Quality of life among Methadone Maintenance Treatment (MMT) patients with higher education

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Abstrak

Latar belakang: *Salah satu penilaian keberhasilan Program Terapi Rumatan Metadon (PTRM) yang merupakan program rehabilitasi terhadap pengguna narkoba -- khususnya pengguna narkotika suntik -- adalah kualitas hidup klien. Oleh karena itu perlu diidentifikasi beberapa faktor yang dominan mempengaruhinya.*

Metode: *Penelitian dilakukan dengan desain potong lintang yang dilakukan di Puskesmas Kedung Badak dan Bogor Timur di Kota Bogor. Pengumpulan data dilakukan dengan wawancara dan pengisian kuesioner WHOQOL-BREF pada April-Juni 2018. Analisis dilakukan dengan menggunakan regresi linier multivariabel.*

Hasil: *Responden dalam penelitian ini berjumlah 62 orang. Hasil penelitian menunjukkan rerata skor kualitas hidup klien PTRM di Kota Bogor pada domain fisik sebesar 57,6; domain psikologis sebesar 57,5; domain sosial sebesar 63,6; dan domain lingkungan 63,9. Dibandingkan rerata skor populasi sehat di Indonesia, domain fisik dan psikologis lebih rendah daripada populasi tersebut, sedangkan domain psikologis tidak berbeda dengan populasi tersebut. Adapun skor domain lingkungan lebih tinggi dibandingkan populasi sehat Indonesia. Faktor yang dominan dalam menentukan kualitas hidup pada domain fisik dan lingkungan adalah tingkat pendidikan, sedangkan domain psikologis adalah dosis metadon. Faktor yang dominan dalam menentukan kualitas hidup domain sosial adalah adanya seseorang yang dapat diajak bicara.*

Kesimpulan: *Semakin tinggi tingkat pendidikan klien, maka kualitas hidup klien pada seluruh domain akan semakin baik. Klien PTRM dengan tingkat pendidikan yang lebih rendah harus dipantau untuk meningkatkan kualitas hidupnya. Penanganan klien dengan pendekatan individual dan dukungan sosial dari keluarga dan teman diperlukan untuk meningkatkan motivasi serta kepatuhan klien dalam menjalani terapi metadon.* ***(Health Science Journal of Indonesia 2018;9(2):93-9)***

Kata kunci: *Kualitas hidup, metadon*

Abstract

Background: One of the objective in Methadone Maintenance Therapy (MMT) which is a rehabilitation program for injecting drug users is quality of life. The purpose of this study was to determine quality of life among MMT patients

Methods: The cross sectional study was conducted in Kedung Badak Primary Health Care and Bogor Timur in Bogor. Data were collected from interview and filling out WHOQOL-BREF questionnaire from April-June 2018. Analysis was performed using multiple linier regression.

Results: Total subjects in this study was 62 subjects. The results showed mean scores for physical domain was 57.6; psychological domain was 57.5; social domain was 63.6; and environmental domain was 63.9. Compared with Indonesian, MMT patient scores were higher in environmental domain and lower in physical and psychological domain while social domain had no different with it. The dominant factor in determining physical and environmental domain was level of education, while the psychological domain was methadone dose, and the existence of someones to talk to was dominant factor for social domain.

Conclusion: The higher level of education, will produce better quality of life in all domains. MMT patients with lower level education must be monitored to improve their quality of life. It is suggested to treat patients based on individual approaches and support from family and friends is needed to motivate clients and adherence to the therapy. ***(Health Science Journal of Indonesia 2018;9(2):93-9)***

Keywords: Methadone, quality of life

Drug abuse is a global problem experienced by all countries, including Indonesia. It has become one of global burden of diseases resulted disturbance in productivity with number of Disability Adjusted Life Years (DALY) in 2015 was 17 million or 0.66% of total causes of world burden, while mortality rates was 2.3 per 100,000 population. In Indonesia, it accounts for 0.2% of total DALY.[1]

Based on National Narcotics Board (BNN), drug abuse prevalence in Indonesia was 2.18% in the age group of 10-59 years.[2] Ministry of Health Indonesia showed that until June 2010, the highest prevalence of Injecting Drug Users (IDU) was DKI Jakarta, West Java, East Java, South Sulawesi, and Bali.[3] Bogor was included in top 5 cities in Indonesia in terms of drug trade.[4]

