

The Efficacy of Methadone Maintenance Therapy on the Quality of Life and Marital Satisfaction among Substance Users

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Abstract

Introduction: the present study has been conducted with the aim of examining the quality of life (QoL) and marital satisfaction before and after three months of methadone maintenance in the patients enrolled in methadone therapy center in city of Kashan.

Method: In this study, a quasi-experimental with pre and post assessments was conducted. Forty-five substance users receiving methadone therapy were selected and investigated for three months. General assessment of patients (including demographic variables) was recorded and patients completed the QoL and marital satisfaction questionnaires.

Results: Paired T-test revealed that the effect of methadone on QoL and marital satisfaction was significant ($p < 0.001$). Scores of QoL and marital satisfaction have significant difference just in job variable among the other demographic variables. Pairwise comparison confirmed that two aspects (including physical and environmental) of QoL increased at post-test relative to pre-test.

Conclusion: results of this study showed that methadone maintenance therapy (MMT) can lead to a significant improvement of QoL and marital satisfaction in substance users.

Declaration of Interest: None

Keywords: Methadone Maintenance Therapy, Quality of Life, Marital Satisfaction.

Introduction

Illicit drugs use is one of the most important social and public health problems that can affect other aspects of health(1). The prevalence of substance abuse is increasing around the world, particularly in Iran. A large percentage of people who abuse drugs are adolescents and young adults. During the past 20 years, the rate of substance abuse has been three times higher than the growth rate of population in Iran (2). Based on clinical observation, substance abuse is often correlated with psychological, emotional, mood and behavioral disorders (3).

Addiction is a chronic disorder with biological, psychological and social factors (4). Therefore, there is a considerable need to treat the psychological and social factors in addition to biological factors(4). Treatment is costly and difficult for breaking the cycle of addiction. As a result, it requires a comprehensive treatment systems with different approaches to pharmacotherapy, psychotherapy and rehabilitation(5, 6). Methadone is a synthetic drug and receptor agonist morphine; therefore, its consumption has the effects and side effects of opioid. MMT is used as the most common form of substitution treatment for individuals who are suffering from substance abuse and unable to withdraw(7, 8).

During the last three decades, attention to QoL as an important factor in evaluation the treatment outcomes and efficacy of treatment in physical and mental illnesses has been increased. QoL has been defined in many ways. World Health Organization (WHO) defines QoL as "an individual's perception of their position in life in the

context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns"(9). QoL is a multidimensional concept that includes physical, mental, emotional, social, spiritual and occupational domains and can be assessed through an individual's mental experiences(10, 11).

Previous study has shown that the aspects of mental and physical health, risky behaviors and QoL have improved among methadone maintenance clients(12). Another study has reported that anger management has significant difference between MMT addicts and non addicts(13). The study that has been conducted in northern Tiwan revealed that QoL of heroin users' long-term improves after receiving MMT. Significant improvements were found in psychological and environmental aspects(14).

The results of Lashkaripour study in 2012 has indicated that QoL of substance-dependent outpatients have improved during the first three months of treatment. Significant improvements have reported in physical and social domains of QoL, but no significant improvements in the psychological and environmental aspects(15).

Substance abuse is a major family problem in addition to individual-social problems. In other word, addiction problems have a negative effect on the mental health of addicted person and his/her family members (2).

Given the role of women with addicted spouses in relation to their husbands, children and society, special attention to this group is essential(16).

Marital satisfaction is an adaptation between the current status and the

expected status. Satisfaction is one of the most important aims of a marriage system(17, 18).

Based on the results of a study comparing resiliency and marital satisfaction among camp residents, drug addicts treated with methadone and normal individuals, methadone users showed higher resiliency and marital satisfaction than substance users (19, 20).

Considering the importance of the family for the life and well-being of society, it seems that understanding the factors influencing marital satisfaction is essential. So, it is expected that by increasing marital satisfaction, the mental, social and emotional problems of families decrease. This matter is more important in vulnerable families such as addicted persons' families.

