

Quality of life, its early change and retention in MMT program in Iran: Evidence for policymakers and service providers

Samad Rouhani¹, Farzan Kheirkhah*², Iraj Salarieh³, Saleh Abedi⁴

¹ Assistant Professor, Department of Public Health; Psychiatry; Behavioral Sciences Research Center, Mazandaran University of Medical Sciences, Sari, Iran & Hospital Management Research Centre, Tehran University of Medical Sciences, Tehran, Iran

^{2*} Corresponding Author, Associate Professor, Department of Psychiatry, Faculty of Medicine, Babol University of Medical Sciences, Babol, Iran

³ M.D., Chief of Emergency Department, Yahyanejhad Hospital, Babol University of Medical Sciences, Babol, Iran

⁴ Clinical Psychologists, MMT Consultant, Babol University of Medical Sciences, Babol, Iran

Drfarzankh@yahoo.com

Abstract: Substance abuse is now a major public health problem in Iran. Opioid substances jeopardize different aspect of health and wellbeing of addicted people resulting in low level of quality of their life. Methadone Maintenance Treatment (MMT) is a universally recognized effectiveness method of pharmacological treatment for drug dependents. Maintenance in treatment is the main concern for MMT programs. In this study we investigated the role of quality of life (QOL) and its early change as predictors of retention in MMT program. In a longitudinal study we followed-up subjects (N= 203) for six months from the start of their treatment in a MMT clinic in the city of Babol-Iran in late 2009 till early 2010. We have measured the quality of life of patients before starting the treatment as baseline data, and two subsequent measurements at the end of first and six months as outcome data by EQ-5D questionnaire. Using SPSS software package version 17.0 t test, correlation coefficient, and chi-squared tests were run to predict retention in treatment at least for six months. Patients entered in this study had relatively different socio-demographic background. People with lower level of quality of life had better improvement during the first month of treatment and retained in the MMT program longer. Among all variables of study, just baseline score of quality of life and its early change were statistically significantly related to retention in treatment program at least for six months. Substance abusers who more suffer from opioid substances benefit more from MMT program, therefore, they are keener to quit their addiction and stay longer in MMT program. Hence, quality of life of addicted patients before entering the treatment program is an important predictor of both early progress in their quality of life and longer retention in MMT program. The policy change based on the evidence of this research is recommended.

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1. Introduction

Iran's suffering from substance abuse and drug addiction has long history (Mokri, 2002; Calabrese 2007; Goodarzi et al., 2011; Dolan et al., 2012). Because of different cultural, social, legal and political issues, determining the exact figure of addicted people in Iran is not easy (Ardebili, 2006; Mokri 2002; Goodarzi et al., 2011), however, different reports estimated the number of substance abusers between 700,000-4,000,000 (Mokri, 2002). With reference to the World Drug Report 2008 (UNODC, 2008), authors mentioned Iran with a highest rate of opiate drug abusers in the world (Shekarchizadeh et al., 2012). There is also a concern that the problem is worsening as the number of addicted patients is increasing together with a decrease in addiction age (Mokri, 2002). Iran's high burden of substance abuse could be namely because

of three reasons: First, Iran is a neighbor of Afghanistan, the world's major producer and exporter of opioid substances. Second, Iran is the transit route for drug smuggling produced in Afghanistan and destined towards European countries resulting to easier accessibility to these substances in the countrywide. Third, having high level of unemployment beside lack of appropriate recreational facilities for youngsters, create a situation with more vulnerability for substances misuse (Calabrese, 2007; Goodarzi et al., 2011; Dolan et al., 2012). Realizing the damage that these substances make on different aspect of health and daily life, this problem is now felt as a major public health issue for Iranian nation. Counter-drug policy has long history in Iran, which most of them focused on supply side approach and non-pharmacological methods such as detention, financial and even capital punishment. In recent

years, besides continuing non-medicine approach, the government of Iran has chosen to employ pharmacological method as a demand side approach for harm reduction and management of demand for opioid substances. In 2002, Ministry of Health & Medical Education in Iran has established the first Methadone Maintenance Treatment (MMT) clinic in this country to treat substance abusers. Also the parliament of Iran gave all doctors the permission to prescribe methadone for addicted patients under the specific guideline introduced by ministry of health. Soon after the number of MMT clinics scaled up at the country level both in public and private sectors (Calabrese, 2007).

MMT programme is universally recognised as an effective pharmacological method in dealing with addicted patients (Shekarchizadeh, 2012, Rouhani et al., 2012). To attain a better outcome in MMT program, it is critical that patients stay longer in the treatment (Darke et al., 2005). Nonetheless, studies in developed and developing countries demonstrated that retention rate in MMT program varies between 30 to 60% in the first year of the treatment (Bell et al., 2006; Rumah Sakit Ketergantungan Obat [RSKO], 2008).

