



## A Comparison between Quality of Life of the Patients under Methadone Maintenance Treatment with and without Alcohol abuse

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### ABSTRACT

Alcohol consumption during methadone maintenance treatment (MMT) is among the common challenges in the addiction field. It is reported that alcohol overuse is closely related to the peripheral consequences of social health, however, in some studies, there are not enough reliable data for such a conclusion for drug addicts; as the measures of therapists about the quality of life (QOL) in alcohol users indicate the relatively healthy daily performance of these patients. The presence of a low number of foreign studies conducted on the relationship between quality of life (QOL) and alcohol consumption among the MMT patients and lack of any similar studies in Iran were the main motifs of the author of the present work to evaluate the relationship between alcohol consumption and QOL of MMT patients. This work is a cross-sectional analytical study through which the quality of life (QOL) of patient's subject to MMT without alcohol overdose was investigated. The statistical population of this work was all male 18- to 60-year-old patients under MMT process, who were selected among the patients referring to MMT educational health center of the Shafa in Rasht City in 2014. All participants were subject to alcohol consumption measure and QOL tests using MacAndrew alcoholism scale (MAC-R) and short form 36-item (SF-36) QOL measurement questionnaire, respectively. The study population of the present work was 190 patients under MMT process who were divided into two control and alcoholic groups. The mean and standard deviation for the age of participants in alcoholic and control groups were  $37.65 \pm 7.49$  and  $36.02 \pm 7.95$  years, respectively. The findings also show that, based on the revised alcoholism MacAndrew scale, the average score of the participants is  $27.76 \pm 5.19$ . Based on this scale, 21.1, 30.5, and 48.4% of the participants had a slight, average, and severe alcohol overdose problem. The results obtained from SF-36 questionnaire indicate that the mean and standard deviation of the alcoholic and control groups are  $45.0 \pm 22.4$  and  $35.2 \pm 22.8$ , respectively. The present study showed that methadone dosage in MMT process has a high predictive value in (quality of life) QOL determination. Hence, the careful regulation of methadone dosage with patient needs, as well as measuring the QOL subscales in MMT patients (particularly for those with the daily methadone dosage above 40 mg) and teaching the required scales for improving the low subscales are recommended for preventing symptoms such as consumption relapse, treatment interruption, and the communication problems related with QOL for the participants of this group.

**Keyword:** Quality of life, MMT, alcohol abuse

### INTRODUCTION

Alcohol consumption during methadone maintenance treatment (MMT) is among the common challenges in the addiction field. It is estimated that about 20-50% of people under MMT have some alcohol overdose problems [1]. The majority of opioid users volunteer to MMT with a history of taking drugs such as cannabis and amphetamine

are reported with the alcohol consumption increase during and after the treatment. There seems to be a positive correlation between alcohol consumption and drug overdose temptation [2]. Alcohol overdose is largely considered among the main social health problems. The side effects of an alcohol overdose in MMT patients are more blatant. According to some reports, above 57% of the patients under MMT are alcohol addicts [3,4]. In addition, a high percentage of mood disorders, anxiety, and personality problems is seen in MMT patients who are potentially at the risk of severe alcohol addiction [5]. Besides, the patients are also inclined to involve in criminal activities followed by drug addiction, which finally disrupts their treatment process [6,7]. Another concern in this regard is the increased mortality of patients under MMT who also use alcohol [8]. In a study conducted by Rivas et al. (2013) on the coexistence of medical factors and mortality risk on 680 patients suffering from alcohol consumption problems, it was concluded that MMT is itself an independent death factor for their early mortality [9]. About one-third of patients under MMT had alcohol overuse [10]. It is reported that alcohol overuse is closely related to the peripheral consequences of social health [11]. However, in some studies, there are not enough reliable data for such a conclusion for drug addicts [12,13]; as the measures of therapists about the quality of life (QOL) in alcohol users indicate the relatively healthy daily performance of these patients [14]. One of the important aspects of QOL evaluation is that drug use or overdose might be followed by extensive consequences that severely affect their physical and mental health, social communications, and daily life. In addition, having an unhealthy lifestyle can drive people toward taking drugs [15]. According to the results of previous works, QOL can be considered effectively as a more accurate measure of social and health benefits along curing the alcohol and drug and alcohol problems [16]. The results of previous work indicate that QOL of patients with drug addiction is of a very poor quality since starting MMT while a considerable improvement occurs within the first and third month of MMT [17]. The complete recovery takes at least 3 years, where this duration serves as an effective factor in the long-term MMT process [18,19]. The alcohol overuse is associated with a very poor QOL in the society [20,21]. The presence of a low number of foreign studies conducted on the relationship between quality of life (QOL) and alcohol consumption among the MMT patients and lack of any similar studies in Iran were the main motifs of the author of the present work to evaluate the relationship between alcohol consumption and QOL of MMT patients.

