

## Abstract

**Objective:** This study aimed at comparing addicts' quality of life and psychological disorders based on two methods, i.e. an educational method (Narcotics Anonymous) and a medicinal method (Methadone Maintenance Treatment). **Method:** An ex post facto research design was used in this study. Using purposive sampling, a number of 217 male Neurotics (110 NA, 107 MMT) was selected from Shahrekord City. Quality of Life Questionnaire and Depression, Anxiety and Stress Scale (DASS-42) were utilized to collect data. Results: According to the results of multivariate analysis of covariance, in terms of life quality, status of NA group members was more desirable as compared with the MMT group. Considering the three psychological disorders, NA group members were in a better condition than the methadone treatment group. An increase in the membership duration in NA was associated with lower levels of depression and physical pain and higher levels of general health and positive emotions. **Conclusion:** Therapeutic community approach was revealed to be more adequate in improving the quality of life and reducing psychological disorders, and may be considered as a desired method of treatment.

**Keywords:** quality of life, psychological disorders, NA, MMT

# Addicts' Quality of Life and Psychological Disorders (depression, anxiety and stress) in two Treatment Methods: Narcotics Anonymous vs. Methadone Maintenance Treatment

Mansooreh HajHosseini, Ramin Hashemi

## Mansooreh HajHosseini

Associate Professor

Department of Educational Psychology and Counseling

Tehran University

Tehran

Iran

E-mail: hajhosseini@ut.ac.ir

## Ramin Hashemi

MA in family counseling



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## Introduction

Addiction is chronic intoxication which is the outcome of the use of natural or industrial medicine, and results in dependency. For this, World Health Organization used the concept of 'dependency' for addiction which originates from a prolonged period of use of substance or a combination of substances which leads to tolerance or withdrawal when one stops using. The term 'use disorder' is used instead of addiction. In classification of psychological disorders, for example, addiction is attributed to abuse of substances like alcohol, heroine etc. which entails problems such as a change in thinking, emotions and behavior (Ganji, 2014). This matter has been turned to a family crashing disaster, a social predicament and a great therapeutic challenge. Addiction and the resulting diseases and chronic disorders like hepatitis and AIDS, divest the sufferers of thinking, working and creativity power and, along with damage to their employment and family, decrease their quality of life. Some studies suggest a direct negative correlation between substance abuse and life quality, and a convergence between addiction and psychological disorders symptoms like depression and anxiety (Carpentier et al., 2009; Ghamari 2012; Bukstein, 2000). Therefore, to tackle the drug abuse and its destructive effects various kinds of confrontational, legal, therapeutic, and educational- pedagogical strategies are used. In the educational-pedagogical strategy, in addition to therapy focused on the behavioral and mental principles of personal growth, there are efforts to help the sufferer in the rehabilitation process, and by discarding displeasing experiences of treatment period his quality of life improves. The aim of these treatment programs, in addition to cutting dependency, is to restore health to the addict's life; and to empower them to prevent the relapse of drug abuse.

Life quality as a health index, is a dynamic concept for individual's perception of the relative condition of health and other non-medical aspects of life, and specifies their evaluation about their physical health, mental condition, social relations, independence level and emotional concerns (Alder, Porter, Abraham & Tychln, 2009). The World Health Organization (1993) defines life quality as individuals' perception of their life in their cultural context, value system, objectives, expectation and standards; and outlines four dimensions of physical health, psychological health, social relations and relation to the environment. One of the educational pedagogical strategies is a therapeutic community of narcotic anonymous (NA). The community has focused its improvement program on the personal revolutionary plan and tries to make a total change in people's lifestyles with the aid of fellows' support. Therefore with the resulting conscious and accountable attitude toward themselves, individuals redefine their role in life, and consciously and productively reconnect to the others and the world (white et al., 2013). The NA treatment process includes twelve-step program in three dimensions of self-help, social support and spirituality lifting (Moos 2007). The community's treatment approach is based on the social participation and cooperative teamwork and leads to personal growth,