In terms of different factors affecting the length of stay in treatment, authors pointed out variety of variables that could be categorized as treatment characteristics, patient characteristics, and societal characteristics (Shekarchizadeh, 2012) each encompassing different criteria. Some authors reported that pre-treatment characteristics have little predictive value for staying in treatment program of substance abusers, therefore, suggested early treatment response as predictor of treatment retention (McLellan et al., 1997; Morral et al., 1999).

There is little controversy that drug addiction damages all aspects of health as well as daily life. Accordingly treatment interventions must focus more on the outcomes that comprises different aspects of health such as physical, mental and social well-being known as Health Related Quality Of Life "HRQOL" (Miller and Miller, 2009; Karow et al., 2010).

Therefore in the field of drug addiction improvement in quality of life, as an indication of patient functioning and well-being rather than social and family preferred changes, is more appropriate measure of treatment outcome (Habratt et al., 2002; Padaiga et al. 2007). Hence, HRQOL measurement is increasingly performed in the field of drug addiction studies (Torrens et al., 1999; Ventegodt & Merrick, 2003).

Many study findings demonstrated the positive impact of drug addiction treatment interventions on HRQOL (Ventegodt and Merrick,

2003; Maremmani et al., 2007; Ponizovsky and Grinshpoon, 2007), however, investigations indicating the relation between HRQOL improvement and retention in treatment interventions for drug abusers is rare. One longitudinal study in Taiwan has reported the association between better QOL and longer retention in MMT program (Wang et al., 2012).

Given the fact that length of stay in treatment is an important factor for the outcomes of MMT programs, further research needs to be done to predict the patient retention. In this study we have used addicted patients' quality of life and its early change as predictors of retention in MMT program in Iran.

2. Material and Methods

We studied all addicted patients who have enrolled in a MMT clinic in the city of Babol in Mazandaran province from November 2009 to March 2010. It was a longitudinal study that followed-up subjects (N= 203) for six months from the start of their treatment. Patient, treatment and social characteristics of all subjects were taken from patient file that is routinely collected in MMT clinics in Iran. Disease-specific instruments commonly used in addiction research for the measurement of HRQOL are: the Maudsley Addiction Profile "MAP", (Marsden et al., 1998), the Symptom Checklist "SCL-90", (Arrindell and Ettema, 1986) and the European Addiction Severity Index "EuropASI", (Kokkevi and Hartgers, 1995). One of the most frequently applied quality of life measurement tool is the EuroQol questionnaire "EQ-5D", (EuroQol Group, 1990). The EQ-5D is a brief, simple and easy-to-use self-completion questionnaire that its validity in addicted populations has been confirmed (Zanden et al., 2006). We have used for the measurement of quality of life. The quality of life of patients were measured before starting the treatment as baseline data, and two subsequent measurements at the end of first and six months to assess early and continued change in quality of life as an outcome of the treatment. Using SPSS software package version 17.0 t test, correlation coefficient, and chi-squared tests were run to predict retention in treatment at least for six months.

3. Results

During the period of study, there were 203 patients who entered into the MMT program in the designated clinic in the city of Babol. Using predetermined instruments, we have collected data from participants at their entrance in the program and followed them up for six months from the start of their treatment. They were different in terms of patient, treatment and social characteristics. Table 1 shows different background of attendees.

Table 1: Patient, treatment, and social characteristics of addicted patients joining MMT program in Omid Clinic in Babol-Iran 2009-10

| Patient, treatment and social characteristics | Number | Rate (%) | |
|---|------------------|----------|------|
| Age at admission | <17-39 years | 129 | 63.5 |
| | ≥40 years | 74 | 36.5 |
| Gender | Male | 201 | 99.0 |
| | Female | 2 | 1.0 |
| Marriage | Couple | 174 | 85.7 |
| | Single | 29 | 14.3 |
| Children | Having child | 146 | 71.9 |
| | No children | 57 | 28.1 |
| Location of residency | Urban | 105 | 51.7 |
| | Rural | 94 | 48.3 |
| Education | <5 years | 54 | 26.6 |
| | 6-12 years | 129 | 63.5 |
| | Higher education | 20 | 9.9 |
| Housing | Homeless | 41 | 20.2 |
| | Owner | 161 | 79.3 |
| Job | Having a job | 12 | 5.9 |
| | Jobless | 191 | 94.1 |
| Years of substance abuse | < 1 year | 92 | 45.3 |
| | ≥ 1 year | 110 | 54.2 |
| Method of drug use | Smoking | 110 | 54.2 |
| | Oral | 37 | 18.2 |

As table above indicates participants were from relatively different socio-demographic background.