## MATERIALS AND METHODS

This work is a cross-sectional analytical study through which the quality of life (QOL) of patients' subject to MMT without alcohol overdose was investigated. The statistical population of this work was all male 18- to 60-year-old patients under MMT process, who were selected among the patients referring to MMT educational health center of the Shafa in Rasht City in 2014. The research units willing to participate in this work attend to the presence describing the objective of the study by the author, completing the informed consent sheets by the participants, and considering the inclusion and exclusion criteria of the work. At the beginning, the demographic information questionnaire (including their age, marital status, occupation status, drug addiction pattern, methadone dose, education level, and address) of the patients were completed. Then, all participants were subject to alcohol consumption measure and QOL tests using MacAndrew alcoholism scale (MAC-R) and short form 36-item (SF-36) QOL measurement questionnaire, respectively.

### **Inclusion criteria**

The inclusion criteria of this work were selecting study units from participants referring to MMT department of Shafa hospital, Rasht City, with an age range of 18 to 60 years, literate, and subject to MMT process since no longer than the last month.

### **Exclusion criteria**

The exclusion criteria of this work were the certain diagnosis of drug (except nicotine) overdose with MMT, the positive urea screening tests, and detection of drug use give-up signs.

### **Research instrument**

**The revised MacAndrew alcoholism scale (MAC-R):** This scale, which is used to distinguish the alcoholic and non-alcoholic patients, is derived from the 49-item Minnesota Multiphasic Personality Inventory (MMPI-2). The assessment score using this scale is classified into three categories: the raw score below 24 indicates a very low overdose; 24 to 27 indicates the average overdose, and scores above 27 represent several alcohol overdose problems. In studies conducted in Iran, the reliability level of the test is 0.53, which is carried out by dividing 0.53 into two halves [22].

**SF-36 questionnaire:** This questionnaire is a proper tool for assessment of individual health cognition. The questionnaire consists of 36 items that evaluate two scale groups. Group 1 is the physical health scale which in turn is divided into 4 sub-scales including the physical performance, physical pain, general health, role performance associated with the physical health. Group 2 presents the mental health scale, which in turn contains 4 subscales including joy level, role performance associated with emotional problems, social role performance, and mental health. The total score of the scale is the summed scores of these 8 subscales. Each scale has a score range of 0 to 100 with 0 as the worst and 100 as the best conditions. According to the study conducted by Vahdanineya *et al.* (2003), applying an alpha-Cronbach 88%, the liability of this scale varies from 0.77 to 0.90 while its validity (applying convergences validity method) is within 0.57 to 0.95 for different aspects of the questionnaire [23].

#### Data analysis and assessment

The data were assessed after gathering questionnaire information. According to the MAC-R instruction, patients with a raw score below 24 have a low overdose probability; the score within 24 to 27 represents an average overdose; and 27 and greater implies severe overdose problems. As the next step, to measure QOL in all patients with and without alcohol overdose problem, the SF-36 questionnaire was filled in and then the scores assigned for these two groups were compared. To analyze the quantitative and qualitative data, T-test and  $\chi^2$  tests were respectively used; where the statistical difference below 0.05 was considered as significant. To remove Confounding variables, a regression analysis was performed. For statistical analyses, SPSS 20 software was used.

#### Ethical considerations

To respect ethical aspects, all participants were asked to fill in informed consent sheets after complete describing the goals of the study. The participants were allowed to leave the study at any stage of the investigation for any reason with giving no explanation. For ethical considerations, all patients with MAC-R score with the average (24-27) and severe (>27) cut of point were informed about their conditions and suggested being checked up by a psychiatrist. To consider anonymity of the patients, all of their information were prepared secretly and used evaluated as the research population data and published in general.