accountability and individual independence. This program, in the spiritual lifting phase, deals with individuals' awakening to their need of spiritual strength and gaining power from that and, in social support phase, focuses its improvement plan on every single sufferer's help to one another and drives them to make conversations and exchange experience in discussion circles. Hence, on the basis of this method, the sufferers, in discussion circles, review the problems, help each other with the reconsideration of matters and come to realize their responsibility for the treatment (Kelly, Urbanoski, Hoepfner, & Slaymaker 2011). Advocates of this method believe that the social context and the sufferer's interaction with the fellows who have the common perception of the problems and have faced the treatment problems, is a major factor in accountability and endurance for the treatment progression (Kelly & Urbanoski, 2012; Moos, 2007). The NA's aim has been stated as to make a major change in lifestyle such as avoiding drug, developing honesty and a sense of responsibility; and the various researches have demonstrated its success in improving the quality of life and decreasing the psychological disorders, in addition to participants' addiction break. For instance, Moos and Moos (2005), in their study on two groups of alcoholics showed that the group which in addition to receiving professional medical services have participated in alcoholics anonymous, had better improvement process, endurance in stopping drinking and higher quality of life. Bavi and Borna (2010) showed the rehabilitation period effectiveness of the therapeutic community on decreasing negative self-concept, anxiety and depression of voluntarily referred addicts. Beygi (2012) in his study showed that active participation of addicts in NA and following the 12-step principles leads to advancement in social and religious activities and enhancement of their quality of life. Sotoode-Asl, Behnam and Ghorbani showed that NA sessions could improve the personality attributes scores (introversion, extroversion, psychosis, neurosis) of narcotics-dependents. Saleh Moghadam, Bazaz Kahani and Vagheei (2013) in investigation of three groups of NA, therapeutic community, and methadone maintenance therapy (MMT), illustrated that the NA group members gained higher scores in all dimensions of life quality compared to other two groups. On the other hand, MMT could also be a successful treatment for addiction. This program, based on the medicinal treatment tries to control the withdrawal syndrome originating from substance abuse stop by replacing methadone with the narcotics; and in many cases it proved its effectiveness in psychological condition and mental wellbeing during the avoiding period. However, findings about the effect of MMT on the life quality and psychological symptoms are conflicting. For example, Huong, Guan, Nordin, Adlan & Habil (2009), Chou et al. (2013), Rohani, Salarieh, Abedi and Kheyrikhah (2013) and Lashkari poor, Bakhshani and Sajadi (2012) investigating the life quality of addicts going through MMT, showed that the method contributes to improvement of different aspects of addicts' quality of lives. Poor Naghash Tehrani (2009) showed in his study, that the level of anxiety and

depression symptoms in MMT declines. On the other hand, some studies have shown that people under the MMT have demonstrated higher level of mental health problems, compared with ordinary individuals. Peles, Schreiber, & Adelson (2006) have shown that the majority of people under MMT experience temperamental and emotional disorders like depression and anxiety. Carpentier Et al. (2009) in a research on the 193 addicts under the MMT found that 78 percent of participants had psychiatric problems (temperamental disorders 60%, anxiety disorders 46%, personality disorders 65%) and enjoyed low quality of life and needed more psychological services. On that account, the need for a decisive and effective therapy calls for a precise evaluation and comparison of different methods since life quality is a multi-dimensional concept which could be brought into consideration when choosing proper method to face addiction. Since disorders such as anxiety and depression play major roles in addict's relapse (Miller, 1995), investigation of these in different treatment methods seems to be necessary. Thus, the aim of the present study was to compare the life quality and psychological disorders (anxiety, depression, stress) in two addiction treatment methods (NA and MMT).

## **Method**

### **Population, sample and sampling method**

As the present research, with the aim of realizing the better addiction treatment method, compares the addicts' life quality and psychological disorders conditions under two treatment methods, NA and MMT, the research methodology is *ex post facto*. The statistical population was comprised of male addicts in recovery in two groups of MMT and NA in Shahre-Kord city who were selected using purposive sampling and put into two groups A) MMT (including 107, mean age of 32.9 and mean years of drug abuse of 8.8) and B) NA (including 110, mean age of 32.8, mean years of drug abuse of 7.1) who have stopped using narcotics at least for 3 month. First MMT group was selected and then, based on their demographical characteristics, the NA group was sampled.

