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RESEARCH ON SITUATIONS AND INTERVENTIONS ON DROPOUT AMONG DRUG USERS IN METHADONE MAINTENANCE TREATMENT IN HAI PHONG, 2014 – 2016

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INTRODUCTION

Opioid substances led the list of substances that cause problems in terms of burden of illness and mortality. The pilot treatment program for drug substitution by methadone in Vietnam in 2008 showed that methadone was very effective in controlling heroin addiction and was approved to expand the service to other provinces and cities nationwide. As prescribed by the treatment program, patients must visit the treatment facilities daily under the supervision of the medical staffs to guarantee the safety and effectiveness of treatment. Patients with poor compliance or unsuitable methadone doses may significantly increase the risk of illicit drug use and lead to treatment failure.

The current methadone treatment model is available throughout the country and is increasingly expanding, thus the study of treatment adherence, drop-out in Methadone Maintenance Treatment (MMT) is stable as well as factors related to the discontinuation of treatment is essential to develop interventions to enhance the adherence and effectiveness of the program. In this situation, we conducted a research project aimed to:

1. *Describe the real situation and several factors related to dropping out of methadone treatment in Haiphong from 2014 to 2015.*

2. *Evaluate the effectiveness of community-based health education and communication in methadone maintenance treatment.*

THE CONTRIBUTIONS OF THE DISSERTATION

1. This is the first study to determine the rate of drop-out for the first 3 years of methadone treatment patients in Haiphong. As the results, after 3 years of treatment, the proportion of patients quitting

the methadone program in the first year was 10.5%, the second year was 13.2% and the third year was 14.0%. After 3 years, a total of 33.3% of patients abandoned the treatment program.

2. Patients those used drugs within the treatment period, missed more than 3 days in the last 3 months were indicated as patients at risk of methadone abandonment for over 5 consecutive days. Patients with a current dose of $\geq$ 60mg per day reduced the risk of quitting than patients taking <60mg per day

3. Community-based health education includes updating knowledge activities for peer educators and health workers, psychosocially supporting for patients at risk of drop-out of MMT so as to enhance adherence and improve quality of life (QoL) for patients. After 6 months of intervention, IEC program obtained significant results: a reduction in the rate of patients who skipped taking methadone for 3 days and over 3 consecutive days in the last 3 months, with an intervention efficiency of 27.0 % and 55.6%; Reducing risk factors such as illicit drug use, urine test (+) with heroin, and drug-using peers with intervention efficiency of 43.7%, 38.3% and 16.2%; Significantly increasing QoL score of psychological and environmental aspects of patients.

STRUCTURES OF THE DISSERTATION

The dissertation consists of 132 pages, 59 tables, 5 figures, 2 diagrams and 166 references, of which 134 ones are foreign. There are 2 pages of introduction 2 pages, 32 pages of overview, 20 pages of methodology, 40 page of results, 35 pages of discussion, 3 page of conclusion and recommendation.

Chapter 1: LITERATURE REVIEW

1.1. The situation of drug use in the world and Vietnam.

By 2013, UNODC estimates that there were 246 million people using an illegal drug worldwide. By 2014, it is estimated that 32.4 million people who used opioid substances, accounting for 0.7% of the world population, and following by to marijuana, drugs topped the list of substances causing illness burden and relating to death.

In 2015, the government counted 201,180 drug addicts having records management. Yet, the net number of drug users was actually higher than the statistics because many people who used drugs did not reveal their status to their family and/or society. Drugs were recorded in 4 groups, but the majority was heroin (70%).

1.2. Treatment of opiate addiction by methadone.

Methadone treatment is a long-term, controlled, low-cost, oral treatment that helps prevent the spread of blood-borne diseases such as HIV, hepatitis, assisting heroin addicts stop or reduce heroin intake in order to help rehabilitate physiological, social, labor function and reintegrate the community.

Adherence to methadone treatment: According to the Ministry of Health's methadone treatment guidelines, patients need to visit the treatment facilities daily under the supervision of a health professional staffs. Patients those do not continuously come to take methadone are regarded as methadone abandonment. As follows are approaches to treat treatment-quitting patients:

- Missed 1-3 days: did not change the dose of methadone treatment.

- Missed 4-5 days: reduced ½ dose of former dose before quitting treatment.

- Missed > 5 consecutive days (from 6 to 30 consecutive days): resumed the treatment when the patient returns to the methadone treatment.