Since QoL is one of the most important factors to evaluate the results and outcomes of curative methods, also according to the previous studies, the present study has been carried out to investigate the QoL and marital satisfaction before and after MMT substance users in city of Kashan in the year of 2016-2017. The results of current study could be useful for illustrating the efficacy of MMT on QoL of addicted persons in the related region of the study. In addition, it could be helpful for better making decision about modification or continuation of exciting treatment.

Materials and Methods

In this study, a quasi-experimental with pre and post assessments was conducted. The sample population consisted of 45 patients who had undergone MMT within a 3 month period in 2018 at the MMT clinics in the city of Kashan. The sample

size was estimated according to parameters related to QoL and marital satisfaction from two similar studies (using the sample size formula for comparing two independent means) (15, 21).

At first, a list of all MMT centers in Kashan was prepared. From all methadone maintenance treatment centers in Kashan, some centers were randomly selected. Participants were randomly recruited from these centers. Participants completed WHOQOL-BREF and ENRICH Couple questionnaires after obtaining the informed consents. Patients were included in the study if they were at least 18 years old, married and had a positive urine results for at least one substance abuse such as opioid, morphine, methamphetamine and marijuana. Participants were excluded if they had serious mental, physical and behavioral disorders, received several treatments to quit addiction or if they were pregnant or breastfeeding.

Measurements

WHOQOL-BREF questionnaire: this test contains 26 items divided into four domains: Physical health, psychological health, social relationships, and environmental health. Each item of the WHOQOL-BREF is scored from 1 to 5. Scores were calculated for each of these domains in the range 0-100, higher score indicating high QOL. Because of negative phrasing, three items of the WHOQOL-BREF (items 3, 4 and 26) were reversed before scoring (22). The reliability of the Persian version of this questionnaire has been confirmed by using Cronbach's alpha from 0.78 to 0.82 (23).

ENRICH Couple Scale (ECS): This test was developed in 1989s by Olson and Fowers. The ECS consists of 35 items that

are used to evaluate marital satisfaction, idealistic distortion, communication and conflict resolution. Response options range from 1 (strongly disagree) to 5 (strongly agree) (24). Alpha coefficient of the questionnaire for the sub-scales of marital satisfaction, communication, conflict resolution, and idealistic distortion equals to 0.86, 0.80, 0.84, 0.83 respectively and the test retest reliability was equal to 0.86, 0.81, 0.90, and 0.92 in order (25).

Procedures

After obtaining the informed consents from participants, demographic data such as

age, sex, education, employment status and duration of substance abuse were collected at baseline. Since the study was done on a single group, the demographic variables mentioned above were not considered as a confounder and would not be controlled. After investigating the

inclusion and exclusion criteria, the WHOQOL-BREF questionnaire and ENRICH Couple Scale were completed before and 3-month after treatment by patients.

This study was approved by both Research Council and Ethics Committee of Kashan University of Medical Sciences (reference number: IR.Kaums.MEDNT.REC.1396.1).

Results

Among the 45 participants that completed the study, 31 participants (68.9) were males and 14 participants (31.1) were females. The mean age of the participants were 33.11 ± 5.39 years and the mean duration of drug use was 3.58 ± 1.85 . 66.7% of participants were employed and 55.6% had a history of taking morphine. The majority of the participants (48.9%) had a high school diploma. The demographic data of the participants are presented in table 1.

Table 1: Demographic characteristics (n=45).

Variables		Frequency
Age Mean (SD)		33.1 (5.3)
Duration of Use Mean (SD)		3.5 (1.8)
Gender n (%)	Male	31 (68.9)
	Female	14 (31.1)
Employment Status n (%)	Employed	30 (66.7)
	Unemployed	15 (33.3)
Type of Substance Use n (%)	Morphine	25 (55.6)
	Morphine and Cannabis	13 (28.9)
Education Status n (%)	Illiterate	1 (2.2)
	<High school	18 (40.0)
	High school	22 (48.9)
	>High school	4 (8.9)

The Shapiro-Wilk test has been used to examine normal distribution of the QoL and marital satisfaction scores. The paired sample t-test has been used to compare

QoL and marital satisfaction scores before and after the intervention. Outliers or anomalous data have been analyzed with Box Plot. The results of the paired t-test showed a significant difference between

the level of QoL and marital satisfaction scores before and after the intervention

(table 2). This increase was greater about QoL ($P < 0.0001$).