As an anticipated precaution for the harm caused by IDU, such as HIV transmission through contaminated syringes, government developed a Methadone Maintenance Therapy (MMT) program. Methadone is a drug included in World Health Organization (WHO) essential medicines which is used to treat heroin dependence. MMT significantly reduced mortality rate among opioid dependence and reduce criminal activity.[5] In Indonesia, MMT was launched in 2006 to carry out comprehensive, processable, and long-term treatment. Based on study in two hospitals namely Drug Dependency Hospital, Jakarta and Sanglah Hospital, Bali showed that IDUs who participated MMT stopped using drugs.[6]

One of MMT objevtive is quality of life. A study showed that low quality of life was associated with recurrent drug use among IDUs in MMT program.[6] In addition, poor quality of life, unemployment, and inadequate methadone doses will cause low compliance in MMT program.[7] Based on these problems, the study aimed to identify factors associated to quality of life among MMT patients.

METHODS

This cross-sectional study was conducted in purposive selected two public health care, namely Kedung badak and Bogor Timur that serves MMT program in Bogor.

The data was obtained by interview and fill out questionnaire from April-June 2018. Inclusion criterias for the study were adult (minimum 18 years old), joined MMT program at least 6 months, and able to communicate. Exclusion criterias for the study were patients with loss of consciousness, could not cooperate, referral patients who only join MMT program temporary in both public health cares, and not willing to join the study.

WHOQOL-BREF questionnaire was used to assess subjects' quality of life. There are 4 domains in this quality of life (physical health, psychological, social relationships, and environmental) that should be assessed as dependent variables. Physical health has 7 facets including activities of daily living, dependence on medical substances and medical aids, energy and fatigue, mobility, pain and discomfort, sleep and rest, and work capacity. Psychological has 6 facets including bodily image and appearance, negative feelings, positive feelings, self-esteem, spirituality/ religion/personal beliefs, and thinking, learning, memory and concentration. Social relationships has 3 facets consisting of personal relationships, social support, and sexual activity. Environment consist of financial resources, freedom, physical safety and security, health and sodial care: accessibility and quality, home environment, oppportunities for acwuiring new information and skills, participation in and opportunities for recreation/ leisure activities, physical environment (pollution/noise/traffeic/ climate), and transport. Data collected include subject characteristics, history of disease, history of heroin used, history of criminality, history of methadone therapy, and social support which became independent variables. For the purposes of this analysis, patients' occupation was divided into 2 categories (employed and unemployed).

Level of education was categorized into 4 categories (elementary school, junior high school, senior high school, and university). Marriage status was categorized into 3 groups (sigle, married, divorced/ widowed). Body Mass Index (BMI) was divided into 3 categories (normal (18.5-25.0), underweight (<18.5), and overweight (>25.0)). History of HIV and Hepatitis C were divided into 2 groups (negative and positive).

History of heroin overdose was assessed by asking subjects history during last heroin used. It was divided into 2 gorups (no and yes). Duration of heroin use was categorized into 2 groups (less than 10 years and more than equal to 10 years). Number of incarcerations was assessed by asking subjects experiences during following MMT program.

Methadone dose was dose of methadone obtained at this time. Duration of methadone therapy was assessed by asking subjects how long they joined methadone therapy from first time until this time. Social support was evaluated by 2 questions: the presence

of someone who can be talked to and someone who will lend/give money or something valuable if needed were categorized into yes and no.

As many as 62 subjects were derived from the two public health cares. Descriptive statistics were used to analyze patient characteristics and other variables. Based on normality data test, independent t-test and correlation test was performed to select appropriate variable which will be included in multivairate analysis. To identify the factors related to 4 domains quality of life multiple linier regression was used. Analysis was performed using SPSS version 16.

Ethical approval was obtained from the Ethics Committee of Faculty of Public Health Universitas Indonesia.

RESULTS

Table 1 showed characteristics of subjects. Overall, 87.1% of subjects were male, the mean (SD) age was 38.5 (4.1), and 82.3% were employed. Most subject education was university (62.9%) while most subjects were married (64.6%). Approximately 64.5% subjects had normal BMI. Approximately 40.3% were HIV positive and 43.5% had history Hepatitis-C positive. Approximately 22.6% subjects had a history of drug overdose and 75.8% had a history of heroin use more than equal 10 years.