### **Instruments**

Depression Anxiety Stress Scale-42: the scale is a 42 item self-report developed by Lovibond & Lovibond (1995) and is increasingly used in different contexts (Crawford & Henry, 2003). To examine the scale convergent validity, Lovibond & Lovibond used the Beck Depression Inventory (BDI) and Beck Anxiety Inventory (BAI). The correlation between the Depression scale of this questionnaire and Beck Depression Inventory (BDI) was reported to be 0.74 and the correlation between the Anxiety scale and Beck Anxiety Inventory (BAI) came out 0.81. Also, test-retest reliability for the Depression, Anxiety and Stress

scales were reported 0.71, 0.79 and 0.81 respectively. This scale validity was put to test by Afzali, Delavar, Borjali and Mirzamani (2008) using the three questionnaires of Beck Depression Inventory (BDI), Self-rating Anxiety Scale (SAS) and Students Stress Scale (SSS). They reported the correlation between the Depression scale and BDI 0.85, and that of the Anxiety scale and SAS 0.83, and that of Stress scale and SSS 0.76. They have also reported Cronbach's alpha for the Depression, Anxiety and Stress Scales to be 0.94, 0.85 and 0.88 respectively. In the present study Cronbach's alpha for the Depression, Anxiety and Stress came out 0.88, 0.81 and 0.84 respectively.

Short Form Health Survey- 36: the questionnaire was developed by Ware & Sherbourne in United States and has been translated to different languages and there is evidence that it has enjoyed great reliability and validity in various populations (Montazeri, Gashtasbi, Vahdanian & Gandek, 2005). Short Form Health Survey assesses 8 concepts concerning health in two general components: physical component score and mental component score. The items of the physical component include physical function, role physical, bodily pain, general health; and the items of mental component include role emotional, vitality, social function and mental health. The higher score in any of these subscales means a higher level of life quality. This questionnaire was validated by Montazeri et al. (2005) in a sample group of 4163 people in Iran and the result indicates an adequate reliability and validity. The Cronbach's alpha for the physical function, role physical, bodily pain, general health was reported 0.90, 0.85, 0.83 and 0.71 respectively, and for role emotional, vitality, social function and mental health it came out 0.84, 0.65, 0.77 and 0.77 respectively. The questionnaire was also validated by Motamed, Ayatollahi, Zare and Sadeghi Hasan Abadi (2003) and Asghari Moghadam and Faghihi (2004) and the results confirm its validity and reliability. In the present study Cronbach's alpha for physical function, role physical, bodily pain, general health was reported 0.83, 0.53, 0.74 and 0.82 respectively, and for role emotional, vitality, social function and mental health came out 0.32, 0.68, 0.55 and 0.73 respectively.

## **Results**

Descriptive statistics for demographic variables of selected samples are presented in the following table.

**Table 1. Descriptive statistics for demographic variables of the selected samples**

<i>variables</i>	<i>MMT sample</i>		<i>NA sample</i>		
	<i>frequency</i>	<i>Percent frequency</i>	<i>frequency</i>	<i>Percent frequency</i>	
<b>Marital status</b>	<b>married</b>	61	57	64	58.2
	<b>single</b>	44	41.1	41	37.3
	<b>divorced</b>	1	0.9	5	4.5
	<b>Widow</b>	1	0.9	0	·
<b>Education</b>	<b>primary</b>	8	7.5	5	4.5
	<b>secondary</b>	25	23.4	36	32.7
	<b>diploma</b>	61	57	50	45.5
	<b>higher</b>	13	12.1	19	17.3
<b>Parents' addiction</b>	<b>Father</b>	32	29.9	35	31.8
	<b>Mother</b>	1	0.9	2	1.8
	<b>Both</b>	2	1.9	2	1.8
<b>Number of times stopped</b>	<b>None</b>	72	67.3	71	64.5
	<b>one</b>	15	14	10	9.1
	<b>two</b>	18	16.8	29	26.4
<b>Narcotics</b>	<b>More than two</b>	74	69.2	71	64.5
	<b>opium</b>	33	30.8	41	73.3
	<b>Heroin</b>	64	59.8	54	49.1
	<b>opium sap</b>	10	9.3	10	13.6

To examine the goodness of fit of the two groups demographically, parametric tests were used as follow.

