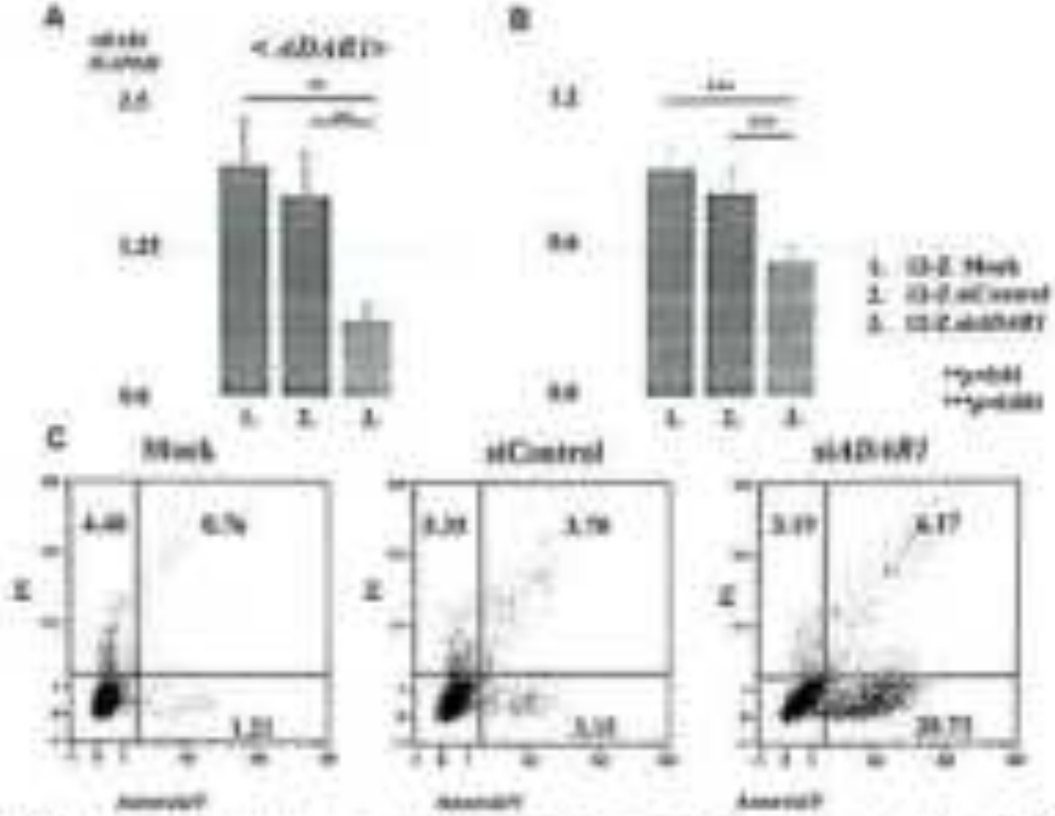

Figure 3: Adenosine deaminase family acting on RNA 1 (ADAR1) expression, cell proliferation, and apoptosis investigated by knockdown ADAR1 in transmitted human endometrioid cell lines. (A) Real-time PCR analysis of the ADAR1 expression levels after treatment transfection of the mock control, siRNA (siControl), or ADAR1 siRNA (siADAR1) into a 122 transmitted human endometrioid cell line for 48 h. (B) 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) analysis of a 122 transmitted human endometrioid cell line after transient transfection of mock, siControl, or siADAR1 siRNA for 48 h. (C) Apoptosis analysis by annexin V-fluorescein isothiocyanate (FITC)/propidium iodide (PI) double staining of a 122 transmitted human endometrioid cell line after transient transfection of mock, siControl, or siADAR1 siRNA for 48 h.

ase (1.7% (Control) at most of the normal cell viability at 48 hours after transient transfection of the ADAR1 siRNA into 122 cells ($p<0.01$, Figure 3B). Therefore, the knockdown of ADAR1 suppressed the cell proliferation in the transmitted human endometrioid cell line.

The following apoptotic profiles were obtained from transient transfection of the ADAR1 into 122 cells. ADAR1 siRNA increased early and late apoptosis, compared with the mock and control of 14.87% and 19.96% for the 122 cells. Therefore, we concluded that ADAR1 siRNA was likely to regulate the early and late apoptosis in the transmitted human endometrioid cell line (Figure 3C).

Knockdown of ADAR1 activated the apoptosis-related pathway in transmitted human endometrioid cell line. Based on previous findings, we hypothesized that ADAR1 might suppress apoptosis in 122 cells by suppressing the dsRNA-sensing signaling pathway. ADAR1 was shown to suppress innate immunity primarily through the RIG-I-like receptor (RLR)-initiated cytosolic dsRNA-sensing signaling pathway, including MDA5 and RIG-I (11, 16). Moreover, RIG-I, MDA5, and PKR have been reported to induce apoptosis (17–19). To learn the steps in the apoptosis, we examined the activation of Caspase 3, Caspase 7, and Caspase 9. We first examined the effects of ADAR1 knockdown on the expression of MDA5, RIG-I, PKR, IRF3, IRF7, Caspase 3, Caspase 7, and Caspase 9 in the 122 cell line. The MDA5 expression significantly increased after transfection of ADAR1 siRNA into 122 cells (Mock, $p<0.001$; Control siRNA, $p<0.001$). The RIG-I expression significantly increased after the transfection of ADAR1 siRNA into 122 cells (Mock, $p<0.001$; Control siRNA,

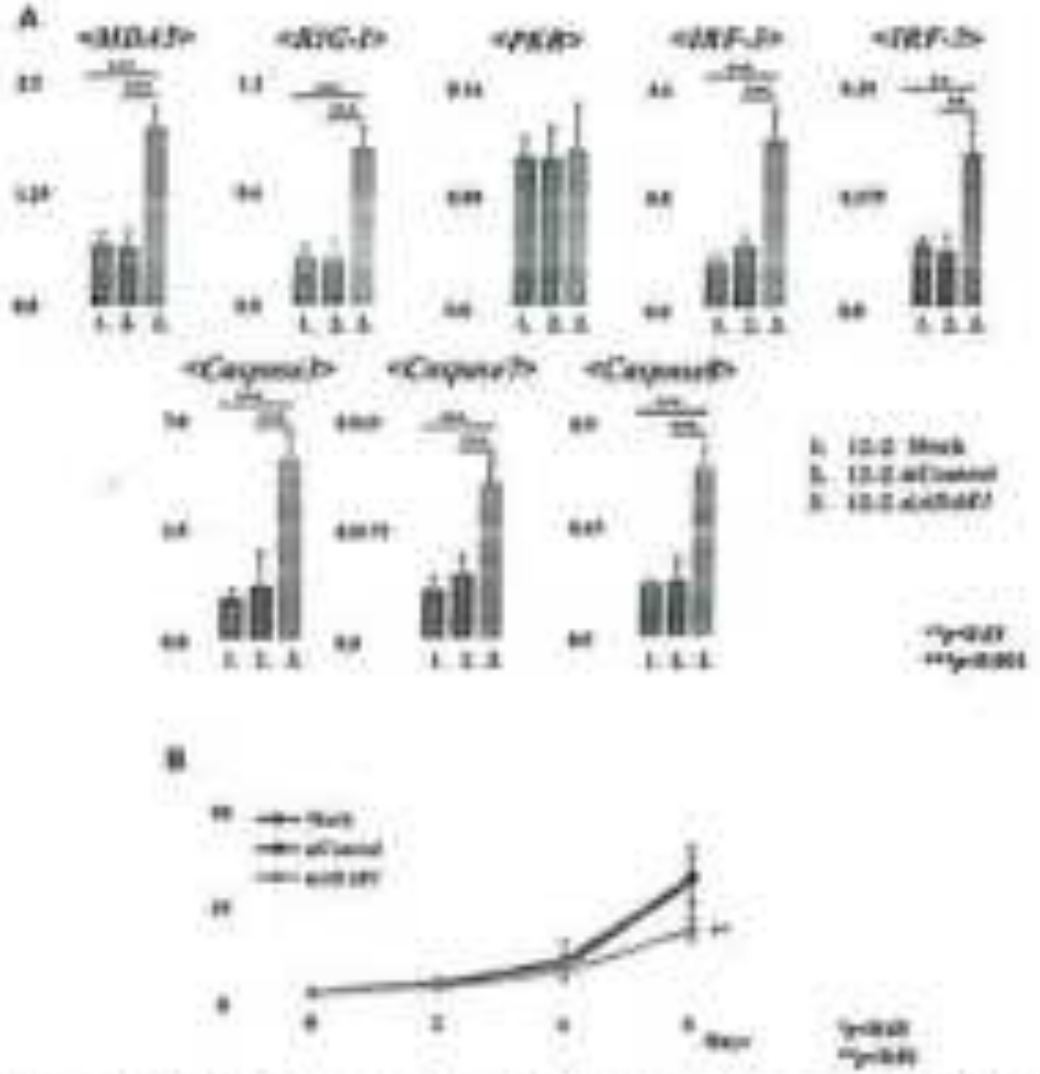

Figure 4. The mechanism and cell growth on keratinocytes were investigated by knockdown expression detection (shAD) using an RNA i (shRNA) in an immortalized human epidermoblastic cell line. (A) Bright view 10 X of the 122 immortalized human epidermoblastic cell line after transfection of the work, control (shCtrl), or ADAR1 shRNA construct (pri 40 h). Real-time PCR of ADAR1, IFIH1, IRF7, Caspase 3, Caspase 7, and Caspase 8 expressions after transfection of the work, shCtrl, and shADAR1 was a 122 immortalized human epidermoblastic cell line (pri 48 h). (B) The cell growth in keratinocytes after transfection of the work, shCtrl, or shADAR1 was a 122 immortalized human epidermoblastic cell line in DMEM/Ham's F12 medium supplemented with 10% FBS (n = 2, 3, and 5 days). Numbers represent the data from triplicate experiments.

$p<0.001$). However, no association was observed between *ADAR1* and *PKR* in 122 cells. The expressions of one of the IFN-stimulated genes (*IRF7* and *IRF7*) which is downstream of *MDA5*, and that of *RIG-I* also increased after transfection of the *ADAR1* into 122 cells (*IRF7*: Mock, $p<0.001$; Control shRNA, $p<0.001$; *IRF7*: Mock, $p<0.000$; Control shRNA, $p<0.001$). To trace the steps in the apoptosis, *Caspase 3*, *Caspase 7*, and *Caspase 8* expressions significantly increased after transfection of *ADAR1* shRNA into the 122 cell line (*Caspase 3*: Mock, $p<0.001$; Control shRNA, $p<0.001$; *Caspase 7*: Mock, $p<0.001$; Control shRNA, $p<0.001$; *Caspase 8*: Mock, $p<0.001$; Control shRNA, $p<0.001$) as shown in Figure 4A. These results suggest that suppression of *ADAR1* activates the dsRNA-sensing

signaling pathway, which in turn increases the expression of apoptosis factors of BCL2, BCL-2, Caspase 3, Caspase 7, and Caspase 8.

Knockdown of ADAR1 inhibited cell growth. The effects of shADAR1 expression on monolayer growth were analyzed using transfection of ADAR1 shRNA into the 12Z cell line. Knockdown of ADAR1 significantly inhibited monolayer growth in 12Z cells when compared with mock and control shRNA (Day 6 Mock: $p<0.001$, shControl: $p<0.001$), as shown in Figure 4B.

Discussion

The aim of the study was to discover new therapeutic targets for endometriosis by employing epigenetic methods. We focused on RNA editing, a recently identified epigenetic mechanism that modulates the post-transcriptional activity of essential genes by changing their amino acid sequences [1]. ADAR, a type of RNA editing, is also involved in immune recognition, mainly through IFN responses [18, 19]. However, there are no reports on the association of action of ADAR1 in endometriosis. Therefore, we investigated the biological function of ADAR1 in endometriosis.

Li et al. reported that high ADAR1 expression was significantly associated with endometriosis [11]. In the present study, ADAR1 expression was significantly higher in cells from patients with endometriosis than in those from non-patients. ADAR1 expression was significantly correlated with cytokine dependence to IL-1β, IL-6, and IL-8 with endometriosis. Endometriosis is estrogen-dependent, so we investigated the relationship between estrogen and ADAR1. Therefore, estrogen induced overexpression of ADAR1, and ADAR1 expression was strongly associated with estrogen dependence.

ADAR1 is also involved in immune recognition, which is primarily explained by the sensitive IFN1 response in various cancer types [20, 21]. ADAR1 activates the type I IFN pathway via dsRNA sensors [AD042 and EIF2-2]. IRF7 and MDA5 were previously reported to promote pro-apoptotic signaling, known as type I IFN-dependent apoptosis [22]. Herein, shADAR1 knockdown increased MDA5, BCL-2, PKR, IRF3, IRF7, Caspase 3, Caspase 7, and Caspase 8 expression in an immortalized human endometriosis cell line, leading to apoptosis. Our results indicate that ADAR1 shows potential as a new therapeutic target for endometriosis.

This retrospective study had several limitations. First, it was performed at a single center. Large-scale prospective studies are required to further ascertain the role and clinical significance of ADAR1 in endometriosis, and we hope to report such results soon.

In summary, our study provides novel evidence for a critical role of ADAR1 in endometriosis. Our study highlights the finding that ADAR1 increases the potential of endometriosis and hence could be a potential therapeutic target in endometriosis.

Conclusion

In this study, we investigated the biological function of ADAR1 in endometriosis and found that ADAR1 expression was significantly higher in endometriotic patients. ADAR1 expression was significantly correlated to IL-1β, IL-6, and IL-8. Knockdown of ADAR1 led to apoptosis through MDA5, BCL-2, PKR, IRF3, IRF7, Caspase 3, Caspase 7, and Caspase 8 expression into an immortalized human endometriotic cell line. Our results show that ADAR1 could be a valuable therapeutic target in endometriosis.

Conflicts of Interest

None of the Authors have any conflicts of interest to declare in relation to this study.

Authors' Contributions

S.H. participated in the study design, laboratory work, data collection, data management, statistical analysis, data interpretation, and manuscript writing. Y.H., S.S., S.K., T.K., and O.M. participated in the design and coordination of the study and helped draft the manuscript. All authors read and approved the final version of the manuscript.

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References

1. Gerstberger S, Hafner M, Tuschl T. A census of human RNA-binding proteins. *Nature Reviews Genetics*. 2014;15(12):829-845. doi: 10.1038/nrg3813
2. Bulun SE, Yilmaz BD, Sison C, et al. Endometriosis. *Endocrine Reviews*. 2019;40(4):1048-1079. doi: 10.1210/er.2018-00242
3. Kim JH, Skalnik DG, Kim IS, et al. Human histone H1 interacts with HP1 and represses transcription. *Molecular and Cellular Biology*. 1997;17(6):3234-3244. doi: 10.1128/MCB.17.6.3234
4. Kim JH, Kim IS, Seo SB, et al. NH2-terminal modification of human histone H1 variants in relation to their functional diversity. *Molecular and Cellular Biochemistry*. 1995;151(2):115-124. doi: 10.1007/BF01076900
5. Kim JH, Kim IS, Seo SB, et al. Human histone H1 variants and their differential properties on transcription in a chromatin environment. *Molecular and Cellular Biochemistry*. 1995;151(2):115-124. doi: 10.1007/BF01076900
6. Kim JH, Kim IS, Seo SB, et al. Human histone H1 variants and their differential properties on transcription in a chromatin environment. *Molecular and Cellular Biochemistry*. 1995;151(2):115-124. doi: 10.1007/BF01076900
7. Kim JH, Kim IS, Seo SB, et al. Human histone H1 variants and their differential properties on transcription in a chromatin environment. *Molecular and Cellular Biochemistry*. 1995;151(2):115-124. doi: 10.1007/BF01076900
8. Kim JH, Kim IS, Seo SB, et al. Human histone H1 variants and their differential properties on transcription in a chromatin environment. *Molecular and Cellular Biochemistry*. 1995;151(2):115-124. doi: 10.1007/BF01076900
9. Kim JH, Kim IS, Seo SB, et al. Human histone H1 variants and their differential properties on transcription in a chromatin environment. *Molecular and Cellular Biochemistry*. 1995;151(2):115-124. doi: 10.1007/BF01076900
10. Kim JH, Kim IS, Seo SB, et al. Human histone H1 variants and their differential properties on transcription in a chromatin environment. *Molecular and Cellular Biochemistry*. 1995;151(2):115-124. doi: 10.1007/BF01076900

6. Lui Y, Shengr CX, Rawmon AE, Samuel CE: Functionally distinct double-stranded RNA-binding domains associated with alternative splice site variants of the interferon-inducible double-stranded RNA-specific adenosine deaminase. J Biol Chem 272(7): 4419-4428, 1997. DOI: 10.1074/jbc.272.7.4419
7. Kiphar A, Ch'[Lawsuit Wh, Kellar W: Two forms of human double-stranded RNA-specific editase 1 (hRED1) generated by the insertion of an Alu cassette. RNA 3(4): 451-463, 1997.
8. Melcher T, Maas S, Herb A, Sprengel R, Higuchi M, Seeburg PH: RED2, a brain-specific member of the RNA-specific adenosine deaminase family. J Biol Chem 271(50): 31795-31798, 1996. DOI: 10.1074/jbc.271.50.31795
9. Chen CX, Cho DS, Wang Q, Lai F, Carter KC, Nishikura K: A third member of the RNA-specific adenosine deaminase gene family, ADAR3, contains both single- and double-stranded RNA binding domains. RNA 6(5): 755-767, 2000. DOI: 10.1017/s1355838200000416
10. Li L, Qian K, Fan Y, Yuan Y, Cheng Q, Gao T, Xie X, Liu C, Zhang L, Zeng H: Ubiquitin-dependent turnover of adenosine deaminase acting on RNA 1 (ADAR1) is required for efficient antiviral activity of type I interferons. J Biol Chem 294(48): 18016-18030, 2019. DOI: 10.1074/jbc.RA119.010988
11. Li Y, Qi M, Wang Q, Li R, Xu J, Sun L: Abnormal overexpression of RNA-editing enzyme ADAR1 promotes the progression of melanomagenesis. Biomed Sci 27(3): 233-244, 2020. DOI: 10.1007/s43032-019-00057-1
12. Nakamura C, Shigeyasu K, Okamoto K, Nakanuka H, Maenjuma H: ADAR1 has an oncogenic function and can be a prognostic factor in cervical cancer. Sci Rep 13(1): 4745, 2023. DOI: 10.1038/s41598-023-31422-y
13. Nishikura K: Working with adenosine deaminases acting on RNA. Nat Struct Mol Biol 17(12): 1372-1377, 2010. DOI: 10.1038/nsmb.1918
14. Basit A, Patel M, Hakeemuddin T, Smith D, Stecher G, Seeburg C, Weitzeg K, Endres S, Ruzicka T, Kolanthaivel K, Weihrauch G: Proapoptotic signaling induced by RED1 and RED4 in acute type I interferon-independent apoptosis in human melanoma cells. J Clin Invest 119(8): 2368-2379, 2009. DOI: 10.1172/JCI37519
15. Fumagalli D, Gacquer D, Rothé F, Lefort A, Libert F, Brown D, Kheddoumi N, Shlien A, Konopka T, Salgado R, Lambrechts D, Policek B, Willard-Gallo K, Desmedt C, Piccart M, Metzeweiy M, Campbell PJ, Sotiriou C, Stratton M, Stephens P, Loi S: Principles governing A-to-I RNA editing in the breast cancer transcriptome. Cell Rep 13(2): 277-289, 2015. DOI: 10.1016/j.celrep.2015.08.081
16. Hu X, Chen J, Shi Z, Jiang F, Lao KW, Chen Y, Pang L, Cui Y, Dong Y, Xu X, Li J: RNA editing of AZIN1 induces the malignant progression of non-small-cell lung cancer. Tumor Biol 36(6): 10.1007/s13277-015-3506, 2015. DOI: 10.1007/s13277-015-3506-z
17. Pfeifer CR, Li Z, Grange CA, Sanuel CE: Protein kinase PKR and RNA adenosine deaminase ADAR1: new roles for old players as modulators of the interferon response. Curr Opin Immunol 24(4): 475-481, 2012. DOI: 10.1016/j.coi.2012.05.008
18. Gay M, Mayo MR, Aneiza A, Kizaner MW: Auto-excite-of-prion kinase PKR requires dimerization-induced cis phosphorylation within the activation loop. J Biol Chem 289(9): 5747-5757, 2014. DOI: 10.1074/jbc.M113.537998
19. Herbert A, Alfken J, Kim YG, Mian IS, Nishikura K, Rich A: A Z-DNA binding domain present in the human editing enzyme, double-stranded RNA adenosine deaminase. Proc Natl Acad Sci USA 94(16): 8421-8426, 1997. DOI: 10.1073/pnas.94.16.8421
20. Herbert A: Mendelian disease caused by variants affecting recognition of Z-DNA and Z-RNA by the Zα domain of the double-stranded RNA editing enzyme ADAR. Eur J Hum Genet 26(1): 114-127, 2018. DOI: 10.1038/s41431-017-0036-9
21. Stefano HE, Kongan LF, Lukoja AS, Smolato MY, O'Connell M, Cotton-Pickles M: Dynamic association of RNA-editing enzymes with the nucleolus. J Cell Sci 116 (Pt 9): 1809-1818, 2003. DOI: 10.1242/jcs.00371
22. London WN, Perahovanes EM, Hoosteg RA: Emerging biological principles of metabolism. Cell 180(4): 670-681, 2017. DOI: 10.1016/j.cell.2016.12.031

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Apolipoprotein-B mRNA-editing complex 3B could be a new potential therapeutic target in endometriosis

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This study investigated the correlation of Apolipoprotein-B mRNA-editing complex 3B (APOBEC3B) expression with hypoxia inducible factor-1α (HIF-1α), Kirsten rat sarcoma virus (KRAS) and phosphatidylinositol-4,5-bisphosphate 3-kinase catalytic subunit alpha (PIK3CA) in endometriosis patients, and the inhibitory effects of APOBEC3B knockdown in a human endometriotic cell line. Here, APOBEC3B, HIF-1α, KRAS, and PIK3CA were examined in patients with and without endometriosis using reverse transcription polymerase chain reaction (RT-PCR). The apoptosis, cell proliferation, invasion, migration, and biological function of APOBEC3B knockdown were explored in 11E immortalized human endometriotic cell line. We observed APOBEC3B, HIF-1α, KRAS and PIK3CA expressions were significantly higher in endometriosis patients ($p < 0.001$, $p = 0.001$, $p = 0.019$, $p = 0.001$). Knockdown of APOBEC3B increased apoptosis, which was 28.03% and 13.27% higher than in mock and control siRNA samples, respectively. APOBEC3B knockdown also decreased PIK3CA expression and increased caspase-8 expression, suggesting a potential role in the regulation of apoptosis. Furthermore, knockdown of APOBEC3B significantly inhibited cell proliferation, invasion, and migration compared to mock and control siRNA. Cell proliferation: mock $p < 0.001$ and control siRNA $p = 0.048$. Cell invasion: mock $p < 0.001$ and control siRNA $p = 0.029$. Cell migration: mock $p = 0.004$, and control siRNA $p = 0.024$. In conclusion, this study suggests that APOBEC3B might be a new potential therapeutic target for endometriosis.

Keywords: Apolipoprotein-B mRNA-editing complex 3B, Endometriosis, Apoptosis, Potential therapeutic target

Endometriosis is characterized by the presence of ectopic and functional endometrial glands and stroma in the extrauterine cavity, which affects 6%–10% of women of reproductive age[1]. Dysplasia is also recognized as significantly involved in the development of endometriosis, and the most common method to determine tissue hypoxia is through the detection of HIF-1α. A growing body of evidence demonstrates that hypoxia plays an essential role in regulating the diverse pharmacopeia of endometriosis, such as increasing adhesion ability and aberrant production of pro-inflammatory cytokines[2]. It has also been reported that point mutations in KRAS and PIK3CA genes are expressed in endometriomas and ovarian cancer, but the mechanisms are still poorly understood[3].

We focused on deoxyribonucleic acid (DNA) editing, such as APOBEC3B in endometriosis. APOBEC3 family (A3A, A3B, A3C, A3D, A3F, A3G, and A3H) is an expansive group of proteins that deaminate cytosine (C) to uracil (U) (C-to-U) in ribonucleic acid (RNA) and single-stranded deoxyribonucleic acid (DNA)[4,5]. DNA editing is a recently identified epigenetic mechanism that regulates of essential genes by altering their nucleotide sequences, leading to changes in gene expression[6–8].

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Endometriosis patients can develop endometriosis-associated ovarian cancer, as shown in many studies. Women with a history of endometriosis had approximately twice the relative risk for clear cell or endometrioid ovarian carcinoma[3]. APOBEC3B has also been reported to be involved in endometriosis-associated ovarian cancer, including ovarian clear cell carcinoma[20]. Recently, Kinnebrew et al. reported that the relationship between APOBEC3B and PIK3CA mutation genetic alterations in endometriosis[21]. Therefore, this study aimed to investigate the correlation of APOBEC3B expression with HIF-1α and PIK3CA in endometriosis patients and the inhibitory effects of APOBEC3B knockdown on human endometriosis cell lines. Understanding the molecular mechanisms underlying endometriosis may lead to new opportunities for diagnostic and potential therapeutic strategies.

Results

Overexpressions of APOBEC3B, HIF-1α, KRAS, and PIK3CA in endometriosis patients

We measured the expression levels of APOBEC3B, HIF-1α, KRAS, and PIK3CA in the endometriotic group ($n=15$) and non-endometriosis group ($n=$ [illegible]). APOBEC3B, HIF-1α, KRAS, and PIK3CA expressions were significantly higher in the endometriosis group than in the non-endometriosis group ($p<0.001$, $p=0.0001$, $p=0.0029$ and $p=0.001$, Fig. 1A). We also examined the relationship of APOBEC3B, KRAS, and PIK3CA expressions with HIF-1α. The expressions of APOBEC3B and PIK3CA were significantly correlated with HIF-1α (APOBEC3B: $R=0.779$, $R2=0.606$, $p<0.001$, and PIK3CA: $R=0.728$, $R2=0.529$, $p<0.001$, Fig. 1B). We also analyzed the relationship of expression of APOBEC3B with PIK3CA and KRAS. PIK3CA was found to be significantly correlated with APOBEC3B ($R=0.615$, $R2=0.469$, $p<0.001$, Fig. 1C).

Hypoxia strengthened APOBEC3B and knockdown of APOBEC3B suppressed HIF-1α

As shown in Fig. 2, hypoxia-mediated overexpression (1%, 3%, 5%) increased expression of HIF-1α, APOBEC3B, KRAS, and PIK3CA in 12Z endometriotic cell lines, as measured by RT-PCR. As expected, the 12Z endometriotic cell line cultured under hypoxic conditions (1% O_2) showed significant increases in HIF-1α expression compared to cultures maintained at 20% O_2 ($p=0.0007$ and 3% O_2, $p=0.0008$). Similarly, under hypoxic conditions (1% O_2), the 12Z cell line exhibited a marked increase in APOBEC3B expression compared to those at 20% O_2 ($p=0.0001$ and 3% O_2, $p=0.0017$). Additionally, the impact of APOBEC3B knockdown on the expression of HIF-1α expression in the 12Z endometriotic cell line was examined. After transfection with siAPOBEC3B siRNA, HIF-1α expression was significantly decreased compared to the mock sample ($p=0.0462$) (Fig. 2C).

Knockdown of APOBEC3B increased apoptosis and activated cytotoxic pathway-related factors

We examined the changes in APOBEC3B expression after the knockdown of APOBEC3B in the 12Z endometriotic cell line. The knockdown efficiency of APOBEC3B was confirmed by RT-PCR, and APOBEC3B expression was significantly decreased following APOBEC3B siRNA transfection into 12Z endometriotic cell line (Mock: $p=0.0001$ and control siRNA: $p=0.0121$, Fig. 3A). After transfection of the APOBEC3B siRNA into the 12Z endometriotic cell line, we also performed an MTS assay to evaluate cell proliferation. The percentages of viable cells decreased by 18.9% (mock) and by 11.9% (control siRNA), compared to those transfected with APOBEC3B siRNA (mock: $p=0.0001$, and control siRNA: $p=0.0001$, Fig. 3B). Representative flow cytometric data revealed that the transfection of APOBEC3B for 48 h increased Annexin V-FITC and PI-positive signals. APOBEC3B siRNA induced early and late apoptosis in the 12Z endometriotic cell line compared to the proportions in the mock and control siRNA groups of 20.25% and 32.25%, respectively. Therefore, APOBEC3B siRNA likely regulates the early and late apoptosis in the 12Z endometriotic cell line (Fig. 3C).

We examined the effects of APOBEC3B knockdown on the expression of KRAS, PIK3CA, and Caspase 8 in the 12Z endometriotic cell line. After transfection of APOBEC3B siRNA, PIK3CA expression significantly decreased (Mock: $p=0.0003$). In contrast, Caspase 8 expression following transfection of APOBEC3B siRNA significantly increased (Mock: $p=0.0227$). These results suggest that the knockdown of APOBEC3B regulates the apoptotic pathway via suppression of PIK3CA and activation of Caspase 8 (Fig. 4A).

Knockdown of APOBEC3B attenuated cell proliferation, monolayer growth, cell invasion, and migration

We performed cell invasion and migration assays and examined monolayer growth in 12Z endometriotic cell line transfected with mock, control, and APOBEC3B siRNA. The proportion of cells capable of invasion declined by 18.9% (mock) and by 15.7% (control siRNA), compared to those transfected with APOBEC3B siRNA (mock: $p=0.001$, and control siRNA: $p=0.029$, Fig. 4B). Moreover, the percentages of cells capable of migration markedly decreased by 50.3% (mock) and by 23.9% (control siRNA) compared to those transfected with APOBEC3B siRNA (mock: $p=0.001$, control siRNA: $p=0.014$, Fig. 4C). Furthermore, the knockdown of APOBEC3B significantly inhibited monolayer growth in the 12Z endometriotic cell line compared with mock and control siRNA (Day 6 mock: $p=0.041$, control siRNA: $p=0.048$, Fig. 4D). These results demonstrate that APOBEC3B potentially affects the proliferation, migration, and invasive ability of 12Z endometriotic cells.

Discussion

The mechanisms involved in endometriosis include chronic inflammatory responses, abnormal angiogenesis, hypoxia, and genomic [illegible]. Knockdown of APOBEC3B in an endometriotic cell line affected many important pathological mechanisms. This indicates that APOBEC3B could become a promising treatment for endometriosis. We further confirmed that the expression of APOBEC3B was higher in the endometriosis patient group compared to that of the control.

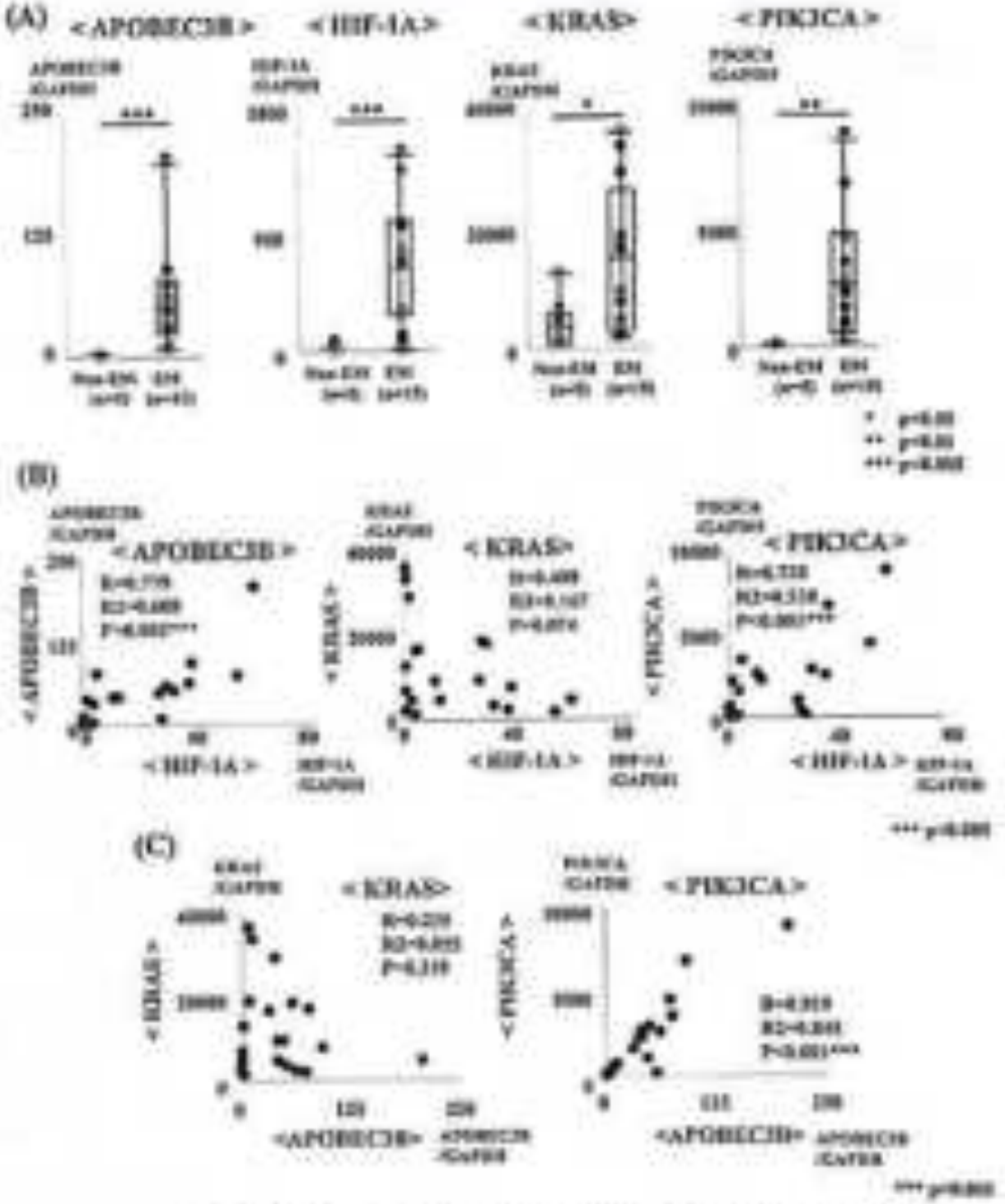

Figure 1. (A) Tumor analysis of APOBEC3B, HIF-1α, KRAS, PIK3CA in 5 non-endometrioma and 11 endometrioma patients. (B) Regression analysis of HIF-1α with APOBEC3B, KRAS, and PIK3CA in 5 non-endometrioma and 11 endometrioma patients. (C) Regression analysis of APOBEC3B with KRAS and PIK3CA in 5 non-endometrioma and 11 endometrioma patients.

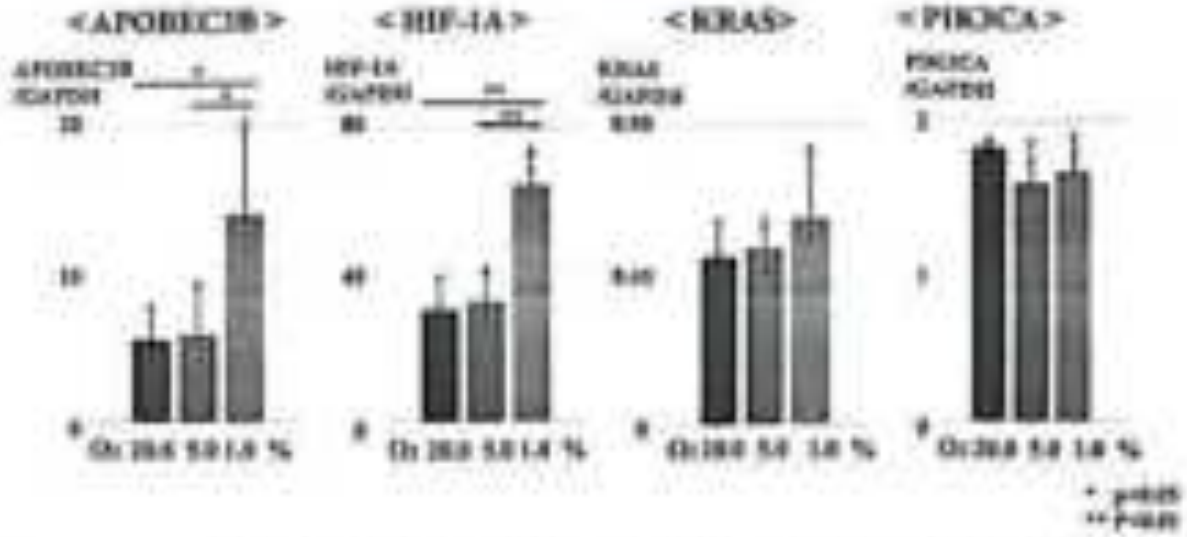

Figure 2. HIF-1α, APOBEC3B, KRAS and PIK3CA expressions were measured with RT-PCR in the 12Z endometrioid cell line at different concentrations of O_2 (24hO_2, 5d-O_2, 14d-O_2) for 48 h.

