Original Article

Quality of life in patients on methadone maintenance treatment: A three-month assessment

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Abstract

Objective: To examine the 3-month effect of methadone maintenance treatment (MMT) on quality of life (QOL) of substance-dependent outpatients in Iran.

Methods: The qausi-experimental study performed at the Oral Maintenance Methadone Treatment Clinic of the Baharan Psychiatric Hospital, a university hospital in Zahedan, southeast of Iran, from 2009 to 2010. One hundred patients with substance-dependence disorder were recruited from the outpatient clinic. Quality of life parametres were measured through the World Health Organization Quality of Life scale (WHO QOL-BREF) prior to the treatment, and 1, 2 and 3 months after starting the treatment in order to assess changes in the Quality of Life across the treatment period. Repeated measurement analysis was used for data analysis.

Results: Of the 100 subjects initially recruited, 83 (83%) completed the study period. The total Quality of Life score improved from pre-treatment to the first month into treatment. The improvement was maintained at the 2-month and 3-month points (P<.05). According to the World Health Organization subscales, the treatment was effective in improving physical and social relationship domains over time (P<.05), but there were no significant improvements in psychological and environmental domains.

Conclusions: Oral methadone maintenance treatment was effective in improving the overall Quality of Life during the first three months of treatment in substance-dependent outpatients.

Keywords: Quality of life, Addiction, Methadone maintenance treatment (MMT). (JPMA 62: 1003; 2012)

Introduction

Substance use is a common, worldwide health and social problem.[1] It is estimated that the prevalence of addiction among Iranian adult population ranges between 3-4%.[2] Using methadone in our country is a current approach for maintenance and detoxification of addicts seeking treatment.[1] Although healthcare researchers have focused on subjective outcome measurement such as quality of life, patients' perception has still received limited attention in the field of addiction research and treatment.[3] Nevertheless, improving quality of life is regarded as an important outcome related to programme efficacy.[4-6] According to WHO, quality of life (QOL) is individuals' perception of their lives as related to their culture and value systems as well as their goals, expectations, standards and concerns.[7] It is commonly believed that health-related problems, including substance abuse, may have a negative effect on the quality of life of the patients. Some recent studies have shown poor quality of life among substance-dependent individuals.[8-10]

One study found that QOL of opioid addicts improved after treatment with methadone or buprenorphin.[11] Another study also reported that QOL of substance-dependent people who participated in methadone maintenance treatment (MMT) increased, but the pattern of this change in different domains was different; that is physical and mental health improved during the second and third month, but there were no significant changes on the other subscales.[12]

Although quality of life as a self-reporting outcome has become an important source of information in treatment outcome studies, and MMT has been used in Iran wildly, the authors did not find sufficient data on the quality of life of Iranian patients with substance-dependence disorder who received MMT. Therefore, this study aimed at assessing the impact of MMT on quality of life of people who attended relevant clinics in Iran during the first 3 months of their treatment. As noted by an earlier study,[13] we also believed that this period is a critical period for maintaining MMT patients.

Patients and Methods

The research design was qausi-experimental study and was conducted from 2009 to 2010. The research sample consisted of 100 patients with substance-dependence disorder, diagnosed according to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV),[14] who sought methadone maintenance treatment (MMT). The sample size was computed by n=2+c (s2/d2) where 's' and 'd' based on results of a pilot study, were 9.7 and 1.5. The 'c' was determined by levels of α (0.05) and 1-β (0.9). The subjects were randomly recruited from the Baharan Psychiatric Hospital outpatient clinic, a university hospital in Zahedan, southeast of Iran. All participants were asked to complete the Farsi version of WHO QOL-BREF, which is a short form of the original Quality of Life instrument developed by the World Health Organization and includes 26 questions assessing the overall quality of life and its four domains (physical health, psychological, social relationships, and environment) and general health dimensions. Each domain is evaluated on a 0-100 scale. Higher scores indicate higher QOL. Because of negative phrasing, three items of the WHOQOL-BRÈF were reversed before scoring.[15] This study was approved by the ethics committee of research affairs at the Zahedan University of Medical Sciences, and informed consent was obtained from all the participants.