- Patients who did not take methadone > 30 days should be removed from methadone treatment. Patients should proceed as new patients when they wish to return to treatment.

At present, in Vietnam, there are many studies on adherence to treatment, abandonment and related factors. However, most of them were descriptive studies on patients who have been currently on treatment. The implementation of a study to determine the major risk factors for drop-out is necessary, by which build appropriate intervention to improve the patients' adherence to treatment.

1.3. Some interventions to enhance adherence to methadone treatment

Community-based health education and communication for methadone-treated patients with the goals of promoting the active roles of patients during treatment, especially sharing their problems with the medical staffs and treated peers during treatment, to improve treatment effectiveness and improve QoL.

Psychological counseling and support: including individual counseling; group counseling and education; family counseling and peer groups support before, during and after the treatment.

Peer Education: Provides knowledge and skills for peer groups, by then support they share experiences, knowledge and skills with other treated patients to support and help each other during the treatment.

International studies have indicated that community-based health education and communication interventions, such as psychological counseling and peer education help to enhance the treatment adherence, reduce drug use, and improve QoL among methadone patients.

Chapter 2: SUBJECTS AND RESEARCH METHODS

2.1. Subjects, duration and settings of the study

Study subjects: study subjects were patients over 18 years of age, who were treated with methadone.

Study duration: From January 2014 to April 2017

Study settings: 5 methadone treatment facilities: An Duong, Hai An, An Lao, Kien An, and Hong Bang District

2.2. Research Methodology

2.2.1. The study design: included three phases: 1) *a cross-sectional descriptive study* of a 2-year retrospective and 3-year follow-up according to medical managing records in order to determine the rate as well as the causes of methadone abandonment. 2) *Case-control study* to find factors associated to methadone abandonment. Case group: patients who skipped treatment for over 5 consecutive days. Control groups: Patients in the same treatment round with the cases and adhered to treatment. 3) *Controlled before-and-after study* to evaluate effectiveness of intervention.

2.2.2. Sample size and sampling methods

Cross-sectional descriptive study: Included total of 1,055 patients who began to receive treatment from 8/2011 to 7/2012 in five MMT clinics to evaluate the rate of abandonment.

Case study:

Sample size: Applied the sample size calculation for case-control study with $\alpha = 0.05$; $\beta = 0.2$; Estimated the rate of heroin use in patients who quitted and adhered to treatment: $p_1 = 20\%$, $p_0 = 5\%$; the difference was estimated 15%. By that, 80 cases (abandoned treatment) and 80 cases were calculated. Scientifically, the sample size was calculated with the ratio of case/control 1: 2. The sample size needed therefore was total of 240 patients (80 cases and 160 cases). In fact, 81 cases and 161 controls were interviewed.

Sample: 819 patients were treated in full 2 years from August 2013 to July 2014. All eligible patients are included in the case and control sampling process.

- Sampling of case group: If a patient is treated for 24 months or more in the course of treatment, he or she will not be admitted to the institution for more than 5 consecutive days, including those who have missed treatment for any reasons will be identified as cases. The study stopped collecting cases when the sample size was reached according to the study design.

- Sampling of control groups: For each case identified, two cases correspondingly were randomly selected from the list of patients in the same treatment round.

Controlled before-and-after study (Intervention study):

Sample size: Use the formula to determine the difference o between the two pre- and post-intervention rates: Type 1 error, select $\alpha = 0.05$ (95% confidence) → $Z_{1-\alpha/2} = 1,96$; β: type 2 error , select $\beta = 0,1$ (study power 90%) → $Z_{\beta} = 1,28$; p1: The proportion of drug use according to FHI evaluation was 12%; p2: The proportion of patients using the drug after the intervention was reduced to 5%. The sample size was calculated a total of 208 participants

Sampling: Select all patients in two Methadone facilities, Hai An (intervention group) and An Duong (control group). Interventions included 214 patients and control group had 221 patients.

2.2.3. Research procedure

Cross-sectional descriptive study: The researchers identified the rate of drop-out and the reasons of patients for leaving treatment program for the first 3 year of treatment through medical records and managing records at the treatment facilities.

Case-control study: When specifying a case (abandoned) and control, the investigators will contact the patients to be invited them to

participate in the study. Patients agreeing to participate in the study will answer the interview and allow researchers to exploit the patient's medical information at the MMT clinics.