Table 2: Summary of pre- and post-intervention on Paired t-test.

Variables	Pre-MMT	Post-MMT	Difference	p-value
	(M±SD)			
Quality of Life	257.07±11.46	262.78±12.69	5.71±8.58	$p < 0.0001$
Marital Satisfaction	116.47±4.75	121.42±7.57	4.95±5.03	$p < 0.0001$

In the Table 3 the different between QoL and marital satisfaction scores have been reported to compare the effect of MMT on QoL and marital satisfaction in terms of gender, education, type of substance use

and employment. It should be mentioned that because of low statistical power due to low sample size, the statistical analysis was not performed.

Table 3: Summary of changes in QoL and marital satisfaction scores of individuals based on related variables.

Variables		Quality of Life (M±SD)			Marital Satisfaction (M±SD)		
		Pre-MMT	Post-MMT	Difference	Pre-MMT	Post-MMT	Difference
Gender	Male	258.3±11.6	264.9±13.4	6.6±8.1	117±4.5	122.3±7.7	5.3±5.1
	Female	254.2±10.9	257.9±9.4	3.6±9.4	115.2±5.0	119.3±6.8	4.0±4.7
Employment Status	Employed	258.7±10.1	266.4±12.1	7.7±8.3	117.9±3.9	123.8±6.8	5.9±5.2
	Unemployed	253.8±13.5	255±10.6	1.6±7.8	113.6±5.0	166.6±6.7	3.0±4.1
Type of Substance Use	Morphine	258.8±11.6	263.7±12.3	4.9±7.4	116.4±4.3	120.5±8.0	4.1±5.5
	Morphine and Cannabis	255.5±10.3	264.7±13.9	9.2±9.6	118.3±4.8	124.8±6.6	6.4±4.5
	Morphine and Amphetamine	253.7±13	255.7±10.6	2.0±9.3	113±4.5	118.1±5.4	5.1±3.5
Education Status	Illiterate	262±0	251±0	-11	116±0	119±0	3
	<High school	252.1±9.9	269.1±12	7.0±6.7	115.6±5.0	122±8.3	6.3±5.5
	High school	260.3±12.2	265.9±12.6	5.5±9.5	117.3±4.6	121.5±7.3	4.2±4.8
	>High school	260.2±8.1	265±5.12	4.7±8.4	115.7±5.1	118.7±7.4	3.0±3.4

Table 4: Summary of pre- and post-intervention mean of QoL aspects in substance users.

Aspects of QoL	M	SD	Std.error	Confidence Interval 95%		T	Sig
				Upper	Lower		
Physical Aspect	-4.79	4.36	0.65	-3.66	-6.28	-7.64	0.001
Mental Aspect	-0.22	3.74	0.55	0.90	-1.34	-39	0.69
Social Aspect	0.71	4.47	0.66	2.05	-0.63	1.06	0.29
Environmental Aspect	-1.26	3.51	0.52	-0.21	-2.32	-2.4	0.02

The paired sample t-test has been applied to compare aspects of QoL scores before and after the intervention. Shapiro-Wilk test was applied for test of normal distribution of QoL and marital

satisfaction scores and the results were not significant, also the outliers have been analyzed with Box Plot. Findings of current study shows that the MMT leads to improvement of physical and

environmental aspects scores at post-test relative to baseline ($p < 0.00$ and $p < 0.02$ respectively). There was no significant improvement on mental and social aspects.

Discussion

The purpose of this study was to investigate the efficacy of MMT on QoL and marital satisfaction of substance users. We sought to find whether using MMT could improve the QoL and marital satisfaction in substance users. According to what we have found, significant improvement was observed after 3-month of MMT in substance users. In other words, our results support the beneficial effects of MMT on QoL and marital satisfaction.