Table 2 showed the mean scores (SD) for physical, psychological, social, and envirnmental domains of quality of life were 75.6 (8.3), 57.5 (10.2), 63.6 (15.4), and 63.9 (13.7). The mean score for MMT patients' age was 38.5 years, while the mean score (SD) for methadone dose and duration of methadone therapy were 101.8 (89.6) mg and 81.6 (41.1) months. Approximately 50% subjects comply to methadone treatment. Approximately 83.9% subjects were having someone who can be talk to and 82.3 % were able to lend money from others if needed.

Table 3 showed that age had negative correlation significantly to social domain. Methadone dose had statistically negative correlation to physical, psychological, social, and environmental domains.

Table 4 showed there were significant different on physical domain to level of education and history of HIV. On psychological domain, there were significant different to marrital status and presence of someone who can be talked to. On social domain, there were significant different to subjects occupation, marrital status, and presence of someone who can be talked to. On environmental domain, there was a significant different to level of education.

Table 1. Characteristic of MMT subjects (Categorical variable)

	n	%
Sex		
Female	8	12.9
Male	54	87.1
Occupatio		
Employed	51	82.3
Unemployed	11	17.7
Level of Education		
Elementary school	1	1.6
Junior high school	3	4.8
Senior high school	19	30.6
University	39	62.9
Marrital status		
Single	11	17.7
Married	40	64.6
Divorced/widowed	11	17.7
BMI		
Normal	40	64.5
Underweight	5	8.1
Overweight	17	27.4
History of HIV		
Negative	37	59.7
Positive	25	40.3
History of Hepatitis C		
Negative	35	56.5
Positive	27	43.5
History of heroin overdose		
No	48	77.4
Yes	14	22.6
Duration of heroin use		
< 10 years	15	24.2
≥10 years	47	75.8
Compliance to methadone treatment		
Comply	31	50.0
Non comply	31	50.0
Someone who can be talked to		
Yes	52	83.9
No	10	16.1
Someone who will lend/give money or something valuable if needed		
Yes	51	82.3
No	11	17.7

Table 2. Characteristics of MMT subjects (Numerical variable)

	Mean	SD	Min-Max	95%CI
WHOQOL-BREF domains				
Physical	57.6	8.3	39.3-82.1	55.5-59.7
Psychological	57.5	10.2	33.3-83.3	54.9-60.0
Social	63.6	15.4	33.3-100.0	59.7-67.5
Environment	63.9	13.7	34.4-96.9	60.4-67.4
Age (years)	38.5	4.1	33-56	37.5-39.5
Methadone dose (mg)	101.8	89.6	2.0 - 390.0	79.0-124.5
Duration of methadone treatment (months)	81.6	41.1	16-184	71.1-92.0

Table 3. Bivariate analysis: correlation test for numeric variables to qualitiy of life domains

Variable	Domain							
	Physical		Psychological		Social		Environmental	
	r	p value	r	p value	r	p value	r	p value
Age	0.03	0.820	-0.11	0.383	-0.27	0.033	-0.08	0.534
Methadone dose	-0.30	0.018	-0.37	0.003	-0.42	0.001	-0.29	0.021
Duration of methadone treatment	0.02	0.910	0.06	0.630	-0.07	0.600	0.03	0.813