APOBEC families regulate the post-transcriptional activity of essential genes by altering their amino acid sequences, leading to changes in gene expression. APOBEC (cytidine deaminase apolipoprotein B mRNA editing enzyme, catalytic polypeptide-like) is a family of cytidine deaminases. APOBEC3B is generally expressed at higher levels compared to other APOBEC3 family members[12]. An analysis of multiple cancers revealed enrichment of APOBEC3B in seven types of tumors: bladder, breast, head and neck, lung adenocarcinoma, lung squamous cell carcinoma, prostate, cervical cell, and uterine[13]. High APOBEC3B levels have been reported in bladder, skin (skin, lung, gastric, esophageal, squamous/adenocarcinoma, and ovarian tumors[14–18]. APOBEC3B is over-expressed in breast, cervical, and non-small cell lung cancers, and its overexpression is correlated with survival[19–21].

A previous study found that endometrioid tissues harbored somatic mutations, including mutations in the well-known cancer driver genes PIK3CA and KRAS[22]. In vitro assays indicated that KRAS and PIK3CA mutations played causative roles in the aggressive behavior of endometriosis[23]. In the base task, APOBEC3B, hybrid domain hotspot mutations in the PIK3CA gene in multiple cancers were found, and the upregulation of APOBEC3B is correlated with increased mutational load of PIK3CA in esophageal squamous cell carcinoma, breast and cervical cancers[24–27]. KRAS mutations have been associated with downregulated expression of APOBEC3B in non-small cell lung cancer. The presence of KRAS mutations may influence the expression levels of APOBEC3B, suggesting a potential interplay between KRAS signaling and APOBEC3B activity[28].

Therefore, we monitored the relationship among expressions of APOBEC3B, HIF-1α, KRAS, and PIK3CA in the endometrioid cell line. We observed the overexpression of APOBEC3B, HIF-1α, KRAS, and PIK3CA in the endometriosis patient group and the correlations of APOBEC3B with HIF-1α and PIK3CA. Accordingly, we conducted investigations of not only these targets in an endometriotic cell line but also HIF-1α and PIK3CA in the APOBEC3B knockdown cell line.

Regarding to APOBEC3B expression in response to hypoxia, Burke et al. also have shown that hypoxic conditions (which include cyclic variations between ~0.1% and 2% O_2) lead to the induction of APOBEC3B expression[29]. Cells exposed to fluctuating/cyclic hypoxic conditions stabilize HIF-1α, leading to the increased expression of HIF-target genes, including APOBEC3B. APOBEC3B has been associated with the HIF-1α transcriptional factor, which is known to be active in hypoxic environments[27]. Consistent with an HIF-1α inhibitor (Supp. Table 1), which partially inhibited the induction of APOBEC3B protein in cyclic hypoxia[30]. This suggests a specific role for HIF-1α in regulating APOBEC3B expression in response to hypoxia. The present study demonstrates that APOBEC3B, HIF-1α, KRAS, and PIK3CA expressions were significantly higher in endometriotic specimens than non-endometriotic specimens. APOBEC3B and PIK3CA expressions were significantly correlated with HIF-1α in endometriotic patients.

In this study, we showed that the knockdown of APOBEC3B in the endometriotic cell line promoted apoptosis. This result is consistent with the studies which demonstrated that the downregulation of APOBEC3B increased apoptosis in kidney renal cancer and diffuse astrocytoma[31,32].

Furthermore, APOBEC3B may negatively regulate apoptosis in cervical cancer cells via apoptosis-associated factors such as caspase[20]. Similarly, caspase 3, 8, and 9 mRNA were significantly increased in diffuse astrocytoma cells with APOBEC3B knockdown[32]. Our study also observed the knockdown of APOBEC3B decreased PIK3CA and increased Caspase 8 expressions in the endometriotic cell line. This is consistent with other studies that indicated that upregulation of APOBEC3B is correlated with increased PIK3CA[24–27]. Therefore, we hypothesized that PIK3CA may act as an essential factor for APOBEC3B to regulate apoptosis-related pathways.

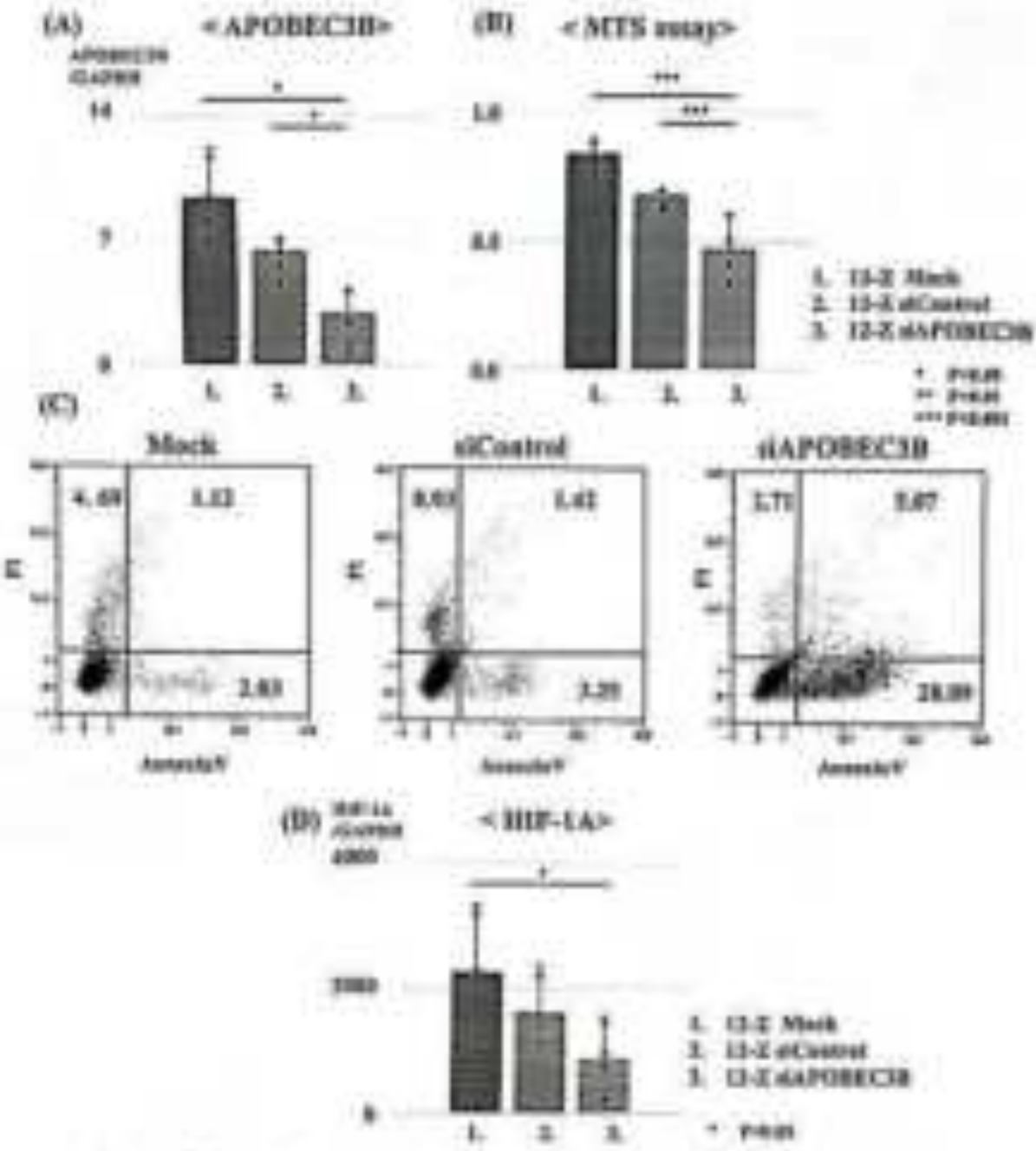

Figure 3. After transient transfection of the mock, normal siRNA (siCont) and siAPOBEC3B(siAPOBEC3B) into 13-Σ endometrioid cell line for 96 h, (A) RT-PCR analysis of the APOBEC3B expression levels in mock, siCont and siAPOBEC3B cells. (B) MTS assays of mock, siCont, and siAPOBEC3B cells. (C) Representative flow cytometric data for apoptosis levels in mock, siCont, and siAPOBEC3B cells. (D) RT-PCR analysis of the HIF-1α expression levels in mock, siCont, and siAPOBEC3B cells.

Previous reports suggested that APOBEC3B enhances cell proliferation and migratory and invasive abilities of hepatocellular carcinoma and cervical cancer cells[26,27]. We examined if the same was true for the endometrioid cell line. Here, we performed the cell proliferation, migration, and invasion assays following the transient transfection of siAPOBEC3B#1#3 in the endometrioid cell line. Knockdown of APOBEC3B in endometrioid cells suppressed the cell proliferative, migratory, and invasive abilities.

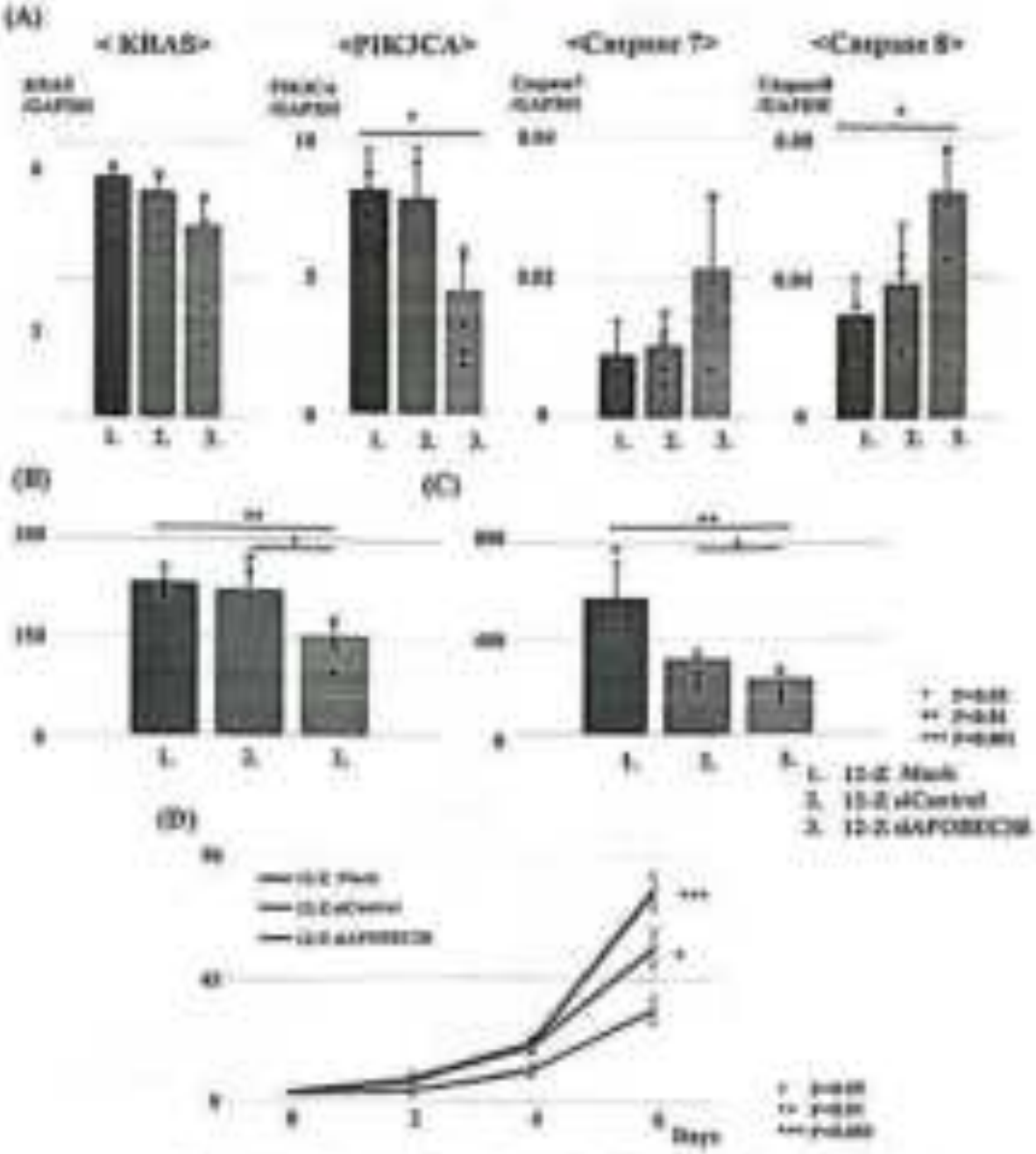

Figure 4. After transient transfection of Cho cells, isolated siRNA (siCon) and siPOSEC3 (siRNA to AAPOSEC3B) (one 133 nucleotomeric cell line for 48 h, (A) RT-PCR analysis of KRAS, PIK3CA, Caspase 7 and Caspase 8 expressions compared between mock, siCon and siAPOSEC3B cells. (B) Cell invasion assay compared between mock, siCon, and siAPOSEC3B transfected cells. (C) Cell migration assay compared between mock, siCon, and siAPOSEC3B transfected cells. Cell invasion and migration assays were performed in triplicates. (D) Cell growth or proliferation was compared between mock, siCon, and siAPOSEC3B transfected cells using DMEM/Ham's F12 medium supplemented with 10% FBS for 1, 2, 3, and 4 days. The numbers represent data from triplicate experiments.

This study has several limitations. First, it is a single-center retrospective analysis. Second, we used only one endometriotic cell line (12Z) instead of primary cell cultures, which may not fully reflect the heterogeneity of endometriotic tissues. Additionally, we acknowledge the limited sample size and absence of protein expression data, which may restrict the depth of our conclusions. Based on our findings of key regulatory molecules in the APOBEC3B pathway at the RNA level, future larger-scale studies with expanded sample sizes and protein-level investigations will be considered to draw more comprehensive conclusions about its role in endometriosis.

To the best of our knowledge, this study is the first to explore APOBEC3B in patients with endometriosis. It was found that APOBEC3B expression was significantly higher in these patients and correlated with AFS (a) and FIGO (a). Knocking down APOBEC3B led to an increase in apoptosis but a decrease in cell proliferation, invasion, and migration. These findings suggest that APOBEC3B could be a therapeutic target for endometriosis treatment. Detailed insights into the mechanisms of action of APOBEC3B have led to new diagnostic and therapeutic strategies for endometriosis.

Materials and methods

Patients and tissue specimens

The study received approval from the institutional ethics committee of Okayama University (approval number: R2021-042). Informed consent was obtained from all participants, and all procedures adhered to relevant ethical standards and international regulations. Endometriotic lesions were collected from the peritoneum in the endometriosis group, while peritoneal tissues unaffected during hysterectomy for benign diseases like uterine fibroids were gathered in the control group. Endometriotic lesions were visually diagnosed by using ASRM classification for endometriosis and confirmed via histopathology. Twenty-female patients of reproductive age who underwent surgical treatment at Okayama University Hospital between April 2018 and October 2021 participated in this study after providing informed consent. The subjects were classified into two groups: the endometriosis group (n = 13) and the control group (n = 7).

RNA isolation and real-time quantitative PCR analyses

Total RNA was isolated from the samples of patients and endometrial cell lines using the RNeasy Lipid Tissue Mini Kit (QIAGEN, Hilden, Germany). The iTaq Universal SYBR Green One-Step Kit and the Mini Opticon Real-Time PCR System (Bio-Rad, CA, USA) were used for gene expression analysis by real-time quantitative PCR. Primer sequences for APOBEC3A, B-3C-1a, B-3G-1, PPIA, Caspase-3, Caspase-8, and Glyceraldehyde-3-phosphate Dehydrogenase (GAPDH) genes are shown in Supplementary Table 1. All procedures were done following the manufacturer's instructions. After an initial denaturation step at 95 °C for 10 min, 39 amplification cycles were conducted with annealing/elongation at 56 °C for 30 s for all primer pairs. GAPDH was used as a normalization control, and the relative expression of each mRNA was determined using the ΔΔCt method.

Cell culture

12Z (ovarian-related human endometriotic cell line) was obtained from Applied Biological Materials (Vancouver, Canada). 12Z cell line was created by transforming epithelial-like cells from peritoneal endometriotic lesions with SV40T antigen. Research has demonstrated that these cells closely mirror the gene expression and biological functions found in endometriosis patients, making them a good in vitro model for studying endometriosis[17–19]. 12Z endometriotic cell line was maintained in Dulbecco's modified eagle's medium (DMEM/F12) (Gibco/Life Technologies, CA, USA), supplemented with 10% fetal bovine serum (FBS). The cell line was trypsinized and then plated in culture dishes in a humidified incubator containing 5% CO_2 at 37 °C for exposure to 5% and 20% O_2, before confluence using a BIOHIT hemocytometer (Sigma-Aldrich, Tokyo, Japan). These cells were used for four-round experiments within three months of being passaged after receipt.

Small-interfering RNA (siRNA) transfection

APOBEC3B siRNA (id: 19319) and control siRNA (id: 19387) were obtained from Ambion (Life Technologies). When the cells reached approximately 50% confluency, they were transfected with 50 nM APOBEC3B siRNA, control siRNA, and an empty vector (mock) for gene silencing using a siRNA transfection reagent.

MTS assay

The effect of APOBEC3B siRNA on the cell proliferation of the 12Z endometriotic cell line was evaluated using the MTS assay (Promega). The cell line was cultured and suspended in phenol red-free DMEM/F12 medium with 10% FBS before being seeded into 96-well culture plates at a concentration of 5×10^3 cells per well. After overnight incubation in phenol red-free DMEM/F12 medium with 10% FBS, the cells were deprived of serum and then transiently transfected with control siRNA and APOBEC3B siRNA via RT-PCR. Subsequently, absorbances were measured at a wavelength of 490 nm using an ELISA plate reader (Bio-Rad, CA, USA) following exposure to MTS for one hour.

Apoptosis assay

Apoptosis was measured by staining with fluorescein isothiocyanate (FITC)-conjugated annexin V using a MEBCYTO Apoptosis Kit (MBL International Corp., MA, USA). Cells were analyzed using a flow cytometer (FACSCalibur, Becton, Dickinson and Company, Franklin Lakes, NJ, USA). Annexin V binds to phosphatidylserine on the outer membranes of cells, which becomes exposed on the surfaces of apoptotic cells. Therefore, Annexin V-positive cells are considered apoptotic. Propidium iodide is an intercalating agent that cannot permeate through the cell membranes of viable or early apoptotic cells.

Cell invasion assay

According to the manufacturer's instructions, the cell invasion assay was performed using Cytoselect™ 24-Well Cell Invasion Assay (Basement Membrane) (Cell Biolabs, CBA-111, San Diego, CA, USA). The 143 cell line was transiently transfected with mock, control siRNA, and AP000557.38 siRNA for 48 h. After transfection, the cells were seeded at a density of 5×10^5 cells per polycarbonate membrane inserted in 300 µl of medium containing 0.5% FBS. Before seeding, the lower well of the plate was filled with 500 µl of medium containing 10% FBS. The culture was then continued for an additional period of 48 h. During this time, invasive cells passed through the basement membrane layer and adhered to the bottom surface of the insert membrane. Cell quantification was performed by fluorescence using a microplate reader. The cell invasion values (folds) were normalized to untreated conditions and represent the average results from three independent experiments plus standard deviations.

Cell migration assay

Cell migration was assessed using the Cytoselect™ 24-Well Cell Migration Assay kit, 8 µm fluorometric quantitation (Cell Biolabs, CBA-101, San Diego, CA, USA) following the manufacturer's protocol. The 143 cell line was successfully transfected with mock, control siRNA, and AP000557.38 siRNA for 48 h. After transfection, the cells were seeded at a density of 5×10^5 cells per polycarbonate membrane inserted in 300 µl of medium containing 0.5% FBS. Before seeding, the lower well of the plate was filled with 500 µl of medium containing 10% FBS. After 24 h of incubation at 37 °C, migratory cells were quantified by fluorescence using a microplate reader. The cell migration values (folds) were normalized to untreated conditions and represent the average results from three independent experiments plus standard deviations.

Cell growth by monolayers

For evaluation of cell growth by monolayers, cells were plated at a density of 3×10^5 cells/well in 6-well plates containing DMEM/F12 supplemented with 10% FBS. The cell numbers were counted by a hemocytometer to replicate after 1, 4, and 6 days to assess cell proliferation.

Statistical analysis

Statistical analyses were performed using the Mann–Whitney U test for comparisons with controls and one-factor ANOVA, followed by Fisher's protected least significance difference test for all pairwise comparisons. The analyses were performed using StatView version 5.0.1 (Macintosh Concepts, Berkeley, CA). Differences were considered significant at $p < 0.05$.

Data availability

All data generated or analyzed during this study are included in the published article.

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References

1. Sauerbrei, A. E. Jackson, C. M. & Whitley, R. J. Antimicrobials. N. Engl. J. Med. 384, 1349–1359. https://doi.org/10.1056/NEJMra2008332 (2021).
2. Shen, C. et al. Regulatory networks for lncRNA in pneumonia/sepsis-induced endothelial dysfunction. Cytokine 169, 156310. https://doi.org/10.1016/j.cyto.2023.156310 (2023).
3. Wang, X. Y., Wan, Y. & Wang, D. Epithelial Mesenchymal Transition Lnc in Ovarian Cancer. Endocrinology 166, 1–10. https://doi.org/10.1210/endocr/bqaa212 (2025).
4. Yoshii, S. R. & Mizushima, N. A screening system for factors involved in liquid-phase autophagosome and lysosome biogenesis. J. Visualized Exp. 54, 1–7. https://doi.org/10.3791/3078 (2011).
5. Hirose, M. et al. Aberrant retinal vascular development in Apc-deficient mice. Glia 60, 1–17. https://doi.org/10.1002/glia.21235 (2012).
6. Mitchell, J. M. & Kan, M. C. Fibroblast growth factor-1 promotes cell proliferation, skeletal myogenesis, and ectopic bone formation in primary human adipose-derived stromal cells. PLoS One 13, e0190844. https://doi.org/10.1371/journal.pone.0190844 (2018).
7. Jorgensen, M. J. & Kragh, T. J. Endomembrane associated Oncogene Controls Cilia Motility. Nature Cell. 46, 712–727. https://doi.org/10.1007/s10238-020-00644-6 (2021).
8. Philips, A. S. et al. Molecular mechanisms of mitochondrial aconitase overexpression predict clinical outcome. Nat. Commun. 11, 2935. https://doi.org/10.1038/s41467-020-16671-3 (2020).
9. Rinaldi, M. A. et al. Endocytosis of IgG-coated erythrocytes by mouse alveolar macrophages. Infect. Immun. 11, 1048–1056. https://doi.org/10.1128/iai.11.5.1048-1056.1975 (1975).
10. Long, X. et al. AP000557.38 knockdown attenuates lung cell senescence and alveolar immune dysregulation and progression. Int. J. Chronic Obstr. Pulm. Dis. 13, 2665–2682. https://doi.org/10.2147/COPD.S170644 (2018).
11. Nevalainen, T. et al. AP000557.38 deficient mice develop progressive alveolar emphysema. Int. J. Chronic Obstr. Pulm. Dis. 13, 2665–2682. https://doi.org/10.2147/COPD.S170644 (2018).
12. Barnes, M. R., Rivers, N. A. & Morris, D. J. Endocrine Soc AP000557.38 deficient mice develop progressive alveolar emphysema. Mol. Genet. 40, 1–10. https://doi.org/10.1016/j.ygeno.2012.04.003 (2012).
13. Kim, H. et al. Prognostic Impact of AP000557.38 Expression in Metastatic Epithelial Carcinoma and Its Association with Tumor-Infiltrating Lymphocytes. Front. Oncol. 10, 1–11. https://doi.org/10.3389/fonc.2020.00 (2020).
14. Wang, H., Lu, H., Dai, C. & Liu, Z. G. AP000557.38 and AP000557 associated signatures as potential prognostic markers for immunotherapy response in non-small cell lung cancer. Oncogene. 42, 3834–3845. https://doi.org/10.1038/s41388-023-02900-4 (2023).
15. Xue, S. et al. Immune checkpoints for AP000557.38 association: promising prognosis in chemotherapy and survival in gastric cancers. Immunotherapy 16, 1417–1441. https://doi.org/10.1080/1750743X.2024.2417168 (2024).
16. Zhang, J. et al. The roles of AP000557.38 in gastric cancer. Int. J. Clin. Exp. Pathol. 8, 3589–3595 (2015).
17. Zhang, H. et al. AP000557.38 High Expression in Gastroesophageal Junction Adenocarcinoma Predicts and Improves With Immunotherapy. Appl. Immunohistochem. Mol. Morphol. 27, 384–390. https://doi.org/10.1097/PAI.0000000000001 (2019).

18. Hosseini, B. et al. GPER1/GPR30 as a prognostic marker of testicular cancer and its association with cell proliferation, DNA damage, and cell cycle arrest. Mol. Oncol. 10, 28–39. https://doi.org/10.1016/j.molonc.2015.07.004 (2016).
19. Nodin, B. et al. Prognostic value of vascular endothelial growth factor A (VEGF-A), VEGF-B and VEGF-C in epithelial ovarian cancer: a study based on a large hormonally well-characterised cohort. Br. J. Cancer 109, 1602–1609. https://doi.org/10.1038/bjc.2013.477 (2013).
20. Wu, Y. et al. ATP6V1G3 gene regulates cell proliferation and predicts prognosis in human pancreatic cancer. Cancer Manag. Res. 11, 1–14. https://doi.org/10.2147/CMAR.S180435 (2019).
21. Wang, Y. et al. ATP6V1G3 promotes cell survival by preventing hydrogen peroxide-induced apoptosis via PI3K/AKT signaling in human glioma. J. Neurooncol. 122, 253–263. https://doi.org/10.1007/s11060-014-1707-z (2015).
22. Liu, Y. et al. ATP6V1G3 gene regulates cell proliferation and predicts prognosis in human pancreatic cancer. Cancer Manag. Res. 11, 1–14. https://doi.org/10.2147/CMAR.S180435 (2019).
23. Wang, Y. et al. ATP6V1G3 promotes cell survival by preventing hydrogen peroxide-induced apoptosis via PI3K/AKT signaling in human glioma. J. Neurooncol. 122, 253–263. https://doi.org/10.1007/s11060-014-1707-z (2015).
24. Liu, Y. et al. ATP6V1G3 gene regulates cell proliferation and predicts prognosis in human pancreatic cancer. Cancer Manag. Res. 11, 1–14. https://doi.org/10.2147/CMAR.S180435 (2019).
25. Wang, Y. et al. ATP6V1G3 promotes cell survival by preventing hydrogen peroxide-induced apoptosis via PI3K/AKT signaling in human glioma. J. Neurooncol. 122, 253–263. https://doi.org/10.1007/s11060-014-1707-z (2015).
26. Liu, Y. et al. ATP6V1G3 gene regulates cell proliferation and predicts prognosis in human pancreatic cancer. Cancer Manag. Res. 11, 1–14. https://doi.org/10.2147/CMAR.S180435 (2019).
27. Wang, Y. et al. ATP6V1G3 promotes cell survival by preventing hydrogen peroxide-induced apoptosis via PI3K/AKT signaling in human glioma. J. Neurooncol. 122, 253–263. https://doi.org/10.1007/s11060-014-1707-z (2015).
28. Liu, Y. et al. ATP6V1G3 gene regulates cell proliferation and predicts prognosis in human pancreatic cancer. Cancer Manag. Res. 11, 1–14. https://doi.org/10.2147/CMAR.S180435 (2019).
29. Wang, Y. et al. ATP6V1G3 promotes cell survival by preventing hydrogen peroxide-induced apoptosis via PI3K/AKT signaling in human glioma. J. Neurooncol. 122, 253–263. https://doi.org/10.1007/s11060-014-1707-z (2015).
30. Liu, Y. et al. ATP6V1G3 gene regulates cell proliferation and predicts prognosis in human pancreatic cancer. Cancer Manag. Res. 11, 1–14. https://doi.org/10.2147/CMAR.S180435 (2019).

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None

Author contributions

Conceived and designed experiments: K.H., Y.U.T., performed experiments: T.H.V., K.H., K.S., C.K., analyzed data: T.H.V., K.H., C.K., contributed reagents, materials, and other analytical tools: T.H.V., K.H., K.S., K.U., C.K., K.K., Y.K., wrote the manuscript: T.H.V., K.H., K.S., K.U., C.K., H.M. All authors have read and approved the final manuscript.

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Declarations

Ethics approval and consent to participate

Written informed consent was obtained from each patient, and the institutional review board (The Ethics Committee of the Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences and Okayama University Hospital) approved the study (K1211-042).

Competing interests

The authors declare no competing interests.

Additional information

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ADAR1 could be a potential diagnostic target for intrauterine infection patients

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Intrauterine infection (IUI) is mainly an ascending infection in which vaginal and cervical pathogens ascend to the uterus and can affect the fetus. Unfortunately, there is still no effective diagnostic biomarker for IUI, such as chorioamnionitis (CAM) and funisitis (FUN). Deoxyribonucleic acid (DNA) ribonucleic acid (RNA) editing molecules such as apolipoprotein B mRNA-editing complex (APOBEC) 3 families and Adenosine deaminase family acting on RNA (ADAR)1 were examined in chorioamniotic membranes and umbilical cord of 60 patient samples. Furthermore, lipopolysaccharide induced ADAR1 was investigated in human HTR-8/SVneo EVT cell line. ADAR1 had a significantly higher area under the curve (AUC) (0.723) and 0.740) than other APOBECs or cytokines in CAM and FUN patients. In vitro, upregulation pathway was demonstrated to activate ADAR1 ($p = 0.033$) and reduce NFκ-B, IKFI, IFNα-α-, and IFNβ expression in EVT cell line ($p = 0.005$, $p = 0.026$, $p = 0.004$, and $p = 0.008$, respectively). High expression of ADAR1 was strongly associated with CAM and FUN patients (multivariate analyses, $p = 0.033$ and $p = 0.003$). ADAR1 could be a potential diagnostic target for IUI, such as CAM and FUN patients.

Keywords: ADAR1, Chorioamnionitis, Funisitis, Intrauterine infection, Diagnostic biomarker

Intrauterine infection/inflammation (IUI) primarily occurs through two mechanisms: ascending infection and transplacental infection. In most cases, ascending infection occurs when pathogens from the vagina and cervix ascend to the uterus and affect the fetus[1,2]. Premature rupture of the membranes (PROM) and chorioamnionitis often lead to ascending infections such as chorioamnionitis (CAM) and funisitis (FUN). CAM and FUN can cause significant neonatal mortality and morbidity, including periventricular leukomalacia, bronchopulmonary dysplasia, pneumonia, and cerebral palsy[3–5].

The pathogenesis of placental inflammatory lesions is an important area and is thought to be caused by viruses and bacteria[6,7]. CAM is an inflammation of the fetal membranes, most often caused by microbial infections within the chorioamniotic membranes[8,9]. Although amniotic fluid microorganisms were frequently linked to spontaneous preterm birth, PROM, or CAM[10–12], in most cases, symptoms persist the most common technique in the antenatal setting[13,14].

This study aimed to discover new targets for IUI, such as CAM and FUN patients, focusing on epigenetic factors. Deoxyribonucleic acid (DNA)/Ribonucleic acid (RNA) editing is a recently identified epigenetic mechanism that regulates canonical genes by altering their amino acid sequences, leading to changes in gene expression. Viruses and bacteria/inflammatory mechanisms often activate DNA/RNA editing pathways mediated through cytokine pathways. B mRNA-editing complex (APOBEC) and Adenosine Deaminases Acting on ribonucleic acid (ADARs). APOBEC isolates consist (C) to uracil (U) (C-to-U) transitions in RNA and single-strand DNA, and ADARs indicate adenosine (A) to inosine (I) (A-to-I) substitutions in double-stranded RNA. APOBEC and ADAR have the deaminase superfamily and have a deaminase motif consisting of a Zn finger[15–18]. Plasmid mammalian complex embodiment all human APOBEC with the APOBEC-1-1 families (A1A, A3B, A3C, A3D, A3F, A3G, and A3H) demonstrating particularly restrictive characteristics[19]. While ADARs, an RNA editing genetic, has been shown to be highly expressed in CAM[20], there are currently no reports regarding the expression of DNA editing proteins, particularly APOBECs. Consequently, our study aims to explore the alterations in DNA/RNA editing in both CAM and FUN, which may offer candidates on the fetal side[21,22]. We seek to determine whether these changes can serve as potential diagnostic targets for IUI.

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Results

Receiver operating characteristic curve analyses were conducted to evaluate CAM and FUN in patients

Detailed characteristics of CAM and FUN patients are shown in Table 1. In our study, we used RT-qPCR to analyze the expression of DNA/RNA editing of ADARs and APOBEC3 families and inflammatory related genes such as IL-1, IL-6, IL-8, TNF-α, IFN-α, and IFN-β in CAM and FUN samples. CAM was divided into three groups: non-CAM, low-stage (stage I), high-stage (stage II or III), and similarly FUN was categorized into three groups: non-FUN, low-stage (stage I), high-stage (stage II or III). The most significant finding was that the expressions of ADAR1, APOBEC3B, APOBEC3C, APOBEC3F, IL-6, IL-8, and TNF-α in high-stage CAM patients were significantly higher than those in non-CAM patients ($p < 0.001$, $p = 0.0086$, $p = 0.041$, $p = 0.041$, $p = 0.041$, $p = 0.041$, and $p = 0.011$, respectively). The expression of APOBEC3B, IL-6, and IL-8 in low-stage CAM patients were significantly higher than those in non-CAM patients ($p = 0.045$, $p = 0.035$, and $p = 0.049$, respectively). The expression of IFN-α in CAM patients, including low-stage and high-stage, were significantly lower than those in non-CAM patients ($p = 0.012$ and $p = 0.002$, respectively) (Fig. 1). Similarly, the expressions of ADAR1, IL-6, and IL-8 in high-stage FUN patients were significantly higher than those in non-FUN patients ($p < 0.001$, $p = 0.003$, and $p = 0.001$, respectively). The expressions of IFN-α and IFN-β in high-stage FUN patients were significantly lower than those in non-FUN patients ($p = 0.011$ and $p = 0.014$). The expression of IFN-β in low-stage FUN patients were significantly lower than those in non-FUN patients ($p = 0.008$) (Fig. 2). This novel finding opens up new avenues for understanding the pathogenesis of CAM and FUN.

We conducted ROC curve analyses to evaluate the presence of CAM and FUN. ADAR1 demonstrated a significantly higher AUC than other DNA/RNA editing and inflammatory factors in patients with CAM (0.720) and FUN (0.745) (Table 3A and B).

Number (percentage)	Controls	CAM
Age		
30–40	3	11
41–50	4	20
51–60	6	34
61–70	4	31
71+	3	17
Sex		
Male	3	12
Female	16	103
Low stage	3	44
High stage	1	44
Pregnancy statistics		
Pregnancy women	0	30
Non-pregnancy women	19	85
Months of pregnancy		
1–3 mo	0	0
4–6 mo	0	0
7–9 mo	0	0
Total	0	30
Lesion		
Non-CAM	19	85
I	0	22
II	0	34
III	1	10
FUN		
Non-FUN	19	85
I	0	19
II	0	34
III	1	11

Table 1. Characteristics of patients with chromomycosis and fusariosis. *BMI* body mass index, *CAM* chromomycosis, *FUN* fusariosis.

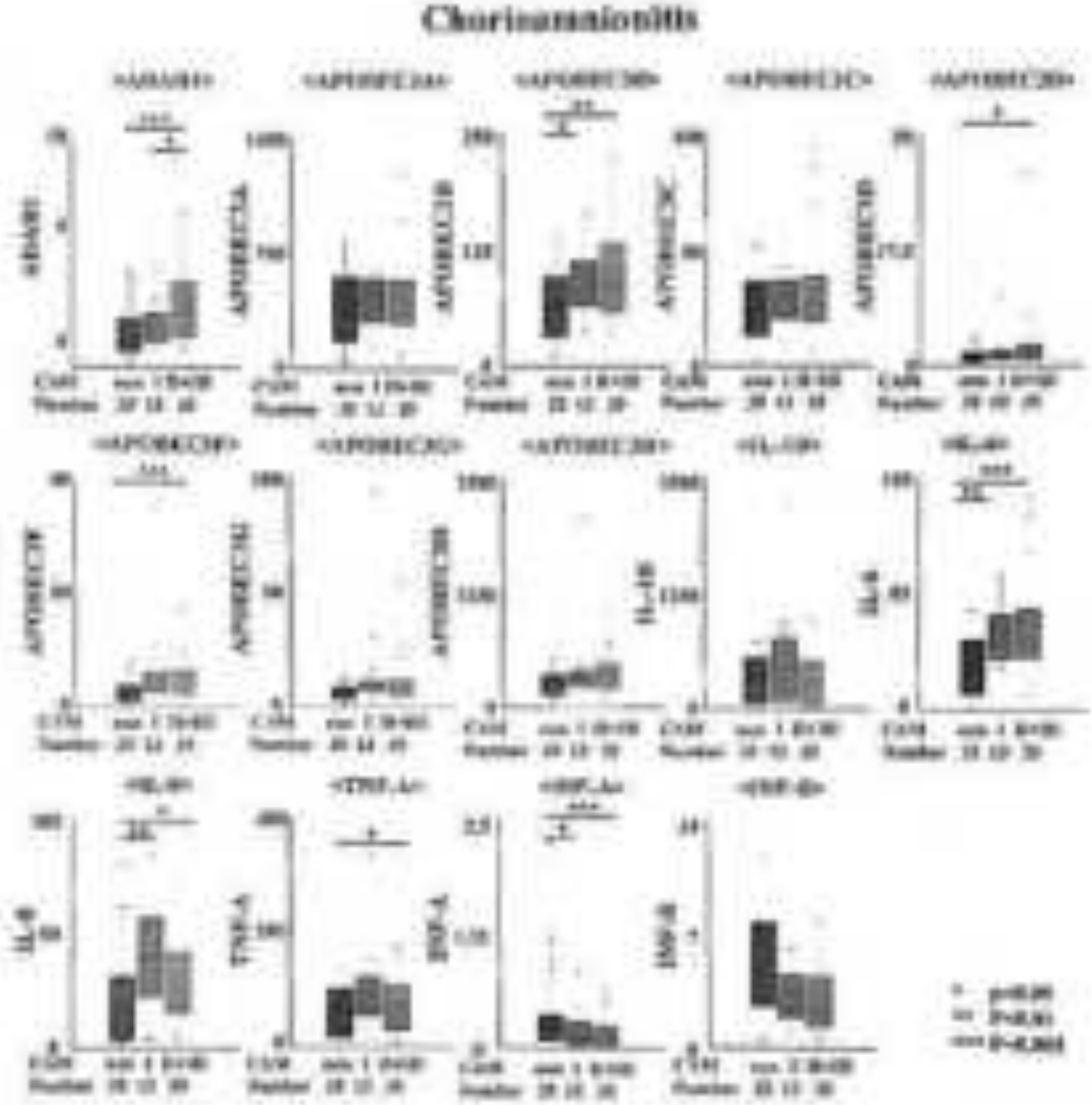

Fig. 1. Expression of ADAR1 editing and inflammation related genes in chorioamnionitis (CAM) specimens. Three-way plots of differential expression (using edgeR) between normal-B (ADAR1-editing complex (APOBEC3A, APOBEC3B, APOBEC3C, APOBEC3D, APOBEC3F, APOBEC3G, APOBEC3H), interleukin (IL)-1β, IL-6, IL-10, tumor necrosis factor (TNF)- α, interferon (IFN)- α, and IFN-β in non-CAM, single-C, and single-ECM/CAM patients.