The previous studies have shown that opioid, alcohol and sedative abuse are associated with lower QoL(26). This suggests that appropriate treatment could help substance users to improve QoL and marital satisfaction.

Consistent with previous study, the QoL significantly improved after MMT (2, 27-32). This is because MMT can increase ability to do daily functions and social interactions of individuals and make substance users more independent on the others for their everyday activities. Therefore, it is no surprising that QoL was reported higher after MMT.

The reports of findings on the persistence of MMT effects on QoL are different. Some studies have found that substance users in treatment at 6-month or longer had a better QoL than at baseline(14, 28, 33, 34), whereas others have found that beneficial effects were observed only during the first to third month of treatment (27, 32).

The beneficial effects of MMT on all aspects of QoL have been previously reported in some studies(35-37), whereas

the other studies have revealed the beneficial effects of MMT on two or three aspects of QoL(14, 33). Our results imply that MMT could improve physical and environmental aspects of QoL.

In the present study, the most significant progress on QoL was found in the physical aspect. It seems that MMT in substance users improves the ability to perform daily activities and increases energy at work and self-care ability. But, the previous work by Chou et al. (14) has revealed that MMT improves QoL in the mental, social and environmental aspects but not in physical aspect.

In addition, environmental aspect of QoL has been significantly improved after MMT, which indicates improvement of one's performance in many personal and social responsibilities. In general, MMT has made a positive difference in being aware of one's surroundings.

According to the results of this study, the social aspect of QoL did not significantly improve after MMT. This may be because social relationships improve slower and require longer period of time to reintegrate into the society. Therefore, 3-month follow-up is short for monitoring the social aspect in MMT patients. In addition, in line with present study, Fei et al (37) have showed that the social aspect of individuals' QoL could be affected due to occupational and social relationships restrictions. The Lack of skills to do a job, daily dose of methadone, attending regular follow-up sessions and stigma towards drug users could be associated with occupational and social relationships restrictions. On the other hand, previous studies have reported that MMT improves patients' QoL in the social aspect. Furthermore, improved social aspect of QoL increases the patients' ability to

work(14, 33). These findings are inconsistent with the findings of present study.

Although many studies have investigated the effect of MMT on QoL, there has been little attention to the effect of MMT on marital satisfaction and in some cases it is limited to sexual satisfaction, which is part of marital satisfaction. The improvement of marital satisfaction in MMT patients might be due to their presence in the family environment, positive effects of more support and intimacy of family. Another important inference from this study is that MMT improves family relationships before social relationships. As a result, improving family relationships is recognized as an important factor in improving social relationship and increasing patient success in the community.

In the present study, the QoL and marital satisfaction significantly improved in employed patients compared to unemployed patients after MMT. Occupation is one of the important aspects of every person's life that has a direct impact on the other aspects of life. Having a job and job satisfaction will have a positive impact on the general life of the employees. The results of present study emphasize on the importance of the job and consider it as one of the essential components of QoL, mental health and marital satisfaction.

The results of this study, along with other studies, emphasize on the effective role of MMT as a method in the treatment of substance users. In fact, MMT can be effective and useful in reducing the challenges in society. On the other hand, the improvement in the patient's marital satisfaction indicates that improved

patient's mental and physical status following MMT will lead to improved childcare and family relationships. Since the substance users often spend an important time getting, using, or recovering from using the drug, MMT could allow the patients more opportunity to engage in productive activities such as education, employment and parenting. Therefore, patients' releasing from mood swings caused by substance abuse increases the patient's ability to solve family problems and conflicts and reduce interpersonal stresses. In this regards, it is suggested that the results of this study be considered in the methadone therapy centers in order to improve the status of patients.

Our study has some limitations that should be noted. First, the data were gathered through patient self-reports, so it may have some biases. Second, the methadone dose has not been considered as an effective variable, so future studies would benefit from targeting the methadone dose. Another limitation of this study is related to the length of follow-up that should be considered in the future studies.

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