The follow-up of all 203 patients for six months from their entrance into the program has shown that 90.1% (183 cases) and 46.3 % (94) have stayed in the program at least for one and six months respectively. Retention in the MMT program had no statistically significant correlation with patient, treatment and social characteristics presented in table 1. The quality of life of patients has been measured in 3 occasions including before the start of treatment, one and six months after treatment. Table 2 indicates the score of patients' quality of life and its during treatment.

As table above shows the quality of life of patients who stayed in treatment program was steadily increased. We have used the score of quality of life of patients before the start of treatment and its change after one month of treatment as predictor of staying in the programme at least for six months. The result of this analysis is shown in table 3.

As table above shows patients who retained in the program at least for six months, had statistically significantly lower level of quality of life from the beginning. But in terms of early change in the quality of life as an outcome measure of treatment, patients who retained in the program for at least six months, had statistically significantly bigger

improvement in the quality of life during the first month of the treatment. In the other words patients who had lower level of quality of life had more improvement in the early stage of treatment and stayed longer in MMT program.

Table 2: Quality of life before treatment and its change during MMT program in Omid Clinic in Babol-Iran 2009-10

| QoL score of all patients | Before treatment | 1 Retained at least month in treatment | 6 Retained at least month in treatment |
|--|------------------|--|--|
| Number of participants | 203 | 183 | 94 |
| Score Min | -0.59 | -0.48 | 0.00 |
| Score Max | 1.00 | 1.00 | 1.00 |
| Score mean(S.D) | 0.45 (0.43) | 0.71 (0.30) | 0.85 (0.24) |
| Score change at month 1 Mean(S.D) | NA | 0.28 (0.41) | 0.30 (0.47) |
| Score change from month 1 to 6 Mean(S.D) | NA | NA | 0.17 (0.31) |
| Score change from month 0 to 6 Mean(S.D) | NA | NA | 0.47 (0.43) |

Table 3: Quality of life before treatment, its early change and retention in MMT program in Omid Clinic in Babol-Iran 2009-10

| Six month retention in MMT | QoL before treatment | | Change in QoL one month after treatment | |
|----------------------------|----------------------|--------|---|--------|
| | .00 | 1.00 | .00 | 1.00 |
| Number | 109 | 94 | 109 | 94 |
| Mean | .5103 | .3824 | .1080 | .2993 |
| Std. Deviation | .38788 | .46581 | .47551 | .46501 |
| Std. Error Mean | .03715 | .04804 | .04555 | .04796 |
| P value | 0.034 | | 0.004 | |

4. Discussions

Opioid substances jeopardize the quality of life of addicted patients through damaging different component of their health including biological, mental and social aspects of their well-being. From this point of view it is appropriate to measure the impact of opioid substances as well as the outcomes of treatment interventions of these patients with using of instruments that create a global score encompassing different aspects of health of an individual such as EQ-5D. Quality of life improvement is one of important criteria of program effectiveness. This measure should be applied to drug

dependent programs to assess the impact of treatment on patient functioning and well-being rather than social and family preferred changes (Habrati et al., 2002; Padaiga et al., 2007). Drug dependent patients entered in this study came from different background. Without any statistically significant difference, they achieved better quality of life as they underwent to the MMT program. Then this finding shows that like many other studies, MMT programme as a newly approached pharmacological treatment in Iran (Mokri, 2002), is an effective program for drug dependents with different characteristics (Ball et al., 1988; Simpson & Joe, 1997 ; Padaiga et al., 2007; Rouhani et al., 2012). Again like many other studies (Bell et al., 2006; Joe, Simpson, & Broome, 1999; Rumah Sakit Ketergantungan Obat [RSKO], 2008), we have found that retention in MMT program is below, so that more than half of (46.3%) of patients had dropped out before six months from the start of their treatment. Given the positive impact of MMT program, the same as other studies, early drop out and low retention rate should be the area of concern for MMT programme in Iran too. Experts when speak about the effectiveness of this program their most frequently mentioned concern is early withdrawal of patients from the treatment program. In this regards there are loads of studies in this field that has been focused to address the issue of early termination of patients from MMT program (Simpson & Joe, 2004; Darke et al., 2005). In this study we have investigated retention in MMT program at least for six months period and its association with different patient, treatment and social characteristics. As table 1 shows these characteristics include variables such as age at admission, gender, coupling, having child, location of residency, education, housing, job, years of substance abuse, method of drug use, type of drug, daily expenditure on drug, methadone dose plus quality of life of patients before and during follow up period at months one and six. Quality of life of patients before treatment as a patient characteristics and change of quality of life after joining the treatment program as a treatment characteristics or outcome measure of treatment program were only two variables that have changed statistically significantly with retention for at least six months in the MMT program. In our study, these two variables of quality of life have differently predicted at least six months retention in MMT program. As table 3 indicates, baseline score of quality of life for those who have left the programme before one month, was higher than for those who had lower score of quality of life at their entrance in the program. But change in the quality of life during the first month of treatment was observed more among those who had lower quality of life at their entrance. Lower level of quality of life should