Controlled before-after study:

* Choosing an intervention to improve patients' adherence to methadone treatment

Studies by national and international authors showed that positive factors that enhance the patients' adherence to treatment are methadone doses > 60 mg, psychosocial interventions, psychosocial social support from medical staffs, not using drugs during treatment. In the case-control phase, we also found that risk factors for drop-out were patients treated with methadone <60 mg, heroin use during methadone treatment, and treatment quitting > 3 days in the last 3 months. Thus, the intervention phase, we intentionally focused on the following activities: 1) psychosocial support from medical staffs and treated peers for patients, 2) increasing knowledge for treated peers 3) updating knowledge for medical staffs with the goal of improving the adherence to treatment and enhancing QoL for patients.

* Interventions included:

- Organize two workshops conducted by a French psychiatrist and addiction specialist for medical staffs at the intervention facility.

- Reinforcing the capacity of the 22-member peer teams. The groups were trained on methadone treatment, illicit drugs, co-infectious diseases by lecturers of Haiphong University of Medicine and Pharmacy. Members of the teams were crucial for attaining better access to patients treated at the treatment facilities.

- Leaflets with contents focus on methadone treatment were distributed to patients by health workers and treated peers, in the medicine-taking room.

- Psychiatric and psychological support for patients: Haiphong University of Medicine and Pharmacy medical staffs were trained about addicting medical support one day per week during the intervention, which strongly improved staffs' knowledge about psychiatric screening, psychological support on the spot and referral to the mental hospital for specialized medical examination and treatment for screened cases of patients with psychiatric problems. With patients abandoning treatment, using illegal drugs, psychosocial support, and motivational interviewing to stimulate patients planning and carrying out positive changes. During the intervention, school staffs and local medical staffs at the facility implemented intervention to ensure that health workers at the facility were able to do so until the end of the intervention period time.

* *Interventions aimed at*: reducing drugs use; improving supports derived from medical staffs, treated peers; enhancing patients' adherence to methadone treatment; reducing risk factors for discontinuation of treatment; improving mental health; improving the quality of life for patients.

2.2.4. Research variables

- Drop-out: patients did not go to the MMT clinics.
- Continuation to use drugs during methadone treatment.
- *Other related variables:* demographic characteristics, methadone treatment, chronic diseases.
- *Quality of life variables:* QoL assessment under EU-3D5L and WHOQOL-BREF tools.
- *Variables in the effectiveness of the intervention:* Changes in risk behavior, adherence and QoL in methadone treatment before and after intervention, including: drug use, adherence to treatment in the last 3 months, changes in QoL of patients before and after

intervention. Intervention efficiency enhanced the patients' adherence and the QoL of patients.

2.2.5. Research index

Evaluate the level of methadone abandonment according to Ministry of Health's guidelines:

- Missed > 3 consecutive days: patients did not taking methadone for 4-30 consecutive days (> 3 days in a row).

- Missed > 5 consecutive days: patients did taking methadone for 6 to 30 consecutive days (> 5 consecutive days).

- Dropped out: patients did not go to take methadone > 30 days (called leaving/quitting the program).

- Drop-out: patients who did not go to take methadone for over 5 consecutive days (including quitting and skipping over 5 consecutive days).

2.3. Data collection and processing

2.3.1. Data collection and data testing

* **With descriptive study:** Information was collected from medical records and managing records of the MMT clinics.

* **With case-control study:** Investigators are lecturers of Haiphong University of Medicine and Pharmacy, who were trained to determine cases, controls and interview, gather information.

* With controlled before-after study: assessing at two time points, before and after intervention, for all patients to evaluate the effectiveness of the intervention.

2.3.2. Data analyzing and processing: Data were imported, refined and processed by Microsoft Access 2003. Subsequently, the data were analyzed by SPSS software, version 16.0.

CHAPTER 3: THE RESULTS

3.1. The real situation and some related factors with dropout of MMT in Haiphong

3.1.1 The propotions of dropout of MMT during 3 years.

Table 3.1: Dropout among patients in methadone treatment during 3 years of following-up in Haiphong, Vietnam (2012-2014)

