Original Article

Personality Patterns in Narcotics Anonymous Members versus Individuals with Addiction Receiving Methadone Maintenance Therapy

Shahin Akhondzadeh, Pharm. D, PhD[1]
Moslem Shabrang, MD[2]
Omid Rezaei, MD[3]
Farzin Rezaei, MD[4]

1Psychiatric Research Center, Roozbeh Psychiatric Hospital, Tehran University of Medical Sciences, Tehran, Iran
2 Shebli Street, Welfare Organization of Kurdistan Province, Sanandaj, Iran.
3 Department of Psychiatry, University of Social Welfare and rehabilitation Sciences, Tehran, Iran.
4Department of psychiatry of Kurdistan University of Medical Sciences, Sanandaj-Iran

Corresponding author:
Farzin Rezaei, Qods Hospital, Pasdaran Blvd., Sanandaj , Iran
Tel: +983717839
E-mail: frrezaie@yahoo.com

Objective: Therapeutic interventions can be classified into two distinct approaches: abstinent and maintenance method. Currently, there are no clear criteria for referring addicted patients to one of these modalities. We aimed to compare the personality characteristics of individuals with addiction who attended narcotics anonymous sessions with those who received methadone maintenance therapy.
Methods: This was a cross- sectional study. The participants were NA members and patients who were undergoing methadone maintenance treatment in outpatient clinics. Using the randomized cluster sampling method, 200 individuals with opioid dependence were selected (each group 100 persons). Data were collected through a demographic questionnaire and the five-factor personality inventory (NEO-FFI). Comparison of the mean scores of NEO-PPI in the two groups was performed by independent t test, and qualitative variables were compared using the Chi-square test.
Results: We found a significant difference between the MMT and NA groups with respect to neuroticism, extroversion, and agreeableness. No significant difference was found in the subscales of conscientious and openness.
Conclusion: People who regularly attended the NA sessions had lower neuroticism and higher agreeableness than patients who were under the maintenance modality. Whether this is the cause or effect of attending NA sessions requires future large-scale cohort studies.

Keywords: *Personality, Narcotics Anonymous, Methadone*

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Addiction is one of the greatest health problems throughout the world which afflicts both developed and developing countries (Kerr et al. 2005). Currently, the prevalence of opioid related disorders has increased significantly in Iran (Koushesh & Afshari 2009). Most studies have estimated that more than 2 million Iranians suffer from opioid dependence (Koushesh & Afshari 2009). Given the vast adverse effects of addiction, several interventions have been applied, none of which is completely effective (Nichols 1988, Malekinejad & Vazirian 2012). Therapeutic interventions can be classified into two distinct approaches: abstinent and maintenance method.

One of the most known abstinence approaches is self-help groups, especially narcotics anonymous (NA) groups. It has been reported that NA groups can provide a warm and supportive setting that can help people with addiction to improve their self-esteem, which is believed to be the most important factor in addiction relapse (Nichols 1988). In these groups, members are encouraged to use no addictive substance and rehabilitate their personalities by a process called the 12–step program (Best et al. 2001). On the other hand, maintenance treatment is based upon replacing opium or heroin with an opioid agonist (methadone). In this approach, the patient is protected from serious complications such as AIDS and hepatitis, and also from some pathologic behaviors such as impulsivity (Hall & Mattick 2008).

Currently, there are no clear criteria for referring addicted patients to one of these modalities. Many patients are referred to NA or methadone centers and a significant proportion of them drop out, which imposes a huge cost to the healthcare system and undermines the self-esteem of the patients (Krentzman et al. 2010, Kelly et al. 2011). The attrition rate among those who referred to NA groups is especially high (Kelly & Moos 2003). Among those who started NA and alcoholic anonymous (AA) attendance, the majority (85% and 91%, respectively) stopped NA and AA attendance for a month or longer (Krentzman et al. 2010). If it could be predicted which addicts respond better to NA or maintenance therapy, then the remission rates would be improved. Many studies have

been conducted on these approaches; however, to the best of our knowledge, none has compared them. Therefore, if we could find some significant differences between these two groups, it might be possible to suggest some hypothesis about the mechanism of action of these approaches and conduct cohort studies. We aimed to compare the personality characteristics of individuals with addiction who attended NA sessions with those who received methadone maintenance therapy (MMT).