be taken as a side effect of substance abuse on different biological, mental and social wellbeing of addicted patients. Therefore people who suffer more from their addiction are more possible to gain from treatment and therefore are keener to quit substance abuse, hence they will retain in the treatment program longer. Regarding to treatment outcome and retention in program, authors found that patient satisfaction, as a measure of program outcome, is an important predictor of retention in MMT program (Villafranca et al., 2006; in 26; 26; Kelly et al., 2011; Villafranca et al., 2006). It also needs to be explained that low level of quality of life at the entrance is most probably related to the substance misuse rather than any other hypothetical issues such as family, social, psychological, financial problems. The evidence that supports this idea is the other finding of this research that indicates those who had lower quality of life had more improvement on this indicator during the first month of treatment. Therefore their lower quality of life is nothing except their suffering from substance abuse. This could be explained that people who suffer more from side effects of substance abuse are more willing to quit their drug abuse as they reached to the entire suffering from their addiction than the enjoyment of opioid consumption. However, those who have not yet experienced such situation still are not quite serious to give up the addiction. This could be translated to the concept that they still more enjoy from opioid substances than suffering from its side effects. If we accept this phenomenon, we need to highlight a lack of awareness about the side effects of opioid substances among addicted population that prevent the quitting of substance abuse until they fall into a serious problems. This matter is supported by other authors as they highlighted that problem recognition is key to help seeking and initiating behaviour change (Evans Li, & Hser, 2008; Lieberman & Massey, 2008).

This situation indicates that if we leave addicted people with themselves just those addicted population who have reached to the end of the line might decide to give up their behaviour and therefore approach to alternatives for treatment. But for those who have not reached to this position neither will enter to the treatment program nor will stay to such treatment programs adequately. This highlights that some intervention needs to be implemented to change MMT programme from a passive approach to an active one and employ different channels to encourage more addicted people into pharmacological treatment of addiction and also support them during treatment program for staying in a more appropriate period. The finding of this research that shows a significant association between quality of life and retention in MMT program is

supported by the findings of other authors (Wang et al., 2012) in Taiwan who concluded an association between better QOL and retention in MMT program.

4. Conclusion

Opioid substances jeopardise the quality of life of its abusers. Substance abusers are not aware of the real impact of these materials on their wellbeing. When they reached to the stage that they suffer seriously from the side effects of opioid substances, they might seek to quit their addiction. Before this stage neither entrance and retention into pharmacological treatment, nor quitting it, is taken seriously by the substance abusers. In this stage with the lack of awareness from the side effects of these materials, they more enjoy from opioid substances than suffering from it. Then they do not ready to trade-off substance abuse with pharmacological treatment i.e. methadone. When they experienced the real side effects of addiction and have lost the quality of their life, it is the time that they might seek to find that methadone can help them and they stick to the program because they both experienced the real impact of substance abuse and the positive impact of pharmacological treatment on the quality of their life. Therefore addiction is a matter of quality of life because among the wide range of variables both those who stayed with MMT programme or decided to leave it were mostly different in their quality of life. The score of quality of life at baseline that is an indication of people suffering from substance abuse is a patient characteristics variable that can predict both early improvement in quality of life of patients undergoing in MMT program and therefore longer retention in the treatment. Therefore people with better score in quality of life in the beginning of treatment may not achieve great improvement on their quality of life, therefore are more vulnerable to leave the program. This knowledge can contribute to help program directors to employ alternative supports such as psychological advice more focused to these patients to encourage them to retain in the treatment for a reasonable time. Also based on the findings of this research retention in MMT programme is more achieved by those patients who suffering from their addiction seriously. Therefore for the society of addicted people an active approach of MMT program is recommended to encourage substance abusers for joining and retaining in the treatment program. We recommend policymakers and service providers to translate the finding of this research into practice, and change MMT clinics from the status quo of passive engagement into an active interventionist.

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Corresponding Author:

Dr. Farzan Kheirkhah

Department of Psychiatry, Faculty of Medicine, Babol University of Medical Sciences, Babol, Iran

E-mail: Drfarzankh@yahoo.com

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