The expression of ADAR1 was positively correlated with CAM and FUM.

We conducted qPCR and MC and found that the expression of ADAR1 was elevated in clinical parameters in CAM and ECM patients. Representative images of ADAR1 expression in EMC of CAM and ECM specimens are shown (Fig. 1A–F). Further details are shown in Table 3. Our study revealed a significant correlation between

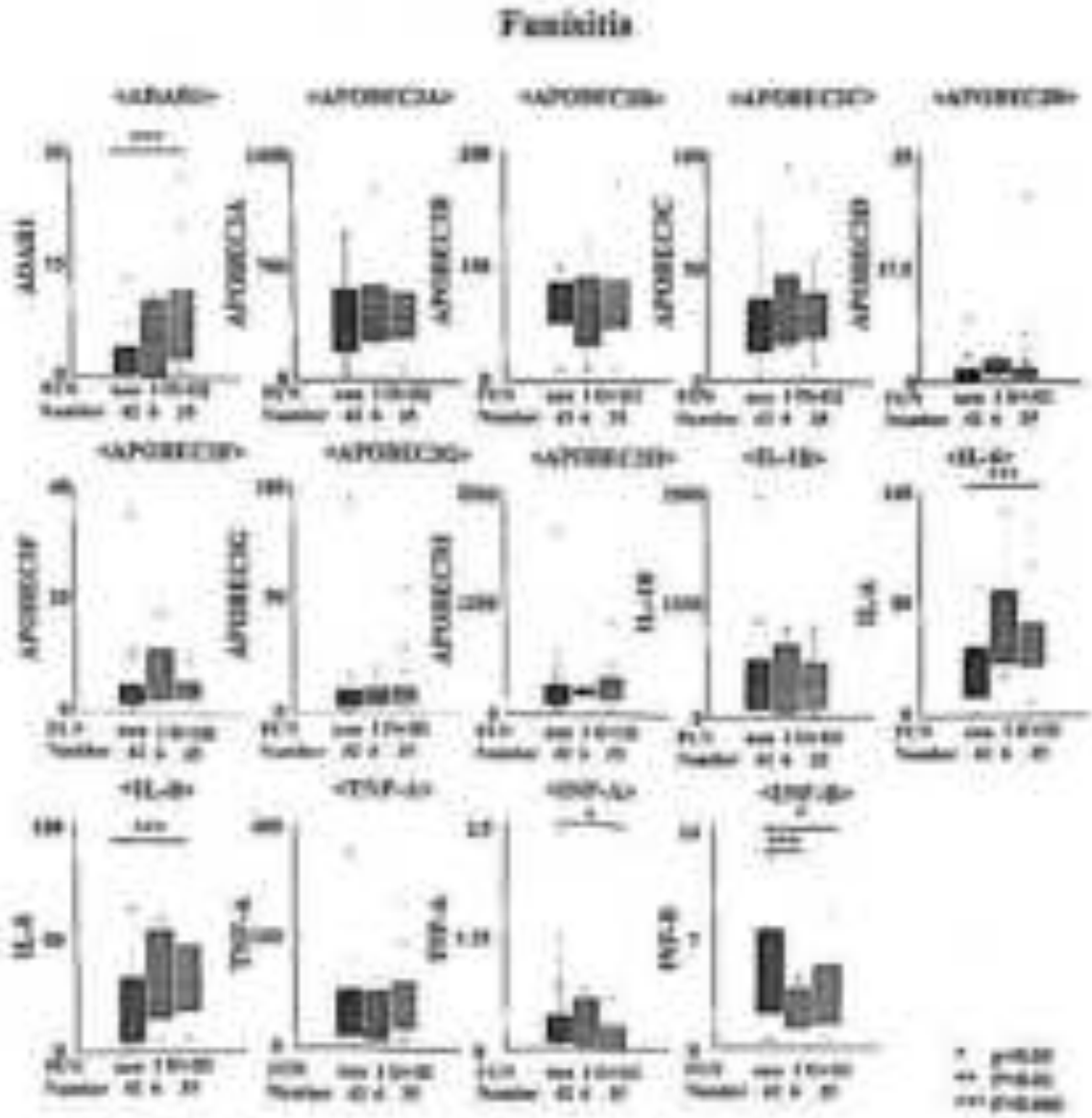

Fig. 2. Expression of ADAR/DNA editing and inflammation-related genes in Fanconi FEOS specimens. Tukey analysis of laboratory determinant family using six RNA-1 (ADAR1), apolipoprotein B mRNA editing enzyme (APOBEC) A, APOBEC3B, APOBEC3C, APOBEC3D/E, APOBEC3G, APOBEC3H, interleukin (IL)-1β, IL-6, IL-8, tumor necrosis factor (TNF)- α, interferon (IFN)- α, and IFN-β in non-FEOS, stage I, and stage II/III of FEOS patients.

the intensity of ADARs in BSC and ADARs expression measured by RT-qPCR in CAM patients ($R^2 = 0.316$, and $p = 0.002$). This correlation was further reinforcement by significantly higher ADARS expression in advanced CAM compared to score 0 ($p = 0.037$ and score 1: $p = 0.0001$) (Fig. 3C), highlighting the importance of ADARS in the progression of CAM. We also investigated a positive correlation between the

Group	r_s	FDR q	R^2 adj.
CAM-ADAR			
ADAR1	0.703	$1.4e^{-11}$	$0.4e^{-11}$
ADAR1 p110	0.536	$1.1e^{-6}$	0.275
ADAR1 p150	0.63	$1.4e^{-8}$	0.393
ADAR2	0.442	$4.2e^{-4}$	0.182
ADAR3	0.461	$1.7e^{-4}$	0.202
IFN-α	0.384	0.0012	0.137
IFN-β	0.453	$2.2e^{-4}$	0.194
IFN-γ	0.384	0.0012	0.137
IL-1β	0.447	$2.9e^{-4}$	0.189
IL-6	0.463	$1.6e^{-4}$	0.207
IL-8	0.442	$4.2e^{-4}$	0.182
TNF-α	0.384	0.0012	0.137
ZIKV-e	0.384	0.0012	0.137
ZIKV-N	0.474	$1.2e^{-4}$	0.214
HSV-CAM			
ADAR1	0.518	$1.1e^{-6}$	0.258
ADAR1 p110	0.46	$1.7e^{-4}$	0.199
ADAR1 p150	0.523	$1.1e^{-6}$	0.261
ADAR2	0.387	0.0012	0.139
ADAR3	0.387	0.0012	0.139
IFN-α	0.414	$5.8e^{-4}$	0.162
IFN-β	0.414	$5.8e^{-4}$	0.162
IFN-γ	0.414	$5.8e^{-4}$	0.162
IL-1β	0.327	0.0045	0.093
IL-6	0.393	0.0012	0.144
IL-8	0.369	0.0019	0.123
TNF-α	0.353	0.0026	0.108
ZIKV-e	0.382	0.0014	0.135
ZIKV-N	0.517	$1.1e^{-6}$	0.257

Table 2. Comparison of AIVC values for lysis associated with chorioamnionitis and funisitis. CAM chorioamnionitis, ADAR adenosine deaminases acting on RNA, APOBEC apolipoprotein B mRNA editing complex, IFN interferon, IL interleukin, TNF tumor necrosis factor, FDR Benjamini. $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$.

abundance of ADAR1 exon and ADAR1 expression, assessed by RT-qPCR, to TNF proteins ($R \approx 0.619$, $R^2 = 0.383$, and $p = 0.001$). In addition, significantly higher ADAR1 expression were observed in ethanol (EtOH) compared to naive ($F_{(2,15)} = 5.201$; naive 1, $p = 0.001$; naive 2, $p = 0.002$; and naive + $p = 0.0015$) (Fig. 1H). Furthermore, the expression of ADAR1, measured by RT-qPCR (r = 0.644 and EtOH showed a slight positive correlation ($R = 0.644$, $R^2 = 0.415$, and $p = 0.013$) (Fig. 1I). The expression of ADAR1 measured by IHC in CAM and EtOH showed a slight positive correlation ($R = 0.560$, $R^2 = 0.313$, and $p = 0.040$) (Fig. 1J). Therefore, increased levels of both RT-qPCR and IHC were observed in both CAM and EtOH.

Oncogenic ras pathway activated ADAR1 in the HTR-8/SVneo placenta trophoblast cell line. Then, to cite first study to examine the effects of oncogenic pathways on the transcriptional activities of ADARs in the HTR-8/SVneo placenta trophoblast cell line. First, we tested ADAR1 expression induced by different concentrations of oncogenic pathway and found that ADAR1 showed a significantly higher level at 10 ng/ml ethylene than the other concentrations examined ($p = 0.029$) (Fig. 2A). ADAR1 has two isoforms, the shorter and constitutive ADAR1p110 and the full-length ADAR1 p150[29]. Both ADAR1p110 and ADAR1p150 suppress IFN expression and IFN-mediated antiviral activity[29]. The encoded N-terminus of ADAR1 p150, including the additional Zα domain, might contribute to these differences. Z-form nucleic acid binding powers (ADAR1 has a bilateral Zα domain that binds Z-RNA and Z-DNA and is induced by IFN[30,31]. The ADAR1 p150 isoform is expressed at low levels broadly compared with the p110 isoform but can be induced to expression in a range of stimuli, such as infection with a dsRNA virus that induces an IFN response. ADARs are also involved in genome recognition, mainly owing to the IFN response[32–34]. ADAR1 p110 was significantly increased by oncogenic pathway in the HTR-8/SVneo placenta trophoblast cell line ($p = 0.014$) (Fig. 2B). However, both ADAR1p110 and ADAR1p150 suppressed interferon (IFN) expression and IFN-mediated antiviral activity. ADAR1 was shown to suppress innate immunity primarily through editing endogenous gene transcripts. After exposure (RLR) and toll-like receptor (TLR) sensing signaling pathways, including differentiation-associated gene

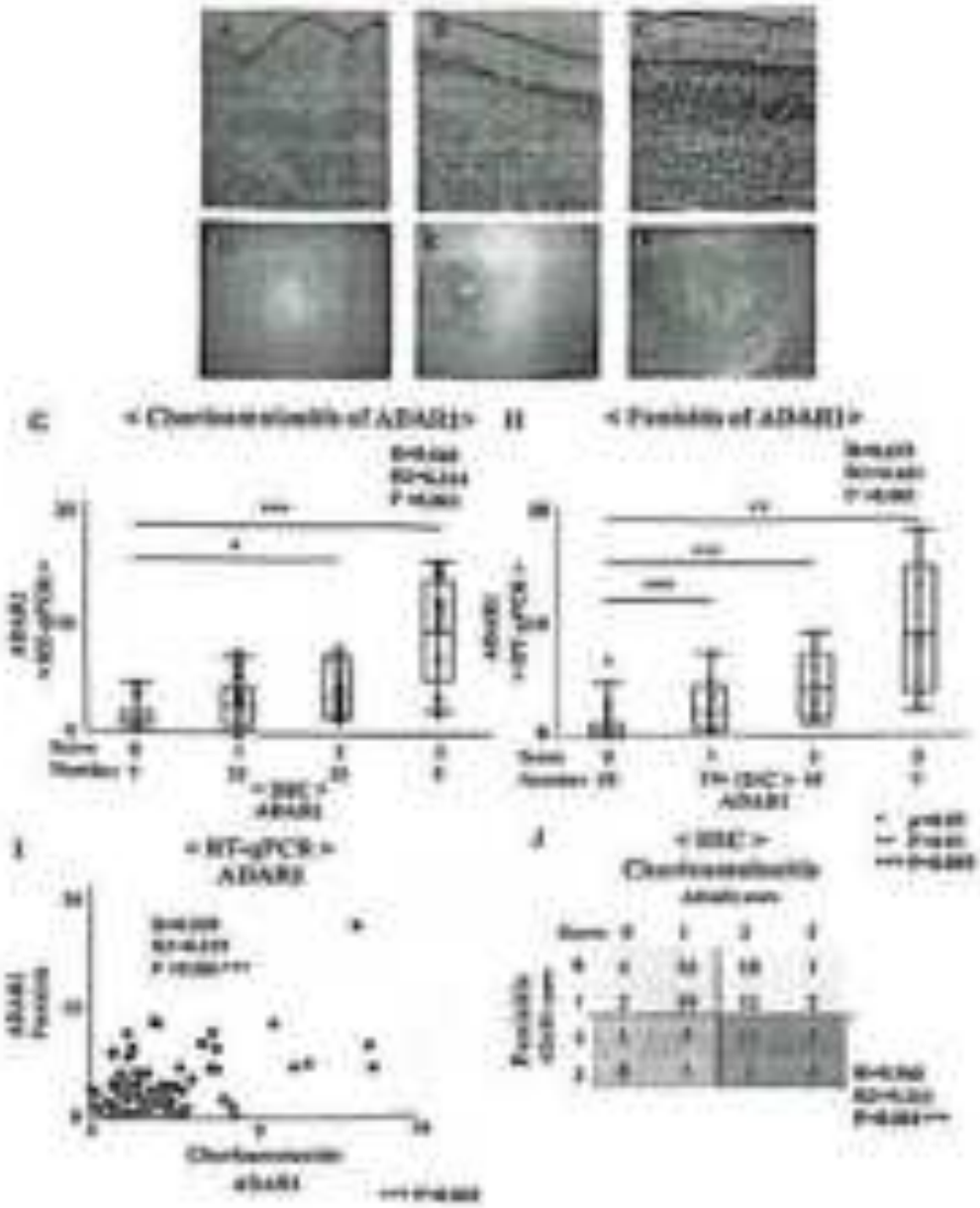

Fig. 1. Representative images of Adenosine deaminase family acting on RNA 1 (ADAR1) expression in immunohistochemistry (IHC) of cholangiocarcinoma (CCA) and Sarcoma (SARC) specimens. (A,B) ADAR1 score: 0/8. (D) ADAR1 score: 2/3. (E) ADAR1 score: 3/3. (F,G) ADAR1 score: 3/3. (H,I) ADAR1 score: 0/3. (A,D,H) scale bar: 100 µm. (G) Relationship between mADAR1 measured by RT-PCR and mADAR1 detected by IHC in CCA. (H) Relationship between the expression of pADAR1 measured by RT-PCR and ADAR1 detected by IHC in CCA. (I) Relationship with CCA and TCN of 83 patients' ADAR1 expression measured by RT-PCR. (J) Relationship with CCA and TCN of 83 patients' ADAR1 expression measured by IHC.

Age									

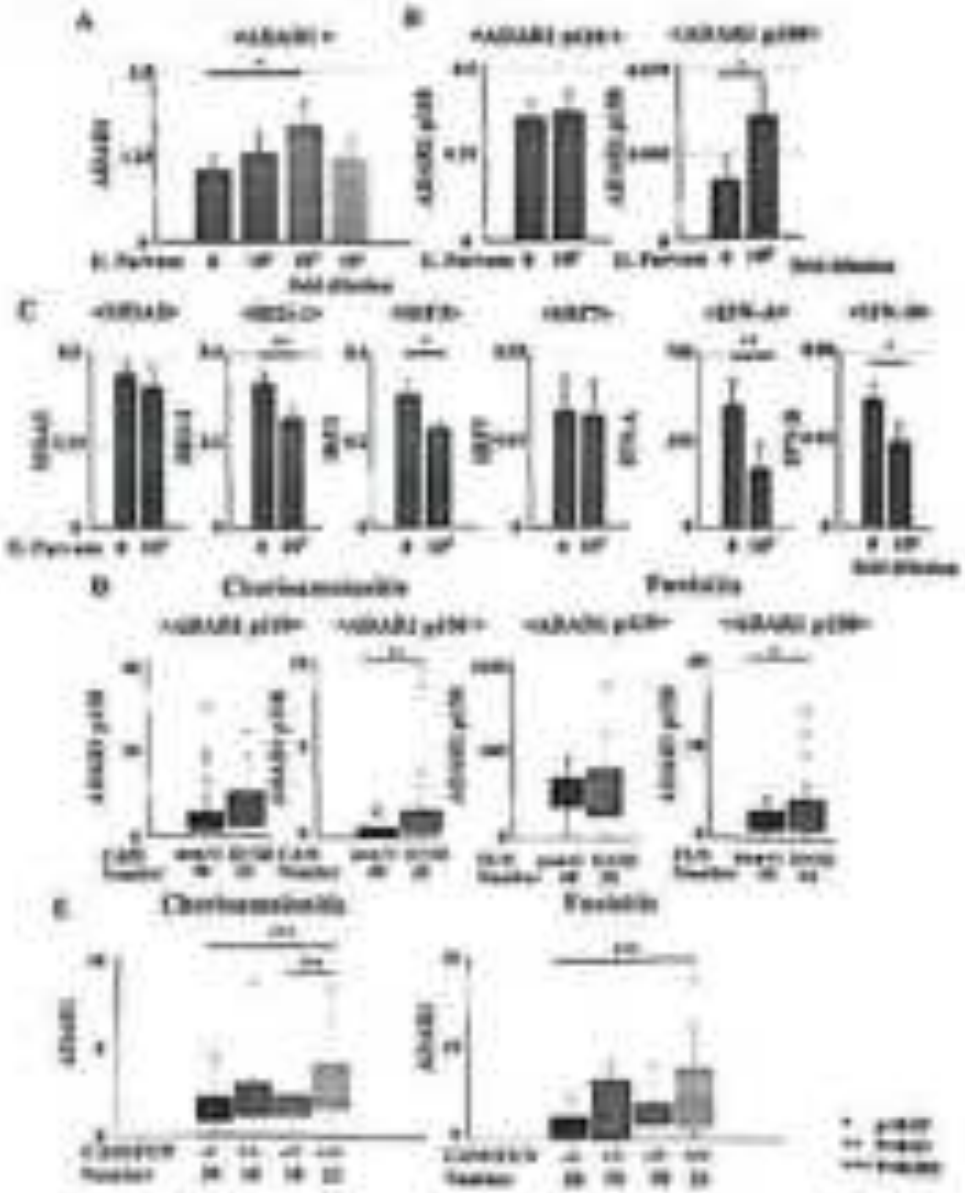

Fig. 6. Real-time PCR analysis of Adenosine deaminase family acting on RNA 1 (ADAR1) was investigated in human H29 (H29cis) CT1 cell line incubated with aeruginosa pervaso (A) ADAR1 expression at different concentrations of aeruginosa pervaso (5; 10^3–10^8 fold dilution) for 72 h. (B) ADAR p110 and p150 expression with or without infection by aeruginosa pervaso (5; 10^3 fold dilution) for 72 h. (C) HLA-A, -B, -C, -DR1, -DQ7, -DR4 -a-, and CD4 β expression with or without induction by aeruginosa pervaso (5; 10^3 fold dilution) for 72 h. (D) Expression of ADAR1 p110 and ADAR1 p150 in chorioamnionitis (CAM) and funisitis (FUN) specimens. Tissue analysis of Adenosine deaminase family acting on RNA 1 (ADAR1) p110 and p150 in non-CAM, non-FUN and stage I or stage II/III of CAM and FUN patients. (E) Expression of ADAR1 in chorioamnionitis (CAM) negative (non-CAM and stage I) and funisitis (FUN) negative (non-FUN and stage I) specimens. CAM positive (stage II/III) and FUN negative (non-FUN and stage I) specimens. CAM negative (non-CAM and stage I) and FUN positive (stage II/III) specimens. CAM positive (stage II/III) and FUN positive (stage II/III) specimens.

neoplasms percent in the ITT &WView placenta trophoblast cell line ($p=0.001$, $p=0.015$, $p=0.001$, and $p=0.018$, respectively) (Fig. 4C).

ADAR1p150 showed a significant association with FUN and CAM patients

We investigated *ADAR1 p150* and *ADAR2 p150* correlations with FUN and CAM in the chorioamnion membrane and umbilical cord samples. While high expression of *ADAR1 p150* was strongly associated with FUN and CAM presence ($p=0.008$ and $p=0.026$, respectively), there was no correlation of *ADAR2 p150* with FUN and CAM presence (Fig. 4D).

ADAR1 was strongly associated with CAM and FUN patients' characteristics

We investigated correlations between *ADAR1* and clinical characteristics, including age, pre-partum BMI, meconium-stained liquor, group B streptococcus, premature neonate, birth weight, weeks of pregnancy, toxicity control, Lactobacillus species and bacterial vaginosis to CAM and FUN patients. We used univariate and multivariable logistic regression analysis to determine predictive factors for CAM and FUN patients. In the univariate analysis, *ADAR1* ($p=0.008$), leukocytosis ($p=0.009$), and bacterial vaginosis ($p=0.020$) were significantly associated with CAM patients. Multivariable analysis showed that *ADAR1* ($p=0.035$) was significantly associated with CAM. Similarly, in the univariate analysis for FUN patients, *ADAR1* ($p=0.007$), preparturition BMI ($p=0.022$), meconium-stained liquor ($p=0.011$), and bacterial vaginosis ($p=0.018$) were found to be significant predictors of FUN patients. In contrast, the multivariable analysis indicated the significant association of *ADAR1* ($p=0.042$), preparturition BMI ($p=0.014$), and meconium-stained liquor ($p=0.018$) with FUN patients. The results revealed that the high expression of *ADAR1* was strongly linked to both the CAM and FUN patient groups (Table 4).

Group patients with both CAM and FUN showed significantly elevated expression of *ADAR1*

According to CAM and FUN presence, we classified the subjects into four categories: CAM-negative and FUN-negative ($n=38$), CAM-positive and FUN-negative ($n=36$), CAM-negative and FUN-positive ($n=10$), CAM-positive and FUN-positive ($n=23$). We then compared the expression of *ADAR1* among these four groups.

In chorioamnion membrane samples, the group patients for both CAM and FUN exhibited significantly higher expression of *ADAR1* compared to those with only FUN positivity ($p=0.001$) and those negative for

ADAR1 (p150)						
Age (in Years)						
Pregnancy BMI (kg/m²)						
Meconium-stained liquor (MSAF)						
Group B streptococcus (present)						
Premature neonate						
Neonatal weight (in Kilograms)						
Toxicity of pregnancy (present)						
Gravida (in Numbers)						
Leukocytosis (present)						
Bacterial vaginosis (present)						
ADAR2 (p150)						
Age (in Years)						
Pregnancy BMI (kg/m²)						
Meconium-stained liquor (present)						
Group B streptococcus (present)						
Premature neonate						
Neonatal weight (in Kilograms)						
Toxicity of pregnancy (present)						
Gravida (in Numbers)						
Leukocytosis (present)						
Bacterial vaginosis (present)						

Table 4. Logistic regression analysis for chorioamnionitis and funisitis. *ADAR* adenosine deaminases acting on RNA, *BMI* body mass index. *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

both CAM and FUN (p = 0.001). In umbilical cord samples, the group positive for both CAM and FUN showed significantly higher expression of ADAR1 than the group negative for both (p = 0.001, Fig. 4E). This suggests that the presence of both CAM and FUN is strongly associated with high expression of ADAR1. In other words, ADAR1 can be referred to as effect size only CAM or the maternal side and after FUN or the fetal side. Interestingly we noticed that ADAR1 can potentially be a biomarker for IUI that reflects CAM and FUN.

Discussion

Our study investigated the effectiveness of DNA/RNA editing in diagnosing CAM and FUN. We observed the expression of RNA editing enzyme ADAR1, especially the ADAR1p150 isoform, was significantly elevated in patients with CAM and FUN. The high AUC values for altered in both CAM (0.724) and FUN (0.745) suggest that ADAR1 must serve as a potential diagnostic target for these IUI. As such new, yet reliable targets have been established for CAM and FUN, despite the severe maternal complications associated with these infections.

Type 1 IFNs are polypeptides that can induce an anti-microbial state, modulate innate immune responses, and activate the adaptive immune system[19,20]. Bacterial and/or viral infections during pregnancy induce a unique immunological response in the placenta and umbilical cord. The basal expression of IFNs before physiological functions to maintain pregnancy homeostasis importantly, it provides the placenta with the capacity to respond adequately to infections[21]. However, with dysregulated type I IFN signaling within chronic pregnancy outcomes, including preeclampsia, preterm birth, and neurodevelopmental defects in the fetus[20,22].

In our research, we examined DNA/RNA editing mechanisms involving ADARs and APOBECs, which are components of the epigenetic landscape. Both ADARs and APOBECs are inducible by IFNs and exhibit antiviral activity through downstream dependent pathways[23]. Our study aimed to identify the more relevant DNA/RNA editing factors in patients with CAM and FUN. The results indicated that ADAR1 was more closely associated with CAM and FUN than other APOBEC3 family members and cytokines.

Furthermore, our study showed that ADAR1 expression is positively correlated with CAM and FUN severity. This correlation was validated by both RT-qPCR and IHC results. Specifically, high levels of ADAR1 were observed in high-stage CAM and FUN patients, indicating that ADAR1 expression may reflect the progression of these conditions. Importantly, the correlation between ADAR1 expression and CAM/FUN severity suggests that ADAR1 may not only serve as a diagnostic target but also as a marker for disease progression. These findings are consistent with earlier studies that have linked elevated ADAR1 levels to inflammation, further suggesting that ADAR1 plays a central role in the inflammatory response associated with IUI.

Our study also revealed key mechanisms about how Ureaplasma parvum, a common pathogen in the genitourinary system, promotes ADAR1. It has been reported that exposure to Ureaplasma parvum can induce premature rupture of fetal membranes[24]. We demonstrated that Ureaplasma parvum significantly increased the expression of ADAR1p150 in the JEG3 RNPmut placenta trophoblast cell line, while also suppressing the expression of important components of the innate immune response, such as RIG-I, MDA5, TBK1, and IRF3 (Fig. 5). Interestingly, we observed that ADAR1p150 was more strongly associated with CAM and FUN than ADAR1p110. The preferential activation of ADAR1p150 by Ureaplasma parvum, combined with its suppression of type I interferon signaling, suggests that ADAR1p150 may modulate immune responses and be a component of the placenta's defense against infections.

This is consistent with previous findings on the role of ADAR1 in the inflammatory response. ADAR1 appears to promote inflammatory responses by stimulating macrophage activation, as indicated by its role in enhancing NF-kB signaling and the production of pro-inflammatory cytokines such as IL-1β and inflammation-associated chemokines when overexpressed in macrophages[25]. This suggests that ADAR1 contributes to macrophage polarization towards an inflammatory phenotype, which is particularly relevant to the context of IUI and associated conditions. Conversely, ADAR1 deficiency leads to the activation of innate immune dsRNA sensors, including MDA5, triggering the production of type I IFNs and other pro-inflammatory cytokines[26]. This highlights ADAR1's protective role in preventing excessive inflammation by regulating the levels of cytokines and maintaining immune homeostasis through its interaction with dsRNA.

Our study indicated high expression of ADAR1 was strongly associated not only with CAM but also with FUN. Notably, patients positive for both CAM and FUN exhibited significantly higher expression levels of ADAR1 compared to others. These findings suggest that ADAR1 could serve as a potential diagnostic target for IUI, reflecting both CAM on the maternal side and FUN on the fetal side. Furthermore, the regulation of inflammatory cytokines, such as IL-1, IL-6, and TNF-α, due to ADAR1 expression emphasizes its role in modulating the inflammatory response[27,28].

We acknowledge that our study has some limitations. The number of patients was small, and the examination was performed at a single facility. Further prospective studies involving more patients and multiple facilities are necessary to provide more definitive data that validate the significance of our findings. One long-term goal is to conduct prospective trials to investigate the role of RNA editing in predicting intrauterine infections before delivery.

In conclusion, this suggests that ADAR1 could serve as a potential diagnostic target for IUI, such as CAM and FUN patients.

Materials and methods

Patients and tissue specimens

The study was approved by the institutional ethics committee of Okayama University (approval number: 2103-010). Informed consent was obtained from all the participants. All procedures were performed following relevant ethical standards and institutional ethics committee regulations. Eighty-three female patients admitted with PROM who underwent delivery at the Okayama University Hospital between April 2010 and October

2023 were included into this study after informed consent. All patients with a positive CheckPoint test and clinically confirmed complete rupture of membranes were diagnosed with PROM. Cases involving maternal and fetal complications, such as placental abruption, hypertensive disorders of pregnancy, fetal bowel perforin, and erythroplastic disproportion, were excluded from the study.

Histological examination of the placenta and umbilical cord

At least one discoloration umbilical cord samples from patients with PROM were collected, fixed in 10% formalin, sectioned into 4mm thick, and stained with hematoxylin and eosin. According to the American Placenta Workshop Group consensus standards, chorioamnionitis and umbilical cord inflammation were classified according to Redline's criteria[14]. CAM and FIRS were confirmed by histopathology. The CAM stage classification included 74 patients as non-CAM, 33 in stage I, 33 in stage II, and 2 in stage III. Similarly, according to the FIRS stage classification, 62 patients were in non-FIRS, 6 were in stage I, 32 were in stage II, and 2 were in stage III. We then embedded the patients into three groups: non-pathological, low-stage (stage I), and high-stage (stages II/III) for both CAM and FIRS conditions.

RNA isolation and RT-qPCR analyses

The Dbg Universal DNBB Cross Overlap Kit and AmpliSpeed Real-Time PCR System (Bio-Rad, CA, USA) were used for gene expression analysis via real-time quantitative PCR. GAPDH was used as a normalization control. Primer sequences for ADORA2a, ADORA2B, ADORA3, ADORA1, ADORA2A, ADORA3, ADORA2B, and various inflammatory factors such as interleukin (IL)−1β, IL-6, IL-8, tumor necrosis factor (TNF) α, IFNα, IFNβ, ADAR1 p110, and ADAR1 p150, melanoma differentiation-associated gene 5 (MDA5), retinoic acid inducible gene I (RIG-I), interferon regulatory factor 9 (IRF9), and IRF7 and CAPSD are presented in Supplementary Table 1. Concentrations for all cases were measured using ultraviolet (UV) absorbance before PCR. At the same time, DEPC water was used as random purity before PCR. All procedures were done following the manufacturer's instructions. After an initial denaturation step at 95 °C for 10 min, 39 amplification cycles were conducted with annealing/extension at 56 °C for 30 s for all primer pairs. The mRNA levels were normalized to each gene expression (2^-ΔCt) of target mRNA. −(2^-[ΔΔCt]) (ΔΔCt), and RNAs were calculated compared with a control sample or 2 (ΔCt) method (ΔΔCt) or ΔCt samples ΔCt control). T and experiments (2^-ΔΔCt).

Immunohistochemistry (IHC) for ADAR1

FFPE specimens of chorioamnion and umbilical cord were cut into 4-μm thick slices. The FFPE sections were deparaffinized with xylene and rehydrated using an ethanol gradient. Endogenous peroxidase activity was blocked with H_2O_2, followed by antigen retrieval using citrate buffer at 99 °C for 20 min. Then, the slides were incubated overnight with an anti-ADAR1 antibody at a 1:200 dilution (Abcam, Cambridge, MA, USA). The sections were then incubated with horseradish secondary antibodies (VECTASTAIN® ABC Elite, Vector Laboratories, Burlingame, CA, USA). Specific antigen–antibody reactions were visualized with diaminobenzidine tetrahydrochloride, and hematoxylin was used for counterstaining. The intensity of ADAR1 staining was scored as negative (0), weak (1), moderate (2), or strong (3) and measured three times by two independent investigators who were blinded to the nature of the specimens and individual used.

Cell culture

The human JEG-3 Hippocampus nonpalliative cell line (ATCC® CRL-3270™) was obtained from the American Type Culture Collection (Manassas, VA, USA). The human HTR-8/SVneo placental trophoblast cell line was maintained in RPMI-1640 (Life Technologies, CA, USA) supplemented with 10% fetal bovine serum (FBS). The cell line was kept in a humidified incubator containing 5% CO_2 at 37 °C. Cells were used for functional experiments within three months of passaging (not more). Umbilical vein endothelial cells (HUVECs) (ATCC® CRL-1730™) (Manassas, VA, USA). Cells were used for functional experiments within three months of passaging (not more). Umbilical vein endothelial cells (HUVECs) (ATCC® CRL-1730™) (Manassas, VA, USA). Cells were resuspended and plated in culture dishes. At ~ 80% confluency, lymphocyte-passive serum solution was diluted 10%, 10%, 10% fetal with RPMI-1640 + FBS, 10% and cultured at each concentration for 72 h. All lymphocytes used in the experiments were viable at the time of the experiment, ensuring that the biological responses observed were due to active lymphocytes.

Statistical analysis

Our study employed rigorous statistical analyses, including the Mann–Whitney U test for comparisons with controls and one-factor ANOVA followed by Fisher's protected least significance difference test for all pairwise comparisons. A receiver operating characteristic (ROC) curve was generated, and the area under the curve (AUC) was calculated to evaluate the discriminatory ability of each scoring system. Univariate and multivariable logistic regression analyses were used to investigate diagnostic CAM, clinical CAM, and FIRS. A p-value of < 0.05 was considered statistically significant. The use of SPSS software, version 23.0 (IBM Corp., Armonk, NY, USA), ensured the accuracy and reliability of our statistical analyses.

Data availability

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

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References

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34. [illegible]
35. [illegible]
36. [illegible]
37. [illegible]
38. [illegible]
39. [illegible]

40. Yun, C. et al. A2AR/1 promotes osteoclast maturation via enhancing lipid raft/flotillin-2 mediated TRAF6 oligomerization. Front. Immunol. 10, 1053 (2019). https://doi.org/10.3389/fimmu.2019.01053
41. Sabokbar, A. M. Mahendran, A. Viola, Kudo, O. Athanasou, N. Osteoclast differentiation by RANKL and OPG from human macrophages. Clin. Orthop. Relat. Res. 385, 106–118 (2001). https://doi.org/10.1097/00003086-200104000-00015
42. Wang, Y. K. et al. Recycling and clearance of plasma lipids. Proteomics. Physiol. Multidisc. Chem. Commun. Biomed. Acta. Orthop. Belg. 2, 1–12 (2019). https://doi.org/10.1038/s41467-019-13142-2 (2019).

Author contributions

Conceived and designed experiments: K.N., K.U.; performed experiments: K.N., K.U., T.H.Y., J.M., K.O.; analyzed data: K.O., H.M.; contributed reagents, materials, and other analytical tools: K.N., K.U., T.H.Y., J.M., K.O., H.M.; wrote the manuscript: K.N., K.U., T.H.Y., J.M., K.O., H.M. All authors have read and approved the final manuscript.

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Declarations

Ethics approval and consent to participate

Informed consent was obtained from each patient, and the institutional review board (The Ethics Committee of the Okayama University Graduate School of Medicine, Dentistry and Pharmaceutical Sciences and Okayama University Hospital) approved the study(approval number: 2001-018).

Competing interests

The authors declare no competing interests.

Additional information

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Full length article

CD63 as a potential biomarker for patients with ovarian cancer

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ABSTRACT

Introduction: Exosomes play an important role in regulating physiological processes and mediating the metastatic dissemination of various types of cancers. We investigated the association of exosomal tetraspanins CD9, CD63, and CD82 in patients with ovarian cancer (OC).

Material and methods: We measured the plasma concentrations of CD9, CD63, and CD82 by enzyme-linked immunosorbent assay in 113 patients who underwent treatment for OC between April 2018 and March 2019. Additionally, we analyzed clinical pathologic factors, chemotherapy response, and prognosis.