QOL evaluation was done at four phases; prior to starting the treatment, and at 1, 2, and 3 months after the beginning of the treatment. Seventeen (17%) patients did not respond to the questionnaires completely and all data related to these patients was eliminated from the study. Once all data were gathered, analysis of variance (ANOVA) was done. SPSS 17.0 was used for statistical analysis.

Results

Of the 83 participants who completed the treatment protocol, 43 (51.8%) were males and 40 (48.2%) were married. Besides, 30 (36.1%), 22 (26.5%), 16 (19.3%) and 15 (18.1%) were aged between 20-25, 26-30, 31-35, and above 35 respectively (Table-1). The mean and standard deviation of participants' scores on the 4 domains of Quality of Life and the total QOL were assessed (Table-2). Shapiro-Wilk test showed no deviation from normal values (p=0.108).

The effect of MMT on total QOL score was estimated by analysis of variance in which time of measurement (the pre-treatment or baseline score, scores at month 1, 2 and 3) was the within-subjects variable. Mauchly's test for sphericity indicated that this assumption was not met (W = .53, df = 5,

Table-1: Demographic characteristics (n=83).

	n	percent
Gender		
Male	43	51.8%
Female	40	48.2%
Education		
<High school	21	25.3%
High school	29	34.9%
>High school	33	39.8%
Age		
20-25	30	36.1%
26-30	22	26.5%
31-35	16	19.3%
>35	15	18.1%
Marital status		
Single	43	51.8%
Married	40	48.2%

Table-2: Mean scores for Quality of Life (QoL) domains (n=83).

	Physiological health Mean±SD	Psychological Mean±SD	Social relationships Mean±SD	Environment Mean±SD	Total QOL Mean±SD
Baseline	75.15±10.72	71.66±10.38	24.81±8.13	86.79±13.58	258.43±23.7
First month	90.45±14.85	64.38±9.21	30.36±8.74	94.21±21.26	279.42±41.7
Second month	82.79±15.5	64.38±1988	40.38±22.10	87.61±36.44	277.59±80.1
Third month	86.21±12.85	70.07±15.62	38.7±9.44	93.2±22.81	287.56±54.9

Table-3: Mean scores for the 4 domains of Quality of Life (range 1-100) and Total QOL (range1-400) of substance-dependent individuals by gender.

Assessment time	Physiological health Mean±SD	Psychological Mean±SD	Social relationships Mean±SD	Environment Mean±SD	Total QOL Mean±SD
Male					
Baseline	75.11±11.46	72.46±9.2	24.74±7.86	86.13±13.6	258.5±23.2
First month	89.58±15.24	64.65±8.85	30.04±8.38	93.76±20.64	278±41.6
Second month	82.04±16.36	66.32±19.42	38.41±13.58	86.04±39.76	272.8±81.6
Third month	86.13±13.44	69.11±16.05	38.04±9.85	91.53±23.61	284.8±58.8
Female					
Baseline	75.2±10.01	70.8±11.57	24.9±8.52	87.5±13.68	2.58.4±24.5
First month	91.4±14.56	64.1±9.69	30.7±9.21	94.7±22.17	280.9±42.4
Second month	83.6±14.68	67.3±20.61	42.5±28.62	89.03±37.39	282.7±79.2
Third month	86.30±12.35	71.1±15.27	38.1±9.1	95±22.07	290±53.5

Table-4: Mean scores for the 4 domains of Quality of Life (QoL) (range 1-100) and total QOL (1-400) of substance-dependent individuals by marital status.