Material and Methods

This was a cross-sectional study. The participants were NA members and patients who were undergoing methadone maintenance treatment in outpatient clinics in the city of Sanandaj (West of Iran). Using the randomized cluster sampling method and judgment sampling, 200 persons with opioid dependence who met the inclusion criteria were selected (each group 100 persons).

We included men who had attended the meetings for more than one year in the NA group. Those with other axis I disorders and who were absent from the sessions for more than one month were excluded .

For the MMT group, inclusion criteria were male sex and receiving methadone therapy for at least one year. Exclusion criteria for this group were: more than one month dropout of methadone therapy, other axis I disorders, or having more than three positive screening morphine tests during the last year. Axis I disorders were evaluated by clinical interview.

Written informed consent was obtained before entering the study and those who refused to participate received the standard treatment. The study was performed in accordance with the Declaration of Helsinki and subsequent revisions and was approved by the Ethics Committee at the Science and Research Branch of Islamic Azad University.

Data were gathered by a demographic questionnaire and the five-factor personality inventory (NEO-FFI). In this study, the questionnaire was read to the illiterate participants by the researchers. NEO-FFI is a 60-item questionnaire specifically designed to measure the five-factor model of personality. Items are answered on a five-point Likert scale, ranging from strongly disagree to strongly agree. This questionnaire measures five factors of personality: neuroticism, extraversion, openness to experience, agreeableness and conscientiousness. Several investigators have reported excellent validity and reliability for this questionnaire (Briggs 1992, McCrae 1992, Holden 1994, Blöink et al. 2005). In this study, Cronbach's alpha for subscales of neuroticism, extraversion, openness to experience, agreeableness and conscientiousness was 0.65, 0.72, 0.51, 0.61, and 0.70, respectively. The questionnaire had also been translated to Persian and its reliability and validity was approved in a previous study (Garousi et al. 2000).

Kolmogorov-Smirnov test was used to determine the normal distribution of the variables. Comparison of the mean NEO-PPI scores in the two groups was performed by independent t test and qualitative variables were compared using Chi-square test. Results have been presented as mean±SD. $P<0.05$ was considered as significant. Data were analyzed using SPSS software, version 13.0.

Results

There was no significant difference between NA group and MMT group with respect to their demographic variables, except for educational level and residency ($P = 0.006$, and $P = 0.001$, respectively, Table 1). All participants were men with the mean age of 35.9 (range: 18-62 years). The educational level of NA group was significantly lower than MMT group, and more proportion of NA group lived in downtown areas[We found a significant difference between the two groups regarding neuroticism, extroversion and agreeableness ($P = 0.003$, 0.033, and 0.012, respectively, Table 2). The scores of MMT group on neuroticism were higher and they gained lower scores on agreeableness and extroversion. No significant difference was found in conscientious and openness subscales.

Table 1: Demographic characteristics of individuals with addiction attending to narcotic anonymous session compared with those who received methadone maintenance therapy

	NA group	MMT group	p
Age (Mean±SD, year)	34.9(±10.39)	36.91(±9.15)	0.148
Duration of addiction (Mean±SD)	12.34(±10.53)	10.43(±6.94)	0.131
Monthly income level) Mean±SD, 1000 Tomans)	334.8(±187.77)	432.12(±182.69)	0.001
Marital status	Married: 49(49%)	Married: 57(57%)	0.257
Level of education	Illiterate or elementary school: 57	Illiterate:36	0.006
Residency (Downside of the city)	73	41	0.001

*MMT=Methadone Maintenance Therapy
*NA=Narcotics Anonymous

Table 2: personality factors of individuals with addiction attending to narcotic anonymous sessions compared with those who received methadone maintenance therapy

Factor of personality (Mean±SD)	NA group	MMT group	p
Neuroticism	23.8(±4.7)	25.9(±5.15)	0.003
Agreeableness	22.32(±5.26)	20.42(±5.33)	0.012
Conscientious	20.08(±5.95)	18.39(±7.11)	0.070
openness	23.00(±3.93)	22.37(±3.91)	0.258
Extroversion	22.96(±5.51)	21.20(±6.08)	0.033

*MMT=Methadone Maintenance Therapy
*NA=Narcotics Anonymous

Discussion

The findings of this study revealed a significant difference between NA and MMT groups regarding educational level and residency. The members of NA group had lower educational level and were living more in the poor regions compared with the members of the MMT group.