Results: In terms of stages, CD63 concentration was significantly higher in patients with stage IV compared to those with stage I–III ($p = 0.003$). In terms of histological type, CD63 expression was significantly higher in high-grade serous carcinoma (HGSC) than in other non-mucinous tumors ($p < 0.001$). Furthermore, CD63 levels were significantly higher in advanced stage, HGSC than in patients with early-stage, non-HGSC and early-stage, HGSC ($p = 0.008$ and $p = 0.003$, respectively). In the Kaplan-Meier survival analysis of 56 patients with OC treated with primary surgery followed by platinum-based chemotherapy, CD63 was significantly associated with progression-free survival ($p = 0.043$). However, CD9 and CD82 were not significantly associated with PFS. In the PAC of 53 patients with EOC, CD63 concentration was significantly correlated with the response to chemotherapy ($p = 0.035$). In the PAC of 53 patients with EOC, CD63 concentration was significantly correlated with the response to chemotherapy ($p = 0.035$). In the PAC of 53 patients with EOC, CD63 concentration was significantly correlated with the response to chemotherapy ($p = 0.035$).

Conclusions: CD63 could be a potential biomarker for all types of OC patients.

Introduction

Ovarian cancer (OC) is the second most common gynecological malignancy worldwide, with an estimated 224,000 new cases diagnosed in 2020 [1]. About 70% are epithelial ovarian cancers (EOC), which have histological types, including high-grade serous carcinoma (HGSC), clear cell carcinoma (CCC), endometrioid carcinoma (EC), and mucinous carcinoma (MC). Prognosis and treatment are the same for the various histological subtypes. However, despite these different histological subtypes, their diagnosis and treatment approaches are generally same, and no data show we are effective biomarkers that comprehensively cover all OC histological types.

Exosomes are cell-derived membranous vesicles with a diameter of 30–100 nm that contain genetic biomaterials, such as mRNA, microRNA, small interfering RNA, and proteins [2,3], and contribute to intercellular communication. Tetraspanins play important roles in regulating physiological processes and mediating the metastatic dissemination of various types of cancers [4]. Furthermore, previous studies have suggested that quantitative determination of human EpCAM expression is a simple way to clinically useful for diagnosing malignancies and predicting their prognosis [5,6]. Several methods have been developed to detect exosomes. Enzyme-linked immunosorbent assay (ELISA)-based methods are commonly performed using specific antibodies (Abs) against exosomal surface antigens [7,8].

The tetraspanins of CD9, CD63, CD81, CD82, and CD151 have been extensively investigated as exosome biomarkers in ovarian cancer [9–11]. Tetraspanins are a superfamily of proteins characterized by four transmembrane domains and a specific Cys in the largest of the two

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cytotoxic activity. All cell types and tissues express a variable combination of immunogenic, some of which are mainly present in the plasma membrane, such as CD9, while some are found intracellularly, such as CD63, which are secreted by late endosome and lysosome-related organelles [3,4,10,11]. Tetraspanin protein family members, such as CD9, CD63, and CD81, are ubiquitously expressed on exosomes and commonly used as exosomal biomarkers. These tetraspanins are involved in physiological processes such as cell adhesion, cell motility, and signal transduction [12–14]. In OC, CD9 is widely expressed in MOSC and asymmetric an important new therapeutic target with immediate relevance to natural killer cell immunotherapy [15]. CD63 derived from cancer cells reveals abundant TGF-β, which facilitates tumor growth [16]. Thus, this study aimed to investigate the efficacy of exosome expressing CD9, CD63, and CD81 as potential novel diagnostic and therapeutic targets for patients with OC.

Methods

Plasma collection

Samples were collected from 91 patients who underwent OC assessment at Okayama University Hospital between April 2018 and March 2024. All study protocols were approved by the Institutional Review Board/Ethics Committee of Okayama University (reference numbers, R2211-036, K2006-080), and all participants provided written informed consent. Plasma was produced from 7 ml of blood by centrifugation at 3,200 *g* for 10 min, followed by a second centrifugation at 16,000 *g* for an additional 10 min, and then stored in Okayama University Biobank. In this study, data were extracted from archival records and analyzed using an ELISA kit from the collected samples (plasma).

All 91 patients underwent staging based on imaging or surgical findings. The use of computed tomography (CT) and positron emission tomography/CT (PET/CT) to locate tumor deposits before debulking surgery has become standard practice. Every operative cytoreductive procedure was performed with the aim of achieving a complete resection with no residual tumor (R0). All the primary debulking surgery (PDS) were successfully achieved as R0. Patients with complete disease not deemed amenable to curative surgery were administered postoperative chemotherapy. Patients who underwent exploratory laparotomy for diagnostic biopsy or cytoreductive surgery debulking were included in the interval debulking surgery (IDS) group. Surgical resection was classified as curative (R0, complete resection with no residual tumor) or non-curative (R1 or R2, microscopic or gross residual tumor) in the PDS group. Patients who underwent PDS were then treated with an intensive six cycles of standard chemotherapy (n = 49), including those in the cycles of neoadjuvant chemotherapy (NAC) with IDS followed by three to five cycles of adjuvant chemotherapy with or without bevacizumab (Bevacizumab or PARP inhibitors) (n = 42). If a residual tumor is considered unresectable, or is unsuccessful in attempting to complete six cycles of postoperative chemotherapy or to complete IDS after 3 to 4 cycles of perioperative chemotherapy [17].

ELISA assay

Exosome (CD9, CD63, and CD81) were quantified using CD9/CD63 CD63/CD81, and CD9/CD81 Exosome ELISA kits (EXOCD9-1, EXOCD63-1, and EXOCD81-1, Finetest, Wuhan, Hubei) according to the manufacturer's instructions [17–21]. Briefly, membrane proteins, tumor necrosis factor-alpha, podocin, and glycosylase B were measured using a Human CD_/HE (tetraspanin multiple) ELISA kit (EHCD[illegible], Adipo Biotechnology, Ehime, Taiwan) according to the manufacturer's instructions. The Exosome and CD_/HE ELISA kits are reviewed. ELISA kits that use high performance antibodies. Briefly, the 50 μL of samples and 75 μL each of antibody-diluted target (standard) Reagent solution was added. This solution was incubated at room temperature for 15 hr in a static manner. After washing 3 times, 100 μL each of diluted CBD conjugated and target antibody was added and incubated at room temperature for 2 hrs for a static reaction. After washing 3 times, each 100 μL of substrate solution was added and the reaction was terminated after incubation at room temperature for 30 min. The OD value was measured using a microplate reader at a wavelength of 450 nm, and the concentration was calculated.

Statistical analysis

Categorical variables were compared using Fisher's exact test. Differences between continuous variables were determined using the Steel–Dwass test. The correlation was estimated using Spearman's rank correlation coefficient. A receiver operating characteristic (ROC) curve was generated and the area under the curve (AUC) was calculated to evaluate the discriminatory ability of each scoring system. ROC curves were generated for CD9, CD63, CD81 and CA125 to determine the cut-off values for predicting recurrence and survival that yielded optimal sensitivity and specificity. The patients were divided into groups based on the CD9, CD63, CD81 and CA125 cut-off values derived from the ROC curves. Univariate and multivariate logistic regression analyses were performed to investigate the prognostic factors for survival (OS) and overall survival (OS). Statistical significance was set at $p < 0.05$. SPSS software (version 2022, IBM Corp., Armonk, NY, USA) was used to ensure the accuracy and reliability of the statistical analyses.

Results

Clinicopathological characteristics associated with tumorigenesis in patients with OC

We investigated the distributions of CD9, CD63, CD81, and CA125 according to the clinicopathological characteristics of the overall population (Table 1). The average concentrations of CD9, CD63, CD81, and CA125 were 0.89 pg/mL, 22.29 pg/mL, 199.59 pg/mL, and 980.44 U/mL (range: CD9: 0.01–10.09 pg/mL; CD63: 7.00–52.49 pg/mL; CD81: 34.39–379.09 pg/mL; and CA125: 5.4–13804 U/mL), respectively. The expression of CD9 was significantly associated with lymph node involvement (LNM) ($p = 0.049$, respectively). The expression of CD63 was significantly associated with the stage, histology, disease-free survival (DFS), and second-line chemotherapy (SHCT) ($p = 0.004$, 0.016, <0.001, and 0.013, respectively). The expression of CD81 was closely associated with tumor stage, LNM, and RMI ($p = 0.049$, $p = 0.033$, and $p = 0.042$, respectively). CA125 levels were closely associated with body mass index (BMI), DFS, and RMI ($p = 0.001$, $p = 0.030$, and $p = 0.002$) (Table 1). These results indicate that CD63 levels were significantly elevated in advanced stages, MOPC, DFS and RMI compared with CD9 and CD81, and reacted more sensitively than CA125. The expression of CD9 and CA125 was also analyzed according to the stage and histological type. In terms of stage, CD9 expression was significantly higher in stage IV than in stage I OC ($p = 0.0023$ (Fig. 1a). In terms of the histological type, CD63 expression was significantly higher in EOC than in CCC ($p = 0.0490$) (Fig. 1b). Non-Hodgkin lymphomas are very rare and their exposure as contraindications.

We stratified the cohort into four groups based on the stage of progression and histological early stage and non-MOPC, advanced stage and non-MOPC, early stage and MOPC, and advanced stage and MOPC. Subsequent analyses were performed. CD63 levels were significantly higher in advanced stage cancer and MOPC than in early stage cancer, non-MOPC and in early-stage cancer, MOPC ($p = 0.045$ and $p = 0.004$, respectively). CD81 levels were significantly higher in advanced stage, non-MOPC and advanced stage, MOPC than in early stage and MOPC ($p = 0.015$ and $p = 0.033$, respectively). There were no significant differences in CD9 and CA125 levels among the four groups (Fig. 1c).

Table 1
Xxxxxxxxxx of CD8, CD103, CD11, and CCL20 with clinical factors in ovarian cancer.

Variable	Number	CD8	p-value	CD8A	p-value	CD8B	p-value	CCL20	p-value
Age			0.000		0.000		0.004		0.016
≤ 50	51	5.737 ± 2.008		10.842 ± 1.710		190.808 ± 100.804		808.504 ± 3770.054	
> 50	60	7.074 ± 2.037		12.040 ± 2.364		342.099 ± 207.809		966.0 ± 4788.000	
Stage			0.110		0.007		0.007		0.132
I-II	39	6.418 ± 2.062		10.998 ± 2.190		232.848 ± 180.46		872.647 ± 3307.56	
III-IV	82	7.061 ± 2.000		12.027 ± 10.054		313.848 ± 177.004		1.008.914 ± 4078.848	
Histology			0.132		0.007		0.17		0.003
Non-HGSC	49	6.048 ± 1.975		10.59 ± 10.614		194.048 ± 162.548		768.977 ± 3.742.84	
HGSC	74	7.142 ± 2.089		12.889 ± 10.229		342.824 ± 197.971		1.013.333 ± 47.948.2	
BMI			0.46		0.368		0.366		0.007
< 30.0	83	6.883 ± 2.134		12.114 ± 10.000		288.88 ± 184.186		930.545 ± 4333.14	
≥ 30.0	41	6.95 ± 2.048		10.795 ± 10.782		314.881 ± 192.449		1.483.914 ± 6.8998.48	
Lymph node assessment			0.047		0.814		0.17		0.874
Often	60	6.977 ± 2.182		11.479 ± 9.296		297.847 ± 192.388		888.868 ± 3.807.968	
Rarely	60	7.249 ± 2.062		12.454 ± 10.438		314.848 ± 184.284		1.005.284 ± 4.078.848	
Pharmacological constraint			0.137		<0.001*		0.032*		0.048*
Often	98	6.848 ± 2.156		10.918 ± 9.8.828		168.284 ± 142.282		698.828 ± 2.778.728	
Rarely	43	7.348 ± 2.025		14.722 ± 47.872		518.828 ± 188.848		1.868.888 ± 8.728.888	
Pharmacological complaint			0.012		0.118		0.088		0.136
Often	76	6.887 ± 2.047		11.887 ± 10.4		188.884 ± 188.118		748.848 ± 2.848.8	
Rarely	32	8.77 ± 2.028		16.828 ± 81.782		514.182 ± 188.248		1.478.828 ± 7.888.778	
Ascites			0.115		0.114		0.182		0.122
Often	72	6.58 ± 2.148		10.814 ± 47.187		148.884 ± 144.828		828.888 ± 2.788.828	
Rarely	47	8.742 ± 2.284		17.148 ± 87.788		288.888 ± 718.418		1.818.888 ± 8.188.848	
Pembrolizumab immunotherapy			0.018		0.818*		0.182		0.287
Often	81	6.877 ± 2.112		12.878 ± 10.118		228.882 ± 188.228		888.878 ± 3888.888	
Rarely	61	8.187 ± 2.178		14.148 ± 82.888		514.88 ± 848.888		1.848.788 ± 8788.8.8	

Abbreviations: BMI, body mass index.
* $p < 0.05$.

Changes in osteopontin, CD103, and CCL20 before and after chemotherapy

We compared the expression of CD8, CD103, CD11, CCL20, CTLA4 of interferon-gamma, tumor necrosis factor-alpha, perforin, and granzyme B before and after chemotherapy in the RAC of 10 patients. In the RAC of 12 patients who were assessed as having either partial response (PR) or complete response (CR) on CT imaging, CD103 and CCL20 significantly decreased ($p = 0.143$ and $p = 0.044$, respectively), whereas perforin significantly increased with DCC ($p = 0.003$) (Fig. 1). In contrast, there were four Progressive Disease (PD) cases, but no significant differences were observed (Supplemental Fig. 1). In the HGSC of patients with CR, Regarding the response rate to chemotherapy in the RAC of 14 patients with CR, CD103 showed a tendency to differ between the PR and PD/SD groups ($p = 0.093$) (Fig. 1a), and a moderate inverse correlation was observed between CD103 and perforin ($R = 0.639$, $R^2 = 0.408$, $p = 0.008$) (Fig. 1b). Perforin contributes to modulating biological functions such as cytotoxicity and cytokine-related mass release [27]. Therefore, CD103 to DC may play a superior role in these biological functions.

Prognostic predictors of osteopontin in patients with EOC

Next, we examined whether CD8, CD103, CD11, and CCL20 were predictive markers for PFS and OS. We used ROC curve analyses to determine the optimal CD8, CD103, CD11, and CCL20 cut-off values to predict PFS and OS in patients with EOC. The analyses identified the most accurate cut-off values for CD8, CD103, CD11, and CCL20 as 0.05 pg/mL, 46.00 pg/mL, 198.00 pg/mL, and 340.50 U/mL, respectively, for predicting PFS with patients with DC (AUC = 0.555, 0.550, 0.696, and 0.587). The most accurate cut-off values for CD8, CD103, CD11, and CCL20 were 7.00 pg/mL, 22.00 pg/mL, 336.00 pg/mL, and 388.00 U/mL, respectively, for predicting OS with patients with DC (AUC = 0.474, 0.446, 0.578, and 0.648) (Supplementary Fig. 2).

In the Yearly cohort, the median PFS and OS times for all patients were 22.0 and 35.8 months, respectively; the follow-up periods ranged from 4 to 69 months. At the last follow-up, 34 patients were alive with no evidence of disease, 21 patients had died of the disease, and 13 patients were alive with the disease. Correlations among clinical factors, PFS, and OS were assessed using univariate and multivariate analyses (Table 2). In the univariate analysis, CA125 ($p = 0.042$), stage ($p = 0.042$), LVSI ($p = 0.024$), EM ($p = 0.010$), residual tumor ($p < 0.001$), ascites ($p = 0.042$), and PACI ($p < 0.001$) were significantly associated with worse PFS. In the multivariate analysis, CD103 ($p = 0.31$ 85, stage ($p = 0.014$), histology ($p = 0.002$), and residual tumor ($p = 0.002$) were significantly associated with worse PFS in patients with EOC. In the univariate analysis, stage ($p = 0.008$), LVSI ($p = 0.01$ 1), residual tumor ($p < 0.001$), ascites ($p = 0.007$), and PACI ($p = 0.001$) were significantly associated with worse OS. In multivariate analysis, histology ($p < 0.001$) and residual tumor ($p = 0.020$) were significantly associated with worse OS in patients with EOC.

Discussion

Exosomes play important roles in the progression of various cancers. However, there have been no detailed reports on their role in EOC. In this study, we investigated the status and prognosis of the osteopontin gene family members CD8, CD103, and CD11 in detail using samples from patients with EOC. CD8 (cytotoxic cytotoxic) is cytotoxic-effector molecules with T-CD is promoting B-CD8 activation and cell proliferation [11]. Moreover, LEN, CD103, and CD8C have been associated with-IFN-γ cytotoxic-supporting long-term binding [11,12]. CD103 enhanced the interferonresponse of glucocorticoids for promoting the nuclear translocation of NANOG, a key protein involved in DNA repair [13]. CD103 contributes to maintaining hematopoietic stem cell quiescence, containing TGF-β signaling through its connection with TGFβ receptors 1 and 2 [23]. Overall, osteopontin family members are important players in tissue development as they contribute to crucial aspects of the main cancer hallmarks.

In the present study, CD8 was significantly associated with LVSI, CD103 was closely associated with stage, histology, EM, and PACI, and CD11 was closely associated with stage, EM, and PACI. CD103 expression was significantly higher in stage IV than in stage I EOC and was

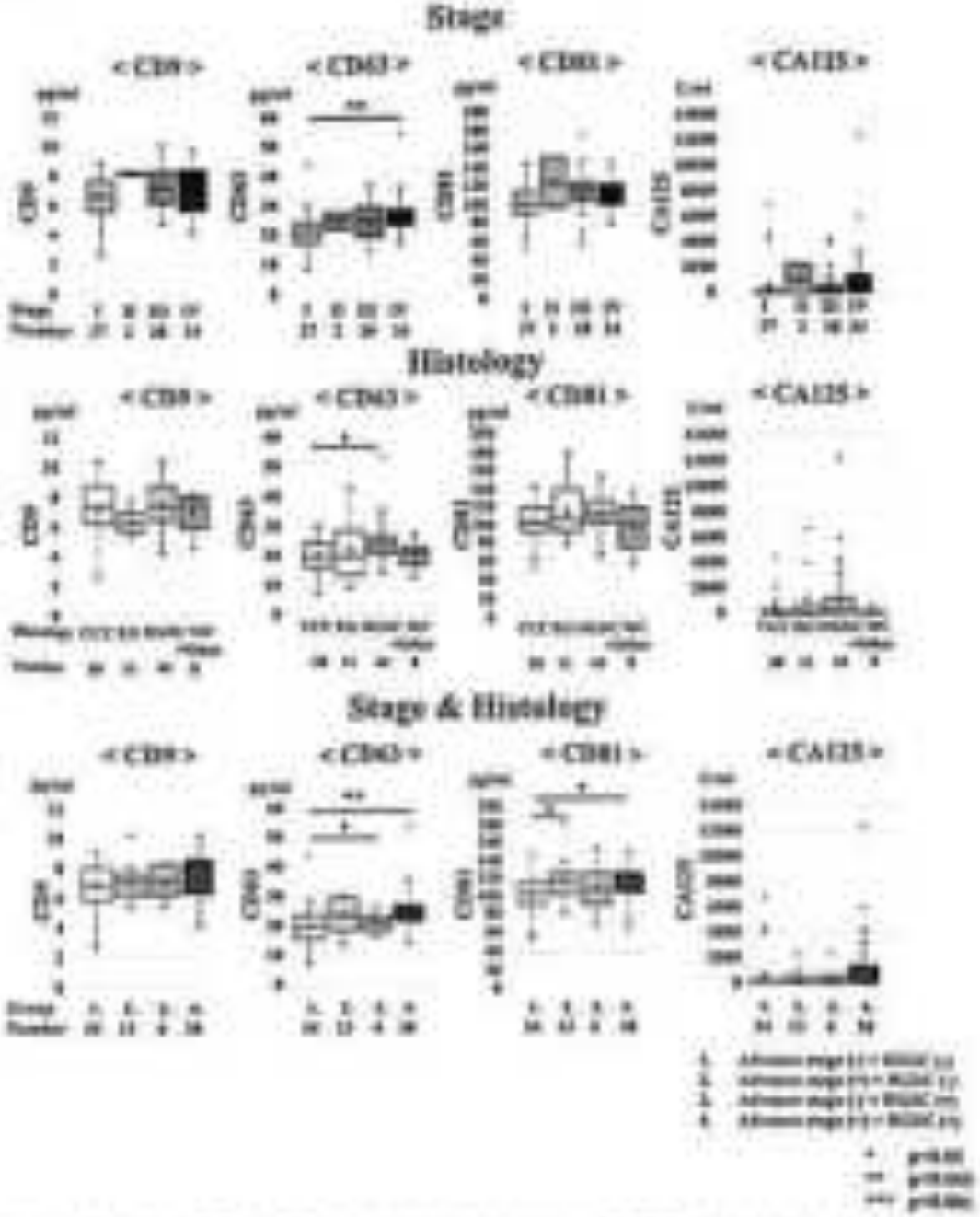
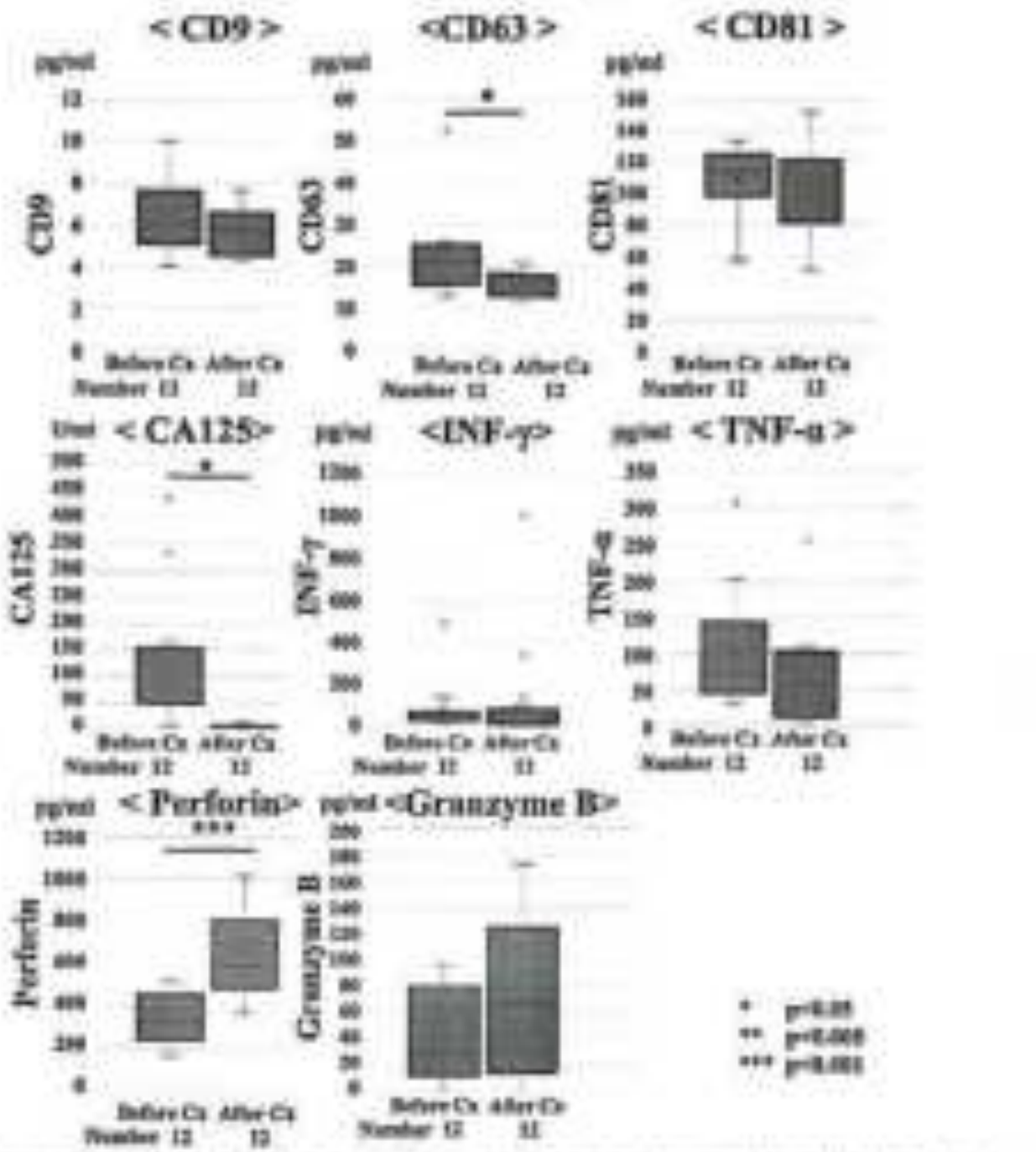


Fig. 1. Expression levels of CD9, CD63, CD81, and CA125 in EV-proteins with ovarian tumor categorized by stage, histological subtype, and a combination of stage and histology. (a) Stage: Stage I, 39 patients; II, 6 patients; III, 28 patients; IV, 11 patients. (b) Histological type: clear cell carcinoma (CCC), 28 patients; endometrioid carcinoma (ECC), 13 patients; high-grade serous carcinoma (HGSC), 44 patients; mucinous carcinoma (MC) and other carcinomas, 8 patients. (c) Stage and histological type: early-stage + non-HGSC, 34 patients; advanced-stage + non-HGSC, 14 patients; early-stage + HGSC, 5 patients; advanced-stage + HGSC, 46 patients.

significantly higher in HGSC than in CCC. Furthermore, CD63 levels were significantly higher in the advanced-stage and HGSC groups than in the early-stage and non-HGSC and in the early-stage and HGSC groups. These findings suggest that CD63 may serve as a more effective biomarker for CC than CD9 or CD81.

To date, there are no reports on the immune effects of intraperitoneal


< CD9 >
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<Granzyme B>
pg/ml
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CD9
CD63
CD81
CA125
INF-γ
TNF-α
Perforin
Granzyme B
Before Cx
After Cx
Number 12
12
* p<0.05
** p<0.005
*** p<0.001

[illegible]

[illegible]

Fig. 5. a) Association of CD64 expression in responders to chemotherapy in 10 patients with ovarian cancer (partial response (PR) or complete response (CR)), 13 patients progressive disease (PD), 4 patients) b) Correlation between CD64 and paclitaxel in responders to chemotherapy in 10 persons with ovarian cancer.

Table 3
Prognostic factors for PFS and OS identified by Cox univariate and multivariate analysis.

PFS		Univariate analysis			Multivariate analysis	

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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None.

Author contributions

AB performed the study, conducted the analyses, and wrote the main manuscript. EEL, SL, AAL, and SGZ performed the experiments. SM designed the study. BR, BJC, PVPC, DLTP, and YBA performed analyses. All authors have read the data and reviewed the manuscript.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ijmedinf.2021.104571.

References

[1] Shen P, Hernandez AV, Deng A, Kinder J, Siegel RL, Cercamondola J, et al. Gastroesophageal distal intubated adequate oil symptom hydrocarbon excitatory for the recovery in 450 exercises. Ch Cancer J Clin. 2014;71:209–225. https://doi.org/10.3322/caac.21232. PMID: 24912635.

[2] Wang N, Li P, Hutton DW, Abdel-Kader K. Home vs. convalescent nursing monitoring the cost-effectiveness study. Am J Manag Care. 2018;24:e370–378. PMID: 30485070.

[3] Tsimpoukis AI, Rizanis G, Thiley C. Weaknesses, secretion, and communities prerequisite on treatment and valley characteristics machine. Intern Med Care Qual Qual Assur. 2019;32:1–8. https://doi.org/10.1108/IJHCQA-12-2018-0314. PMID: 31264.

[4] Thiele RA, Thiley A. Understanding the photovoltaic materials whose are one and device the based or go. Qual Saf Health Care. 2010;19:e34. https://doi.org/10.1136/qshc.2009.034827. PMID: 20615.

[5] Wang H. Vaccine diagnostic for environmental vaccines. Nature. 2015;519:150–3. https://doi.org/10.1038/nature14259. PMID: 25762142.

[6] Xie H, Qiu B, Xie Y, Peng Y, Zhang Z, Wei B, Bian WH, Wang J. Structured device as memory standard for glucocorticoid diagnostics energy in their implement cell in cancer compounds. J Biomed Nanotechnol. 2015;11:1114–1. https://doi.org/10.1166/jbn.2015.2058. PMID: 26415288.

[7] Vincent WW, Bode SJ, Bond LJ, Bern A, Abel J, Jarrett J, et al. Characterizing of weight collection, isolate multi-platform sensitivity in extracellular vesicle research. J Extracell Vesicles. 2017;6:1418366. https://doi.org/10.1080/20013078.2017.1418366. PMID: 29410.

[8] Jarrett J, Hill HR, Rochberg H, Bode SJ, Ni Tajia O, Hamilton K, et al. Maternal experimental maintenance for detection of acute-phase vaccine and case outcomes in positive symptom force the transactional toxicity for thrombolytic trauma. J Biomed Nanotechnol. 2015;11:1–8. https://doi.org/10.1166/jbn.2015.2058. PMID: 26415288.

[9] Tsimpoukis AI, Arabadzhieva M, Kirkchilov E, Mavrikova S, Kostadi G, Dzurkov J. Diagnostic value and multivariate value of emergencies 2019 to cancer. Intern Med Care Qual Qual Assur. 2019;32:1–8. https://doi.org/10.1108/IJHCQA-12-2018-0314. PMID: 31264.

[10] Wang JJ, Qu T, Zhou Y, Zhang H, Liu W, Ji G, Ai H, Qiao Z, Zhang W, Hauck, Wu J, Jiang J. Aqueous Ventricle Cytokine Injection Intervals? Through Cardiac Investigation Radiological and Endovascular and Endovascular Interventional Neuroradiology Endovascular Treatment in Ischemic Stroke Patients Stroke Cancer. Front Med (Lausanne). 2020;7:597315. https://doi.org/10.3389/fmed.2020.597315. PMID: 33330.

[11] Chen X, Tang J, Chen T, Wang H, Deng X, Yi X, Ding T. Attention processing of acute encephalitis vaccine on a 2019-ncov-infected, platform to early-stage clinical diagnosis of vaccine coronavirus. Environ Environ Res. 2020;187:109703. https://doi.org/10.1016/j.envres.2020.109703. PMID: 32454.

[12] Li J, Qi Z, Li L, Sanai N, Kuhnert F, Liu C, Hart G, Brown J, Tsai K, Wang E, Fan Q. Epidermal growth factor receptor regulation of tyrosine-protein kinase EGFR and PTP1B contributes to growth signaling in oncogene addicted glioblastoma cells. Int J Cancer. 2013;132:2508–18. https://doi.org/10.1002/ijc.27931. PMID: 23132.

[13] Ivanyants G, Sahagalbhoi S, Kalinichi A, Kalbanska L, Ghafir L, Volgin Iva A, et al. Comparative Evaluate to? Cancer Assessment Versus? Is Hair Tomographic Scan Examples of Plasma and Cardio Fibrotic of Ventricular Cancers Patients. Int J Med Sci Manag Res Cardiol. 2015;2:1–8. https://doi.org/10.19070/2377-8253-150001. PMID: 29.

[14] Charlie C, Jacquard A, Beardsley L, Kuhlmann A. Intraoperative in a glance. J Cell Sci Ther. 2015;6:1000. https://doi.org/10.4172/2157-7013.1000. PMID: 25.

[15] Moore S, Lu Hyun PL, Ortiz G, Jeffers RH, Beardsley L. Lateral experiences on cardiovascular process consumption and their vein. Biochem J. 2002;365:139–146. https://doi.org/10.1042/BJ20020332. PMID: 11931.

[16] Nandor gfh. Tomographic functions and associated mitochondria: the dna total cell and antibody. Int J. 2015. https://doi.org/10.4172/2157-7013.1000. PMID: 25.

[17] Hudson C, Nakanishi M. Tomographic to mitochondrial medical therapeutic and function. Front Immunol. https://doi.org/10.3389/fimmu.2020.00. PMID: 32.

[18] Kim J, Hong S, Park H, Baekgkokt S, Jeong HG, Kim S, Yi M. Expression and function of intraepithelial and short-interesting platelets in B cells. Front Immunol. 2014;5:356. https://doi.org/10.3389/fimmu.2014.00356. PMID: 25.

[19] Knowles HB, Hwang HH, Gallgalla-Hiremath N, Shen PC, Hammer M, Mellott D, et al. Hydrogels-calcium-chloride-carbon nitride-enhanced MR cell function in cancer as metabolic-optical nanotheranostics. Sci Rep. 2021;11:4. https://doi.org/10.1038/s41598-020-79139-8. PMID: 33420.

[20] Hong S, Li R, Xi Q, Xue S. Immunosuppressive of female cancer with medicine to transforming growth factor-beta in response from cancer cells. Cancer Lett. 2014;344:197–208. https://doi.org/10.1016/j.canlet.2013.11.019. PMID: 24333.

[21] American Cancer Society, Kidney, Kidney Cancers and Urothelial Randomized Cancer Clinical Cancer Patient Clinical Practice Guidelines in Oncology. https://www.cancer.gov/types/urothelial/patient/bladder-treatment-pdq. PMID: 26389.

[22] Pinto S, Pinto A, Jakusch M. Cellular evaluation of Pharmaceutical Trembling Controlled Cell by Ion Hemolytic for the measurement of nanoparticles and protein aggregates. Plastic Rep. 2020;127:795–804. https://doi.org/10.1016/j.jphotobiol.2020.112.

[23] Kim H, Kim YC, Jung HW, Park JY, Choi YD, Chang IC. Functional enhancement of invasive cervical trials HIV order by IL-2 with IL-21 synergy against hepatocellular carcinoma cells. The concerning cell genomics in vitro study. Indicator. 2020;10:e0. https://doi.org/10.1038/s41598-020-79139-8. PMID: 33420.

[24] Ji H, Fan C, Wang L, Tawaraji H. The mycoplasma CD3 exercises cells intracytoplasmic T-cell acute and myeloma CD3 alpha-analysis test complex activation and cell proliferation. J Cell Biol. 2005;168:445–455. https://doi.org/10.1083/jcb.200407.

[25] Lee HA. Functional implications of carcinogenic proteins in cancer biology. Cancer Lett. 2007;252:1–8. https://doi.org/10.1016/j.canlet.2006.12.007. PMID: 17222.

[26] Lynch HJ, Snyder ME. Specific cross-cross among myeloproliferative in myeloblastic research outcomes and gastrointestinal molecular. Anesthesiol J. 2006;104:19–24. https://doi.org/10.1097/00000542-200601000-00004. PMID: 16394.

[27] Zhang H, Chen Q, Liu M, Ma X, Qiao H, Ma H, et al. ADAM1 influences epithelial-mesenchymal transition by promoting cancer transformation of Snail1. Cancer Biomark. 2017;19:1–8. https://doi.org/10.3233/CBM-160458. PMID: 28.

[28] Wang Y, Zhang S, Wang Q, Qi H, Tian H, et al. CD44+ acts as a homeostasis marker in maintaining hematopoietic stem cell quiescence through suppressing ITGB1/Rac1/Cdc42 signaling in acute myeloid leukemia. Cell Death Dis. 2018;9:1–12. https://doi.org/10.1038/s41419-018-0.

[29] Hematology AJMH. Cover 39 Cells from hematopoiesis as different functions. Hematol Oncol Stem Cell Ther. 2008;1:1–2. https://doi.org/10.1016/S1658-3876(08)50.

[30] Liu H, Hubert C, Wang J, Lee YEA, Miyamoto G, Ma J, et al. miR-34a/Snail1 signal transduction? Axis basal biology in cancer development. J Ultrastruct Mol Res. 2012;140:7. https://doi.org/10.1016/j.jsmc.2012.04.011. PMID: 22.

[31] Hubert C, Rich N, Hui J, Wang MY, Yang MH. The cancer-dependent impact of Long-term-exposure? (CSC) and Other Therapeutics on cancer carcinogenesis and progression: a Look at Oncogenic Functions on Cellular Functions and Signaling Transformation and Metastasis. Cancer Lett. 2012;338:168–173. https://doi.org/10.1016/j.canlet.2012.07.005. PMID: 22.