**Table 2. The Chi-square test result to examine the goodness of fit**

<i>Variables</i>	<i>Chi-square</i>	<i>df</i>	<i>Sig.</i>
<b>Marital Status</b>	3.8	3	0.28
<b>Education</b>	4.85	3	0.18
<b>Parents' Addiction</b>	0.43	3	0.95
<b>Number Of Times Stopped</b>	3.6	2	0.17
<b>Narcotics</b>	2.67	2	0.26

As the expected frequency in the fields of marital status and parents' addiction was less than 5, therefore for these features, the significance test of Exact for Pearson Chi-square was used. As indicated in Table 2. Results show that there is no significant difference between the two groups of NA and MMT patients in any of the demographic variables: marital status, education, parents' addiction, number of times stopped ( $P > 0.05$ ).

**Table 3. The result of t-test to examine the goodness of fit of the two groups by age and years of use**

<i>variables</i>	<i>MMT</i>		<i>NA</i>		<i>t</i>	<i>df</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
<b>age</b>	32.89	8.8	32.85	7.1	0.03	215
<b>Years of use</b>	8.44	5.71	6.89	5.81	1.98*	215

As shown in the presented tables, there is no significant difference by age between the NA and MMT patients ( $P>0.05$ ). Hence, it appears that age has the same possible effect on the variables in both groups; but there is a significant difference by the years of substance use between them. Therefore, it seems that the possible effect of this feature on investigating variables is not the same. On that account, this feature has been considered as the covariate in ANCOVA in order to eliminate its effect in both groups.

**Table 4. Statistical analysis of the subscales life quality, depression, anxiety and stress**

	<i>variables</i>	<i>MMT</i>		<i>NA</i>	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
<b>SF-36</b>	physical function	20.04	4.34	23.30	3.78
	role physical	5.08	0.87	5.73	1.28
	bodily pain	7.91	1.81	4.83	1.94
	general health	14.43	3.33	19.45	2.21
	role emotional	3.88	0.63	4.45	0.99
	vitality	12.69	3.48	16.04	3.42
	mental health	16.67	3.51	20.70	3.95
<b>DASS-42</b>	social function	4.99	1.64	7.12	1.63
	depression	26.03	5.95	19.02	7.23
	anxiety	17.61	5.52	12.37	5.91
	stress	24.98	6.18	1.932	6.56

To examine the difference between groups in investigating variables, ANCOVA ought to be used and in order to test the assumption of equality of variances Levene's test was run.

**Table 5. Levene's test for equality of variances**

<i>subscales</i>	<i>F</i>	<i>df1</i>	<i>df2</i>	<i>significance</i>
<b>depression</b>	2.560	1	215	0.12
<b>anxiety</b>	0.050	1	215	0.82
<b>stress</b>	2.390	1	215	0.12

As seen in the table above, the assumption of equality of variances is observed. The ANCOVA result suggests a significant difference in linear combination of variables between the two groups ( $P<0.001$ ,  $F=21.470$ , (Wilks' Lambda=0.77)). To investigate the difference patterns, one-way ANCOVA was used as follow.

**Table 6. The result of one-way ANCOVA to examine the difference patterns**

<i>variables</i>	<i>F</i>	<i>df</i>	<i>Sig.</i>	<i>Partial Eta Squared</i>
<b>depression</b>	58.30	1	0.0005	0.21
<b>anxiety</b>	40.87	1	0.0005	0.16
<b>stress</b>	38.49	1	0.0005	0.16

As shown in Table 7. The result of one-way ANCOVA showed that by eliminating the effect of drug abuse duration and considering Bonferroni adjusted alpha value (0.017), there is a significant difference between two groups in three variables of depression, anxiety and stress. Looking at the descriptive statistics, it has been shown that MMT patients have gained higher scores in the subscales depression, anxiety and stress than the NA members. As such, it seems that the NA patients are in a better condition.