Assessment time	Physiological health Mean±SD	Psychological Mean±SD	Social relationships Mean±SD	Environment Mean±SD	Total QOL Mean±SD
Single					
Baseline	76.04±11.86	69.86±9.16	23.9±8.57	85.2±14.11	255±24.5
First month	88.56±15.65	63.34±9.59	29.3±8.62	91.53±21.94	272.7±42
Second month	83.06±16.2	67.34±19.67	37.58±12.92	87.62±39.65	275.6±82.1
Third month	83.9±11.39	68.09±16.2	36.93±9.23	89.76±21.93	278.7±53.2
Married					
Baseline	74.2±9.41	73.6±11.34	25.8±7.62	88.5±12.94	262.1±22.5
First month	92.5±13.86	65.5±8.76	31.5±8.83	97.1±20.39	286.6±40.7
Second month	82.5±14.9	66.2±20.35	43.4±28.79	87.6±37.59	279.7±79
Third month	88.7±13.97	72.2±14.88	39.3±9.62	96.9±23.43	297.1±55.9

p = 0.001). Therefore, the Huynh-Feldt correction was applied. Based on the corrected degrees of freedom, the main effect of time of measurement was significant (F= 5.487, df = 2.47, 202.81, p <0.001).

Post-hoc comparisons were performed using Bonferroni adjustment for multiple comparisons. The MMT treatment was effective in improving total QOL in the addicts. The total QOL score was improved from a mean of 258.4 ± 23.68 at pre-treatment to 279.42 ± 41.72 (p= 0.001) at first month after treatment. The improvement was maintained at the second month (M = 277.59 ± 80.1 (p= 0.02) and third month (M = 287.6 ± 54.9 (p < 0.001) assessments. There were no significant differences between mean scores at the first month compared to the second month, and at the second month compared to the third month (p >0.5).

Based on results of repeated analysis of physical domain of QOL, Mauchly's test for sphericity indicated that this assumption was not met (W = .67, df = 5, p = 0.001). Therefore, the Huynh-Feldt correction was applied. Based on the corrected degrees of freedom, the main effect of time of measurement was significant (F= 5.487, df = 2.47, 202.81, p <0.001).

Post-hoc comparisons were performed using Bonferroni adjustment for multiple comparisons. The MMT treatment was effective in improving physical domains of QOL. The physical health score was improved from a mean of 75.15 ± 10.72 at pre-treatment to a mean of 90.45 ± 14.85 (p< 0.005) at first month after treatment. The improvement was maintained at second month (M = 82.79 ± 15.5, p< 0.005) and third month (M= 86.21 ± 12.85, p < 0.005)

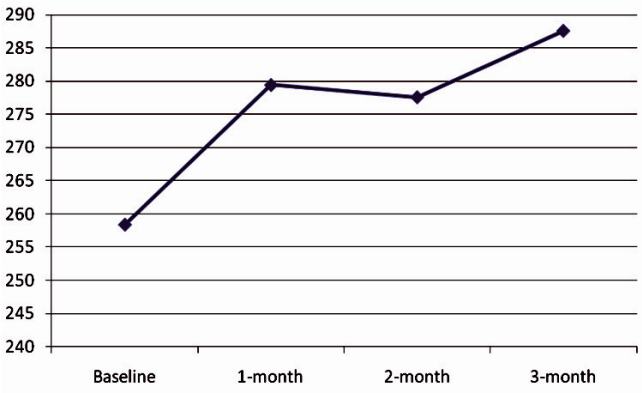

Figure: Changes of quality of life in substance-dependent patients who participated in methadone maintenance treatment (MMT) across assessment times.

assessments. There was no difference between the second month and third month means ($p > 0.05$) (Figure).

In terms of psychological domain, Mauchly's test for sphericity indicated that this assumption was not met ($W = 0.649$, $df = 5$, $p = 0.001$). Therefore, the Huynh-Feldt correction was applied. Based on the corrected degrees of freedom, the main effect of time of measurement was significant ($F= 5.487$, $df = 2.41, 197.31$, $p = 003$). Post-hoc comparisons were performed using Bonferroni adjustment for multiple comparisons. The psychological health score was reduced from a mean of 71.66 ± 10.38 at pre-treatment to a mean of 64.38 ± 9.21 ($p < 0.001$) at first month after treatment. There were no differences between the baseline mean and second and third month means ($p > 0.5$).