LÝ LỊCH KHOA HỌC

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8. Cơ quan công tác: Tên cơ quan: Trường Đại học Y Dược Hải Phòng. Khoa/Phòng, Bộ môn, Trung tâm...: Bộ môn Vi sinh Y học, khoa Kỹ thuật Y học. Địa chỉ cơ quan: 72A Nguyễn Bỉnh Khiêm, Ngô Quyền, Hải Phòng, Việt Nam. Điện thoại: 0984187677., Fax:.. Email: ytcuong@hpmu.edu.vn	

9. Quá trình đào tạo

Bậc đào tạo	Nơi đào tạo	Chuyên ngành/Tên luận án, luận văn, luận án	Năm tốt nghiệp
Đại học	Trường Đại học Y Hải Phòng	Bác sỹ đa khoa	1995
Thạc sĩ	Trường Đại học Y Hà Nội	Vi sinh Y học	1999
Tiến sĩ	Trường Đại học Kanazawa, Nhật Bản	Vi sinh Y học	2012
TSKH			

10. Các khoá đào tạo khác (nếu có)

Văn bằng	Tên khoá đào tạo	Nơi đào tạo	Thời gian đào tạo
Vi sinh Y học	Đào tạo chuyên gia quốc tế về chuyên ngành Vi sinh	Viện nghiên cứu Y học, Kuala Lumpur, Malaysia	

11. Trình độ ngoại ngữ

Tên ngoại ngữ	Văn bằng/Chứng chỉ	Năm
Anh Ngữ	C	1995

12. Quá trình công tác *(trước khi về Trường và sau khi về Trường)*

Thời gian (Từ năm ... đến năm...)	Vị trí công tác	Cơ quan công tác	Địa chỉ cơ quan
1995 -Nay	Giảng viên	Trường Đại học Y Dược Hải Phòng	72A Nguyễn Bỉnh Khiêm, Ngô Quyền, Hải Phòng, Việt Nam
2008- nay	Trưởng Bộ môn Vi sinh	Trường Đại học Y Dược Hải Phòng	72A Nguyễn Bỉnh Khiêm, Ngô Quyền, Hải Phòng, Việt Nam
2013- nay	Trưởng Khoa Kỹ thuật Y học	Trường Đại học Y Dược Hải Phòng	72A Nguyễn Bỉnh Khiêm, Ngô Quyền, Hải Phòng, Việt Nam
2008- nay	Trưởng khoa xét nghiệm	Bệnh viện trường Đại học Y Hải Phòng	225C Lạch Tray, Ngô Quyền, Hải Phòng
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13. Các công trình khoa học đã công bố

13.1. Bài báo khoa học:

- *Tên tác giả: tên các tác giả của bài báo*
- *Tác giả chính: là Tác giả thứ nhất (first author) hoặc Tác giả liên hệ (corresponding author)*
- *Danh mục: WoS/Scopus hoặc Tạp chí trong nước được HĐGSNN tính điểm*

TT	Tên bài báo	Tên tác giả	Tác giả chính	Tạp chí	Ngày XB	Số, trang	Danh mục	ISSN (DOI)
1	CONSTRUCT VALIDITY OF THE	Nguyen Thi Thu Huong,				6 No. 3		

	VIETNAMESE VERSION OF MASLACH BURNOUT INVENTORY-GENERAL SURVEY.	Kaspe Kiaoks, Khue Minh Pham, Ngoi Thi Minh Nguyen, Tran Bao Nguyen, Huong Thi Thu Pham, Cuong Hang Nguyen, Linh Van Pham, Hai Thanh		*Nurse Li ne Journal*	2021			p-ISSN 2540-7937 e-ISSN 2541-464X
2	Ứng dụng xét nghiệm QuantiFERON-TB Access trongchẩn đoán lao tiềm ẩn tại cộng đồng	Mạc Nguyễn Quỳnh Trâm, Nguyễn Hằng Cường, Bạch Thị Nhu Quỳnh		*Tạp chí Khoa học sức khoẻ*	2024	số 4-2024 : trang 1-6		https://doi.org/10.59907/jhs.v4i.1
3	Nghiên cứu đặc điểm chỉ số ANTI-MULLERIAN HORMONE (AMH), ANTRAL FOLLICLE COUNT (AFC),	Nguyễn Thị Ly, Phạm Thu Xanh, Nguyễn Hằng Cường,		*Tạp chí Y học Việt*	2024	trang 390-394, tập 545		

	OVARIAN RESPONSE PREDICTION INDEX (ORPI) trên phụ nữ được chỉ định IVF tại bệnh viện Quốc tế Sản Nhi Hải Phòng	Phạm Thị Thu Trang, Nguyễn Đức Thuận, Võ Bá Việt Phương		ea se				
4	Đánh giá hiệu quả nâng cao mức chất lượng phòng xét nghiệm của các cơ sở y tế công lập trên địa bàn tỉnh Hải Dương năm 2024.	Vũ Thị Hải Hà, Nguyễn Hàng Cường, Đinh Thị Xuyến, Ngô Thị Thảo, Ngô Quỳnh Diệp, Đinh Thị Diệu Hồng, Cao Văn Tuyến.		Tạp chí Y học Việt nam	9/2024	tập 542, trang 197-202		
	Kết quả sau 6 tiếp quản lý quá trình xét nghiệm tại các bệnh viện tuyến II tỉnh Hải Dương năm 2023	Vũ Xuân Hiệu, Nguyễn Hàng Cường, Đinh Thị Xuyến, Ngô Thị Thảo, Ngô Quỳnh Diệp, Đinh Thị Diệu		Tạp chí Y học Việ t nam	2023			

		Hằng.						
	Nghiên cứu tỷ lệ và một số đặc điểm không không sinh của *Staphylococcus aureus* phân lập tại bệnh phẩm lâm sàng tại bệnh viện Hữu nghị Việt - Tiệp (1/2020-12/2020).	Trịnh Thị Hằng, Nguyễn Hùng Cường, Hoàng Thị Hải Yến, Nguyễn Thị Thanh Phương, Trần Diệu, Lại Thị Quỳnh.		*Tạp chí Y học Việt Nam*	2022	tập 515, trang 299-303.		
	Nghiên cứu vai trò sát nghiệm Glycomark (1,5 AG) trong theo dõi điều trị bệnh nhân đái tháo đường typ 2.	Phạm Thị Thu Trang, Lưu Vũ Dũng, Đỗ Ngọc Hải, Đào Văn Tùng, Nguyễn Hùng Cường, Nguyễn Thị Liên		*Tạp chí Y học Việt Nam*	2022	tập 515, trang 127-134.		
	So sánh chỉ số FIB-4 với kết quả Fibroscan trong chẩn đoán xơ hóa gan tại bệnh viện Việt Tiệp năm 2021.	Phạm Minh Khánh, Phạm Thị Thu Trang, Lưu Vũ Dũng, Đỗ Ngọc Hải, Đào Văn Tùng,		*Tạp chí Y học Việt Nam*	2022	tập 515, trang 162-168.		

		Nguyễn Hùng Cường, Ngô Anh Thế						
	Ứng dụng phương pháp Sửa Sigma trong kiểm soát chất lượng hóa sinh tại bệnh viện Đại học Y Hải Phòng	Trịnh Văn Khương, Nguyễn Hùng Cường, Phạm Minh Khánh, Đào Thị Hương, Vũ Thị Xuân.		Tạp chí Y học Việt Nam	2021	Tập 503, trang 55-62		
	Tỷ lệ chuẩn và genotype của Human papillomavirus ở bệnh nhân khám tại bệnh viện Đại học Y Hải Phòng (2020).	Trịnh Văn Khương, Nguyễn Hùng Cường, Đào Thị Hương, Nguyễn Ngọc Mỹ Trinh, Vũ Thị Hương		Tạp chí nghiên cứu Y học	2020	tập 133 (11) phần II 12/2020 trang 18-22		

13.2. Sách chuyên khảo, giáo trình – tài liệu dạy học:

- *Tên tài liệu: Sách Chuyên sách*
- *Loại hình: Chuyên khảo; Tham khảo; Giáo trình; Tài liệu hướng dẫn*

TT	Tên tài liệu	Tên tác giả	Chủ biênTổng chủ biên	Nhà xuất bản	Năm xuất bản	Loại hình	ISBN
1							
2							

14. Báo cáo Hội nghị - hội thảo khoa học

Ký yếu; Tóm tắt; Toàn văn

TT	Tên báo cáo	Tên tác giả	Tác giả chính	Tên hội nghị	Thời gian báo cáo (tháng/năm)	Ký yếu	ISBN
	Cập nhật các sơ nghiệm chẩn đoán và đánh giá hiệu quả điều trị viêm gan virus B và C	Nguyễn Hồng Cường	x	Cập nhật chẩn đoán và điều trị viêm gan virus	2015/2025		

15. Bằng sở hữu trí tuệ đã được cấp

Liệt kê các văn bằng bảo hộ đối quyền sáng chế, giải pháp hữu ích, kiểu dáng công nghiệp, thiết kế bố trí, giống cây trồng...

TT	Tên và nội dung văn bằng	Số, Mã, ký hiệu	Nơi cấp	Năm cấp
1				
2				

16. Công trình KH&CN được ứng dụng, chuyển giao

TT	Tên công trình	Hình thức	Quy mô	Địa chỉ áp dụng	Giá trị	Thời gian
1						
...						

17. Nhiệm vụ KH&CN các cấp

- *Loại hình: Đề tài/ Dự án/ Đề án*
- *Tình trạng nhiệm vụ: Đã nghiệm thu/ Chưa nghiệm thu/ Không hoàn thành*

17.1. Nhiệm vụ KH&CN đã và đang chủ trì

Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình *(nếu có)*	Tình trạng nhiệm vụ	Ngày			Kinh phí
					Phê duyệt	Đăng ký kết quả nếu có	Công nhận kết quả	

17.2. Nhiệm vụ KH&CN đã và đang tham gia

Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình *(nếu có)*	Tình trạng nhiệm vụ	Ngày			Kinh phí
					Nghiệm thu	Công nhận kết quả	Đăng ký kết quả	

18. Giải thưởng về KH&CN trong và ngoài nước

TT	Tên giải thưởng	Hình thức khen thưởng	Cấp khen thưởng	Năm tặng thưởng
1				
2				

19. Hướng dẫn sau đại học

- *Học viên hướng dẫn: hướng dẫn 1/ hướng dẫn 2*
- *Bậc đào tạo: Tiến sĩ/ Thạc sĩ/ BS Nội Trú/ CKII...*

TT	Họ tên học viên	Vai trò	Bậc đào tạo	Chuyên ngành	Nơi đào tạo	Năm cấp bằng
1	Phạm Thị Tâm	Hướng dẫn 2	Thạc sỹ	Vi sinh Y học	ĐHYHà Nội	2013
2	Võ Thị Nở	Hướng dẫn 2	Thạc sỹ	Vi sinh Y học	ĐHY Hà Nội	2018
3	Kiều Mai Loan	Hướng dẫn 1	Thạc sỹ	Xét nghiệm Y học	ĐHY Dược HP	2021
4	Nguyễn Thị Khánh Hòa	Hướng dẫn 1	Thạc sỹ	Xét nghiệm Y học	ĐHY Dược HP	2021
5	Lê Thị Hải Tâm	Hướng dẫn 1	Thạc sỹ	Xét nghiệm Y học	ĐHY Dược HP	2022
6	Phan Thị Tâm	Hướng dẫn 1	Thạc sỹ	Xét nghiệm Y học	ĐHY Dược HP	2022
7	Mạc Nguyễn Quỳnh Trâm	Hướng dẫn 1	Thạc sỹ	Xét nghiệm Y học	ĐHY Dược HP	2023
8	Vũ Xuân Hiếu	Hướng dẫn 1	Thạc sỹ	Xét nghiệm Y học	ĐHY Dược HP	2023

9	Vũ Đình Tuấn	Hướng dẫn 2	Thạc sỹ	Xét nghiệm Y học	ĐHY Dược HP	2023
10	Nguyễn Hữu Hiệp	Hướng dẫn 2	Thạc sỹ	Xét nghiệm Y học	ĐHY Dược HP	2023
11	Nguyễn Thị Ly	Hướng dẫn 2	Thạc sỹ	Xét nghiệm Y học	ĐHY Dược HP	2024
12	Vũ Thị Hải Hà	Hướng dẫn 1	Thạc sỹ	Xét nghiệm Y học	ĐHY Dược HP	2024

NHỮNG THÔNG TIN KHÁC VỀ CÁC HOẠT ĐỘNG KHOA HỌC VÀ CÔNG NGHỆ

(Tham gia các tổ chức khoa học ngành nghề; thành viên Ban biên tập các Tạp chí khoa học trong và ngoài nước; Thành viên các hội đồng quốc gia, quốc tế, ...)

Thành viên Hiệp hội nghiên cứu viêm gan virus khu vực Đông Á

Hải Phòng, ngày 30 tháng 05 năm 2023

XÁC NHẬN CỦA ĐƠN VỊ

TRƯỞNG PHÒNG TỔ CHỨC CÁN BỘ

TS. Nguyễn Hải Ninh

NGƯỜI KHAI

(Ký tên và ghi rõ họ)

TS. Nguyễn Hùng Cường

BỘ Y TẾ
Số: 0012599/BYT-CCHN

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

CHỨNG CHỈ HÀNH NGHỀ KHÁM BỆNH, CHỮA BỆNH

BỘ TRƯỞNG BỘ Y TẾ

Căn cứ Luật khám bệnh, chữa bệnh ngày 23/11/2009;
Căn cứ Nghị định số 87/2011/NĐ-CP ngày 27/9/2011 của Chính phủ quy định chi tiết và hướng dẫn thi hành một số điều của Luật khám bệnh, chữa bệnh;
Căn cứ Thông tư số 41/2011/TT-BYT ngày14/11/2011 của Bộ trưởng Bộ Y tế hướng dẫn cấp chứng chỉ hành nghề đối với người hành nghề và cấp giấy phép hoạt động đối với cơ sở khám bệnh, chữa bệnh;
Xét đề nghị của Cục trưởng Cục Quản lý khám, chữa bệnh - Bộ Y tế,

CẤP CHỨNG CHỈ HÀNH NGHỀ KHÁM BỆNH, CHỮA BỆNH

Họ và tên: **NGUYỄN HÙNG CƯỜNG.**
Ngày tháng năm sinh: 29/9/1971.
Giấy chứng minh nhân dân số: 030786079.
Ngày cấp: 20/12/2004. Nơi cấp: Công an Hải Phòng.
Chỗ ở hiện nay: Số 24/71 tổ 8 khu I , phường Đư Hàng Kênh, quận Lê Chân, thành phố Hải Phòng.
Văn bằng chuyên môn: Bác sỹ.
Phạm vi hoạt động chuyên môn: Chuyên khoa Xét nghiệm Vi sinh và Sinh học phân tử.

CHỨNG THỰC
BẢN SAO ĐÚNG VỚI BẢN CHÍNH
Ngày 25-03-2015

Hà Nội, ngày 16 tháng 11 năm 2013
KT. BỘ TRƯỞNG
THỨ TRƯỞNG

CHỨNG THỰC BẢN SAO ĐÚNG VỚI BẢN CHÍNH

Nguyễn Thị Xuyên

BỘ GIÁO DỤC VÀ ĐÀO TẠO
CỤC KHẢO THÍ VÀ KIỂM ĐỊNH
CHẤT LƯỢNG GIÁO DỤC

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

Hà Nội, ngày 19 tháng 5 năm 2015

CỤC KHẢO THÍ VÀ KIỂM ĐỊNH
CHẤT LƯỢNG GIÁO DỤC

CÔNG NHẬN

Văn bằng số: Ngày cấp: 07/3/2012

Do: **Trường Đại học Kanazawa, Nhật Bản**

Cấp cho: **Nguyễn Hùng Cường**

Ngày sinh: 29 tháng 9 năm 1971

Nơi sinh: Hải Phòng

Là bằng tốt nghiệp: **Tiến sĩ**

CHỨNG THỰC
BẢN SAO ĐÚNG VỚI BẢN CHÍNH
17-04-2015

Đã đăng ký tại Bộ Giáo dục và Đào tạo ngày 19 tháng 5 năm 2015

KT. CỤC TRƯỞNG

Mai Văn Trinh
PHÓ CỤC TRƯỞNG

Đề nghị số đăng ký số: 006915/CNVB

Kanazawa University

This is to certify that

NGUYEN HUNG CUONG

has passed the final examination in the Doctoral course of the graduate school, and that the required dissertation has been accepted by the Graduate School of Medical Science.
The President of the University has therefore conferred the degree of Doctor of Philosophy in Medical Science.

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CHỨNG THỰC
BẢN SAO ĐÚNG VỚI BẢN CHÍNH
17-04-2013

NAKAMURA Shinichi
President
Kanazawa University

PHÓ CHỦ TỊCH

証 正 印 刷

金博乙第1078号

学位記

グエン フン クオン

1971年 9月29日生

本学に学位論文を提出し所定の

審査及び試験に合格したので

博士(医学)の学位を授与する

CHỨNG THỰC
BẢN SAO ĐÚNG VỚI BẢN CHÍNH
17-04-2025
NGƯỜI THỰC HIỆN CHỨNG THỰC

平成24年 3月 7日

金沢大学長 中村信一

PHÓ CHỦ TỊCH
Nguyễn Thị Thu Hương

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TỔNG HỘI Y HỌC VIỆT NAM
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Email: tapchiyhocvietnam@gmail.com; Website: tapchiyhocvietnam.vn; vmj.vn

- Mối liên quan giữa resistin-1 huyết tương với một số đặc điểm lâm sàng, cận lâm sàng ở bệnh nhân.

- Nồng độ resistin-1 liên quan có ý nghĩa với một số chỉ số nhân trắc học, chỉ số sinh hóa máu.

- Nồng độ resistin-1 huyết tương liên quan chưa có ý nghĩa thống kê với giới, nhóm tuổi, tỉ số eo/hông, nồng độ lipid và HbA1c.

TÀI LIỆU THAM KHẢO

1. **B.Rigal, Y.Ohkawa, D.Gaudefk (2018).** " Serum Resistin — 1 Levels in Patients With Different Glucose Tolerance Levels". Physiol. Res, 67: pp. 979-985.
2. **Qing-Chun Li, Hai-Tao Wang, Xi Chen, et al. (2010).** "Fasting plasma levels of resistin-1 in patients with type 2 and type 2 diabetes mellitus and the exercise-related fluctuation of resistin-1 level in normal humans". Regulatory Peptides, 159: pp. 72-77.
3. **Kangkang Huang, Yunkai Liang, Xue Wang, et al. (2021).** "Influence of circulating resistin-1, 25H and 26D on insulin secretion in the development of T2DM". Frontiers in Public Health, 10:1009; pp. 1-10.
4. **Ayshe Ahmed Abed, Layla Otheyan Farhan, Ashgan Gharan Dawood (2020).** "Relationship between serum Resistin-1, Adiponectin, Apelin Concentration, and Obesity with Type 2 Diabetes mellitus". Anbar Medical Science Journal, 18:2113.
5. **Xiaoxi Ding, Wei Qu, Shuangxue Gang, et al. (2022).** "Serum Resistin-1 is Related to Type 2 Diabetes Mellitus Patients with Nonalcoholic Arterial Disease". Med Sci Monit., 11: pp. 937-950.
6. **Sarah Khalil Ibrahim Al-Fayadh, Fadhil Jawad Al-Tamo, Maher Abbood Mukheef, et al. (2020).** "Association between Resistin-1 Levels and Dyslipidemia in Sera of Obese/Non-Obese Type 2 Diabetic Women". J Contemp Med Sci, Volume 6, Number 1; pp. 58-62.
7. **Arham Akram, Ismail Catli, Ahmet Anik, et al. (2015).** "The relation of serum resistin-1 level with metabolic and clinical parameters in obese and healthy children". Pediatric Diabetes, 14: pp. 197-197.
8. **S. Mirakhur Samani, M. Ghanaei, G. Rezaei Kanavei, et al. (2015).** "Serum resistin-1 level in healthy subjects with weight-related abnormalities and newly diagnosed patients with type 2 diabetes mellitus: A case-control study". Acta Endocrinol, 11 (1): pp. 69-75.

NGHIÊN CỨU ĐẶC ĐIỂM CHỈ SỐ ANTI-MULLERIAN HORMONE (AMH), ANTRAL FOLLICLE COUNT (AFC), OVARIAN RESPONSE PREDICTION INDEX (ORPI) TRÊN PHỤ NỮ ĐƯỢC CHỈ ĐỊNH IVF TẠI BỆNH VIỆN QUỐC TẾ SẢN NHI HẢI PHÒNG

Nguyễn Thị Ly[1], Phạm Thu Xanh[2], Nguyễn Hùng Cường[3], Phạm Thị Thu Trang[1], Nguyễn Đức Thuận[1], Vũ Bá Việt Phương[4]

TÓM TẮT

Mục tiêu: Mô tả đặc điểm các chỉ số AMH, AFC, ORPI và xác định mối liên quan của chúng với kết quả đáp ứng khi kích buồng trứng theo phác đồ GnRH đối với phụ nữ được IVF tại Bệnh viện Quốc tế Sản Nhi Hải Phòng. **Đối tượng và phương pháp:** Nghiên cứu mô tả cắt ngang trên 480 phụ nữ được hút IVF tại Bệnh viện Quốc tế Sản nhi Hải Phòng từ 1/2021 đến 12/2023. Tất cả đối tượng nghiên cứu được đo AFC, AMH, ORPI. **Kết quả:** Tuổi trung bình 31,02 ± 4,48. AMH, AFC và ORPI có mối tương quan thuận với số lượng noãn thu được và số noãn thu trưởng thành (p < 0,01). ORPI có khả năng dự đoán đáp ứng buồng trứng tốt nhất (AUC = 0,808 cho đáp ứng quá mức, AUC = 0,808 cho đáp ứng kém). Giá trị ngưỡng dự đoán đáp ứng buồng trứng và tỷ lệ mắc của AMH, AFC và ORPI lần lượt là 3,735 ng/mL (95% CI: 3,5 và 11,5 (trung bình cộng); 0,739 và 1,838 (95% CI: 71,4%); Kết luận: AMH, AFC và ORPI là các chỉ số tiên lượng đáp ứng buồng trứng đáng tin cậy trên phụ nữ được IVF. ORPI có thêm lợi ích dùng cho trường hợp kinh kém.

Từ khóa: Dự trữ buồng trứng, AMH, AFC, ORPI, IVF

SUMMARY

STUDY ON CHARACTERISTICS OF ANTI-MULLERIAN HORMONE (AMH), ANTRAL FOLLICLE COUNT (AFC), OVARIAN RESPONSE PREDICTION INDEX (ORPI) IN WOMEN INDICATED FOR IVF AT HAI PHONG INTERNATIONAL HOSPITAL FOR OBSTETRICS AND GYNECOLOGY

Objectives: To describe the relationship of AMH, AFC and ORPI with ovarian response to GnRH protocols proposed to women undergoing IVF at Hai Phong International Hospital of Obstetrics, Gynecology and Pediatrics. **Subjects and methods:** A cross-

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[3]Bệnh viện Da Liễu Trung Ương
[4]Trường Đại học Y tế Công cộng
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Ngày nhận bài: 15.9.2024
Ngày phản biện khoa học: 26.10.2024
Ngày duyệt bài: 10.12.2024

national study was conducted on 480 women undergoing IVF at Hai Phong International Hospital of Obstetrics, Gynecology and Pediatrics from January 2023 to December 2023. All study subjects underwent AFC, AMH, and DIVF procedures. Results: The mean age was 31.52 ± 4.46. AMH, AFC and DIVF were positively correlated with the number of oocytes retrieved and fertilized (p < 0.01). DIVF had the best predictive ability for ovarian response (AUC = 0.829 for hyper-response, AUC = 0.808 for poor response). The cut-off values for predicting poor and hyper-response for AMH, AFC and DIVF were 1.735 and 3.150 (ng/mL); 10.5 and 12.5 (unit/ 500ml); 0.734 and 1.069 (AMH/AFC/Age). Conclusion: AMH, AFC and DIVF are reliable predictors of ovarian response in women undergoing IVF. DIVF has high potential for clinical applications. Keywords: Ovarian antagonist, AMH, AFC, DIVF, IVF

I. ĐẶT VẤN ĐỀ

Vô sinh hay sự thất bại trong sinh sản, đã trở thành một vấn đề lớn đối với sức khỏe sinh sản của con người và ảnh hưởng đến khoảng 15,0% các cặp vợ chồng trên thế giới [1]. Phương pháp thụ tinh trong ống nghiệm (IVF) là một giải pháp đầy hứa hẹn, mang lại cơ hội có con cho các cặp vợ chồng hiếm muộn. Một yếu tố then chốt quyết định sự thành công của IVF là khả năng dự đoán đáp ứng buồng trứng với liều pháp kích thích buồng trứng. Việc dự đoán chính xác không chỉ tối ưu hóa kết quả điều trị mà còn giảm thiểu nguy cơ biến chứng cho người bệnh.

Nhiều nghiên cứu đã chỉ ra rằng kích, rồng AMH (Anti-Mullerian Hormone), Estradiol (E2), Progesterone, AMH (Anti-Mullerian Hormone), Inhibin B, siêu âm đếm số nang thứ cấp (AFC-Antral follicle count), Doppler mạch buồng trứng (Ovarian vascular), thể tích buồng trứng, và chỉ số dự đoán đáp ứng buồng trứng ORPI (Ovarian response prediction index) là các yếu tố đáng tin cậy để dự đoán đáp ứng buồng trứng với liệu pháp kích thích buồng trứng trong hỗ trợ sinh sản [2]. Trong đó, chỉ số AFC, AMH, DIVF là những chỉ số đáng tin cậy để đánh giá dự trữ buồng trứng và đưa ra quyết định về liều lượng kích thích trứng phù hợp [3, 4]. Mặc dù cả ba chỉ số này đều được sử dụng rộng rãi, các nghiên cứu khác nhau đã báo cáo các giá trị ngưỡng khác nhau để dự đoán mức độ dự trữ buồng trứng và đáp ứng buồng trứng với liệu pháp kích thích trứng trong IVF [3, 4, 5].

Đề tài nghiên cứu đặc điểm các chỉ số AMH, AFC và DIVF trên những chu kỳ thực hiện IVF tại bệnh viện Sản- Nhi Quốc tế Hải Phòng được tiến hành nhằm mục tiêu: Mô tả đặc điểm các chỉ số AMH, AFC, DIVF và xác định mối liên quan của các chỉ số này với kết quả đáp ứng kích thích buồng trứng trên nhóm đối tượng nghiên cứu. Kết quả nghiên cứu này sẽ cung cấp bằng chứng khoa học hỗ trợ bác sĩ lâm sàng trong việc đưa ra quyết định cá nhân hóa về liệu pháp kích thích buồng trứng, tối ưu hóa hiệu quả điều trị và giảm thiểu biến chứng cho bệnh nhân.

II. ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU

2.1. Đối tượng nghiên cứu. Tất cả những phụ nữ được chỉ định thực hiện kích thích buồng trứng trong thụ tinh trong ống nghiệm (IVF) tại Trung tâm hỗ trợ sinh sản Bệnh viện Quốc tế Sản-Nhi Hải Phòng, từ 1/2022 - 12/2023.

Tiêu chuẩn lựa chọn

- Bệnh nhân nữ tuổi từ 18-45.
- BMI ≥ 25 kg/m²
- Số chu kỳ điều trị thụ tinh trong ống nghiệm ≤ 2
- Được kích thích buồng trứng bằng phác đồ GnRH đối vận
- Có chọc hút noãn làm thụ tinh trong ống nghiệm
- Có đầy đủ các thông tin: kết, loại vô sinh, nguyên nhân vô sinh, thời gian vô sinh
- Bệnh nhân được chỉ định làm xét nghiệm AMH và siêu âm đánh giá AFC.
- Bệnh nhân đồng ý tham gia nghiên cứu.

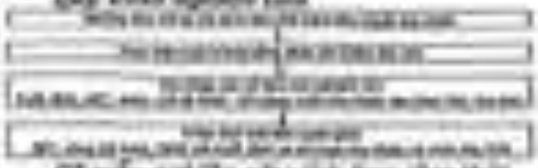
Tiêu chuẩn loại trừ

- Bệnh nhân có bệnh lý nội khoa nặng như tim mạch, hô hấp, gan, thận.
- Bệnh nhân có bệnh lý nội tiết như suy tuyến giáp, cường tuyến giáp, suy tuyến yên.
- Bệnh nhân có tiền sử phẫu thuật buồng trứng.

2.2. Địa điểm và thời gian nghiên cứu: Trung tâm hỗ trợ Sinh sản và Khoa Xét nghiệm - Bệnh viện Sản Nhi quốc tế Hải Phòng từ 1/2022 đến 12/2023.

2.3. Phương pháp nghiên cứu: Mô tả cắt ngang

Quy trình nghiên cứu



Cỡ mẫu nghiên cứu: Sử dụng công thức:

$$n = Z^2(1-\alpha/2)\frac{P(1-P)}{d^2}$$

Trong đó: P: Tỉ lệ đáp ứng buồng trứng ở mức bình thường. Theo nghiên cứu của Berenbeg Hakkenaven và cộng sự nghiên cứu trên 9989 chu kỳ thụ tinh ống nghiệm tỉ lệ đáp ứng buồng trứng bình thường là 65,89% [6].

d: Độ sai lệch tuyệt đối (khoảng sai lệch mong muốn giữa tỉ lệ thu được từ mẫu và tỉ lệ của quần thể) trong nghiên cứu lấy d = 0,05.

α: Mức ý nghĩa thống kê chọn $Z_{1-\alpha/2}$ = 0,5 tìm được từ bảng Z ứng với giá trị α được chọn, (α = 0,05; $Z_{1-\alpha/2}$ = 1,96)

Thay vào công thức trên ta được n = 384. Trong nghiên cứu này chúng tôi lựa chọn được 480 bệnh nhân đủ điều kiện trong thời gian nghiên cứu.

2.4. Các chỉ số nghiên cứu

- Tuổi tính theo năm, chỉ số BMI theo kg/m².

- Chỉ số AFC (số nang thứ cấp): là số nang noãn có kích thước 2 – 9mm đếm được trên một cắt của 2 bên buồng trứng bằng siêu âm đầu dò âm đạo thực hiện vào ngày 2 – 3 của chu kì kinh (ngày trước khi dùng thuốc kích trứng).

- Nồng độ AMH trong máu được thu bằng vào ngày bắt kì của chu kỳ kinh nguyệt. Mẫu được ủn bằng bình hệ thống máy (máy Cobas 6x1 800 theo nguyên tắc miễn dịch hóa phát quang trong vòng 2 giờ sau khi lấy mẫu theo hướng dẫn của hãng BeckmanCoulter.

- Chỉ số ORPI: được tính theo công thức nồng độ AMH (ng/mL) nhân với số nang thứ cấp trong AFC chia cho tuổi (năm) của chính bệnh nhân [4].

- Noãn thu được và noãn thụ tinh.

+ Noãn thu được: tổng số noãn rách ra được sau khi chọc hút.

+ Noãn thụ tinh: noãn được xem là noãn thụ tinh, bình thường khi xuất hiện 2 tiền nhân (Pronucleir-PN). Noãn sau khi được tiêm tinh trùng vào bào tương (Intracytoplasmic Sperm Injection - ICSI) sẽ được kiểm tra xuất hiện hai tiền nhân sau khoảng 16 – 20 giờ.

- Phân loại đáp ứng buồng trứng theo số lượng noãn chọc hút thu được và số noãn thụ tinh theo Hương TH Ngọc Lan và Ghiorra [1; 4]

Noãn chọc hút	Noãn thụ tinh	Phân loại đáp ứng buồng trứng
>15	Rất tốt	Quá mức
5-15	3-8	Tốt
4-11	<4	Kém

2.5. Xử lý số liệu: Các biến số định lượng như tuổi, BMI, nồng độ AMH, nang thứ cấp AFC, ORPI, tổng số noãn chọc hút thu được và noãn thụ tinh được thể hiện dưới dạng trung bình (X), độ lệch chuẩn (±SD), giá trị nhỏ nhất (min), giá trị lớn nhất (max). Kiểm định Pearson (r) được sử dụng để đo lường mối tương quan giữa các biến số.

- Biến số định tính là kết quả đáp ứng của buồng trứng với hội chẩn kích thích buồng trứng được thể hiện dưới dạng phân số và tỷ lệ phần trăm.

- Đường cong ROC (Receiver operating characteristic) được sử dụng để so sánh khả năng dự đoán đáp ứng buồng trứng giữa các chỉ số như nồng độ AMH, AFC, ORPI, tuổi, BMI.

- Phân tích hồi quy đơn và đa biến được sử dụng để đánh giá độ nhạy và đặc hiệu của các giá trị ngưỡng AMH, AFC và ORPI dự đoán đáp ứng của buồng trứng với liệu pháp kích thích buồng trứng.

- Phần mềm Excel MS 2019 và SPSS 20.0 được sử dụng để thu thập số liệu và tính toán trong nghiên cứu.

2.6. Đạo đức nghiên cứu. Các số liệu thu thập được nhằm mục đích phục vụ cho nghiên cứu, kết quả nghiên cứu được đề xuất sử dụng vào mục đích nâng cao sức khỏe cho cộng đồng, không sử dụng vào mục đích khác. Nghiên cứu đã được thông qua bởi hội đồng đạo đức về khoa học của bệnh viện.

III. KẾT QUẢ NGHIÊN CỨU

Bảng 3.1. Một số đặc điểm của nhóm đối tượng nghiên cứu (n=480)

Các chỉ số	X ± SD	Min	Max
Tuổi (năm)	31,63 ± 4,49	23,00	45,00
BMI (kg/m²)	21,51 ± 2,57	15,36	34,84
Thời gian vô sinh (năm)	3,13 ± 2,46	1,00	20,00
AMH (ng/ml)	3,84 ± 2,09	0,68	12,96
AFC (nang)	11,61 ± 6,05	2,00	50,00
ORPI (AFC/AMH) (tuổi)	1,70 ± 1,01	0,05	7,47
Số noãn chọc hút	14,64 ± 7,75	1	46
Số noãn thụ tinh	8,87 ± 5,01	0	28

Với 480 phụ nữ trong nghiên cứu của chúng tôi có các đặc điểm về tuổi (31,63±4,49), BMI (21,51±2,57) và các đặc điểm khác như thời gian vô sinh, AMH, AFC, ORPI, tổng số noãn chọc hút, số noãn thụ tinh được mô tả tại bảng 3.1.

Bảng 3.2. Mối liên quan AMH, AFC, ORPI với kết quả kích thích buồng trứng (n=480)

Chỉ số	Số noãn chọc hút/ Số noãn thụ tinh			
	r	p	r	p
AMH	0,728	<0,01	0,599	<0,01
AFC	0,685	<0,01	0,578	<0,01
ORPI	0,418	<0,01	0,436	<0,01

Các chỉ số AMH, AFC có mối tương quan tuyến tính mức độ mạnh với số noãn chọc hút được và số noãn thụ tinh (p<0,01); chỉ số ORPI mối tương quan tuyến tính mức

Hình 3.1. Biểu đồ AUC của đáp ứng buồng trứng với các chỉ số AMH, AFC, ORPI, Tuổi, BMI (n=498)

Biểu đồ AUC (Area Under the Curve) là một công cụ thực quan được sử dụng để đánh giá khả năng của các chỉ số AMH, AFC, ORPI, tuổi và BMI trong việc dự đoán đáp ứng buồng trứng. Đường cong càng gần góc trên bên trái của đồ thị càng có khả năng dự đoán tốt hơn (Hình 3.1).

Bảng 3.3. Diện tích dưới đường cong AUC (ROC) của đáp ứng buồng trứng với các chỉ số AMH, AFC, ORPI, tuổi, BMI (n=498)

Các chỉ số đánh giá	AUC		
	Đáp ứng quá mức (≥20; 480)	Đáp ứng tốt (≥10 ≤ 480)	Đáp ứng kém (≥0; <480)
AMH (ng/ml)	0,881	0,619	0,772
AFC (nang thứ cấp)	0,809	0,600	0,823
ORPI (AFC/số ngày kích)	0,838	0,635	0,806
Tuổi (năm)	0,511	0,518	0,341
BMI (kg/m²)	0,536	0,517	0,462

Có phụ nữ (41,9%) có đáp ứng buồng trứng quá mức, 182 phụ nữ (37,9%) có đáp ứng buồng trứng tốt và 99 bệnh nhân (20,8%) có đáp ứng buồng trứng kém. Trong đó chỉ số AMH, AFC, ORPI, tuổi, BMI được đánh giá hiệu suất với đáp ứng buồng trứng thông qua diện tích dưới đường cong AUC (0,80 - 0,09 = tốt; 0,69 - 0,70 = tạm được; 0,50 - 0,60 = không giá trị).

Bảng 3.4. Tiên lượng của đáp ứng buồng trứng dựa vào các chỉ số AMH, AFC và ORPI (n=498)

Các chỉ số	Đáp ứng	Giá trị ngưỡng	Độ nhạy	Độ đặc hiệu
AMH	Đáp ứng quá mức	3,58	77,0%	75,1%
	Đáp ứng tốt	0,57 - 3,58	35,0% - 97,3%	5,7% - 99%
	Đáp ứng kém	0,25	91,9%	87,5%
AFC	Đáp ứng quá mức	17,500	74,0%	77,00%
	Đáp ứng tốt	5,500 - 14,500	99,2% - 99,7%	47,5% - 57,5%
	Đáp ứng kém	3,500	83,9%	34,4%
ORPI	Đáp ứng quá mức	1,04	74,0%	76,0%
	Đáp ứng tốt	0,50 - 1,10	75,5% - 98,4%	5,9% - 51,4%
	Đáp ứng kém	0,25	80,08%	69,2%

Hướng giá trị các chỉ số AFC, AMH, ORPI cho độ nhạy và độ đặc hiệu tối ưu nhất cho việc tiên lượng đáp ứng buồng trứng sau khi phân loại theo buồng trứng. Đồng đối với đáp ứng buồng trứng tốt các ngưỡng đều dao động trong khoảng có vùng độ AMH, AFC, ORPI đối với đáp ứng tốt cũng nằm trong khoảng dao động.