Phòng khám	0-12 months			13-24 months			25-36 months			Total dropped out over 3 years
	Patients initially enrolled	Missed > 5 consecuti ve days n (%)	Dropped out n (%)	Patients initially enrolled	Missed > 5 consecuti ve days n (%)	Dropped out n (%)	Patients initially enrolled	Missed > 5 consecuti ve days n (%)	Dropped out n (%)	
An Duong	244	13 (5.3)	15 (6.2)	229	8 (3.5)	30 (13.1)	198	20 (10.1)	33 (16.7)	79 (32.4)
An Lao	184	1 (0.5)	32 (17.4)	152	2 (1.3)	24 (15.8)	128	7 (5.5)	25 (19.5)	81 (44.0)
Hai An	207	11 (5.3)	27 (13.0)	180	4 (2.2)	29 (16.1)	151	15 (9.9)	21 (13.9)	77 (37,2)
Hong Bang	167	1 (0,.6	11 (6.6)	156	5 (3.2)	12 (7.7)	144	11 (7.6)	15 (10.4)	38 (22.8)
Kien An	253	6 (2.4)	26 (10.3)	227	13 (5.7)	29 (12.8)	198	15 (7.6)	21 (10.6)	76 (30.0)
Total	**1055**	**32 (3.0)**	**111 (10.5)**	**944**	**32 (3.4)**	**124 (13.1)**	**819**	**68 (8.3)**	**115 (14.0)**	**351 (33.3)**

Comments: The proportion of patients who had abandoned methadone was 10.5% during the first year, 13.2% during the second year and 14.0% during the third year. After 3 years, 33.3% of patients had dropped out.

The reasons for dropping out methadone maintenance: Almost clinics did not have reasons of patient's non-compliance in the medical records. The percentage of this was 47.7% in the first year, 63.7% in the second year and 70.4% in the third year.

3.1.2. Factors associated with methadone non-compliance

Table 3.3: Demographic characteristics of the study population (n = 242)

Demographic characteristics	Cases n (%)			Controls in treatment n = 161; n (%) (2)	p$_{1,2}$
	Dropped out n = 28	Missed > 5 consecutive days n = 53	Total n =81 (1)		
Sex					
Male	27 (96,4)	52 (98,1)	79 (97,5)	158 (98,1)	0,837*
Female	1 (3,6)	1 (1,9)	2 (2,5)	3 (1,9)	
Age, years					
24 - 30	5 (17,9)	6 (11,3)	11 (13,6)	20 (12,4)	0,636
31 – 40	17 (60,7)	27 (50,9)	44 (54,3)	85 (52,8)	
41 – 50	6 (21,4)	14 (26,4)	20 (24,7)	43 (26,7)	
51 – 59	-	6 (11,3)	6 (7,4)	13 (8,1)	
Mean, years (SD)	36,7 ± 5,5	39,6 ± 7,4	38,6 ± 6,9	38,4 ± 7,0	0,852
Education level completed					
Primary school	2 (7,1)	3 (5,7)	5 (6,2)	15 (9,3)	0,177*
Secondary school	18 (64,3)	20 (37,7)	38 (46,9)	67 (41,6)	
High school	6 (21,4)	28 (52,8)	34 (42,0)	73 (45,3)	
College/University or higher	2 (7,1)	2 (3,8)	4 (4,9)	6 (3,7)	
Marital status					
Single	7 (25,0)	10 (18,9)	17 (21,0)	56 (34,8)	0,126
Married	17 (60,7)	37 (69,8)	54 (66,7)	80 (49,7)	
Divorced / Separated	4 (14,3)	6 (11,3)	10 (12,3)	25 (15,5)	

(*) : Test Fisher exact

Comments: There is similarity in gender, age group, mean of age, education level, marital status of case group and control group (p> 0.05).

- The results showed that 63% of the patients in the case group and 48.4% of the control group had mental symptoms. There were 32.1% of patients in case group and 16.8% of patients in the control group

had mental illness in the last 3 months. The difference between the groups was statistically significant (p <0.01).

Table 3.10: Distribution of methadone doses of the study subjects

Methadol doses are being used (mg)	Cases n (%)			Controls n = 161; n (%) (2)	$p_{1,2}$
	Dropped out n = 28	Missed > 5 consecutive days n = 53	All n = 81 (1)		
5 - 59 mg	10 (35,7)	34 (64,2)	44 (54,3)	43 (26,7)	
60 – 119 mg	11 (39,3)	14 (26,4)	25 (30,9)	62 (38,5)	0,000
120 – 380 mg	7 (25,0)	5 (9,4)	12 (14,8)	56 (34,8)	
$\overline{X} \pm$ SD (mg)	78,0 ± 43,8	57,1 ± 43,6	64,3 ± 44,5	111,7 ± 78,8	0,000

Comments: The proportion of patients was treated with methadone doses less than 120 mg/day and the mean of methadone dose in both groups was statistically significant (p <0.01).