Table 4. Bivariate analysis: categorical variables to quality of life domains

Variable	Domain							
	Physical		Psychological		Social		Environmental	p value
	Mean (SD)	p value	Mean (SD)	p value	Mean (SD)	p value	Mean (SD)	
Sex								
Female	53.6 (7.6)	0.142	59.4 (15.7)	0.710	65.6 (20.1)	0.690	66.4 (17.6)	0.586
Male	58.2 (8.3)		57.2 (9.3)		63.3 (14.8)		63.5 (13.2)	
Occupation								
Employed	58.5 (8.0)	0.054	58.4 (9.1)	0.112	65.8 (14.8)	0.011	65.3 (12.9)	0.097
Unemployed	53.2 (8.5)		53.0 (14.0)		53.0 (14.1)		57.7 (16.3)	
Level of Education								
Elementary school	46.4 (0.0)	0.045	62.5 (0.0)	0.064	50.0 (0.0)	0.118	53.1 (0.0)	0.026
Junior high school	52.4 (7.4)		54.2 (0.0)		55.6 (17.3)		50.0 (17.4)	
Senior high school	54.7 (8.2)		52,6 (11.3)		58.3 (13.9)		59.0 (12.1)	
University	59.7 (7.9)		59.9 (9.3)		67.1 (15.,4)		67.6 (13.2)	
Marrital status								
Single	56.2 (7.3)	0.119	57.2 (10.9)	0.029	62,1 (13.1)	0.026	60.8 (14.2)	0.120
Married	59.1 (8.1)		59,5 (9,3)		66,9 (15.5)		66.5 (14.1)	
Divorced/widowed	53.6(8.9)		50,4 (10,1)		53,0 (13.1)		57.7 (9.8)	
BMI								
Normal	57.2 (7,2)	0.845	57.7 (9.5)	0.965	63.5 (14.3)	0.839	62.8 (11.9)	0.294
Underweight	57.1 (9.1)		56.7 (14.0)		60.0 (14.9)		58.8 (20.1)	
Overweight	58.6 (10.7)		57.1 (11.2)		64.7 (18.5)		68.0 (15.7)	
History of HIV								
Negative	59.8 (7.9)	0.008	59.2 (8.2)	0.124	66.0 (15.8)	0.134	66.5 (13.6)	0.074
Positive	54.3 (7.9)		54.8 (12.2)		60.0 (14.4)		60.1 (13.4)	
History of Hepatitis C								
Negative	58.0 (8.3)	0.704	58.0 (11.8)	0.636	66.4 (15.8)	0.097	63.9 (14.8)	0.991
Positive	57.1(8.5)		56.8 (14.3)		59.9 (14.3)		63.9 (12.6)	
History of heroin overdose								
No	57.4 (8.8)	0.777	58.1 (10.6)	0.384	64.6 (15.5)	0.344	64.5 (144)	0.570
Yes	58.2 (6.5)		55.4 (8.6)		60.1 (15.0)		62.1 (11.5)	
Duration of heroin use								
< 10 years	57.4 (10.5)	0.906	58.9 (10.7)	0.537	67.2 (17.7)	0.296	62.9 (16.1)	0.750
≥10 years	57.7 (7.6)		57.0 (10.1)		62.4 (14.7)		64.3 (13.1)	
Compliance to methadone treatment								
Comply	56.0 (7.9)	0.130	59.0 (10.2)	0.244	61.9 (14.0)	0.424	62.1 (13.9)	0.314
Non-comply	59.2 (8.5)		56.0 (10.1)		65.1 (16.7)		65.6 (13.6)	
Someone who can be talked to								
Yes	58.4 (8.2)	0.067	58.8 (9.8)	0.016	66.3 (14.6)	0.001	64.4 (14.2)	0.508
No	53.2 (7.6)		50.4 (9.5)		49.2 (11.4)		61.2 (110)	
Someone who will lend/give money or something valuable if needed								
Yes	58.1 (8.0)	0.32	57.7 (10.3)	0.717	65.0 (15.1)	0109	64.8 (13.0)	0.295
No	55.5 (9.6)		56.4 (10.1)		56.8 (15.7)		59.9 (16.8)	

Table 5 showed that physical domain was positively correlated to sex (β = 0.24) and higher level of education (β = 0.33), while methadone dose had negative correlation to physical domain (β = -0.31). On psychological domain, higher level of education had positively correlation to get better score (β = 0.26), while higher methadone dose was associated to poor score (β = -0.32). On social domain, age (β = -0.26), methadone dose (β=0.25), and no one who can be talked to (β = -0.40) were associated with poor score, while level of education was positively correlated (β = 0.24). On environmental domain, the higher level of education, will increase the score (β = 0.37).

Furthermore, the dominant factor in determining quality of life in physical and environment domain was level of education, while psychological domain was determined by methadone dose. The dominant factor in determining social domain was the presence of someone to talk to.