Our study suggested that the neuroticism score of people receiving agonist maintenance therapy was significantly higher than the NA group. Some previous studies have shown a high prevalence of neuroticism in addicts (Weijers et al. 2003, Turiano et al. 2012). To the best of our knowledge, no study has examined NA members and MMT patients in this view. Neuroticism is usually associated with anxiety, depression, hostility and vulnerability to stress, and one can claim that participating in NA meeting needs some levels of emotional stability. Usually people with high levels of neuroticism cannot make long term relationship with others. Their relation with other people is usually accompanied with tension because of their hostility and feeling of insecurity. People with such a personal character cannot attend NA sessions for a long term period because such sessions are not only educational but also emotional relations may be formed between the participants. In other words, it is expected that regular participation in NA sessions and reliance on others be difficult for individuals with high levels of neuroticism.

In our study, NA members attained more scores of extroversion scale and there was a significant difference between the two groups in this aspect. Other studies have shown that socializability and social support are associated with addiction remission (Woff 1996, Turiano et al. 2012). It might be supposed that participating in group sessions with a warm and supportive atmosphere will improve the extroversion of addicts, but another hypothesis about this difference could be that probably people with a higher extroversion may remain in the NA groups for a longer time and gain more benefit from them. Furthermore, some studies have suggested that self-help groups could not address the underlying psychopathology and these interventions might be more useful for patients who have no social support (Woff 1996). More specifically, some studies have shown that social anxiety negatively affects the client's willingness to talk in groups, attend self-help meetings and ask for a sponsor (Book et al. 2009). Kelly showed that individuals were significantly less likely to dropout from the 12-step self-help groups at the 1-year follow up if they were more socially involved (Kelly& Moos 2003). These findings suggest that extroversion might be prerequisite of successful self-help interventions and not the effect of them.

The mean score of openness in the NA group was higher than the MMT group, but this difference was not significant. Some studies have indicated that addicts have much more openness compared with the general population. Some authors have suggested that higher openness predicted increased substance abuse (Turiano et al. 2012). Oppenness is related to accepting new experiences and seeking variety, and some studies have shown the relation between addiction and seeking variety.

We found a significant difference between the two groups regarding agreeableness and we also found that NA members showed a higher score in this scale. Agreeableness has a close relationship with positive social relationships and it might be a factor contributing to persistence in attending NA meetings. Some studies showed that higher agreeableness could predict lower addiction relapse (Turiano et al. 2012). In other words, people who have higher agreeableness attend NA sessions and other self-help groups more and this finding is unlikely to be due to the attendance in these sessions. Most of the studies which emphasized the effectiveness of self-help groups suffer from the non-randomized allocation of the patients (Humphreys 1999). Some studies have shown that self-efficacy is a predictive factor for retention in self-help programs (Laudet et al. 2003, Deane 2012) and self-efficacy has a negative relationship with neuroticism. Interestingly, in some studies, attending self-help sessions did not affect self-efficacy (Kelly 2000). Some studies that have addressed the predictive factors contributing to the effectiveness of NA groups, have shown that those who stay focused on recovery, stay motivated and seek help and support gain more from these groups and their relapse rate is lower (Krentzman et al. 2010). However, these studies do not indicate

why some addicts lose their motivations and do not seek help from others. Some other studies have shown that NA members have more internal locus of control compared with addicted people (Bashardoost tajallia 2010).