- There were 34.6% of patients in the case group and 5.6% of patients in the control group used heroin in the last month. The difference was statistically significant with p <0.001.

- Evaluate the quality of life of patients according to WHOQOL-BREF showed that the quality of life of patient about physical had the highest score (71.2 ± 17.8 in the case group and 76.7 ± 16.7 in the control group) and the psychological aspect had lowest score (52.4 ± 17.0 in the case group and 55.2 ± 18.4 in the control group). There were statistically significant differences between the two groups in terms of score of quaility of life in both physical and environmental aspects (60.2 ± 16.2 in the case group and 65.8 ± 15.7 in the control group) with p <0.05.

- In the case group, the reason for dropping out was that they did not depend on heroin anymore (23.5%), time required for MMT conflicted with their works (21.0%), 16.0% had a health problem that prevented regular attendace.

Table 3.36: Multivariate analysis of factors associated with drop-out.

Variable	aOR (95% CI)	p
Marital status		
Married	Ref	
Single / Widow / Divorced / Divorced	0,67 (0,24-1,86)	0,440
Have children		
Yes	Ref	
No	2,84 (0,88-9,14)	0,081
Distance from home to MMT clinic, mean(SD), km	1,07 (0,96 – 1,20)	0,228
Most recent methadone maintenance dose, mg/day		
5-59	Refer	
60-119	0,40 (0,17-0,94)	**0,036**
120-380	0,28 (0,09-0,86)	**0,026**
Number of methadone days missed, last 3 months		
No missed days	Ref	
1-3 days	2,21 (0,86-5,66)	0,098
> 3 days	18,48 (7,25-47,09)	**<0,001**
Use heroin during last month of MMT		
No	Ref	
Yes	12,40 (4,19-36,75)	**<0,001**
Have current friends who use drugs		
No	Ref	
Yes	0,62 (0,29-1,31)	0,207
HIV status		
Negative	Ref	
Positive	1,06 (0,39-2,93)	0,907
Self-reported mental health problems, last 3 months		
No	Ref	
Yes	0,99 (0,45-2,17)	0,983
p = 0,000 , R^2 = 55,3%		

Comments: In the multivariate logistic regression analysis, only 2 factors were heroin use while taking methadone and missed> 3 days of methadone treatment in the last 3 months, which increased the risk of patient abandonment. On the other hand, patients taking the dose of methadone over 60mg reduced the risk of dropping out treatment than those who received lower doses.

3.2. Intervention results

- After intervention, the proportion of patients in the intervention group receiving mental support and information from treated peers was significantly higher than before intervention and in comparison with the control group. Effectiveness of the intervention were 48% and 159.5% respectively.

- After intervention, the patients were satisfied with the health workers was higher than those before intervention and compared with the control group with the effectiveness of the intervention were 69.7%.

3.2.1. Strengthen adherence to methadone treatment.

At the intervention clinic, the results showed that after 6 months of intervention, the proportion of patients who missed methadone for 3 days and more than 3 consecutive days in the last 3 months, urine test (+) with heroin drug use was significantly reduced (p <0.05).

Table 3.48: The effectiveness of intervention with missing methadone more than 3 consecutive days in the last 3 months.

Effectiveness of interventions for missing more than 3 consecutive days	Effectively index (%)		The interventional effectiveness (%)
	Intervention	**Control**	
Adherence	58,3	2,7	55,6

Commenst: The effectiveness of interventions for missing more than 3 consecutive days of methadone intake in the last 3 months was 55.6%.
- The effectiveness of intervention for missing more thann 3 days in the last 3 months was 27.0%. Effectiveness of intervention for the lastest heroin-positive urine samples, with friends who had drug use were 38.3% and 12.6%. The proportion of patients who used drugs dropped 6.9% after intervention, while in non-intervention clinic increased 1.8%, the difference was statistically significant (p <0.05).

Table 3.53: The change of using heroin before and after intervention

Time / Using heroin	Before intervention		After intervention		Difference (%)	p
	Yes	**No**	**Yes**	**No**		
Intervention group	23 (11,7)	191 (89,3)	11 (4,8)	197 (94,7)	6,9	0,023
Control group	26 (11,8)	195 (88,2)	21 (100)	188 (90,0)	1,8	0,568
p	0,737		0,041			

Comments: Evaluating at the intervention clinic and non-intervention clinic, patients still using heroin after intervention in both intervention and control groups showed that there was a significant statistic difference (p<0,05).