Table 5. Multiple regression analysis to quality of life domains

Variable	Domain											
	Physical (adjusted R^2 = 20.234)*			Psychological (adjusted R^2 = 0.200)*			Social (adjusted R^2 = 0.361)*			Environmental (adjusted R^2 0.123)*		
	Coefficient β	Coefficient B (SE)	p value	Coefficient β	Coefficient B (SE)	p value	Coefficient β	Coefficient B (SE)	p value	Coefficient β	Coefficient B (SE)	p value
Constant	-	31.13	0.001	-	56.88 (8.96)	0.0005	-	100.76 (20.73)	0.0005	-	29.,28 (11.31)	0.012
Age	-	-	-	-	-	-	-0,26	-1.09 (0,40)	0.009	-	-	-
Sex (ref. Female)	0.24	5.89 (2.77)	0,038	-	-	-	-	-	-	-	-	-
Education (ref. Elementary school)	0.33	4.04 (1.42)	0,006	0.26	4.01 (1.86)	0.035	0.24	5.41 (2.42)	0.029	0.37	7.61 (2.46)	0.003
Marrital status (ref. Single)	-	-	-	-0.22	-3.64 (2.04)	0.079				-	-	-
Methadone dose	-0.31	-0.03 (0.01)	0.009	-0.32	-0.04 (0.01)	0.010	-0.25	-0.04 (0.02)	0.025			
Non-comply to methadone treatment (ref. Comply)	-	-	-	-0.22	-4.44 (2.36)	0.065	-	-	-	-	-	-
Absent of someone can be talked to (ref. Presence of someone can be talked to)	-	-	-	-	-	-	-0.40	-16.21 (4.45)	0,001	-	-	-
*p value < 0,05												

DISCUSSION

Several limitations must be considered in interpreting the results. The research was only conducted in two public health cares in Bogor, so it did not represent the whole region of Indonesia. In addition, magnitude of changes in quality of life scores before join MMT program can not be determined, therefore the scores only can be compared to Indonesian general population scores. History of HIV and Hepatitis C only obtained from subject recognition. Assessment of compliance to methadone therapy was based solely on drug taking records, therefore researchers could not ascertain whether the drug was actually taken by subjects.

In Indonesia, there is no quality of life score for methadone clients who have completed MMT, so these findings will be compared to the existing data (Indonesian general population score). Compared to the mean score of quality of life of Indonesian general population (physical domain = 69.23, SD = 11.49; psychological domain = 66.74, SD = 12.89; social domain = 63.13, SD = 14.38; environmental domain = 58.53, SD = 13.43), the mean score of physical and psychological domain of subjects were lower than the population.[8] A person who has a history of heroin dependence tends to have chronic health problems that could weaken physical function and higher psychological pressure than healthy people, so that

MMT clients will be difficult to reach healthy state as healthy population.[9] The mean score of social domain was not significantly different than Indonesian population. The mean score of environmental domain had higher score than Indonesian general population. Study in Taiwan showed that after 12 months of methadone treatment, social and environmental domain scores improve significantly than before treatment. Methadone treatment can return patients to normal daily activities, so the quality of life will increase. After joined methadone treatment, patients will be more willing and able to rebuild their social relationships.[10] In this analysis, age was negatively corrrelated to social domain after being controlled by other variables. As people age, many aspects of their lives change including relationships with the people around them, social context, family, and health. Many social relationships are lost by involving community and friend network.[11]

This study noted that level of education showed a positive correlation to quality of life in all domains. The result was in line with study in Taiwan and Malaysia.[12,13] People with higher education have better strategies to addressing social and environmental problems and have higher incomes, so they will have better quality of life.[14]

Furthermore, higher methadone dose was associated with poor physical and psychological domain. This may be occured because dose increase indicate that patients enter a maintenance phase or got another treatment therapy that require increased dose (such as HIV treatment) that need to be monitored for years including side effects and emotional condition. Increased dose result in severe side effects such as constipation, drowsiness, nausea, and sexual problems.[3] In this study, the absence of social support associated with poor quality of life. Study in Taiwan also in line with this result.[15] A study showed that having at least a friend has a positive effect on quality of life.[16] Social support is important to improve compliance to the therapy, such as family that can assist patients in reminding to take medication.[17] Social support need to be included into MMT programs to improve life satisfaction and treatment outcomes.

In conclusion, the higher level of education, will produce better quality of life in all domains. MMT patients with lower level education must be monitored to improve their quality of life. It is suggested to treat patients based on individual approaches and support from family and friends is needed to motivate clients and adherence to the therapy.

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