IV. BÀN LUẬN

Một số đặc điểm của nhóm phụ nữ thực hiện IVF. Nhóm phụ nữ trong nghiên cứu của chúng tôi có độ tuổi trung bình 35,00±4,49 cao hơn nghiên cứu của Nguyễn Thanh Tuấn (2024) thực hiện tại trung tâm hỗ trợ sinh sản quốc gia với độ tuổi trung bình là 33,6±5,5 [7]. Kết quả nghiên cứu của chúng tôi cũng cho thấy sự phân bố rộng của các chỉ số AMH, AFC và ORPI trong quần thể nghiên cứu, phân ánh tính đa dạng trong dự trữ buồng trứng và đáp ứng buồng trứng của phụ nữ được chỉ định IVF. Điều này nhấn mạnh tầm quan trọng của việc đánh giá cá nhân hóa trong quá trình điều trị IVF. Nồng độ AMH trung bình (3,84±2,89 ng/mL) tương đối cao so với các nghiên cứu của Trần Hữu Dật (2018) và Nguyễn Thanh Tuấn (2024), có thể do sự khác biệt về độ tuổi và đặc điểm của các quần thể nghiên cứu [5], [7]. Tuy nhiên, sự phân bố rộng của AMH (0,01 - 20,08 ng/mL) cho thấy cần thận trọng khi sử dụng chỉ số này một mình để dự đoán đáp ứng buồng trứng. Tương tự, AFC trung bình (12,01±6,05 nang) nằm trong khoảng giá trị được báo cáo trong các nghiên cứu khác của Nguyễn Thanh Tuấn (2024), nhưng cũng có sự phân bố rộng (2 - 58 nang) [7]. ORPI, một chỉ số kết hợp AMH và AFC, cũng cho thấy sự phân bố rộng (0,08 - 37,97), nhấn mạnh tiềm năng của thông tin bổ sung so với việc sử dụng AMH hoặc AFC riêng lẻ.

Mối liên quan AMH, AFC, ORPI với kết quả kích thích buồng trứng. Theo bảng 3.2 và ba chỉ số AMH, AFC và ORPI đều cho thấy mối tương quan dương và có ý nghĩa thống kê với số lượng noãn thực hút được. Điều này có nghĩa là khi giá trị của AMH, AFC hoặc ORPI tăng lên, số lượng noãn thực hút được cũng có xu hướng tăng lên. Trong đó, AFC cho thấy mối tương quan mạnh nhất (r = 0,597), tiếp theo là AMH (r

= 0.548) và DRFI (r = 0.959). Điều này cho thấy AFC có thể là chỉ số dự đoán tốt nhất về số lượng noãn chọc hút được, tuy nhiên cả AMH và DRFI cũng cung cấp thông tin hữu ích. Tương tự như với số lượng noãn chọc hút, cả ba chỉ số AMH, AFC và DRFI cũng cho thấy mối tương quan đương và có ý nghĩa thống kê với số lượng noãn thụ tinh. Trong đó, AFC vẫn là chỉ số có mối tương quan mạnh nhất (r = 0.570), tiếp theo là AMH (r = 0.559) và DRFI (r = 0.426). Kết quả của chúng tôi khá tương đồng với nghiên cứu của Trần Hữu Đạt và cộng sự khi cho kết quả AFC cũng có mối tương quan mạnh nhất với số noãn chọc hút được và số noãn thụ tinh lần lượt là r = 0.707; r = 0.596 [5].

Nghiên cứu của chúng tôi có 37,9% đối tượng nghiên cứu đáp ứng buồng trứng tốt, 41,3% có đáp ứng buồng trứng quá mức, 20,8% đáp ứng buồng trứng kém. Kết quả này tạo nên nghiên cứu của Vương Ngọc Lan về đáp ứng kém là 13,8%; thấp hơn về đáp ứng tốt (62,2%) và cao hơn về đáp ứng quá mức (23%) nghiên cứu của Nguyễn xuân Hợi [1], [2]. Trong đó, AUC của tuổi và BMI (bảng 3.7) thấp hơn đáng kể so với các chỉ số dự trữ buồng trứng, cho thấy chúng có khả năng tiên lượng đáp ứng buồng trứng kém hơn. Tuy nhiên, AUC của BMI là 0.526 cho đáp ứng quá mức và 0.463 cho đáp ứng kém, cho thấy BMI có thể có một số giá trị trong việc dự đoán đáp ứng buồng trứng. Kết quả này phù hợp với các nghiên cứu của Zhong (2024) đã chỉ ra rằng BMI là những yếu tố ảnh hưởng đến đáp ứng buồng trứng và tỷ lệ BMI cao có liên quan đến kết quả IVF kém. AUC của cả ba chỉ số AMH, AFC và DRFI đều cao (> 0.6) đối với cả đáp ứng quá mức, cho thấy cả ba đều có khả năng tiên lượng tốt. DRFI có AUC cao nhất cho đáp ứng quá mức và cao thứ hai cho đáp ứng kém, cho thấy DRFI có thể là chỉ số tiên lượng tốt trong ba chỉ số này. Kết quả này phù hợp với các nghiên cứu đã chỉ ra rằng DRFI là một yếu tố dự đoán đáp ứng buồng trứng tốt hơn so với AMH hoặc AFC đơn lẻ [3].

Việc xác định được các ngưỡng dự đoán và độ nhạy, độ đặc hiệu của các chỉ số này có ý nghĩa quan trọng trong việc lựa chọn phác đồ kích thích buồng trứng phù hợp cho từng bệnh nhân, từ đó tăng khả năng thành công của IVF, giảm thiểu các biến chứng như hội chứng quá kích buồng trứng và đáp ứng buồng trứng kém. Nghiên cứu này có sự khác biệt trong các giá trị ngưỡng của AMH cho tiên lượng kém so với Nguyễn Xuân Hợi và có giá trị gần tương đương với nghiên cứu của Vương Thị Ngọc Lan, Trần Hữu Đạt [1; 2; 5]. Vương Thị Ngọc Lan và Trần Hữu Đạt có ngưỡng cho đáp ứng nhiều lần lượt là 1,57 ng/ml và 2,345 ng/ml còn Nguyễn Xuân Hợi chỉ có ngưỡng cho đáp ứng kém là 1,12 ng/ml. Với ngưỡng chỉ số AFC và DRFI đối với cả đáp ứng buồng trứng quá mức và đáp ứng buồng trứng kém trong nghiên cứu của chúng tôi có sự khác biệt với nghiên cứu của Trần Hữu Đạt [5]. Có thể do có sự khác biệt về đặc điểm nhân khẩu học và lối sống của các đối tượng tham gia, từ đó ảnh hưởng đến kết quả nghiên cứu.

V. KẾT LUẬN

Các kết quả này khẳng định việc sử dụng các chỉ số AMH, AFC và DRFI có khả năng đánh giá tốt đáp ứng buồng trứng với kích thích buồng trứng tăng phóc để GnRH đối vận. Đặc biệt là DRFI, chỉ số mới rất có ý nghĩa trong việc tiên lượng đáp ứng buồng trứng ở phụ nữ thực hiện IVF. Trong đó giá trị ngưỡng của AMH, AFC và DRFI có ý nghĩa cho việc tiên lượng đáp ứng kém và quá mức của buồng trứng lần lượt là 1.720 và 2.130 (ng/ml); 10.5 và 12.5 (sang thứ tự); 8.739 và 1.868 (AMH/AFC/YuAI).

TÀI LIỆU THAM KHẢO

1. Dang Q, Kay PT, Wang L (2013). Overexpressing tim genetics of Tsunami interests. Science, 102(2011):728-163.
2. Vương Thị Ngọc Lan và Võ Minh Tuấn (2014). So sánh giá trị dự đoán về đặc tính của các chỉ số AMH, FSH và AFC đối với đáp ứng noãn ở bệnh nhân thụ tinh trong ống nghiệm. Nghiên cứu Y học, 87(1), 15 - 21
3. Nguyễn Xuân Hợi (2018). Sự cần giá trị tiên lượng của AMH với AFC, FSH, E2 đối với đáp ứng kém của buồng trứng trong thụ tinh trong ống nghiệm. Tạp chí Nghiên cứu Y học, 102, 47 - 52
4. Olivennes JB, Barnhart KT, Petersen KE, et al (2012). A new ovarian reserve prediction index (ORPI): implications for individualized controlled ovarian stimulation. Reprod Biol Endocrinol, 10:94
5. Trần Hữu Đạt, Võ Thị Ngọc, Nguyễn Lê Thắng và cộng sự (2018). Giá trị của AFC, AMH và ORPI trong tiên lượng của buồng trứng kém đáp ứng thực hiện IVF tại Bệnh viện Tâm Anh. Tạp chí nghiên cứu y học, Tập 121, số 7, 43-47.
6. Yuksekavcar B, Ekmekçi T, Cetin I (2008). Is there an ideal stimulation regimen for IVF for poor responders and does it change with age? Journal of assisted reproduction and genetics, 25:521-529.
7. Nguyễn Thanh Tuấn, Nguyễn Việt Quang, Mã Sỹ Hồng và cộng sự (2024). Đặc điểm của phụ nữ thụ tinh trong ống nghiệm tại trung tâm Hỗ trợ sinh sản quốc gia Hành viên Thụ tinh Trong Ống. Tạp chí Y học Việt Nam, 2024;539(1B).
8. Zhang W, Wang Y, Chen L, Zeng L, Li B (2024). Association between body mass index and in vitro fertilization/intracytoplasmic sperm injection outcomes: An analysis of 15,124 normal ovarian responders in China. Chinese medical journal. 2024 Apr 5;137(7):823-45.

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TẠP CHÍ

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HỘI NGHỊ KHOA HỌC THƯỜNG NIÊN LẦN THỨ 27
HỘI HÓA SINH Y HỌC HÀ NỘI VÀ CÁC TỈNH PHÍA BẮC

TỔNG HỘI Y HỌC VIỆT NAM
TẠP CHÍ Y HỌC VIỆT NAM
[illegible]

ĐÁNH GIÁ HIỆU QUẢ CAN THIỆP NÂNG CAO MỨC CHẤT LƯỢNG PXN CỦA CÁC CSYT CÔNG LẬP TRÊN ĐỊA BÀN TỈNH HẢI DƯƠNG NĂM 2024

Vũ Thị Hải Hà[1], Nguyễn Hùng Cường[2], Ngô Thị Thảo[1], Đinh Thị Diệu Hằng[1], Đinh Thị Xuyến[1], Ngô Quỳnh Diệp[1], Cao Văn Tuyến[1]

TÓM TẮT

Mục tiêu: Đánh giá hiệu quả can thiệp nâng cao mức chất lượng PXN (PXN) y học của các PXN thuộc 24 cơ sở y tế (CSYT) công lập tại Hải Dương theo quyết định 2429/QĐ-BYT. *Đối tượng và phương pháp nghiên cứu:* Nghiên cứu mô tả cắt ngang kết hợp can thiệp trên 27 PXN thuộc 12 Trung tâm Y tế (TTYT) tuyến huyện và 12 bệnh viện tuyến tỉnh (BVTT) trên địa bàn Hải Dương về hệ thống quản lý chất lượng xét nghiệm theo Bộ tiêu chí đánh giá mức chất lượng PXN y học (Quyết định 2429/QĐ-BYTDSCT). Các số liệu được phân tích trên phần mềm SPSS 26. *Kết quả:* Tỷ lệ % số điểm đạt trung bình sau can thiệp cao hơn ở nhóm BVTT với 71,75% và chỉ số hiệu quả (CSHQ) đạt 55,54%. Đối với các tiêu chí (*), (**) CSHQ ở nhóm TTYT ứng cao hơn BVTT với 146,33% và 123,10%. Kết quả xếp mức chất lượng trước can thiệp có 96,3% chưa xếp mức, 3,7% xếp mức 2. Sau can thiệp có 77,78% PXN được xếp đạt mức 2, 3,41% PXN được xếp đạt mức 3 và 14,81% chưa xếp mức. *Kết luận:* Hiệu quả nâng cao mức chất lượng của các PXN thuộc các CSYT công lập trên địa bàn tỉnh Hải Dương đã được cải thiện rõ rệt nhưng vẫn còn một số tồn tại nhất định. Kết quả này cho thấy bước đầu tính hiệu quả của các giải pháp can thiệp mà nhóm nghiên cứu đã thực triển khai. Tuy nhiên, vẫn cần tiếp tục thực hiện giám sát và triển khai thêm các giải pháp chuyên sâu để hỗ trợ nâng mức chất lượng cho các PXN trên địa bàn tỉnh Hải Dương.

Từ khóa: Hệ thống QLCL xét nghiệm, Bộ tiêu chí 2429, Quyết định 2429, Hiệu quả can thiệp, Hải Dương

SUMMARY

EVALUATION OF THE EFFECTIVENESS OF INTERVENTIONS TO IMPROVE THE QUALITY LEVEL OF PUBLIC HEALTH FACILITY LABORATORIES IN HAI DUONG PROVINCE IN 2024

Objectives: To evaluate the effectiveness of interventions to improve the quality level of medical laboratories in 24 public health facilities in Hai Duong, according to Decision 2429/QĐ-BYT. *Subjects and methods:* A cross-sectional descriptive study combined with interventions was conducted in 27 laboratories in 12 district health centers and 12 provincial hospitals in Hai Duong. The evaluation was based on the Quality Management System according to the Laboratory Quality Evaluation Criteria (Decision 2429/QĐ-BYT). The data were analyzed using SPSS 26

[1]*Trường Đại học Kỹ thuật Y tế Hải Dương*
[2]*Trường Đại học Y Dược Hải Phòng*
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Người phản biện: PGS.TS Phạm Văn Trần

uniform. Results: The average percentage of points achieved after the intervention was higher in the provincial hospitals group, with 71.71%, and the Effectiveness Index (EI) reached 11.54%. The II for criteria (*) and (***) increased more in the district health centers group, with 146.53% and 123.18%, respectively. The results of the quality level ranking before intervention were 94.3% unranked and 5.7% ranked at level 2. After intervention, 77.18% of laboratories were ranked at level 2, 7.41% were ranked at level 3, and 14.81% were unranked. Conclusion: The quality improvement of laboratories in public health facilities in Hai Duong Province has shown significant progress, although some challenges remain. These results demonstrate the initial effectiveness of the interventions implemented by the research group. However, continuous monitoring and further specialized interventions are needed to support and elevate the quality level of laboratories in Hai Duong.

Keywords: Quality Management System (QMS), 2429 Criteria, Decision 2429, Effectiveness of the intervention, Hai Duong

I. ĐẶT VẤN ĐỀ

Việc tăng cường năng lực hệ thống quản lý chất lượng xét nghiệm (HTQLCLXN) là điều kiện tiên quyết để cải thiện chất lượng khám và điều trị bệnh. Trong những năm qua, Chính phủ và Bộ Y tế đã triển khai nhiều biện pháp nhằm đảm bảo và nâng cao chất lượng xét nghiệm (CLXN), bao gồm việc ban hành các văn bản pháp lý và hướng dẫn xây dựng, đánh giá HTQLCLXN cho các PXN [1],[2],[3],[4]. Hải Dương là tỉnh mặc dù có hệ thống y tế khá phát triển, tuy nhiên mức chất lượng của các PXN còn nhiều hạn chế, ảnh hưởng đến chất lượng dịch vụ y tế [5]. Trước thực trạng này, việc triển khai các biện pháp can thiệp nhằm nâng cao chất lượng của các PXN công lập trên địa bàn tỉnh Hải Dương là hết sức cần thiết. Do vậy, nhóm nghiên cứu thực hiện đề tài "Đánh giá hiệu quả can thiệp nâng cao mức chất lượng PXN của các cơ sở y tế (CSYT) công lập trên địa bàn tỉnh Hải Dương năm 2024" với mục tiêu: *"Đánh giá hiệu quả can thiệp nâng cao mức chất lượng PXN y học của các PXN thuộc 24 CSYT công lập tại Hải Dương theo quyết định 2429/QĐ-BYT".*

II. ĐỐI TƯỢNG VÀ PHƯƠNG PHÁP NGHIÊN CỨU

2.1. Đối tượng nghiên cứu

Toàn bộ 27 PXN gồm 15 PXN thuộc 12 Bệnh viện tuyến tỉnh (BVTT) và 12 PXN thuộc 12 Trung tâm y tế (TTYT) tuyến huyện trên địa bàn Hải Dương.

Tiêu chuẩn chọn mẫu: PXN thuộc các CSYT có tham gia khám chữa bệnh bảo hiểm y tế trên địa bàn tỉnh Hải Dương và đồng ý tham gia nghiên cứu.

Tiêu chuẩn loại trừ: PXN thuộc các CSYT không tham gia khám chữa bệnh bảo hiểm y tế vàhoặc không đồng ý tham gia nghiên cứu.

2.2. Phương pháp nghiên cứu

Thiết kế nghiên cứu: Nghiên cứu mô tả cắt ngang kết hợp can thiệp với số liệu từ tháng 3/2022 đến tháng 5/2024. Cỡ mẫu và phương pháp chọn mẫu: Chọn mẫu toàn bộ với 27 PXN thuộc 12 BVTT và 12 TTYT trên địa bàn Hải Dương. Chỉ số và biến số trong nghiên cứu: 169 tiêu chí trong bộ tiêu chí đánh giá mức chất lượng PXN y học theo Quyết định số 2429/QĐ-BYT.

Phương pháp đánh giá: Sử dụng bảng kiểm đánh giá theo quyết định 2429/QĐ-BYT với các mức độ đánh giá và cho điểm như sau: Mỗi tiêu chí có một thang điểm nhất định, tổng số điểm tối đa của 169 tiêu chí là

368 điểm. Phương pháp xếp mức chất lượng dựa vào tỷ lệ % số điểm PXN đạt được cùng các tiêu chí bắt buộc (*) và (**). Có 6 mức chất lượng bao gồm: chưa xếp mức, mức 1, mức 2, mức 3, mức 4 và mức 5.

Phương pháp can thiệp: Các nội dung can thiệp bằng đào tạo (Đào tạo về "Hệ thống quản lý chất lượng xét nghiệm" cho lãnh đạo, cán bộ quản lý; Đào tạo về "Một hoạt chất số trong hệ thống quản lý chất lượng xét nghiệm" cho nhân viên quản lý chất lượng; Đào tạo về "Đảm bảo chất lượng xét nghiệm hoá sinh, huyết học, vi sinh" cho kỹ thuật viên xét nghiệm), các nội dung can thiệp bằng hội thảo, tọa đàm (Hội thảo "Công tác quản lý chất lượng của các PXN trên toàn tỉnh Bình Dương", Tọa đàm: "Công tác đánh giá nội bộ trong các PXN thực hiện liên thông"), các nội dung can thiệp bằng hỗ trợ, hướng dẫn trực tiếp tại CSYT (Hướng dẫn xây dựng, thiết lập hệ thống tài liệu, hồ sơ về QLCL, Hướng dẫn vận hành và duy trì hệ thống hồ sơ về QLCL).

Sau can thiệp, nhóm nghiên cứu tiến hành đánh giá lại các tiêu chí theo bộ tiêu chí như đánh giá ban đầu vào năm 2022.

Phương pháp thu thập số liệu: Thành lập đoàn đánh giá, tập huấn nội dung và kỹ năng đánh giá, thực hiện đánh giá tại các địa điểm nghiên cứu theo bảng kiểm ban hành kèm quyết định 2429/QĐ-BYT.

Phương pháp phân tích số liệu: Số liệu được phân tích bằng phần mềm thống kê Microsoft Excel 365 và SPSS 26 cho các bảng số như: Tỷ lệ %, giá trị trung bình (mean), độ tin cậy (p); Để đánh giá hiệu quả của quá trình can thiệp qua chỉ số hiệu quả (CSHQ) theo công thức:

$$CSHQ(\%) = \frac{p2 - p1}{p1} x100$$

Trong đó:

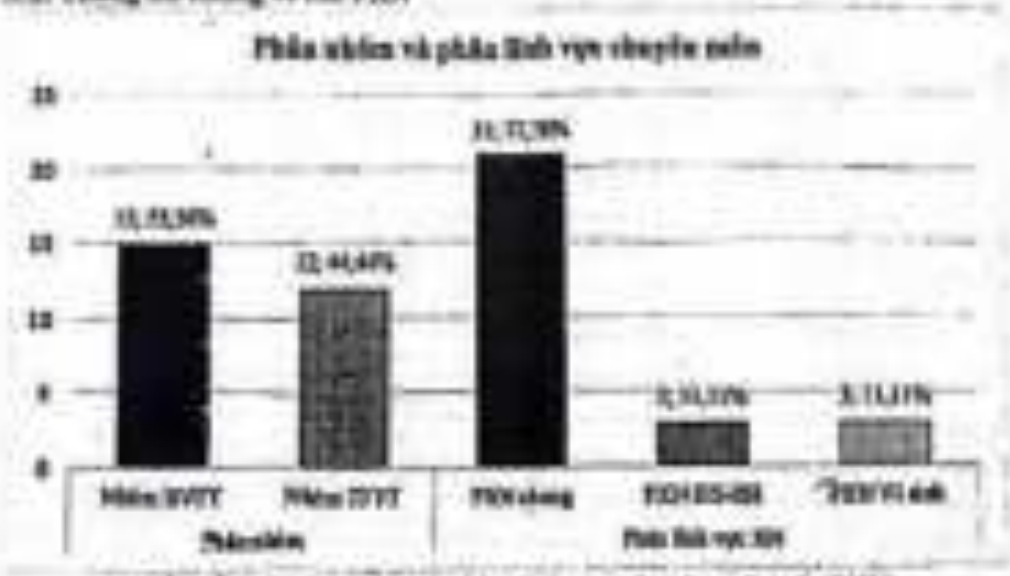
+ CSHQ: Chỉ số hiệu quả

+ p1: Tỷ lệ % chỉ số nghiên cứu trước can thiệp

+ p2: Tỷ lệ % chỉ số nghiên cứu sau can thiệp.

III. KẾT QUẢ NGHIÊN CỨU

3.1. Thông tin chung về các PXN



Biểu đồ 3.1. Phân nhóm và phân lĩnh vực chuyên môn các PXN

Nhận xét: Trong tổng số 27 PXN thuộc 24 CSYT có: 55,56% PXN thuộc BVTT và 44,44% PXN thuộc TTYT tuyến huyện. Có 77,78% PXN thực hiện xét nghiệm chung; 11,11% PXN chỉ thực hiện các xét nghiệm sinh hóa máu, huyết học và 11,11% PXN chỉ thực hiện các xét nghiệm Vi sinh.

3.2. Hiệu quả nâng cao mức chất lượng của các PXN

Bảng 1. Hiệu quả nâng cao tỷ lệ % số điểm đạt của các CSYT

Nhóm CSYT	Tỷ lệ % số điểm đạt trung bình trước can thiệp	Tỷ lệ % số điểm đạt trung bình sau can thiệp	p	CSHQ
Nhóm BVTT (n=15)	46,13	71,75	0,001	55,54
Nhóm TTYT (n=12)	35,55	69,79	0,002	96,32

Nhận xét: Tỷ lệ % số điểm đạt trung bình của cả 2 nhóm đều tăng. Trong đó, nhóm TTYT tăng cao hơn với CSHQ là 96,32% (p=0,002). Nhóm BVTT có CSHQ tăng thấp hơn với 55,54% (p=0,001).

Bảng 2. Hiệu quả nâng cao tỷ lệ các tiêu chí (*), (***) đạt

Nhóm CSYT	Tỷ lệ % số tiêu chí (*), (***) đạt trước can thiệp	Tỷ lệ % số tiêu chí (*), (***) đạt sau can thiệp	p	CSHQ
Tiêu chí (*)				
Nhóm BVTT (n=15)	48,44	85,44	0,001	82,58
Nhóm TTYT (n=12)	48,56	100	0,002	146,55
Tiêu chí (***)				
Nhóm BVTT (n=15)	31,48	62,22	0,001	97,65
Nhóm TTYT (n=12)	34,07	53,7	0,002	123,10

Nhận xét: Tỷ lệ số tiêu chí (*) và (***) đạt của cả 2 nhóm đều tăng, sự khác biệt trước và sau can thiệp đều có ý nghĩa thống kê với p<0,05. CSHQ đối với tiêu chí (*), (***) đạt cao hơn ở nhóm TTYT với 146,55% và 123,10%.

Bảng 3. Hiệu quả nâng cao xếp mức chất lượng

Phân loại	Mức chất lượng	Nhóm BVTT (n=15)		Nhóm TTYT (n=12)		Kết quả xếp mức chất lượng chung	
		Trước (n)	Sau (n)	Trước (n)	Sau (n)	Trước (%)	Sau (%)
Xếp mức theo tỷ lệ % số điểm đạt	Chưa xếp mức	1	0	0	0	3,70	0,00
	Mức 1	6	0	6	0	44,44	0,00
	Mức 2	4	5	6	4	37,04	33,33
	Mức 3	3	7	0	8	11,11	55,56
	Mức 4	1	1	0	0	3,38	3,70
	Mức 5	0	2	0	0	0,00	7,41
Xếp mức khi kết hợp các tiêu chí (*), (***)	Chưa xếp mức	14	4	12	0	96,30	14,81
	Mức 1	0	0	0	0	0,00	0,00
	Mức 2	1	9	0	13	3,70	77,78
	Mức 3	0	2	0	0	0,00	7,41
	Mức 4	0	0	0	0	0,00	0,00
	Mức 5	0	0	0	0	0,00	0,00

Nhận xét: Mức chất lượng chung của các PXN đều tăng ở cả 2 nhóm. Khi xét riêng theo tỷ lệ % số điểm đạt thì tỷ lệ PXN "chưa xếp mức" và "mức 1" đều giảm, tăng mạnh ở "mức 3", đặc biệt có 2 PXN thuộc nhóm BVTT đã đạt tỷ lệ % số điểm ở "mức 3". Khi kết hợp với các tiêu chí bắt buộc (*) và (***) thì tỷ lệ PXN "chưa xếp mức giảm" từ 96,3% xuống còn 14,81%. PXN xếp "mức 2" tăng từ 3,70% lên 77,78%, đặc biệt đã có 2 PXN được xếp "mức 3" trong khi trước can thiệp chỉ có 1 PXN được xếp "mức 2".

IV. BÀN LUẬN

4.1. Thông tin chung về các PXN

Qua biểu đồ 1 cho thấy trong tổng số 27 PXN thuộc 24 CSYT công lập thì tỷ lệ PXN thuộc nhóm BVTT cao hơn nhóm TTYT. Kết quả cũng cho thấy phần lớn (77,78%) là các PXN đang thực hiện chung cả Hóa sinh, Huyết học và Vi sinh. Chỉ có 01 PXN chuyên biệt lĩnh vực Hóa sinh, Huyết học và 03 PXN chuyên lĩnh vực Vi sinh. Có thể thấy mức độ PXN chuyên môn hóa chưa cao, mô hình PXN chung đang chiếm ưu thế.

4.2. Hiệu quả nâng cao mức chất lượng của các PXN

Về hiệu quả nâng cao mức chất lượng của các PXN theo tỷ lệ % số điểm đạt, qua bảng 1 cho thấy tỷ lệ % số điểm đạt sau can thiệp của nhóm BVTT là hơn nhóm TTYT. Tuy nhiên, CSHQ đó lại ngược lại khi nhóm TTYT cao hơn nhóm BVTT. Điều này hoàn toàn có thể hiểu được do trước can thiệp nhóm BVTT đã có tỷ lệ % số điểm đạt cao hơn so với nhóm TTYT. Sau can thiệp tỷ lệ số điểm đạt của nhóm BVTT có cao hơn nhóm TTYT nhưng không lớn, nguyên nhân là do nhóm BVTT có sự khác biệt giữa các bệnh viện hạng I và các bệnh viện chuyên khoa. Có những bệnh viện đạt điểm cao (bệnh viện hạng I) nhưng có nhiều bệnh viện đạt thấp, đặc biệt ở nhóm các bệnh viện chuyên khoa. Do vậy, tích chung lại sự khác biệt giữa nhóm BVTT với nhóm TTYT là không rõ rệt.

Về hiệu quả của tỷ lệ các tiêu chí bắt buộc (*) và (***), bảng 2 cho thấy tỷ lệ các tiêu chí (*) đạt hiệu quả cao nhất ở các PXN thuộc nhóm TTYT khi đã đạt 100%, đồng nghĩa 100% các PXN thuộc nhóm TTYT sẽ được xếp mức chất lượng (thể hiện ở bảng 3). Các tiêu chí (***) nhóm BVTT sau can thiệp đạt được tỷ lệ cao nhất điều này cũng phù hợp khi ở bảng 3 cũng thấy được có 2 PXN đã đạt đủ 18/18 tiêu chí (***) và được xếp mức 3.

Về tổng hợp xếp mức chất lượng bảng 3 cho thấy cả 2 nhóm đã tăng được tỷ lệ xếp mức, tập trung chủ ở mức 2 và mức 3, cá biệt có 2 PXN đạt số điểm tương đương mức 3. Tuy nhiên, khi kết hợp đánh giá tỷ lệ % số điểm đạt và các tiêu chí bắt buộc (tiêu chí (*) và tiêu chí (***)) thì có 77,78% các PXN được xếp mức 2. Trong đó, nhóm TTYT có 100% PXN được xếp mức 2. Có 2 PXN nhóm BVTT đã được xếp mức 3. Mặc dù 2 PXN này đạt đủ tiêu chí (***) và số điểm ở mức 5, nhưng do kết quả đánh giá đã chỉ ra có một số tiêu chí như nội kiểm, ngoại kiểm, phê duyệt phương pháp chưa thực hiện được đủ cho 100% danh mục kỹ thuật của PXN mà chỉ đạt cho danh mục các xét nghiệm làm thường theo quyết định 3140/QĐ-BYT (6) nên chỉ đạt mức 3. Lý giải vấn đề này là do tiêu chí 8.16 (***) về thực hiện xác nhận giá trị sử dụng/thẩm định phương pháp đang là tiêu chí mà các PXN không đạt được cho 100% danh mục kỹ thuật. Mặc dù, các PXN đã được đào tạo và tập huấn để thực hiện nhưng khi triển khai thực tế còn khá khăn về hóa chất, sinh phẩm, vật tư cho quá trình thực hiện. Đây là vấn đề cần được các PXN, các lãnh đạo bệnh viện quan tâm trong thời gian

nội soi muốn nâng tiếp được mức chất lượng. Theo báo cáo của trung tâm kiểm chuẩn chất lượng xét nghiệm y học – Trường Đại học Y Dược TP Hồ Chí Minh tại hội nghị "Thực trạng và giải pháp nâng cao năng lực hệ thống QLCLXN tại tỉnh Hải Dương" do trường Đại học Kỹ thuật Y tế Hải Dương tổ chức ngày 29 tháng 06 năm 2023 thì: Kết quả đánh giá tiêu chí 2429 online năm 2023 của 210 PXN khu vực Đông Nam bộ, Tây Nguyên và Duyên hải miền Trung có tỷ PXN không xếp mức: chiếm 48,95%, mức 1 chiếm 8,55%, mức 2 chiếm 36,67%, mức 3 chiếm 2,86%, mức 4 chiếm 13,33% và mức 5 chiếm 5,24% [7]. Con số này cho thấy mức chất lượng của các PXN tại Hải Dương còn thấp hơn so với các PXN ở ba khu vực trên ở các mức 4 và 5. Nguyên nhân là do các PXN tại Hải Dương không đạt đủ các tiêu chí bắt buộc (***). Do vậy, trong thời gian tiếp theo cần có sự quan tâm, đầu tư mạnh mẽ của các CSYT cũng như sự đồng hành giám sát của nhóm nghiên cứu để có thể nâng cao năng lực và mức chất lượng cho các PXN tại tỉnh Hải Dương.

V. KẾT LUẬN

Tỷ lệ % số điểm đạt trung bình sau can thiệp cao hơn ở nhóm BVTT với 71,25% và CSHQ đạt 55,34%.

CSHQ đối với các tiêu chí (*), (***) từng cao hơn ở nhóm TTYT với 146,55% và 123,18%.

Kết quả xếp mức chất lượng trước can thiệp có 96,3% chưa xếp mức, 3,7% xếp mức 2. Sau can thiệp có 37,78% PXN được xếp đạt mức 2, 7,41% PXN được xếp đạt mức 3 và 14,81% chưa xếp mức. 100% các PXN thuộc nhóm TTYT xếp đạt mức 2.

Hiệu quả nâng cao mức chất lượng của các PXN công lập trên địa bàn tỉnh Hải Dương đã được cải thiện rõ rệt nhưng vẫn còn một số khó khăn nhất định. Kết quả này cho thấy hiệu quả của các giải pháp can thiệp mà nhóm nghiên cứu tổ chức triển khai đã đúng giải pháp. Tuy nhiên, trong thời gian tới vẫn cần tiếp tục thực hiện giám sát và triển khai thêm các giải pháp chuyên sâu để hỗ trợ nâng mức chất lượng cho các PXN trên địa bàn tỉnh Hải Dương và có thể xây dựng thành mô hình cho các tỉnh thành khác tham khảo.

TÀI LIỆU THAM KHẢO

1. Bộ Y tế (2013), Thông tư 01/2013/TT-BYT ngày 11/01/2013, Hướng dẫn thực hiện quản lý chất lượng xét nghiệm tại cơ sở khám chữa bệnh.
2. Chính phủ (2016), Quyết định số 316/QĐ-TTg của Thủ tướng Chính phủ: Phê duyệt Đề án tăng cường năng lực hệ thống quản lý chất lượng xét nghiệm y học giai đoạn 2016 – 2025.
3. Bộ Y tế (2017), Quyết định số 2429/QĐ-BYT ngày 12 tháng 6 năm 2017 của Bộ trưởng Bộ Y tế về việc Ban hành Tiêu chí đánh giá mức chất lượng PXN y học.
4. Bộ Y tế (2018), Sổ tay hướng dẫn đánh giá việc thực hiện tiêu chí đánh giá mức chất lượng PXN Y học.
5. Cao Văn Tuyển và CS (2023), "Thực trạng mức chất lượng PXN của các bệnh viện tuyến huyện, tuyến tỉnh tại Hải Dương năm 2022", Tạp chí Y học Việt Nam, Số chuyên đề tập 532: tr 187-192.
6. Bộ Y tế (2017), Quyết định số 3148/QĐ-BYT ngày 07 tháng 7 năm 2017 của Bộ trưởng Bộ Y tế về việc Ban hành danh mục xét nghiệm áp dụng kỹ thuật thông, công nhận kết quả xét nghiệm.
7. Trung tâm kiểm chuẩn chất lượng xét nghiệm y học – Trường Đại học Y Dược thành phố Hồ Chí Minh (2023), "Tình hình thực hiện ngoại kiểm và kết quả đánh giá theo Quyết định 2429/QĐ-BYT của các đơn vị Khu vực Duyên Hải Miền Trung, Tây Nguyên và Đông Nam Bộ", Báo cáo tại hội nghị "Thực trạng và giải pháp nâng cao năng lực hệ thống QLCLXN tại tỉnh Hải Dương" ngày 29 tháng 06 năm 2023.

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CONSTRUCT VALIDITY OF THE VIETNAMESE VERSION OF MASLACH BURNOUT INVENTORY-GENERAL SURVEY

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ABSTRACT

Burnout is a state of emotional, physical, and mental exhaustion caused by excessive and prolonged stress. The purpose of this study is to validate the Vietnamese version of Maslach Burnout Inventory-General Survey (MBI-GS) for burnout measuring in Vietnam. It includes using cross-sectional study, factorial validity of MBI-GS was tested by exploratory factor analysis then continued by confirmatory factor analysis. Pearson's correlation is used to check criterion-related validity. The model of three factors structure without item 8 and 9 was suggested as the best fit model with square ($\chi 2 = 282.13$), $P < 0.001$), root mean square error of approximation (RMSEA = 0.07), comparative fit index (CFI = 0.92), goodness of fit index (GFI = 0.91). The construct validity of Vietnamese version of Maslach Burnout Inventory-General Survey is acceptable for use in future investigations regarding burnout.

BACKGROUND

Globally, numbers of job stress measures have been available such as General Health Questionnaire (GHQ; Goldberg, 1978) which aim to detect psychological issue such as depression or anxiety. Another scale namely Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) developed by Radloff in USA is designed to measure current depression in general population. This scale is helpful for epidemiologic studies accompanied by depression. The Zung Self-Rating Depression Scale was designed by William W.K. Zung to assess depression disorder. The Zung Self-Rating Depression Scale is a short self-administered survey to quantify the depressed status of a patient (Zung, 1965).

The concept of burnout was initialized in 1970s (Schaufeli et al., 2009) was defined as a multidimensional syndrome that is experienced in response to chronic job stressor. The Maslach Burnout Inventory (MBI) (Maslach, 1996) is considered as the primary burnout measure that most widely used. There are three version of MBI which is known as MBI-Human Service Survey (MBI-HSS), a second version of the MBI was adapted to people working in educational setting (MBI-Education Survey or MBI-ES) and the third, general version of the MBI was developed without the increasing interest in burnout within occupation (Kitaoka et al., 2004). MBI-GS is mainly used in general object such as medical staff, teachers or workers (Maslach, 1996) therefore, our research are more interested in this scale.

For the particular case of MBI-GS, the three-factor structure including exhaustion, cynicism and professional efficacy of the MBI-GS was validated through multinational samples in Sweden (Schutte, Toppinen, Kalimo, & Schaufeli, 2000), in Japan (Kitaoka et al., 2004) in Romania (Maria et al., 2014) in Iran (Zaber et al., 2010). Although the confirmatory of three-factor structure for MBI-GS were popular in burnout research but there has been raised some argument in term of number of factors. In the history of burnout, instead of combining three dimensions of burnout into a single one, an approach has introduced to evaluate burnout in just one dimension namely exhaustion. The concept of exhaustion refers to feeling of overextended emotion and physical resources. Then, people who suffer from experience of hum-

out, they seemed to gain experience exhaustion (Pisk & Lehan, 1996). Other disagreement of our factors reported that, inefficacy in some domains can be a function of either exhaustion or cynicism. The feeling of exhaustion or cynicism would produce lack of professional efficacy. It is difficult to gain accomplishment if people experienced feeling of exhaustion so that combination of two is suggested (Lee & Ashforth, 1996). Due to the lack of agreement on factor structure, it is recommended that the development of MBI-GS is still necessary. Another reason for conducting research on MBI-GS measure is that though validation of Vietnamese version of MBI-GS was introduced but it only utilized exploratory factor analysis which is insufficient to get deeper and clearer understanding involving measurement's validity (Nguyen et al., 2018). In order to make further progress on burnout research in Vietnam, the confirmatory factor analysis is applied in this study. Therefore, the aim of this research is to offer some fruitful research dimensional burnout construct by implementing of reliability, factorial and criterion-related validities.