## RESULTS

The study population of the present work was 190 patients under MMT process who were divided into two control and alcoholic groups. The mean and standard deviation for the age of participants in alcoholic and control groups were  $37.65 \pm 7.49$  and  $36.02 \pm 7.95$  years, respectively. The singles in consumption and control groups were 55.8 and 40%, respectively; the 0.0% of the alcoholic and 4.2% of the control group were unemployed; 91.6% of alcoholic and 90.5% of the control groups were the residents of Rasht City (Table 1).

According to the findings of this research, 67.4%, 25.3%, and 7.4% of the study units had less than 40 mg, 40 to 80 mg, and above 80 mg of daily methadone consumption, respectively. Moreover, in the alcoholic group, 83.2%, 16.8%, and 0.0% of the participants were taking less than 40 mg, 40-80 mg, and more than 80 mg of methadone on a daily basis, respectively.

**Table 1: Demographic information of MMT patients with and without alcohol consumption**

Variables	Control group (95 participants)	Alcoholic group (95 participants)	P value*
Age (mean $\pm$ SD)	36.02 $\pm$ 7.95	37.65 $\pm$ 7.49	0.15
Single (%)	40/0	55/8	0.04
Unemployed (%)	4/2	0	0.06
<b>Percentage of participants with their corresponding methadone dosage (mg.)</b>			
<40	67.4	83.2	0.007
40-80	25.3	16.8	
>80	7.4	0	
Urban place of living (%)	90.5	91.6	1

The findings also show that, based on the revised alcoholism MacAndrew scale, the average score of the participants is  $27.76 \pm 5.19$ . Based on this scale, 21.1, 30.5, and 48.4% of the participants had a slight, average, and severe alcohol overdose problem. The results obtained from SF-36 questionnaire indicate that the mean and standard deviation of the alcoholic and control groups are  $45.0 \pm 22.4$  and  $35.2 \pm 22.8$ , respectively. Based on the analysis of  $\chi^2$  test, except subscale 1 (physical performance) and subscale 3 (general health), the rest of subscales in SF-36 for

alcoholic and non-alcoholic groups have a statistically significant difference. In this regard, subscale 5 (tiredness or joy) have a high score in the control group compared to the alcoholic group. The overall SF-36 score of the alcoholic group is greater than that of the control group, where this difference is statistically significant. Similarly, the scores of physical and mental scales in the alcoholic group are higher than those of control group; but, the difference is statistically significant only in physical scale (Table 2).

**Table 2: A comparison of scale and subscale scores of SF-36 questionnaire for two group of MMT patients with and without alcohol consumption**

SF 36 Scale	Alcoholic group	Control(non-alcoholic) group	P-value*
Physical health	56.6	41.9	0.0001
Mental health	33.9	28.5	0.087
Subscales			
Physical performance	69.1	69.1	0.987
Physical pain	47.1	24.2	0.001
General health	38.2	24.4	0.148
Role performance limitation induced by physical health	24.6	15	0.001
Tiredness or joy	37.1	43.7	0.005
Role performance limitation induced by emotional problems	33.9	27.1	0.016
Social role performance (social performance)	65.3	36.9	0.0001
Emotional health	44.8	37.5	0.0001
Total score	45.0	35.2	0.003

Since synchronization of these two groups was not completely possible, the studied parameters were introduced to the regression analysis model so that to study the real factors effective in QOL of the MMT patients. In this model, seven variables including age, marital status, methadone dosage, place of living, history of mental disease, and alcohol consumption. The regression model shows that the employment or unemployment and alcohol consumption or lack of use has no effect on QOL of the participants and the most important predictive of QOL is using methadone dosage above 40 mg. The other predictive variables of the study are presented in Table 3. Overall, the linear regression indicated an  $R = 0.606$ ,  $R^2 = 0.367$ , and Adjusted  $R^2 = 0.350$  for the model.