Table 3.54: The effectiveness of intervention to patients still using heroin currently in methadone treatment group

The interventional effectiveness	Effective index (%)		Effectiveness of intervention (%)
	Intervention	**Control**	
Still using heroin	59,0	15,3	43,7

Comment: The interventional effectiveness of patients who still using heroin currently was 43.7%

3.2.2. Improve the quality of life

Assessing patients having concerns, depression within 3 months after intervention in both intervention and control clinics showed that there was a significant statistic difference (p<0.001).The effectiveness of intervention to reducing concerns and depression during 3 months was 40.9%

Table 3.59: The change of score of patients'life quality before and after intervention following WHOQOL-BREF

Quality of life / Time		Before intervention	After intervention	p
Physic	Intervention group	74,6 ± 14,8	75,4 ± 15,3	0,571
	Control group	72,8 ± 13,6	72,6 ± 13,4	0,874
	p	0,186	0,044	
Mentality	Intervention group	69,4 ± 13,2	72,3 ± 13,9	0,025
	Control group	67,6 ± 13,6	66,6 ± 10,7	0,386
	p	0,181	0,000	
Society	Intervention group	54,2 ± 16,2	58,3 ± 17,6	0,014
	Control group	54,1 ± 13,6	54,9 ± 12,7	0,480
	p	0,913	0,026	
Environment	Intervention group	67,2 ± 13,2	69,1 ± 15,8	0,172
	Control group	65,9 ± 12,8	65,3 ± 12,1	0,675
	p	0,281	0,006	

Comments: The score of life quality on mental and social aspects after intervention increased at 72.3 ± 13.9 and 58.3 ± 17.6 marks, comparing with 69.4 ± 13.2 and 54,2 ± 16.2 marks before intervention, and these scores were also higher than in control group with 66,6 ± 10,7 and 54,9 ± 12,7 marks respectively. There was all a significant statistic difference with p<0,05.

CHAPTER 4 : DISCUSSION

4.1. The situation and several factors related to drop-out of MMT in Haiphong

4.1.1. The rate of drop-out of MMT in 3 years

Our results showed that the dropped out of MMT was 10.5%, 13.1% and 14%, in the first, second and third year respectively. The figure for continuing methadone treatment after 3 years was 66.7%, that means having one-third patients with dropped out of MMT after 3 years. Besides, we also saw that the proportion of patient without using methadone for over five consecutive days (need to be restarted from the beginning) in the first 3 years was 3%, 3.4% and 8.3% respectively. The result of Dao Thi Minh An et al at methadone treatment facilities in Thai Nguyen showed that there was 8.7% and 18.0% of patient with drop-out of MMT after the first and the second year, while the figure after the third year was 25.8%. Therefore, there was not too high percentage of patient abandoning the methadone treatment in our result as well as Dao Thi Minh An's, but there was a difference for each year.

The percentage of the methadone abandonment after one year of treatment in our result was significantly lower than that of other countries in the region and in the West. There were 38% patients leaving out of methadone after 12 months of treatment in Malaysia, and the figure for staying on after one year was 73,9% - 87% in China. The researches in the West and Israrel showed that the percentage of patient abandoning methadone after one year of treatment fluctuated from 27% to 40%, which could be explained by the strict criteria of receiving patients in the methadone treatment system from 2008 to 2011.

Meanwhile almost researches from nations in the region reported the percentage of patient compying with treatment in the

first year, there was one study conducted in China to follow up the participants in consecutive six years, which showed that the percentage of patients continuing methadone treatment after 3 years was 66%, as same as our result. A cumulative study of 74 studies conducted in 43.263 patients treating methadone in China from 2004 to 2013 found that there was one-third patient giving up methadone after 3 months of treatment, 55.2% and 43.0% patients continuing after 12 and 24 months respectively.

Our results were also suitable with previous studies in Asia and Europe, which indicated a low treatment adherence. It was noticeable that the level of methadone treatment adherence was many times lower than treatment duration. It could be explained that when patients have treated for a long time, they believed in having potential to stop using drug completely and leaving out of treatment program. However, a poor treatment adherence are likely to increase the risk of addiction relapse and predict the treatment failures. Therefore, it was necessary to follow-up the adherence of patients and give advices timely to ensure the success of treatment program.