METHODS

A cross-sectional study was used to carry out the survey. Participants were clinical nurses working in different departments at three public hospitals in Thai Nguyen, Vietnam: one general hospital and two specialty hospitals (a children's hospital and an obstetric hospital). There were 490 clinical nurses in total of these hospital, about 500 administered questionnaires were delivered to clinical nurses at three hospitals using random sampling. Due to the number of nurses at each hospital, 300 questionnaires were sent to the general hospital, 90 to the children's hospital, and 110 to the obstetrics hospital. Overall, 443 questionnaires were returned (general hospital, N = 234, children's hospital, N = 8, obstetrics hospital, N = 125) with a response rate of 88.6% (general hospital, 90.0%; children's hospital, 88.8%; obstetrics hospital, 86.0%). However, among 443 responses, there were 13 invalid responses with the same answer given for the entire scale or where there was missing data for some questions. Therefore, we obtained a final sample size of 430 nurses (general hospital, N = 230, children's hospital, N = 78; obstetrics hospital, N = 122) for statistical analysis.

We administered three sets of questionnaires: 1) a demographic questionnaire; 2) an MBI-GS questionnaire (Maslach, Jackson & Leiter, 1996); and 3) an Areas of Worklife Scale (AWS) questionnaire (Leiter & Maslach, 2011) which already validated and translated to Vietnamese version (Nguyen, Klassen, Schlgers, & Thai, 2018).

The demographic questionnaire related to sex, age, marital status, children, age of children, years of nursing work, work place, nursing position, on-duty work schedule and education level. The MBI-GS consists of three scales totaling 16 items: exhaustion is defined through five items which represent like "I feel emotionally drained from my work", cynicism also concludes five items, one of them is "I have become less interested in my work since I started this job", and professional efficacy with six items that represented as "I can effectively solve the problems that arise in my work". Each item is scored using a 7-point Likert scale (never, a few times a year, once a month, a few times a month, once a week, a few times a week, and daily) ranging from 0 to 6. The translation process selected two phases: 1) forward translation, involving translation of the MBI-GS from English to Vietnamese by a bilingual researcher; and 2) back translation, involving two independent bilingual translators, both of whom majored in English teaching and translation. Afterward, two researchers carefully compared the back translation to the original English version item by item to evaluate conceptual equivalence. The 28-item AWS questionnaire consists of six key domains: workload (3 items), control (5), rewards (4), community (5), fairness (5), and value (4). Each scale contains both a positive wording item (e.g., "I have enough time to do what's important in my job" [workload]) and a negative wording item (e.g., "I do not get recognized for my good efforts at work" [rewards]). Subjects indicated their degree of agreement with these statements using a 5-point Likert scale ranging from 1 (strongly disagree) to 3 (hard to decide) to 5 (strongly agree), leaving for the negative word item is reversed.

To indicate internal consistence of the MBI-GS and AWS subscales, we used Cronbach's alpha. The construct validity of each model of MBI-GS was first tested by exploratory factor analysis. In term of factor analysis, we used principal component analysis for extraction method and Promax with Kaiser Normalization for rotation method. The next, confirmatory factor analysis was conducted to perform construct validity. We used indicators for fit model like root mean square error of approximation (RMSEA), comparative fit index (CFI), goodness of fit index (GFI), normed fit index (NFI) and Akaike's information criterion (AIC) to perform model. Then, Pearson's correlation is applied to check criterion-related validity among dimension of burnout and work life area.

RESULTS

Characteristics of Participants

Eleven participants' characteristics. Many more nurses were women (88.1%) than male (11.9%). Average age of participants was 31.64 years (SD = 6.72). Most nurses were already married (78.8%) with children under 11 years of age (75.3%). As for job factors, average years of nursing work was 8.6 years (SD = 6.48), working year group from 1 to 5 years had the highest percentage at 41.9 %. Conversely, group over 15 years of working was (3.8%). The most common on-duty work schedule was two days per week (63.3%), and the majority of nurses had a two-year nursing diploma (81.3%).

Factorial Validity

Eleven factor loading of the Vietnamese MBI-GS. Initially, four factors with an eigen value over one were presented. However, in the original MBI-GS version, exploratory factor analysis showed three factors. Therefore, we selected three factors for rotation. After extraction, factor 1 was identified as exhaustion, factor 2 as professional efficacy, and as exhaustion, factor 3 as professional efficacy, and factor 3 as cynicism. Loading of all items indicated a sufficient value greater than 0.4. In the original version, items 8 and 9 are located in cynicism, but according to factor loading in this study, these two items moved to exhaustion subscale. Therefore, based on these results, we continued to carry out confirmatory

The confirmatory analysis pointed out the fit indices of hypothesis models. The model of model 3b (model of three factors structure without item 8 and 9) was terminated as the best fit model with chi-square ($X2 = 283.13$, $P < 0.001$), root mean square error of approximation (RMSEA = 0.07), comparative fit index (CFI = 0.93), goodness of fit index (GFI = 0.91), normed fit index (NFI = 0.90) and Akaike's information criterion (AIC = 349.13). These results meet criteria for model fit (Taylor, Sinclair, Cronin, & Bullard, 1993). Figure 1 is final model 3b of factorial structure for the MBI-GS and covariance are significant at $p < 0.001$.

Internal Consistency and Criterion-Related Validity

The Cronbach's alpha of exhaustion, professional efficacy, and cynicism reached values of 0.89, 0.88, and 0.77, respectively. The Vietnamese version of AWS already validated in previous study. Regarding AWS subscales, value of alpha is 0.74 for workload, 0.62 for control, 0.68 for community, and 0.77 for fairness. Alpha of rewards and value dimension are 0.71 and 0.81 respectively.

Indicated relation between burnout and area of work life, the correlation was theoretically significant with $p < 0.01$ that supported existence of criterion-related validity.

DISCUSSION

The aim of this study is to investigate the factorial validity of MBI-GS among clinical nurses in Vietnam which is the first confirmatory validation of the MBI-GS performed on Vietnamese sample. In general, the study covers the factorial and criterion-related validity as well as its internal consistency. Before conducting the confirmatory factor analysis, we possess exploratory factor analysis. The construct validity evaluation supported a three-factor structure. However, our analysis suggested that items 8,9 of the scale should be moved to the exhaustion rather than cynicism subscale in comparison with original scale. Then, confirmatory factor analysis results suggested that the three factors model excluding items 8 and 9 was supposed to be the most appropriate model as it satisfies the criteria of model fit. At last the model without items 8 and 9 is selected. This model suggested improvement of model fit when after deleting two items that improved fit model indicated by RMSEA.

Our results are congruent with the Malaysian version when their findings also stated that item 8 and 9 should locate in the exhaustion instead of cynicism dimension (Chan et al., 2014). The item 8 and 9 respectively refer to "I have become less interested in my work since I started this job" and "I have become less enthusiastic about my work". This may link to the feeling of exhaustion as Vietnamese nurses more stated in their responses. This matter mainly supported the result of differences in cultural knowledge and experience (Chan et al., 2014). Besides, factorial validity of Romanian version supported three-factor structure of MBI-GS without item 13 of the cynicism scale as it cross-loaded both on exhaustion and professional efficacy scale. Other study performed that, the item 13 as indicator of the cynicism dimension suggested reconsideration due to its factor loading, after removing this item the three factorial structures indicated a significant improved fit (Iliescu, Ilie, Ispas, & Ion, 2012). Moreover, both of Japanese and Chinese version (Kitaoka et al., 1994; Wu et al., 2007) have supported the original version with loading of 16 items.

In term of criterion-related validity, the results found the three factors of job burnout were correlated with six dimensions of area of work life. Workload had positive correlation with exhaustion and cynicism but positive correlation with professional efficacy. There were numerous studies using different measurement scales to examine the relation between burnout and work life like work engagement (term burnout and work life like work engagement or job demands (Jost, Sotomino, Alicia, & Irene, 2016; Maria, Florina, Adriana, & Dan, 2014). But some of dimensions are similar such as workload in Romanian version studied among healthcare professionals. Romanian version performed workload and emotional demands are related positively with exhaustion and cynicism and negatively with professional efficacy. By contrast, other finding showed positive correlation between professional efficacy and work engagement (Jose, Sotomino, Alicia, & Irene, 2016). In summary, the current result of this study recommended the existence of adequate criterion-related validity for Vietnamese version of MBI-GS.

Strengths and Limitations of the Study

The first study on burnout in Vietnam only used exploratory factor analysis not confirmatory factor analyses. Although exploratory factor analysis of first study satisfied basic validity, several items on the Vietnamese MBI-GS did not meet factorability criteria. As this is the second study provides additional exploration on these items. However, the number of burnout studies in Vietnam still limited that was unavailable for comparison or reference. Further investigation is needed to have overview of Vietnamese burnout. All study participants were clinical nurses, other types of participants is necessary to have a multi-dimensional view of burnout in Vietnam.

CONCLUSION

Based on our findings, the reliability and validity of the Vietnamese MBI-GS is acceptable for use in future investigations. Our factorial validity results support various factors of area of work life leading to burnout. According to these results, some solutions or interventions can be applied for burnout prevention, such as coordination of more nurses and appropriate work schedules to reduce workload among nurses. In order to limit exhaustion and increase professional efficacy intervention program should be recommended in clinical nurses in Vietnam.

REFERENCES

Chen, W.S., Hanifi, J., Xiao, S.C., Sam, W., Lok, P.S., Jamil, A.H.M. et al. 2014. Translation, Cross-cultural Adaptation and Validation of the Malay Version of Maslach Burnout Inventory (MBI) in Malaysia. International Journal of Social Science Studies. 2(2). doi: 10.11114/ijss.v2i2.309.

Goldberg D. 1978. Manual of the General Health Questionnaire. Windsor: NFER-Nelson.

Jose, M.T., Sotomino, D.L.S., Alicia, A.A. & Irene, F. 2016. Validation of the Maslach Burnout Inventory-General Survey on a Representative Sample of Dominican Teachers: Normative Data. The Spanish Journal of Psychology. 19, 1-9.

Kitaoka, K., Nakagawa, H., Hirokawa, Y., Ishizaki, M., Miura, K., Haruta, Y., et al. 2009. Construct validity of the Maslach Burnout Inventory-General Survey. Stress and Health. 25(3), 251-260.

Lee, R.T. & Ashforth, B.E. 1996. A meta-analytic examination of the correlates of the three dimensions of job burnout. Journal of Applied Psychology, 81(2), 123-133.

Leiter, M.P. & Maslach, C. 2011. Areas of Worklife Survey Manual. 5th ed. Menlo Park, CA: Mind Garden.

Maslach, C., Jackson, S.E. & Leiter, M.P. 1996. Maslach Burnout Inventory Manual. 3rd ed. Menlo Park, CA: Mind Garden.

Maria, B., Florina, S., Adriana, B., & Dan, L.D. 2014. Maslach Burnout Inventory – General Survey: Factorial validity and invariance among Romanian healthcare professionals. Burnout Research, 1(3), 103-111.

Nguyen, H.T.T., Kitaoka, K., Ishikawa, M., & Thai, A.L. 2018. Burnout Study of Clinical Nurses in Vietnam: Development of Job Burnout Model Based on Leiter and Maslach's Theory. Asian Nursing Research, 12(1), 42-48.

Pick, D., & Leiter, M.P. 1991. Nurses' perceptions of the nature and causes of burnout: a comparison of self-reports and standardized measures. Canadian Journal of Nursing Research, 23(3), 33-48.

Radloff, L.S. 1977. The CES-D scale: A self report depression scale for research in the general population. Applied Psychological Measurement, 1, 385-401.

Schaufeli, W.W., Arnold, B.D., & Willem, V.R. (2009).

How changes in job demands and resources predict burnout, work engagement & sickness absenteeism. Journal of organizational behaviour, 30(7), 893-917.

Schutte, N., Toppinen, S., Kalimo, R., & Schaufeli, W. (2000). The factorial validity of the Maslach Burnout Inventory-General Survey (MBI-GS) across occupational groups and nations. Journal of Occupational and Organizational Psychology, 73(1), 53-66.

Taylor, A., Shaiberd, A., Cimás, I. & Ballard W. (1992). Recreational Service Quality in the International Setting. International Journal of Service Industry Management, 4, 68-88.

Wu, S., Zhu, W., Wang, Z., Wang, H. & Lan, Y. (2007). Relationship between burnout and occupational stress among nurses in China. Journal of Advanced Nursing, 59, 233-239.

Zung, W. W. (1965). A self-rating depression scale. Archives of General Psychiatry, 12(1), 63-70.

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

BIÊN BẢN
NGHIỆM THU ĐỀ TÀI KHCN CẤP CƠ SỞ NĂM 2023

Tên đề tài: Ứng dụng xét nghiệm QuantiFERON®-TB Access trong chẩn đoán lao tiềm ẩn tại quận Dương Kinh, thành phố Hải Phòng

Chủ nhiệm đề tài: Nguyễn Hùng Cường

Thành viên tham gia: Bạch Thị Như Quỳnh, Mạc Nguyễn Quỳnh Trâm

Đơn vị: Khoa Kỹ thuật Y học

Căn cứ Quyết định số: 2558 /QĐ - YDHP ngày 08 tháng 12 năm 2023 của Hiệu trưởng trường Đại học Y Dược Hải Phòng về việc thành lập Tiểu ban Khoa học công nghệ nghiệm thu đề tài nghiên cứu khoa học cấp cơ sở năm 2023, Tiểu ban đã tiến hành họp để đánh giá, nghiệm thu đề tài vào hồi 16h30ngày 18 tháng 12 năm 2023 tại trường Đại học Y Dược Hải Phòng.

Các thành viên có mặt:

1. PGS.TS. Võ Văn Quang – Trưởng tiểu ban
2. TS. Chu Khắc Tân – Phó trưởng tiểu ban
3. TS. Trần Thị Liên – Ủy viên
4. TS. Võ Thị Thanh Hiếu – Ủy viên Thư ký

Thư ký hành chính: ThS. Trần Thị Thanh Bình

Các thành viên vắng mặt: Không

NỘI DUNG NGHIỆM THU:

1. Đọc quyết định thành lập Tiểu ban: **TS. Võ Thị Thanh Hiếu**
2. Trưởng Tiểu ban điều khiển buổi nghiệm thu
3. Chủ nhiệm đề tài trình bày tóm tắt báo cáo tổng kết đề tài *(có bảo vệ trước hội đồng)*.
4. Các thành viên Tiểu ban nhận xét, góp ý *(có bản nhận xét kèm theo)*.

5. Các thành viên trong Tiểu ban và những người tham dự buổi nghiệm thu trao đổi về nội dung, phương pháp, kết quả nghiên cứu của đề tài; và thống nhất một số ý kiến sau:

Thống nhất với dung, phương pháp và kết quả nghiên cứu

6. Đánh giá kết quả:

6.1. Ban kiểm phiếu gồm:

- **TS. Võ Thị Thanh Hiền**
- **ThS. Trần Thị Thanh Bình**

6.2. Tiểu ban đã bỏ phiếu đánh giá kết quả như sau:

Tổng số phiếu phát ra : 9 phiếu
Tổng số phiếu thu vào : 9 phiếu
Số phiếu hợp lệ : 9 phiếu
Số phiếu không hợp lệ : 0 phiếu

6.3. Kết quả đánh giá:

Xuất sắc : 9 phiếu
Khá : 0 phiếu
Đạt : 0 phiếu
Không đạt : 0 phiếu

Kết quả đề tài đạt loại: Xuất sắc

7. Kết luận:

Thông qua đề tài

Hải Phòng, ngày 10 tháng 12 năm 2021

Trưởng Tiểu ban
(Ký và ghi rõ họ tên)

PGS.TS. Vũ Văn Hương

Thư ký
(Ký và ghi rõ họ tên)

TS. Võ Thị Thanh Hiền

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Năm được phong GS/PGS: Nơi phong:

8. Cơ quan công tác:
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Khoa/Phòng, Bộ môn, Trung tâm ...: Khoa Vi sinh -BV Hữu nghị Việt Tiệp, Hải Phòng.
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9. Quá trình đào tạo

Bậc đào tạo	Nơi đào tạo	Chuyên ngành/Tên khóa luận, luận văn, luận án	Năm tốt nghiệp
Đại học	Trường Đại học Y Hải Phòng, phân hiệu Hải Phòng	Bác sỹ đa khoa	1993
Thạc sĩ	Học viện Quân Y	Vi sinh Y học	2002
Tiến sĩ	Viện Vệ sinh dịch tễ Trung ương, Việt Nam	Vi sinh Y học	2011
TSKH			

10. Các khoá đào tạo khác (nếu có)

Văn bằng	Tên khoá đào tạo	Nơi đào tạo	Thời gian đào tạo

11. Trình độ ngoại ngữ

Tên ngoại ngữ	Văn bằng/Chứng chỉ	Năm
Anh Ngữ	B	

12. Quá trình công tác *(trước khi về Trường và sau khi về Trường)*

Thời gian (Từ năm ... đến năm ...)	Vị trí công tác	Cơ quan công tác	Địa chỉ cơ quan
1995 - Nay	Bác sĩ nội nghiệm	Khoa Vi sinh - BV Hữu nghị Việt Tiệp, Hải Phòng	01, Núi Thương, Lê Chân, Hải Phòng, Việt Nam
2009 - 2013	Phó trưởng khoa VI	Khoa Vi sinh - BV Hữu nghị Việt	01, Núi Thương, Lê Chân, Hải Phòng, Việt Nam

	sinh	Tiệp, Hải Phòng	
2015- nay	Trưởng Khoa Vi Sinh	Khoa Vi sinh - ĐH Hồng Bàng Tiệp, Hải Phòng	61, Mới Thương, Lê Chân, Hải Phòng, Việt Nam
2016- nay	Phó trưởng bộ môn Vi sinh	Trường Đại học Y Dược Hải Phòng	72A Nguyễn Bỉnh Khiêm, Ngô Quyền, Hải Phòng, Việt Nam

13. Các công trình khoa học đã công bố

13.1. Bài báo Khoa học:

- *Tên tác giả: tên các tác giả của bài báo*
- *Tác giả chính: là Tác giả thứ nhất (first author) hoặc Tác giả liên hệ (corresponding author)*
- *Danh mục: ISI/Scopus hoặc Tạp chí trong nước được HĐGSNN tính điểm*

TT	Tên bài báo	Tên tác giả	Tác giả chính	Tạp chí	Ngày XB	Số, trang	Danh mục	ISSN (DOI)
1	Assessing feasibility of establishing antimicrobial stewardship programmes in two provincial-level hospitals in Vietnam: an implementation research study	Vu TLH, Ta TDH, Huynh PT, Le NQ, Tran TTH, Nguyen TH, Tran D, Vu Hai V, Chau MD, Vu THDE, Pham VHS, Nguyen TTO, Pham TTH, Nguyen TCT, Truong AQ, Kesteman T, Ashley EE, Andersen D, van Doorn HR		JAC Open	2021			10.1093/jacamr/dlab183

2	Nghiên cứu tỷ lệ và một số đặc điểm kháng kháng sinh của *Staphylococcus aureus* phân lập từ bệnh phẩm tăm sáng tại bệnh viện Hữu nghị Việt –Tiệp (1/2020-12/2020)	Trịnh Thị Hồng, Nguyễn Hùng Cường, Hoàng Thị Hải Yến, Nguyễn Thị Thanh Phương, Trần Đức, Lại Thị Quỳnh		Tạp chí Y học Việt Nam	2022	tập 515, tháng 6/2022 trang 299-303		
3	Tình hình nhiễm nấm *Penicillium marneffei* tại máu bệnh nhân HIV/AIDS tại khoa Vi sinh bệnh viện hữu nghị Việt Tiệp Hải Phòng, 1/2014-8/2016	Hà Thị Bích Ngọc, Trần Đức, Lại Thị Quỳnh, Nguyễn Thị Hồng, Nguyễn Hùng Cường, Hoàng Thị Hải Yến		Tạp chí Y học Việt nam	2017	tập 460, trang 748-753,		
4	Ứng dụng kỹ thuật Genexpert MTB/RIF trong phát hiện vi khuẩn lao và tính kháng Rifampicin tại Hải Phòng thời gian 2014-2016	Hà Thị Bích Ngọc, Trần Thị Bích Trang, Trần Đức, Lại Thị Quỳnh, Nguyễn Hùng Cường, Hoàng Thị Hải Yến, Vũ Thị Nữ		Tạp chí Y học Việt nam	2017	trang 743-748, tập 460		
5	Nghiên cứu ứng dụng kỹ thuật GeneExpert MTB/RIF trong phát hiện vi khuẩn lao tại	Hà Bích Ngọc, Chu Thị Nga, Trần Đức, Hoàng Thị Trang, Nguyễn Hùng Cường, Hoàng		Tạp chí Y học thực hành	2016	Số 1004-2016 trang		

	Hải Phòng	Thị Hải Yến, Trịnh Thị Hằng, Vũ Thị Nở, Phạm Văn Quang, Nguyễn Đức Nhâm.				434-437		

13.2. Sách chuyên khảo, giáo trình – tài liệu dạy học:

- *Tên tài liệu: Sách/ Chương sách*
- *Loại hình: Chuyên khảo/ Tham khảo/ Giáo trình/ Tài liệu hướng dẫn*

TT	Tên tài liệu	Tên tác giả	Chủ biên/Đồng chủ biên	Nhà xuất bản	Năm xuất bản	Loại hình	ISBN
1							
2							
...							

14. Báo cáo Hội nghị - hội thảo khoa học:

Ký yếu: Tóm tắt/ Toàn văn

TT	Tên báo cáo	Tên tác giả	Tác giả chính	Tên hội nghị	Thời gian báo cáo (tháng/năm)	Kỷ yếu	ISBN
			x				

15. Bằng sở hữu trí tuệ đã được cấp

Liệt kê các văn bằng bảo hộ đối quyền sáng chế, giải pháp hữu ích, kiểu dáng công nghiệp, thiết kế bố trí, giống cây trồng...

TT	Tên và nội dung văn bằng	Số, Mã, Ký hiệu	Nơi cấp	Năm cấp
1				
2				
...				

16. Công trình KH&CN được ứng dụng, chuyển giao

TT	Tên công trình	Hình thức	Quy mô	Địa chỉ áp dụng	Giá trị	Thời gian
1						
...						

17. Nhiệm vụ KH&CN các cấp

- *Loại hình: Đề tài/ Dự án / Đề án*
- *Tình trạng nhiệm vụ: Đã nghiệm thu/ Chưa nghiệm thu/ Không hoàn thành*

17.1. Nhiệm vụ KH&CN đã và đang chủ trì

Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình *(nếu có)*	Tình trạng nhiệm vụ	Ngày		Kinh phí	
					Phê duyệt	Đăng ký kết quả *(nếu có)*	Công nhận kết quả	

17.2. Nhiệm vụ KH&CN đã và đang tham gia

Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình *(nếu có)*	Tình trạng nhiệm vụ	Ngày		Kinh phí	
					Nghiệm thu	Công nhận kết quả	Đăng ký kết quả	

18. Giải thưởng về KH&CN trong và ngoài nước

TT	Tên giải thưởng	Hình thức khen thưởng	Cấp khen thưởng	Nhà tặng thưởng
1				
2				

...				

19. Đào tạo sau đại học:

- *Tại trí hướng dẫn: hướng dẫn 1/ hướng dẫn 2*
- *Bậc đào tạo: Tiến sĩ/Thạc sĩ/BS NT/ Pro/CKII...*

TT	Họ tên học viên	Vai trò	Bậc đào tạo	Chuyên ngành	Nơi đào tạo	Năm cấp bằng

NHỮNG THÔNG TIN KHÁC VỀ CÁC HOẠT ĐỘNG KHOA HỌC VÀ CÔNG NGHỆ

(Tham gia các tổ chức khoa học ngành nghề; thành viên Ban biên tập các Tạp chí khoa học trong và ngoài nước; Thành viên các hội đồng quốc gia, quốc tế; ...)

..... ngày ... tháng ... năm ...

XÁC NHẬN CỦA ĐƠN VỊ

PHÓ GIÁM ĐỐC

Nguyễn Lê Bảo Huyền

NGƯỜI KHAI

(Họ tên và chữ ký)

Trần Đức

LÝ LỊCH KHOA HỌC

1. Họ và tên: PHẠM THÀNH NGUYÊN

2. Năm sinh: 3. Giới tính: Nam

4. Nơi sinh: Xã Hiệp Hòa, huyện Vĩnh Bảo, thành phố Hải Phòng

5. Nguyên Quán: Xã Hiệp Hòa, huyện Vĩnh Bảo, thành phố Hải Phòng

6. Địa chỉ liên hệ: Số 25 Hồng Gà, Cát Dài, Lê Chân, Hải Phòng
Điện thoại: NR..... Mobile: ...0913505019..... Fax: .....
Email: ptnguyen@pnmu.edu.vn

7. Học hàm, học vị:
Năm được công nhận TS: 2020 Nơi cấp bằng: Học Viện Quân Y
Năm được phong GS/PGS: ..... Nơi phong: .....

8. Cơ quan công tác:
Tên cơ quan: Trường Đại học Y Dược Hải Phòng
Khoa/Phòng, Bộ môn, Trung tâm: Bộ môn Giải Phẫu
Địa chỉ cơ quan: 72A Nguyễn Bỉnh Khiêm, Đằng Giang, Ngô Quyền Hải Phòng
Điện thoại: ..... Fax: .....
Email: .....

9. Quá trình đào tạo

Bậc đào tạo	Nơi đào tạo	Chuyên ngành/Tên khóa luận, luận văn, luận án	Năm tốt nghiệp
Đại học	HMV Hải Phòng	Bác sĩ đa khoa	1998
Thạc sĩ	Học viện Quân Y	Giải phẫu người	2008
Tiến sĩ	Học viện Quân Y	Khoa học Y sinh	2020
TSKH			

10. Các khoá đào tạo khác (nếu có)

Văn bằng	Tên khoá đào tạo	Nơi đào tạo	Thời gian đào tạo

11. Trình độ ngoại ngữ

Tên ngoại ngữ	Văn bằng/Chứng chỉ	Năm
Tiếng Anh	Văn bằng	2019

12. Quá trình công tác *(trước khi sử Trưởng và sau khi sử Trưởng)*

Thời gian (Từ năm ... đến năm...)	Vị trí công tác	Cơ quan công tác	Địa chỉ cơ quan

13. Các công trình khoa học đã công bố

13.1. Bài báo khoa học:

- *Tên các giả: nhe các tác giả của bài báo*
- *Tác giả chính: là Tác giả thứ nhất (first author) hoặc Tác giả liên hệ (corresponding author)*
- *Danh mục: ISI/Scopus hoặc Tạp chí trong nước được HĐGSNN tính điểm*

TT	Tên bài báo	Tên tác giả	Tác giả chính	Tạp chí	Ngày XB	Số, trang	Danh mục	ISSN (DOI)
1	Diagnostic Strategy for Suspected Unilateral Absence of the Pulmonary Artery		x	Current Medical Imaging		1573-4056/24		10.2174/1815734056266404231207071244
2	Lung vigilance in diagnosing pulmonary alveolar microlithiasis: A report on four cases	Hoang Van Luong1, Lam Viet Anh2, Pham Thinh Nguyen3	x	Journal of Clinical Imaging Science		ISSN (Online): 2156-7697		10.25259/JCIS_56_2023
3	Blended Motor-Sensory Nerve Bundles on Diffused Tensor	Khanh Lam1*#, Phuoc Thanh Nguyen 2#, Lam		Scientific Foundation SPRINGER		eISSN: 1837-9655		10.38809/scienfound.2022.8643

	Imaging: Evidence of Brain Plasticity in a Patient with 38-year Sequelae from Encephalitis	Viet Anh3, Tran Lien4						
4	Anatomical Characteristics of Thalamus-Cortical Sensory Tract in the Human Brain Using Diffusion Tensor Tractography at 3.0 Tesla Scanner	Lam Khanh1, Nguyen Duy Huy2*, Pham Thanh Nguyen1		Open Access Maced J Med Sci		2019 Oct 15;7(24):4220-4223		10.3889/oamjms.2019.384

13.2. Sách chuyên khảo, giáo trình – tài liệu dịch thuật:

- *Tên tài liệu: Sách/ Chương sách*
- *Loại sách: Chuyên khảo/ Tham khảo/ Giáo trình/ Tài liệu hướng dẫn*

TT	Tên tài liệu	Tên tác giả	Chủ biên/Đồng chủ biên	Nhà xuất bản	Năm xuất bản	Loại sách	ISBN
1							
2							
...							

14. Báo cáo Hội nghị - hội thảo khoa học

Ký yếu: Tên tập/ Toàn tập

TT	Tên bài báo	Tên tác giả	Tác giả chính	Tên hội nghị	Thời gian báo cáo (tháng/năm)	Kỷ yếu	ISBN
			9				

15. Bằng sở hữu trí tuệ đã được cấp

Liệt kê các văn bằng bảo hộ: tác quyền sáng chế, giải pháp hữu ích, kiểu dáng công nghiệp, thiết kế bố trí, giống cây trồng...

TT	Tên và nội dung văn bằng	Số, Mã, Ký hiệu	Nơi cấp	Năm cấp
1				

2					
...					

16. Công trình KH&CN được ứng dụng, chuyển giao

TT	Tên công trình	Hình thức	Quy mô	Địa chỉ áp dụng	Giá trị	Thời gian
1						
...						

17. Nhiệm vụ KH&CN các cấp

- *Loại hình: Đề tài/ Dự án / Đề án*
- *Tình trạng nhiệm vụ: Đã nghiệm thu/ Chưa nghiệm thu/ Không hoàn thành*

17.1. Nhiệm vụ KH&CN đã và đang chủ trì

Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình *(nếu có)*	Tình trạng nhiệm vụ	Ngày			Kinh phí
					Nội dung	Công nhận kết quả (nếu có)	Công nhận kết quả	

17.2. Nhiệm vụ KH&CN đã và đang tham gia

Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình *(nếu có)*	Tình trạng nhiệm vụ	Ngày			Kinh phí
					Nghiệm thu	Công nhận kết quả	Đăng ký kết quả	

18. Giải thưởng về KH&CN trong và ngoài nước

TT	Tên giải thưởng	Hình thức khen thưởng	Cấp khen thưởng	Năm tặng thưởng
1				
2				
...				

19. Đào tạo sau đại học

+ Hướng dẫn: *Hướng dẫn 1/ hướng dẫn 2*

+ Bậc đào tạo: *Tiến sĩ/Thạc sĩ/Bác sĩ Nội Trú/CKII...*

TT	Họ tên học viên	Vai trò	Bậc đào tạo	Chuyên ngành	Nơi đào tạo	Năm cấp bằng

NHỮNG THÔNG TIN KHÁC VỀ CÁC HOẠT ĐỘNG KHOA HỌC VÀ CÔNG NGHỆ

(Tham gia các tổ chức hiệp hội ngành nghề; thành viên Ban biên tập các Tạp chí khoa học trong và ngoài nước; Thành viên các hội đồng quốc gia, quốc tế; ...)

..... ngày ... tháng ... năm .....

XÁC NHẬN CỦA ĐƠN VỊ

TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

HIỆU TRƯỞNG

PGS. Trần Thị Thanh Mai

NGƯỜI KHAI

(Họ tên và chữ ký)

Phạm Thanh Nguyên

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

BIÊN BẢN
NGHIỆM THU ĐỀ TÀI KHCN CẤP CƠ SỞ NĂM 2023

Tên đề tài: Đặc điểm giải phẫu hệ thống tĩnh mạch cửa ở người trưởng thành bình thường bằng cắt lớp vi tính (CT Scanner)

Chủ nhiệm đề tài: Phạm Thành Nguyên

Thành viên tham gia: Trần Xuân Bách

Giảng viên hướng dẫn (nếu có):

Đơn vị: Giải Phẫu

Căn cứ Quyết định số 2550/QĐ - YDHP ngày 08 /12/ 2023 và Quyết định 2561/QĐ – YDHP ngày 12/12/2023 của Hiệu trưởng trường Đại học Y Dược Hải Phòng về việc thành lập; bổ sung thành viên Tiểu ban KHCN đánh giá, nghiệm thu đề tài cơ sở năm 2023 và báo cáo khoa học tại Hội nghị KHCN trường Đại học Y Dược Hải Phòng. Tiểu ban đã tiến hành họp để đánh giá, nghiệm thu đề tài vào hồi 10h00 ngày 17 tháng 12 năm 2023 tại trường Đại học Y Dược Hải Phòng.

Các thành viên có mặt:

1. PGS.TS. Phạm Văn Nhiên
2. TS. Vũ Văn Thái
3. PGS.TS. Dương Thị Hường
4. PGS.TS. Trịnh Thị Ly
5. TS. Lê Thị Diệu Hiền

Thư ký hành chính: ThS. Hoàng Thị Thuận

Các thành viên vắng mặt:

.....

.....

NỘI DUNG NGHIỆM THU:

1. Đọc quyết định thành lập Tiểu ban: TS. Lê Thị Diệu Hiền
2. Trưởng Tiểu ban điều khiển buổi nghiệm thu.
3. Chủ nhiệm đề tài trình bày tóm tắt báo cáo tổng kết đề tài *(có bản báo cáo toàn văn kèm theo)*.
4. Các thành viên Tiểu ban nhận xét, góp ý *(có bản nhận xét kèm theo)*.

5. Các thành viên trong Tiểu ban và những người tham dự buổi nghiệm thu trao đổi về nội dung, phương pháp, kết quả nghiên cứu của đề tài; và thống nhất một số ý kiến sau:

Nhìn rõ hơn chuẩn chỉnh được từ ngữ khoa'...

Nên kết hợp NC và LS để sử dụng kết kết

6. Đánh giá kết quả:

6.1. Ban kiểm phiếu gồm:
- TS. Lê Thị Diệu Hiền
- ThS. Hoàng Thị Thuận

6.2. Tiểu ban đã bỏ phiếu đánh giá kết quả như sau:

Tổng số phiếu phát ra : 05 phiếu
Tổng số phiếu thu vào: 05 phiếu
Số phiếu hợp lệ : 05 phiếu
Số phiếu không hợp lệ : 0 phiếu

6.4 Kết quả đánh giá:

Xuất sắc : 02 phiếu
Khá : 03 phiếu
Đạt : 0 phiếu
Không đạt : 0 phiếu

Kết quả đề tài đạt loại: Xuất sắc

7. Kết luận:

Nghiệm thu đề tài

Hải Phòng, ngày 17 tháng 12 năm 2023

Trưởng Tiểu ban
(Ký và ghi rõ họ tên)

Phạm Văn Nhiều

Thư ký
(Ký và ghi rõ họ tên)

Lê Thị Diệu Hiền

LÝ LỊCH KHOA HỌC

1. Họ và tên: ĐINH DƯƠNG TÙNG ANH

2. Năm sinh: 1968 3. Giới tính: Nam

4. Nơi sinh: Doãn Lập, Tiên Lãng, Hải Phòng

5. Nguyên Quán: Doãn Lập, Tiên Lãng, Hải Phòng

6. Địa chỉ liên hệ: 1/6/228 Trần Nguyên Hãn, Q. Lê Chân, Hải Phòng

Điện thoại: NR ..... Mobile: 0768358666. Fax: ...: 02253.733.315.

Email: dtbinh@hpmu.edu.vn

7. Học hàm, học vị:

Năm được công nhận: Tiến sĩ 2019 ..... Nơi cấp bằng: ĐH Kanazawa (Nhật Bản)

Năm được phong GS/PGS: ..... Nơi phong: .....

8. Cơ quan công tác:

Tên cơ quan: Trường Đại học Y Dược Hải Phòng.....

Khoa/Phòng, Bộ môn, Trung tâm,...: Khoa Y- Bộ môn Nội.....

Địa chỉ cơ quan: 72A Nguyễn Bỉnh Khiêm, Ngô Quyền, Hải Phòng.....

Điện thoại: 02253.731.907 ..... Fax: 02253.733.315.....

Email: contact@hpmu.edu.vn .....