Regarding social relationships domain, Mauchly's test for sphericity indicated that this assumption was not met ($W = 0.236$, $df = 5$, $p = 0.001$). Therefore, the Huynh-Feldt correction was applied. Based on the corrected degrees of freedom, the main effect of time of measurement was significant ($F= 30.431$, $df = 1.701, 139.460$, $p = 0.001$). Post-hoc comparisons were performed using Bonferroni adjustment for multiple comparisons. The social relationship score improved from a mean of 24.81 ± 8.13 at pretreatment to a mean of 30.36 ± 8.74 ($p < 0.001$) at first month after treatment. The improvement was maintained at the second month ($M = 40.38 \pm 22.1$, $p < 0.001$) and third month ($M = 38.07$, $SD = 9.44$), $p < 0.001$) assessments. There was no significant difference between the second month and third month means ($p = 1$).

Mauchly's test for sphericity related to scores of environment domain indicated that this assumption was not met ($W = 0.546$, $df = 5$, $p = 0.001$). Therefore, the Huynh-Feldt correction was applied. Based on the corrected degrees of freedom, the main effect of time of measurement was significant ($F= 2.822$, $df = 2.170, 177.979$, $p = 0.05$). Based on post-hoc comparisons using Bonferroni adjustment for multiple comparisons, environment score improved from a mean of 86.79 ± 13.58 at pretreatment to a mean of 94.21 ± 21.26 ($p = 0.03$) at first month after treatment. The improvement wasn't maintained at the second month ($M = 87.61 \pm 36.44$, $p = 1$) and third month ($M = 93.2 \pm 22.81$, $p > 0.16$). There was no significant difference between second month and third month means ($p = 1$).

Mean values were also worked out against gender and marital status. There was no significant difference in gender, gender by time, marital status, or marital status by time (Table-3 and 4).

Discussion

The study was designed to examine the Quality of Life among outpatient addicts treated with methadone. The results showed a significant improvement in the total QOL whose score improved at first month after treatment. The improvement was maintained at months 2 and 3. As for the sub-domains of QOL, the findings indicated that MMT was effective in improving physical and social relationship domains over time, but there was no significant improvements in psychological and environmental domains. In addition, differences in QOL scores across time did not depend on gender and marital status of the participants.

An earlier study showed improvement in six domains of the Short Form Health Survey (SF-36) six months after the start of methadone treatment.[16] Significant improvement was shown in the 'mental health' domain which is inconsistent with our results. Another study using WHOQOL-BREF found significant improvements in all 4 domains of QOL for individuals with opioid dependence receiving MMT.[17] It found significant improvements in the physical and psychological domains, while in the present study only physical and social relationship domains improved significantly. A study found that methadone improved the QOL of heroin users during one month of treatment, who remained stable until the end of the programme.[18] The results of our study are somewhat consistent with this conclusion regarding the total QOL and domains of physical health and social relationships. QOL was found to have improved in opioid-dependent patients who completed at least three months of treatment.[19] A study in Lithuania showed significant improvements in physical, psychological and environmental domains of QOL, but no significant improvements in the social domain.[6]

In general, the findings of our study were consistent with available literature, confirming the benefits of methadone in the treatment of addicts and in improving their quality of life. The lack of significant improvement in psychological and environmental domains in our study can be

attributed to a variety of reasons. First, it is well documented that substance-dependence disorders are highly comorbid with other psychiatric disorders[20] such as mood and personality disorders, and comorbidity is associated with lower quality of life and poorer outcome. It is possible that the participants in our study might have suffered from other mental health illnesses which we did not explore. Secondly, changes in the quality of life, specifically in the psychological domain, requires longer period of time. Based on current evidence, continuing MMT could improve the QOL gradually. Therefore, it is possible that if we had followed our participants longer, they would have reported improvement in the psychological domain as well. Thirdly, addiction is a chronic, multi-dimensional and complex disorder. Thus, in addition to methadone therapy, other psycho-social interventions are needed in order to achieve improvement in all domains of life.

Conclusion

The study showed that MMT had a positive effect on the quality of life of the addicts. However, results should be interpreted and generalised with caution because of the limitations of our study, which included a small sample size and the absence of a control group. Future studies should also consider factors like personality and psychotic disorders and other mental health illnesses.

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