4.1.2. Several factors related to the drop-out of MMT.

In the group of patients discontinued treatment, 53 people left out above 5 to 30 consecutive days and 28 people abandoned treatment. There were no statistically significant differences in gender, age group, level of education, marriage between drop-out of MMT and control groups.

With regard to the reasons for giving up methadone treatment, the percentage of patients claiming themselves to be no longer dependent on heroin was 23.5%, while 21.0% patients thought that the reason for time of taking methadone was not suitable for working time. Another reason was that patients had health problems and needed to stop using methadone so as to have examination and

treatment, at 16%, and inability to pay for methadone treatment was also a reason with 14.8%.

The result of multiple logistic regression analysis of control study conducted in patients using stably methadone over 2 years demonstrated that the major risk factor of non-adherence was using heroin while taking methadone (aOR = 12,4; 95%CI: 4,19-36,7, p < 0,001) and giving up methadone above 3 days during 3 months (aOR = 18,5; 95%CI: 7,3-47,1; p < 0,001). However, taking high methadone dosage would also reduce the risk of non-adherence if patients took 60 – 119mg methadone per day (aOR=0,40; 95%CI: 0,17-0,94, p = 0,036) and above 120mg/day (aOR=0,28; 95%CI : 0,09 -0,86, p = 0,026), comparing to group of taking under 60mg.

A number of studies also showed the relationship between methadone dosage, behavior of using drugs illegally and the drop-out of MMT. The randomised controlled clinical trials showed that the higher dosage patients used, the better their treatment adherence was. Our results about the dosage were also suitable for previous cumulative studies, which could improve that the dosage of above 60mg/day was enough, effective and useful for maintaining methadone treatment.

Another cumulative study of 18 studies by Yan-ping Bao et al showed that patients using methadone at least 60mg/day tended to adhere treatment better than taking under 60mg/day (OR: 1,74 ; 95%CI: 1,43-2,11), and taking the dosage flexibly would help patients to adhere treatment better than doing fixedly (OR: 1,72; 95%CI: 1,41-2,11). Therefore, maintaining methadone dosage at least 60mg per day should be done with taking dosage flexiably so as to ahere treatment well.

4.2. Effectiveness of intervention

The controlled before-after intervention study was conducted in Hai An Dist with 214 cases and in An Duong Dist with 221 controllers. There were no statistically significant differences in gender, age group, level of education and marriage between case and control groups. After 6 months, we lost mark 6 cases and 12 controllers, who had left out of treatment program.

4.2.1. Treatment adherence of patients

Our case-control study showed that patients who droped out above 3 day of methadone during 3 months, had fellows using drugs illegally, still used drugs and positve with heroin in urine test increased the risk of treatment abandonment within over 5 consecutive days. Our study focused on educating health basing on community in order to enhance treatment adherence and improve life qualities for patients, and we also updated knowledge for medical staff, supported informations and knowledge for treated peers as well as mental health for high risk patients of abandonment.

Our results illustratated that the treatment ahherence of case group was better than that of control group. There was a decrease of cases who droped out of methadone, had positiveness with heroin in urine test and used heroin while treating methadone at present.

Many studies showed that psychosocial support including motivational interview had effectiveness in treating methadone by reducing the desire and using drugs illegally. Ali' study and another randomised controlled clinical trial in Los Angeles and California showed that patients treating methadone and accepting motivational interview in individuals and groups reduced usage of legal drugs.

4.2.2. Life quality of patients

Although treating methadone helped to improve mental health for drug users, they still had other mental problems. Several sdudies

of Vietnamese authors showed that the percentage of patients having mental problems accounted for between 20% and 35%, but it was lower than studies in Netherlands, America and Indonesia. Our study found that the percentage of patients having concern and depression within 3 months in case group decreased more than in control group and comparing to before intervention, with p< 0,01. The intervention effectiveness of this issue accounted for 40,9%.

Caring mental health for patients treating methadone had many challenges because patients themselve and their relatives were easy to accept patient's mental symptoms. In period of interventing, we selected and found out 12 patients having mental problems, but they were shy to be examed and treated by professional doctors because they thought that health problems were not their own real problems. As a result, medical staffs at methadone facilities need to be trained about mental field to enhance selecting, supporting and treating skills, so they are able to help patients having mental problems at methadone facilities.

We used WHOQOL-BREF tool to assess the interventional effectiveness basing on the change of patients' life quality, which found that the score of life quality was better after intervention in all aspects such as physical and mental health, society and environment. However, only score of physical health and environment raises after intervention with p<0.05.