**Table 7. Levene's test of equality of variances in the subscales of Short Form Health Survey**

<i>variables</i>	<i>F</i>	<i>df1</i>	<i>df2</i>	<i>Sig.</i>
<b>physical function</b>	1.29	1	215	0.22
<b>role physical</b>	0.83	1	215	0.42
<b>bodily pain</b>	1.41	1	215	0.19
<b>general health</b>	1.38	1	215	0.21
<b>role emotional</b>	1.11	1	215	0.24
<b>vitality</b>	0.51	1	215	0.47
<b>mental health</b>	1.38	1	215	0.18
<b>social function</b>	0.19	1	215	0.66

As seen in the Table 7 above, the assumption of equality of variances in all items is met and using the MANCOVA is authorized. The results of MANOVA suggest a significant difference in linear combination of variables in both groups ( $P < 0.001$ ,  $F = 21.20$ , Wilks' Lambda = 0.55). To examine the difference patterns, ANOVA was used.

**Table 8. The result of ANCOVA for examining the difference pattern**

<i>variables</i>	<i>F</i>	<i>df</i>	<i>Sig</i>	<i>Partial Eta Squared</i>
<b>physical function</b>	30.64	1	0.0005	0.13
<b>role physical</b>	17.64	1	0.0005	0.08
<b>bodily pain</b>	141.53	1	0.0005	0.40
<b>general health</b>	68.66	1	0.0005	0.24
<b>role emotional</b>	23.49	1	0.0005	0.10
<b>vitality</b>	51.05	1	0.0005	0.19
<b>mental health</b>	59.43	1	0.0005	0.21
<b>social function</b>	95.69	1	0.0005	0.31

As indicated in Table 8. above, the result of one-way ANCOVA showed that by eliminating the effect of drug abuse duration and considering Bonferroni adjusted alpha value, there is a significant difference between the groups in 8 dimensions of physical function, role physical, bodily pain, general health, role emotional, vitality, mental health and social function. Considering the descriptive statistics, NA group is in a better condition than MMT group in all dimensions of quality of life.

Other findings suggest a relationship between the membership duration in the NA and the level of life quality and the psychological disorders. To investigate this relationship among the NA group member, Pearson's Coefficient was used.

The mean and standard deviation of the duration of NA membership were 19.28 and 17.7 respectively. The results of Pearson's Correlation have been presented in the following table.

**Table 9. The results of Pearson's Correlation Coefficient for Duration of membership in NA and investigating the variables**

<i>variables</i>	<i>depression</i>	<i>anxiety</i>	<i>stress</i>	<i>physical function</i>	<i>role physical</i>	<i>bodily pain</i>	<i>general health</i>	<i>role emotional</i>	<i>vitality</i>	<i>mental health</i>	<i>social function</i>
<b>Membership duration</b>	-.26 **	-0.05	-0.08	0.07	0.17	-0.21*	.31 **	0.26 **	0.14	0.12	0.16

\*P<0.05, \*\*P< 0.01

As Table 9. shows, there is a negative correlation between the membership duration in NA and depression ( $r=-0.26$ ) and physical pain( $r=-0.21$ ) and a positive correlation between membership duration and general health ( $r=0.31$ ) and role emotional ( $r=0.26$ ). In other words, as the membership duration in NA extends, depression and physical pain decline, and general health and role emotional increase.