**Table 3: SF-36 predictors with studied variables in MMT patients**

Variable	B coefficient	Standard B coefficient	P value
Methadone dosage above 40 mg	17.32	0.396	<b>0.0001</b>
Being single	16.68	0.362	<b>0.0001</b>
Urban place of living	16.42	0.203	<b>0.001</b>
Age below 40 years	11.83	0.243	<b>0.001</b>
History of mental disorder	23.10	0.123	<b>0.04</b>

## DISCUSSION

Methadone maintenance treatment (MMT), as a long-term maintenance, is among the well-recognized and valid procedures in addiction field that is effective in refraining state after drug take period. Although MMT is among the common efficient approaches, it does not seem to be enough so that it is required to also take into account other treatments that consider the psychological, social communication, and environmental aspects [24].

The simultaneous consumption of alcohol and drugs leads to a broad range of consequences that can enhance the mortality rate as well as the interpersonal and psychological problems. In addition, alcohol overdose influence different layers of quality of life (QOL). The QOL, as a health concept which mainly reflects satisfaction, is not limited to lack of any disease in an individual; rather it represents the social, mental, and definite improvement in accordance with the definition of health given by world health organization (WHO) [25-26].

The MMT patients with a history of alcohol consumption indicated a lower QOL and higher pain in terms of physical conditions. In this regard, the problems induced by alcohol consumption and the psychological-social problems might bring permanentlifetime consequences for such people, particularly in those suffering from hepatitis C [27].

The present study was conducted to measure QOL among the MMT patients with and without alcohol consumption. The participants of this work were divided into two groups with and without alcohol consumption.

The results showed that about half of MMT patients (48.4%) had alcohol overdose problem. Also, it was found that MMT patients with alcohol overdose problem were younger than 50 years. This finding is consistent with those of Nyamathi (2009), Lee (2012), Ryder (2009), and Teplin (2007) [28-31] but not in agreement with the findings of Maremmani *et al.* (2007) [32]. In this connection, Maremmani *et al.* (2007) ultimately concluded that MMT process leads to the reduced alcohol consumption dosage in MMT patients, while the results of present work revealed that only methadone consumption dosage above 40 mg can be effectively used as a predictive of QOL in MMT patients.

Another result of the present work is that the QOL was not low in MMT patients with alcohol overdose problem; which is inconsistent with results of Carpentire (2009) and Senbanjo (2006) [33,34]. In addition, in a study conducted by Senbanjo (2006), the alcoholic MMT patients not only had a low QOL in terms of physical health ( $p = 0.02$ ) and mental health ( $p = 0.03$ ) performance, but also had a statistically significant difference with MMT patients without alcohol consumption. The low physical and mental performance of the alcoholic MMT patients compared to those with no alcohol overdose problem reported in this work is consistent with the findings of present work [33]. In contrast, the results of Faller (2015) was inconsistent with those of us in terms of low QOL; however, this author did not report presence of a direct relation between alcohol consumption with the low QOL, rather he assumes it as a predictive factor [35]. Based on studying various (demographic) factors on the QOL, the following results were derived in the present work: Among all demographic information, two factors including employment or unemployment and alcohol consumption or lack of it indicated no effect on QOL of the MMT patients; rather, methadone take above 40 mg was the main predictive of QOL. Thus, such conclusion that alcohol consumption is not a good predictive of QOL made by Faller (2015) is not consistent with the present work.

## CONCLUSION

The present study showed that methadone dosage in MMT process has a high predictive value in (quality of life) QOL determination. Hence, the careful regulation of methadone dosage with patient needs, as well as measuring the QOL subscales in MMT patients (particularly for those with the daily methadone dosage above 40 mg) and teaching the required scales for improving the low subscales are recommended for preventing symptoms such as consumption relapse, treatment interruption, and the communication problems related with QOL for the participants of this group.

## Suggestion

In this paper, variables such as both genders, the frequent change of job, the financial support of relatives such as patients' wives, mental problems, and the cause-effect relations have not been investigated, which are recommended as the subject for the future works.

Furthermore, in the rural and urban populations of Iran, alcohol and drug abuse varies considering the ethnicities, traditions, and culture of each region. Thus, it is recommended to conducted a comprehensive intercultural study on a national scale considering the effective factors so that to gain more accurate results. Finally, it is worth mentioning that MMT programs require applying some policies to ensure the simultaneous detection of high dosage methadone consumption and continuous interventions, as passing through this step enables to deal with a broad range of problems.

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