Our results showed that the score of life quality was the highest at physical aspect (over 70 marks) and lowest at environmental aspect (below 60 marks) in both case and control groups before and after intervention. The result of Le Minh Giang et al found that the score of physical aspect was the highest (72,2 ± 13,4), and the figure for social aspect was the lowest (55,5 ± 12,3). Evaluating the effectiveness of pilot methadone treatment program in

Haiphong and Ho Chi Minh City showed that the score of patient's life quality was improved well when they were treated by methadone, and in the duration of maintained treatment, the score was the highest on the physical aspect (over 70 marks) and lowest on the environmental aspect (under 60 marks). Some studies in Iran and Malaysia showed that the scores of life quality in all aspects of patient were over 60.

The studies showed the role of providing advices and psychosocial support to patients treating methadone, which included giving advices to each patient or group of patients, their families and treated peers before, during and after treatment. The sdudies of Adeline et al and Ali Navidian et al showed that supporting patients by motivational interview helped them reduce the desire and using drugs illegally, thus increasing keeping patient to stay in long-term methadone treatment.

CONCLUSION

1. The situation and several factors related to drop-out of MMT in Haiphong

1.1. The rate of drop-out of MMT in 3 years

After 3 years of treatment,there were 143/1.055 patients giving up methadone above 5 consecutive days in the first year, accounting for 13.5%, while the figures for the second and third years were 156 patients (16.5%) and 183/819 patients (22.3%) repectively. Meanwhile the percentage of patients dropping out methadone program after one year was 10.5%, in the second and third year it was 13.1% and 14.0% repectively. After 3 years, there was 33.3% patients dropping out the treatment program.

1.2. Several factors related to the drop-out of MMT.

The results of multiple logistic regression analysis showed that the main risk factors for treatment abandonment were using heroin while

treating methadone (aOR = 12.40; CI 95% 4.19-36.47; p <0.001) and left out methadone above 3 days within 3 monhs (aOR = 18.48; CI95% 7.25-47.09; p <0.001). However, using high dosage of methadone also will reduce the risk of treatment abandonment if patients take from 60 to 119mg per day (aOR = 0.40, CI95% 0.17 to 0.94, p = 0.036) and above 120mg / day (aOR = 0.28; CI95% 0.09-0.86; p = 0.026), comparing with those taking less than 60mg / day.

2. Effectiveness of intervention

2.1. Enhance treatment adherence

After the intervention, the percentage of patients who left out methadone for 3 days and 3 consecutive days in the last 3 months decreased to 20.7%, 4.3% was statistically significant (p <0.05). Intervention effectiveness was 27.0% and 55.6% respectively.

After intervention, risk factors were reduced: illegal drug use (4.8%), urine (+) testing with heroin positive (4.8%) and having current friends who use drugs was 35, 6%, significant at p <0.05. The intervention effectiveness with these three indicators is 43.7%, 38.3% and 16.2%, respectively.

2.2. Improve the quality of life

Results after intervention, the percentage of patients having concerns, depression reduced to 6.7% is statistically significant with p <0.01. The intervention effectiveness was 40.9%.

The quality of life of the patients after intervention in the physical aspects (75.4 ± 15.3), psychological (72.3 ± 13.9), social (58.3 ± 17.6) and the environment (69.1 ± 15.8) were significantly higher than before intervention, but only psychological and environmental aspects increased significantly (p <0.05). Compared with the control group, all four aspects were higher and statistically significant (p <0.05).

RECOMMENDATIONS

1. Treatment facilities should pay attention to the effective dose of methadone for each patient, especially in patients who use illegal drugs, dropout methadone and are undergoing treatment at doses lower than 60mg/day due to illness. This person may be at risk for lack of methadone.

2. Consider to develop electronic case-recode and methadone treatment management system nation-wide for patients to easily access and treatment at other MMT clinics when sent to.

3. In the methadone treatment process, consideration may be given to allow patients to take methadone at their home for a few days or buprenorphine can be added to the treatment program in order to increase the options for patients and they no need to go to take methadone everyday at that clinic.

4. Maintain training for health workers and treated peers to strengthen the psychosocial support for health workers and increase the knowledge and role of treated peer groups. By this way, they would have the patients information, especially those patients that were dificult to get to or those used illegal drugs at the early stage for supporting

LIST OF RESEARCH WORKS OF THE AUTHOR THAT WERE PUBLISHED RELATED TO THE THESIS

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