### **Discussion and Conclusion**

Different confrontational, legal, therapeutic and educational training strategies have been resorted to in order to tackle the substance abuse and its devastating consequences. With the aim of identifying a more appropriate method of addressing addiction, the present study compared the life quality and psychological disorders (depression, anxiety and stress) in two methods of MMT and the therapeutic community of NA. The results show that NA group members demonstrate better conditions in both variables, life quality and psychological disorders. Regarding the quality of life, the mean scores of NA members in both physical and mental dimensions were significantly higher than those of the MMT members, and the significance of difference was confirmed about the internal elements of each dimensions of life quality (physical function, role physical, bodily pain, general health, role emotional, vitality, mental health and social function). This finding is in line with the works of Aspinwall, Hill and Leaf (2002), Beygi (2012) and Saleh Moghadam et al (2014). It could be concluded that NA with the aid of extensive social support and desirable interpersonal relationships, invites the members to exchange experience and provides them with similar models. Individuals under treatment in this

community would be able to find new confrontational methods to deal with their problems and have better hope of certain cure while comparing themselves to the similar models (Moos & Moos, 2004). Moreover, the interpersonal relationships in NA, in addition to providing social support and modeling for finding confrontational strategies, make an informational process through which individuals become aware of the desirable and successful strategies of others in the treatment period. This leads to increased self-confidence and could result in stronger sense of competence in facing the fear of upcoming problems or probable failure. As a result, individuals who enjoy participating in this group, with more self-confidence and competence, would be able to put up with the hard conditions of treatment period and have more persistence to go through the process (Kelly, Stout & Slaymaker, 2013). The effect of people's hope of success and the sense of capability is so powerful that those under treatment have been empowered to face the physical pain emerging from withdrawal and consequently, in comparison with MMT patients, gained a higher ability to resist against the physical pain. This, in turn, leads to their better sense of their physical function and, on top of that, to stronger feelings of vitality. Therefore, according to supporters of this method (e.g. Kelly & Urbanoski, 2012, Moos, 2007), it can be concluded that participation in NA group, as it builds the social context based on sympathy and common understanding and the increase in individuals' interaction with similar conditions, is an important factor in establishing accountability for their treatment, and their endurance for continuity of treatment.

Concerning the other variables under investigation, psychological disorders, participating in self-help NA group contributed to a significant difference with the MMT group, in a way that, the means of NA group members in any of three indices of psychological disorders (depression, anxiety and stress) were in better status than the MMT group. This finding indicates that participation in the NA group has provided a better condition for dealing with the side effects of treatment period such as physical pain and role emotional. This has been verified by the lower means of all three indices of psychological disorders (depression, anxiety and stress) in NA group. Peles et al. (2006) Carpentier et al. (2009) have also reported cases of temperamental and emotional disorders in majority of MMT patients. On this account, it appears that the principal feature of the NA is providing social support and patients' help for each other which cause people to exchange experience, while benefiting from similar people's sympathy in discussion circles, and get access to the desirable strategies for tackling mental stress which is accompanied by physical side effects of treatment period. Therefore, in an effort to break dependency on the substance and with the hope of achieving success similar to the existing models, people in NA take responsibility for their treatment and would not need a substitute substance. Along with Moos (2007), it has been confirmed that participating in discussion circles and involvement in the twelve-step process in the NA is accompanied by

vitality resulting from social support, results in better feelings about the self, and leads to more self-esteem, self-control and consequently increased capability for endurance and persistence in the treatment process. For this reason, the members of this group, in comparison with the MMT group fight and overcome their depression, anxiety and stress with more potential. The stronger effect of NA method than MMT on life quality has also been confirmed with other findings of the study about the duration of membership in NA group. On the one hand, the results show a negative correlation between duration of membership and the depression and physical pain, and on the other hand, longer duration of membership correlated with more positively general health and emotional consequences. In other words, an increase in duration of membership in NA is accompanied by less depression and physical pain and better general health and more positive role emotional. Therefore, it seems that out of two common methods of addiction treatment, i.e. therapeutic community of NA and MMT, the therapeutic community has more potential in enhancing life quality and reducing psychological disorders, and could be heeded as a desirable method of treatment. All in all, it is suggested that, to face addiction, the educational-pedagogical strategy is trusted and by social support and, sympathy and exchanging experiences laying in the method of therapeutic community of NA, it tries to involve the sufferers responsibly in the process of breaking addiction and returning to a healthy life. However, it is given that the therapeutic community has not been the best method of curtain treatment for all who suffer, and in choosing the treatment strategy all the patient's individual characteristics, life conditions and constraints and his preferential method should be taken into account.

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