9. Quá trình đào tạo

Bậc đào tạo	Nơi đào tạo	Chuyên ngành/Tên khóa luận, luận văn, luận án	Năm tốt nghiệp
Đại học	Trường Đại học Y Dược Hải Phòng		2014
Thạc sĩ	Đại học Paris 7 – Paris Diderot (Paris, CH Pháp)	Chuyên ngành: Sinh học tế bào, Sinh lý học và Bệnh học/Tên luận văn: La voie RhoA/Rho-kinases dans un modèle murin de la sclérose systémique	2011
Tiến sĩ	Đại học Kanazawa (Kanazawa, Nhật Bản)	Chuyên ngành: Nấu phát triển/ Tên luận án: FGF	2019

		Signaling Directs the Cell Fate Switch from Neurons to Astrocytes in the Developing Mouse Cerebral Cortex	

10. Các khoá đào tạo khác (nếu có)

Văn bằng	Tên khoá đào tạo	Nơi đào tạo	Thời gian đào tạo
Chứng chỉ	Chuyên khoa định hướng chuyên ngành Nhi khoa	Trường Đại học Y Dược Hải Phòng	2016
Bằng đại học	Ngành Tiếng Anh	Trường Đại học Hải Phòng	2008
Chứng chỉ	Bồi dưỡng nghiệp vụ sư phạm	Trường Đại học Sư Phạm Hà Nội 2	2015
Chứng chỉ	Bồi dưỡng theo tiêu chuẩn chức danh nghề nghiệp Giảng viên chính hạng II	Trường Đại học Sư Phạm, Đại học Huế	2019
Chứng chỉ	Hô hấp nâng cao	Trung tâm Hô hấp - Bệnh viện Nhi trung ương	2020
Chứng chỉ	Quản lý nhà nước ngạch chuyên viên	Trường Cán bộ quản lý văn hóa, thể thao và du lịch	2020
Chứng chỉ	Bồi dưỡng lãnh đạo quản lý cấp phòng	Trường Cán bộ quản lý văn hóa, thể thao và du lịch	2020
Chứng chỉ	Bồi dưỡng theo tiêu chuẩn chức danh nghề nghiệp Giảng viên chính hạng I	Trường Đại học Sư Phạm, Đại học Huế	2021
Trung cấp	Trung cấp Lý luận chính trị - hành chính	Học viện Thanh thiếu niên Việt Nam	2021
Cao cấp	Cao cấp Lý luận chính trị	Học viện Chính trị khu vực I	2024

11. Trình độ ngoại ngữ

Tên ngoại ngữ	Văn bằng/Chứng chỉ	Năm
Tiếng Anh	Bằng đại học/ TOEIC IBT	2008/2013
Tiếng Pháp	Bằng DELF B2	20010

12. Quá trình công tác *(trước khi về Trường và sau khi về Trường)*

Thời gian (Từ tháng ... đến tháng...)	Vị trí công tác	Cơ quan công tác	Địa chỉ cơ quan
10/2013 - 12/2014	Giảng viên tập sự	Bộ môn Nhi – trường ĐH Y Dược Hải Phòng	Trường ĐH Y Dược Hải Phòng, 72A Nguyễn Bỉnh

			Khánh, Ngô Quyền, Hải Phòng
	Bác sĩ điều trị	Khoa Hô hấp – BV Trẻ em Hải Phòng	BV Trẻ em Hải Phòng, Phố Việt Đức, Kiến An, Hải Phòng
1/2015 – 9/2015	Giảng viên	Bộ môn Nhi – trường ĐH Y Dược Hải Phòng	Trường ĐH Y Dược Hải Phòng, 72A Nguyễn Bỉnh Khiêm, Ngô Quyền, Hải Phòng
	Bác sĩ điều trị	Khoa Hô hấp – BV Trẻ em Hải Phòng	BV Trẻ em Hải Phòng, Phố Việt Đức, Kiến An, Hải Phòng
9/2015 – 9/2019	Nghiên cứu sinh Trợ giảng	Kawasaki Lab – Đại học Kanazawa, Nhật Bản	Thành phố Kanazawa, tỉnh Ishikawa, Nhật Bản
10/2019 – 10/2022	Giảng viên Giám vụ sau đại học Chuyên viên	Bộ môn Nhi – trường ĐH Y Dược Hải Phòng Phòng Hợp tác quốc tế	Trường ĐH Y Dược Hải Phòng, 72A Nguyễn Bỉnh Khiêm, Ngô Quyền, Hải Phòng
	Bác sĩ điều trị	Khoa Hô hấp – BV Trẻ em Hải Phòng	BV Trẻ em Hải Phòng, Phố Việt Đức, Kiến An, Hải Phòng
11/2022 – 3/2023	Giảng viên Chuyên viên Tổ lý NCKH và HTQT	Bộ môn Nhi – trường ĐH Y Dược Hải Phòng Phòng Hợp tác quốc tế Văn phòng Khoa Y	Trường ĐH Y Dược Hải Phòng, 72A Nguyễn Bỉnh Khiêm, Ngô Quyền, Hải Phòng
	Bác sĩ điều trị	Khoa Hô hấp – BV Trẻ em Hải Phòng	BV Trẻ em Hải Phòng, Phố Việt Đức, Kiến An, Hải Phòng
3/2023 – 6/2023	Phó trưởng BM Chuyên viên Tổ lý NCKH và	Bộ môn Nhi – trường ĐH Y Dược Hải Phòng Phòng Hợp tác quốc tế Văn phòng Khoa Y	Trường ĐH Y Dược Hải Phòng, 72A Nguyễn Bỉnh Khiêm, Ngô Quyền,

	HTQT		Hải Phòng
	Bác sĩ điều trị	Khoa Hô hấp – BV Trẻ em Hải Phòng	BV Trẻ em Hải Phòng, Phố Việt Đức, Kiến An, Hải Phòng
9/2021 – nay	Phó trưởng phụ trách BM Chuyên viên Tuyển sinh NCKH và HTQT	Bộ môn Nhi – trường Đại Y Dược Hải Phòng Phòng Hợp tác quốc tế Văn phòng Khoa Y	Trường Đại Y Dược Hải Phòng, 72A Nguyễn Bỉnh Khiêm, Ngô Quyền, Hải Phòng
	Bác sĩ điều trị	Khoa Hô hấp – BV Trẻ em Hải Phòng	BV Trẻ em, Phố Việt Đức, Kiến An, Hải Phòng

13. Các công trình khoa học đã công bố

13.1. Bài báo khoa học:

- *Tên tác giả: tên một tác giả của bài báo*
- *Tác giả chính: là Tác giả thứ nhất (first author) hoặc Tác giả liên hệ (corresponding author)*
- *Danh mục: Web Scopus hoặc Tạp chí trong nước được HĐGSNN tính điểm*

TT	Tên bài báo	Tên tác giả	Tác giả chính	Tạp chí	Ngày XB	Số, trang	Danh mục	ISSN (DOI)
1.	PGF signaling directly the cell fate switch from neurons to astrocytes in the developing mouse cerebral cortex.	Tung Anh Dinh Duong, Yuichi Hirohiba, Kengo Saito, Kanji Kawasaki, Yoshie Ishikawa, Naoyuki Matsumoto, Yukari Shimizu, Hitoshi Kawasaki	x	The Journal of Neuroscience	2019	Tập 39, Số 31, trang 6081-6094	ISI, Scopus (Q1)	ISSN 1529-2401
2.	Characterization of the Inner and Outer Fiber Layers in the Developing Cerebral	Kengo Saito, Keiichi Mizuguchi, Toshikido Horiike, Tung Anh Dinh Duong, Yukari Shimizu,		Cerebral Cortex	2019	Tập 29, Số 10 (Tháng 10-2019), trang	ISI, Scopus (Q1)	ISSN 1047-3211, 1460-2199

	Cortex of Gyrencephalic Ferrets	Hiroshi Kawasaki				4332-4341		
3.	Folding of the Cerebral Cortex Requires Cdk5 in Upper-Layer Neurons in Gyrencephalic Mammals	Yohei Shinmyo, Yukari Terashita, Tung Anh Dinh Duong, Toshihide Horike, Mutsuo Kawamura, Kazuyoshi Hosomichi, Atsushi Tajima, Hiroshi Kawasaki		Cell Reports	2017	Tập 20, Số 9, trang 2131-2143	ISI, Scopus (Q1)	ISSN 2211-1247 (online); 2639-1856 (print)
4.	An essential role of SVZ progenitors in cortical folding in gyrencephalic mammals	Tomohisa Toda, Yohei Shinmyo, Tung Anh Dinh Duong, Kazuko Masuda, Hiroshi Kawasaki		Scientific Reports	2016	Tập 6:291 78, trang 1-12	ISI, Scopus (Q1)	ISSN 2045-2322 (online)
5.	Localized neurogenesis regulates gyrification of the cerebral cortex	Yohei Shinmyo, Kengo Saito, Toshihide Hanabe-Horike, Natsunori Kamiya, Akitaka Ando, Kenji Kawasaki, Tung Anh Dinh Duong, Masataka Sakashita, Juvenpon Robson, Tsuyoshi Hattori, Takayuki Kannon, Kazuyoshi Hosomichi, Michal Stezak, Matthew G. Holt, Atsushi Tajima, Hiroshi Kawasaki		Science Advances	2023		ISI, Scopus (Q1)	ISSN 2375-2548 (Online)

		Osawa Hori, Hiroshi Kawasaki						
6.	Ruptured liver abscess presenting as pneumoperitoneum caused by *Klebsiella pneumoniae*: a case report	Thuong Pham Van, Son Vu Ngoc, Ngoc Anh Nguyen Hoang, Doan Hoang Hau, Tung Anh Dinh Duong	6	BMC Surgery	2020	Tập 20, số 1	ISI, Scopus (Q2)	ISSN: 1471-2482
7.	Hyponatremia from a non-component mixture comprising Amoxicillin and Sulbactam	Tung Anh Dinh Duong., Ngoc Anh Hoang, Linh Doan Thi, Dung Bui Thi, Hoang Pham Thi, Sang Nguyen Ngoc, Chien Bui Van, Thuc Dinh Van	6	Clinical Case Reports	2022	Tập 8, số 6, trang 1181-1183	ISI, Scopus (Q4)	Online ISSN: 2050-0904, Print ISSN: 2050-0904,
8.	Visualization of the Retina in Intact Eyes of Mice and Ferrets Using a Tissue Clearing Method	Yueyun Ye, Tung Anh Dinh Duong, Kengo Saito, Yukari Shimoyo, Yoshie Ichikawa Tomomi Higashide, Kyosuke Kagami Hiroshi Fujiwara, Kazuhiro Sugiyama, Hiroshi Kawasaki		Translational Vision Science & Technology	2020	Tập 9, số 2 (3)	ISI, Scopus (Q4)	Online ISSN: 2164-2591
9.	Phenotypic and genotypic features of Vietnamese children with pachyonychia congenita	Ha Thi Chu, Tung Anh Dinh Duong, Doanh Hau La, Thien Van La, Binh Bui Nguyen, Chuc Van Dang, Quang Van Vu		Pediatrics & Neonatology	2022	Tập 64, số 4, trang 405-410	ISI, Scopus (Q3)	ISSN 2212-1692 (Online)
10.	Antimicrobial Resistance	Tung Anh DINH DUONG, Thi	6	International Journal	2023	Tập 15, số	WOS, Scopus	ISSN:

	Antimicrobial Resistance Microbiological Characteristics of Community-Acquired Pneumonia in Children in Northern Vietnam	Danh DAM		of Biomedicine		1, trang 183-187	(QA)	2354-0338
11.	Ecology of bacterial community-acquired pneumonia among hospitalized children in Hai Phong Children's Hospital	Dinh Duong Tung Anh, Hoang Ngoc Anh, Nguyen Khanh Ly	x	Tạp chí nghiên cứu Y học	2023	Tập 166, số 3(12); 2023; trang 71-76		ISSN 2354-0001

11.2. Sách chuyên khảo, giáo trình – sử liệu sử học:

- *Tên tài liệu: Sách/ Chương sách*
- *Loại hình: Chuyên khảo/ Tham khảo/ Giáo trình/ Tài liệu hướng dẫn*

TT	Tên tài liệu	Tên tác giả	Chủ biên/Đồng chủ biên	Nhà xuất bản	Năm xuất bản	Loại hình	ISBN
1	Giáo trình Nhi khoa tập I	13 tác giả	Đặng Văn Chức/ Nguyễn Ngọc Sáng	NXB Y học	2022	Giáo trình	
2	Giáo trình Nhi khoa tập II	13 tác giả	Đặng Văn Chức/ Nguyễn Ngọc Sáng	NXB Y học	2022	Giáo trình	

14. Báo cáo Hội nghị - hội thảo khoa học

Kỷ yếu: Tên tập/ Toàn văn

TT	Tên báo cáo	Tên tác giả	Tác giả chính	Tên hội nghị	Thời gian báo cáo (tháng/năm)	Kỷ yếu	ISBN
			x				

15. Bằng sở hữu trí tuệ đã được cấp

Liệt kê các văn bằng bảo hộ: độc quyền sáng chế, giải pháp hữu ích, kiểu dáng công nghiệp, thiết kế bố trí, giống cây trồng...

TT	Tên và nội dung văn bằng	Số, Mã, Ký hiệu	Nơi cấp	Năm cấp
1				
2				
...				

16. Công trình KH&CN được ứng dụng, chuyển giao

TT	Tên công trình	Hình thức	Quy mô	Địa chỉ áp dụng	Giá trị	Thời gian
1						
...						

17. Nhiệm vụ KH&CN các cấp

- *Loại hình: Đề tài/ Dự án / Đề án*
- *Tình trạng nhiệm vụ: Đã nghiệm thu/ Chưa nghiệm thu/ Không hoàn thành*

17.1. Nhiệm vụ KH&CN đã và đang chủ trì

Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình *(nếu có)*	Tình trạng nhiệm vụ	Ngày			Kinh phí
					Phê duyệt	Đăng ký kết quả *(nếu có)*	Công nhận kết quả	
Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị viêm phổi thùy tại bệnh viện Trẻ em Hải Phòng năm 2022		Nhiệm vụ NCKH và công nghệ cấp cơ sở	Trường ĐH Y Dược Hải Phòng	Đã nghiệm thu				6.000.000 đồng
Đặc điểm dịch tễ lâm sàng, cận lâm sàng của trẻ mắc viêm thanh		Nhiệm vụ NCKH và công nghệ	Trường ĐH Y Dược Hải Phòng	Đã nghiệm thu				6.000.000 đồng

POST /ipp/print HTTP/1.1
Connection: Keep-Alive
Content-Type: application/ipp
User-Agent: CUPS/1.4 (Windows NT 6.1; x86) IPP/2.0
Content-Length: 181
Host: localhost:631
Accept-Encoding: identity
Accept-Language: en-us,*
Accept: */*
Pragma: no-cache
attributes-charset: utf-8
attributes-natural-language: en
printer-uri: ipp://

viện Tai mũi họng Hải Phòng năm 2021-2022		cấp cơ sở						
Thực trạng kháng kháng sinh và viêm nhầy xuất quản điều trị viêm phổi cộng đồng do H. influenzae ở trẻ em Hải Phòng 2019 - 2020		Nhiệm vụ NCKH và công nghệ cấp cơ sở	Trường Đại Y Dược Hải Phòng	Đã nghiệm thu				6.000.000 đồng
Đặc điểm vi khuẩn, dễ kháng kháng sinh và viêm và kết quả điều trị viêm phổi ở trẻ em dưới tại bệnh viện Trẻ em Hải Phòng		Nhiệm vụ NCKH và công nghệ cấp cơ sở	Trường Đại Y Dược Hải Phòng	Đã nghiệm thu				6.000.000 đồng
So sánh đặc điểm của viêm tiểu phế quản cấp		Nhiệm vụ NCKH và công	Trường Đại Y Dược Hải Phòng	Đã nghiệm thu				6.000.000 đồng

có nhiễm RSV và không nhiễm RSV tại bệnh viện Trẻ em Hải Phòng		nghệ cấp cơ sở						
17.2. Nhiệm vụ KHÁC/Đề tài tham gia								
Tên nhiệm vụ	Mã số	Loại hình	Cơ quan quản lý nhiệm vụ, thuộc Chương trình (nếu có)	Tình trạng nhiệm vụ	Ngày			Kinh phí
					Nghiệm thu	Công nhận kết quả	Đăng ký kết quả	
Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị viêm tiểu phế quản cấp ở trẻ dưới hai tuổi tại bệnh viện Trẻ em Hải Phòng năm 2022		Nhiệm vụ NCKH và công nghệ cấp cơ sở	Trường ĐH Y Dược Hải Phòng	Đã nghiệm thu				3.000.000 đồng
Đặc điểm lâm sàng, cận lâm sàng của trẻ mắc viêm thanh quản cấp tại bệnh viện Trẻ em Hải Phòng năm 2022		Nhiệm vụ NCKH và công nghệ cấp cơ sở	Trường ĐH Y Dược Hải Phòng	Đã nghiệm thu				3.000.000 đồng

Dánh giá kiến thức, thực hành xử trí sốt cho trẻ dưới 5 tuổi của người chăm sóc trẻ và một số yếu tố liên quan tại khoa Tự Nguyện B Bệnh viện		Nhiệm vụ NCKH và công nghệ cấp cơ sở	Trường ĐH Y Dược Hải Phòng	Đã nghiệm thu				6.000.000 đồng
Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị xuất huyết giảm tiểu cầu miễn phát tại bệnh viện Trẻ em Hải Phòng 2021		Nhiệm vụ NCKH và công nghệ cấp cơ sở	Trường ĐH Y Dược Hải Phòng	Đã nghiệm thu				6.000.000 đồng
Đặc điểm dịch tễ lâm sàng và kết quả điều trị co giật do sốt đơn thuần tại bệnh viện Trẻ em Hải Phòng năm 2021 - 2022		Nhiệm vụ NCKH và công nghệ cấp cơ sở	Trường ĐH Y Dược Hải Phòng	Đã nghiệm thu				6.000.000 đồng

Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị đồng đẳng đồng mạch ở trẻ sơ sinh non tháng tại bệnh viện Trẻ em Hải Phòng năm 2021 - 2022		Nhiệm vụ NCKH và công nghệ cấp cơ sở	Trường ĐH Y Dược Hải Phòng	Đã nghiệm thu				6.000.000 đồng
Đặc điểm lâm sàng và cận lâm sàng và kết quả điều trị bệnh nhiễm khuẩn huyết ở trẻ sơ sinh		Nhiệm vụ NCKH và công nghệ cấp cơ sở	Trường ĐH Y Dược Hải Phòng	Đã nghiệm thu				6.000.000 đồng

18. Giải thưởng về KH&CN trong và ngoài nước

TT	Tên giải thưởng	Hình thức khen thưởng	Cấp khen thưởng	Năm tặng thưởng
1				
2				
...				

19. Đào tạo sau đại học

- *Tại trì hướng dẫn: hướng dẫn 1/ hướng dẫn 2*
- *Bậc đào tạo: Tiến sĩ/Thạc sĩ/BSNT/CKII...*

TT	Họ tên học viên	Vai trò	Bậc đào tạo	Chuyên ngành	Nơi đào tạo	Năm cấp bằng
1	Trần Thị Thanh Hằng	Hướng dẫn 1	Thạc sĩ	Nhi khoa	Trường ĐH Y Dược Hải Phòng	2024

2	Vũ Thị Thu Thủy	Hướng dẫn 1	Thạc sĩ	Nhi khoa	Trường ĐH Y Dược Hải Phòng	2021
3	Vũ Văn Xoa	Hướng dẫn 1	Thạc sĩ	Nhi khoa	Trường ĐH Y Dược Hải Phòng	2020
4	Vũ Hải Hà	Hướng dẫn 1	Thạc sĩ	Nhi khoa	Trường ĐH Y Dược Hải Phòng	
5	Phạm Thị Ngọc	Hướng dẫn 2	BSCKII	Nhi khoa	Trường ĐH Y Dược Hải Phòng	2021
6	Hoàng Thị Hồng	Hướng dẫn 1	BSNT	Nhi khoa	Trường ĐH Y Dược Hải Phòng	2021
7	Phạm Văn Duyệt	Hướng dẫn 2	BSNT	Nhi khoa	Trường ĐH Y Dược Hải Phòng	2021
8	Bùi Thị Thúy	Hướng dẫn 2	BSNT	Nhi khoa	Trường ĐH Y Dược Hải Phòng	2021
9	Nguyễn Thị Hiền	Hướng dẫn 2	BSNT	Nhi khoa	Trường ĐH Y Dược Hải Phòng	2021
10	Nguyễn Đức Mạnh	Hướng dẫn 2	BSNT	Nhi khoa	Trường ĐH Y Dược Hải Phòng	2021
11	Nguyễn Đức Thiện	Hướng dẫn 1	Thạc sĩ	Nhi khoa	Trường ĐH Y Dược Hải Phòng	2021

NHỮNG THÔNG TIN KHÁC VỀ CÁC HOẠT ĐỘNG KHOA HỌC VÀ CÔNG NGHỆ
- Thành viên Ban Biên tập - Tạp chí Khoa học sức khỏe - Trường Đại học Y Dược Hải Phòng.

Hải Phòng, ngày 13 tháng 4 năm 2023

XÁC NHẬN CỦA ĐƠN VỊ

NGƯỜI KHAI

(Ký, ghi rõ họ và tên)

KT. HIỆU TRƯỞNG

PGS.TS. Trần Thị Thanh Mai

TS.BS. Trần Thị Hồng Hạnh

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

BIÊN BẢN
NGHIỆM THU ĐỀ TÀI KHCN CẤP CƠ SỞ NĂM 2023

Tên đề tài: Đặc điểm lâm sàng, cận lâm sàng và kết quả điều trị viêm phổi thùy tại Bệnh viện Trẻ em Hải Phòng năm 2022

Chủ nhiệm đề tài: Đinh Dương Tùng Anh

Thành viên tham gia: Trần Thị Thanh Hằng, Hoàng Ngọc Anh

Giảng viên hướng dẫn (nếu có):

Đơn vị: Nhi

Căn cứ Quyết định số: 2330/QĐ - YDHP ngày 08 tháng 12 năm 2023 của Hiệu trưởng trường Đại học Y Dược Hải Phòng về việc thành lập Tiểu ban Khoa học công nghệ nghiệm thu đề tài nghiên cứu khoa học cấp cơ sở năm 2023, Tiểu ban đã tiến hành họp để đánh giá, nghiệm thu đề tài vào hồi 15h30 ngày 18 tháng 12 năm 2023 tại trường Đại học Y Dược Hải Phòng.

Các thành viên có mặt:

1. PGS.TS Phạm Văn Linh	- Trưởng tiểu ban
2. PGS.TS Nguyễn Thị Thu Phương	- Phó trưởng tiểu ban
3. TS. Vũ Minh Tân	- Ủy viên
4. TS. Phạm Thị Vân Anh	- Ủy viên
5. TS. Nguyễn Thanh Hải	- Ủy viên thư ký

Thư ký Ánh chính: BS. Trần Thị Thanh Hằng

Các thành viên vắng mặt: .....

.....

NỘI DUNG NGHIỆM THU:

1. Đọc quyết định thành lập Tiểu ban: TS. Nguyễn Thanh Hải
2. Trưởng Tiểu ban điều khiển buổi nghiệm thu.
3. Chủ nhiệm đề tài trình bày tóm tắt báo cáo tổng kết đề tài *(có bản sao kèm theo)*.
4. Các thành viên Tiểu ban nhận xét, góp ý *(có bản nhận xét kèm theo)*.

3. Các thành viên trong Tiểu ban và những người tham dự buổi nghiệm thu trao đổi về nội dung, phương pháp, kết quả nghiên cứu của đề tài; và thống nhất một số ý kiến sau:

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6. Đánh giá kết quả:

6.1. Ban kiểm phiếu gồm:

- TS. Nguyễn Thanh Hải
- BS. Trần Thị Thanh Hằng

6.2. Tiểu ban đã bỏ phiếu đánh giá kết quả như sau:

Tổng số phiếu phát ra : 5 phiếu
Tổng số phiếu thu vào : 5 phiếu
Số phiếu hợp lệ : 5 phiếu
Số phiếu không hợp lệ : 0 phiếu

6.3. Kết quả đánh giá:

Xuất sắc : 05 phiếu
Khá : 0 phiếu
Đạt : 0 phiếu
Không đạt : 0 phiếu

Kết quả đề tài được loại : Tốt

7. Kết luận:

Nghiệm thu đề tài

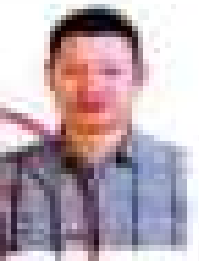
.....

Hải Phòng, ngày 11 tháng 12 năm 2023

Trưởng Tiểu ban	Thư ký
(Ký và ghi rõ họ tên)	(Ký và ghi rõ họ tên)
PGS.TS. Phạm Văn Linh	TS. Nguyễn Thanh Hải

BỘ Y TẾ
TRƯỜNG ĐẠI HỌC Y DƯỢC HẢI PHÒNG

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc



LÝ LỊCH KHOA HỌC

I. LÝ LỊCH SƠ LƯỢC

Họ và tên: Chu Khắc Tân Giới tính: Nam

Ngày, tháng, năm sinh: 02/02/1977

Nơi sinh: Xã Dũng Tiến, Huyện Vĩnh Bảo, Hải Phòng

Quê quán: Xã Dũng Tiến, Huyện Vĩnh Bảo, Hải Phòng Dân tộc: Kinh

Học vị cao nhất: Tiến sĩ Năm, nước nhận học vị: 2021

Chức danh khoa học cao nhất: ..... Năm bổ nhiệm: .....

Chức vụ (hiện tại hoặc trước khi nghỉ hưu): Phụ trách Bộ môn Dịch tễ học

Chỗ ở riêng hoặc địa chỉ liên lạc: 9[] Vĩnh Tiến, Vĩnh Niệm, Lê Chân, Hải Phòng

Điện thoại liên hệ: CQ NR: DĐ: 0902086658

Fax: E- mail: ctctan@hpmu.edu.vn

II. QUÁ TRÌNH ĐÀO TẠO:

1. Đại học:

Hệ đào tạo: Chính quy. Thời gian: 6 năm (1994-2000)

Nơi đào tạo: Trường Đại học Y Hải Phòng

Ngành học: Bác sĩ đa khoa. (CK định hướng YTCC). Nước đào tạo: Việt Nam

2. Sau đại học:

2.1. Thạc sĩ

Thạc sĩ chuyên ngành: Y tế công cộng. Năm cấp bằng: 2012

Nơi đào tạo: Đại học Curtin, Australia

Tên luận văn: Recommendations for interventions to reduce HIV risk among people who inject drugs in the greater Mekong subregion

Người hướng dẫn: Dr. Gemma Crawford

2.2. Tiến sĩ

Tiến sĩ chuyên ngành: Dịch tễ học – Y tế công cộng

Năm cấp bằng: 2021

Nơi đào tạo: Đại học Curtin, Australia

Tên luận án: Antenatal and postnatal depression among Vietnamese women: A prospective cohort study.

Ngày bảo vệ (ngày nộp quyển): 3/ 4/ 2021 .....

Người hướng dẫn: Dr. Ngoc Minh Pham, Prof. Andy Lee, Prof. Binns Colin

3. Trình độ ngoại ngữ:

1. Anh văn ..... Mức độ sử dụng: Thành thạo

4. Trình độ tin học:

Thành thạo tin học văn phòng và một số phần mềm thống kê phục vụ hoạt động chuyên môn.....

III. QUÁ TRÌNH CÔNG TÁC CHUYÊN MÔN

Thời gian	Đơn vị công tác	Công việc đảm nhiệm
2000-2002	Bộ Y tế - Dự án hỗ trợ phát triển y tế Việt Nam – EC Điều tra y tế quốc gia 2000-2002	Nhân viên dự án. Điều tra và giám sát số liệu tại tỉnh Sơn La, Vĩnh Phúc, Ninh Thuận, Lâm Đồng, Nghệ An.
2003-2003	Trường Đại học Y Hà Nội Module Phương pháp nghiên cứu khoa học của Khoa Y tế công cộng.	Nghiên cứu viên, trợ giảng
2004-2011	Trường Đại học Y Dược Hải Phòng Phòng Đào tạo Đại học	Chuyên viên
2012-nay	Trường Đại học Y Dược Hải Phòng Khoa Y tế công cộng – Bộ môn Dịch tễ học	Giảng viên

IV. CÁC CÔNG TRÌNH NGHIÊN CỨU KHOA HỌC (trong 5 năm trở lại đây)

1. Các đề tài nghiên cứu khoa học đã và đang tham gia:

TT	Tên đề tài nghiên cứu	Năm bắt đầu/năm hoàn thành	Đề tài cấp (NN,Bộ , Ngành, trường, dự án liên kết với nước ngoài,...)	Trách nhiệm tham gia trong đề tài

1	Maternal lifestyle and diet during pregnancy in relation to infant healt outcomes in vietnam	2013/ 2017	Dự án liên kết với đối tác trong nước và nước ngoài	Nghiên cứu viên chính
2	Thực trạng hoạt động của một số phòng tư vấn xét nghiệm tự nguyện ở Hải Phòng năm 2014	2014	Trường	Chủ nhiệm đề tài
3	Thực trạng kiến thức và hành vi an toàn giao thông của học sinh một số trường trung học phổ thông Hải Phòng năm 2013	2013	Trường	Chủ nhiệm đề tài
4	Thực trạng học tập của sinh viên bác sĩ đa khoa trường Đại học Y Hải Phòng năm 2011-2012	2012	Trường	Chủ nhiệm đề tài
5	Điều trị thay thế nghiện các chất dạng thuốc phiện bằng methadone tại Hải Phòng	2013-2013	Bộ	Điều tra viên

2. Các công trình khoa học đã công bố.

TT	Tên công trình	Năm công bố	Tên tạp chí
1.	Nguyen, C. L., Nguyen, P. T. H., Cha, T. K., Ha, A. V. V., Pham, N. M., Duong, D. V., Do, D. V., Tang, H. K., Binns, C. W., & Lee, A. H. (2017). Cohort profile: maternal lifestyle and diet in relation to pregnancy, postpartum and infant health outcomes in Vietnam: A multicentre prospective cohort study.	2017	BMJ Open, 7(9), e016794.
2.	Nguyen, C. L., Hoang, D. V., Nguyen, P. T. H., Ha, A. V. V., Cha, T. K., Pham, N. M., Lee, A. H., Duong, D. V., & Binns, C. W. (2018). Low Dietary Intakes of Essential Nutrients during Pregnancy in Vietnam.	2018	Nutrients, 10(8), 1025.

3.	Nguyen, C. L., Pham, N. M., Lee, A. H., Nguyen, P. T. H., Cha, T. K., Ha, A. V. V., Duong, D. V., Duong, T. H., & Binns, C. W. (2018). Physical activity during pregnancy is associated with a lower prevalence of gestational diabetes mellitus in Vietnam.	2018	*Acta Diabetologica*, *55*(9), 955-962.
4.	Nguyen, P. T. H., Binns, C. W., Nguyen, C. L., Ha, A. V. V., Cha, T. K., Duong, D. V., Do, D. V., & Lee, A. H. (2018). Gestational Diabetes Mellitus Reduces Breastfeeding Duration: A Prospective Cohort Study.	2018	*Breastfeeding Medicine*, *14*(1), 39-45.
5.	Nguyen, P. T. H., Pham, N. M., Cha, K. T., Van Duong, D., & Van Do, D. (2019). Gestational Diabetes and Breastfeeding Outcomes: A Systematic Review.	2019	*Asia Pacific Journal of Public Health*, *31*(3), 183–188
6.	Ha, A.V.V.; Zhao, Y.; Binns, C.W.; Pham, N.M.; Nguyen, C.L.; Nguyen, P.T.H.; Cha, T.K.; Lee, A.H. Low Prevalence of Folic Acid Supplementation during Pregnancy: A Multicenter Study in Vietnam.	2019	*Nutrients* 2019, *11*, 2347
7.	Ha, V. V. A., Zhao, Y., Pham, M. N., Binns, C. W., Nguyen, C. L., Nguyen, P. T. H., Cha, T. K., & Lee, A. H. (2019). Physical Activity During Pregnancy and Postpartum Low Back Pain: A Prospective Cohort Study in Vietnam.	2019	*Asia Pacific Journal of Public Health*, *31*(8), 706–
8.	Nguyen, P.T.H.; Binns, C.W.; Nguyen, C.L.; Van Ha, A.V.; Cha, K.T.; Duong, D.V.; Do, D.V.; Lee, A.H. Physical Activity During Pregnancy is Associated with Improved Breastfeeding Outcomes: A Prospective Cohort Study. *Int.	2019	*J. Environ. Res. Public Health* 2019, *16*, 1749.
9.	Ha, A. V. V., Zhao, Y., Pham, N. M., Nguyen, C. L., Nguyen, P. T. H., Cha, T. K., Tang, H. K., Binns, C. W., & Lee, A. H. (2019). Postpartum weight retention in relation to gestational weight gain and pre-pregnancy body mass index: A prospective cohort study in Vietnam.	2019	*Obesity Research & Clinical Practice*, *13*(2), 143-149.
10.	Cong Luat Nguyen, Andy H. Lee, Ngoc Minh Pham, Phong Thi Hoang Nguyen, Anh Vo Van Ha, Tan Khac Cha, Dat Van Duong, Hong Thi Duong & Colin W. Binns (2020) Prevalence and pregnancy outcomes of gestational diabetes mellitus by different international diagnostic criteria: a prospective cohort study in Vietnam,	2020	The Journal of Maternal-Fetal & Neonatal Medicine, 33:21, 3706-3712
11.	Phong Thi Hoang Nguyen, Colin W. Binns, Anh Vo Van Ha, Cong Luat Nguyen, Tan Khac Cha, Dat Van Duong, Dung Van Do & Andy H. Lee (2020) Caesarean delivery associated with adverse breastfeeding practices: a prospective cohort study,	2020	Journal of Obstetrics and Gynaecology, 40 :5, 644-648

12.	Ha A.V.V., Zhao Y., Pham N.M., Nguyen C.L., Nguyen P.T.H., Chu T.K., Binns C.W., Lee A.H.(2020) Physical activity and sedentary behaviour during pregnancy are associated with gestational weight gain in Vietnamese women).	2020	Asia Pacific journal of clinical nutrition, 29 (1) , pp. 136-143
13.	Ha, A.V.V.; Zhao, Y.; Binns, C.W.; Pham, N.M.; Nguyen, P.T.H.; Nguyen, C.L.; Chu, T.K.; Lee, A.H. Postpartum Physical Activity and Weight Retention within One Year: A Prospective Cohort Study in Vietnam.	2020	Int. J. Environ. Res. Public Health 2020, 17, 1105.
14.	1. Nguyen P, Binns CW, Ha AVV, Chu TK, Nguyen LC, Duong DV, et al. Prolacted and early formula feeding increase risk of infant hospitalization: a prospective cohort study.	2020	Archives of Disease in Childhood. 2020;105(S2):A23-a
15.	Chu Khắc Tân, Phạm Thanh Hải, Vũ Quang Hưng, Nguyễn Thế Anh, Cập Minh Đức (2022). Sự hài lòng của người bệnh điều trị nội trú về chất lượng dịch vụ y tế tại Trung tâm Y tế huyện Nghĩa Đàn, tỉnh Nghệ An năm 2020.	2022	Tạp chí Y học dự phòng. 32 (1): 202.
16.	Nguyễn Thế Anh, Trịnh Đình Tuấn, Chu Khắc Tân, Cập Minh Đức (2022). Các yếu tố liên quan đến kiểm soát đường huyết lúc đói ở bệnh nhân đái tháo đường týp 2 tại trung tâm y tế Gia Lộc, Hải Dương năm 2021.	2022	Tạp chí Y học Việt Nam. 513 (số đặc biệt): 18 – 23.
17.	Chu Khắc Tân, Nguyễn Thế Anh, Đặng Ngọc Hà, Cập Minh Đức (2022). Chất lượng bệnh viện tại trung tâm y tế huyện Nghĩa Đàn tỉnh Nghệ An năm 2020.	2022	Tạp chí Y học Việt Nam. 513 (số đặc biệt): 37 – 43.
18.	Phạm Thị Ngọc, Cập Minh Đức, Phan Thị Hoài Thu, Nguyễn Thế Anh, Phạm Văn Thức, Chu Khắc Tân (2022). Một số yếu tố liên quan đến bệnh phổi tắc nghẽn mạn tính điều trị ngoại trú tại Bệnh viện Phổi Hải Dương năm 2021.	2022	Tạp chí Y học Việt Nam. 513 (số đặc biệt): 64 – 70.
19.	Nguyễn Thế Anh, Nguyễn Thị Thùy Linh, Vũ Thị Mến, Chu Khắc Tân, Nguyễn Văn Thành, Cập Minh Đức (2022). Kiến thức về bệnh đái tháo đường thai kỳ của thai phụ tại Bệnh viện Đại học Y Hải Phòng năm 2021.	2022	Tạp chí Y học Việt Nam. 513 (số đặc biệt): 147 – 156.
20.	Vũ Quang Hưng, Cập Minh Đức, Phan Thị Hoài Thu, Nguyễn Thế Anh, Phạm Văn Thức, Chu Khắc Tân (2022). Thực trạng quản lý điều trị bệnh phổi tắc nghẽn mạn tính ngoại trú tại Bệnh viện phổi Hải Dương năm 2021.	2022	Tạp chí Y học Việt Nam. 513 (số đặc biệt): 206 – 213

11.	Chu Khac Tan, Nguyen Thi Ngoc Mai (2024) Knowledge of prevention of sexually transmitted infections of high school students in Nam Sach district, Hai Duong province, in 2023.	2024	Journal of health sciences. Vlosme 2, Issue 6 DOI: https://doi.org/10.59076/jhs020624007

I. Hướng dẫn sinh viên, học viên bảo vệ khoá luận tốt nghiệp, luận văn, luận án:

Đã hướng dẫn thành công:

- Sinh viên bảo vệ khóa luận tốt nghiệp: 11
- Học viên bảo vệ luận văn tốt nghiệp: 2

Xác nhận của cơ quan

PHÓ HIỆU TRƯỞNG

TS. Trần Thị Thanh Mai

Hải Phòng, ngày 15 tháng 4 năm 2025

Người khai kí tên

(ghi rõ chức năng học vị)

Chu Khắc Tân