Our study showed that the level of education and socioeconomic status of the NA group were lower than the MMT group. Patients with lower education and socioeconomic status are attracted to NA groups more easily because they are not afraid of disclosing and engendering their position. However, to conclude this statement by sure, cohort studies are recommended. Although some studies have suggested a weak relationship between NA use and high socioeconomic status (Christo & Franey 1995), to the best of our knowledge, no study has compared this variable among NA and MMT groups.

The most important shortcoming of this study is the cause and effect. Based on our design, it cannot be proved that the differences are causes of successful treatment or its effects. Perhaps cohort studies could solve this dilemma. In other words, one can argue that higher agreeableness score and lower neuroticism in NA members are due to positive effects of NA meetings.

Conclusion

This study has suggested that people who regularly attended NA sessions had lower neuroticism and higher agreeableness than patients who were under the maintenance modality. Whether this is cause or effect of attending NA sessions requires large-scale cohort studies. Presently, one can say that there are distinct psychological differences between patients who respond to NA method and patients who respond to maintenance therapy.

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References

1. Bashardoost tajallia F, Kheiri L. Locus of control in substance relateb and N.A. Procedia Social and Behavioral Sciences 2010; 5: 1414–1417.
2. Best DW, Harris JC, Gossop M, Manning VC, Man L H, Marshall, et al. Are the Twelve Steps more acceptable to drug users than to drinkers? A comparison of experiences of and attitudes to Alcoholics Anonymous (AA) and Narcotics Anonymous (NA) among 200 substance misusers attending inpatient detoxification. Eur Addict Res 2001; 7: 69-77.
3. Blöink R, Brieger P, Akiskal HS, Marneros A. Factorial structure and internal consistency of the German TEMPS-A scale: validation against the NEO-FFI questionnaire. Journal of Affective Disorders 2005; 85: 77-83.
4. Book SW, Thomas SE, Dempsey JP, Randall PK, Randall CL. Social anxiety impacts willingness to participate in addiction treatment. Addict Behav 2009; 34: 474-476.
5. Briggs SR. Assessing the five-factor model of personality description. J Pers 1992; 60: 253-293.
6. Christo G , Franey C. Drug users' spiritual beliefs, locus of control and the disease concept in relation to Narcotics Anonymous attendance and six-month outcomes. Drug Alcohol Depend 1995; 38: 51-56.
7. Deane FP, Wootton DJ, Hsu CI , Kelly PJ. Predicting dropout in the first 3 months of 12-step residential drug and alcohol treatment in an Australian sample. J Stud Alcohol Drugs 2012; 73: 216-225.
8. Garousi MT, Mhryar AH, Tabatabai M. Application of a new personality test (NEO) and study its analytic properties and factor structure among Iranian university students. Journal of Human Sciences Zahra.2000; 39: 173-198.
9. Gowing L, Farrell MF, Bornemann R, Sullivan LE , Ali R. Oral substitution treatment of injecting opioid users for prevention of HIV infection. Cochrane Database Syst Rev 2011: CD004145.
10. Holden RR, Fekken GC. The NEO five-factor inventory in a Canadian context: Psychometric properties for a sample of university women. Personality and Individual Differences 1994; 17: 441-444.
11. Humphreys K, Mankowski ES, Moos RH , Finney JW. Do enhanced friendship networks and active coping mediate the effect of self-help groups on substance abuse? Ann Behav Med 1999; 21: 54-60.
12. Kelly JF, Myers MG , Brown SA. A multivariate process model of adolescent 12-step attendance and substance use outcome following inpatient treatment. Psychol Addict Behav 2000; 14: 376-389.
13. Kelly JF, Moos R. Dropout from 12-step self-help groups: prevalence, predictors, and counteracting treatment influences. J Subst Abuse Treat 2003; 24: 241-250.
14. Kelly SM, O'Grady KE, Mitchell SG, Brown BS , Schwartz RP. Predictors of methadone treatment retention from a multi-site study: a survival analysis. Drug Alcohol Depend 2011; 117: 170-175.
15. Kerr T, Marsh D, Li K, Montaner J , Wood E. Factors associated with methadone maintenance therapy use among a cohort of polysubstance using injection drug users in Vancouver. Drug Alcohol Depend 2005; 80: 329-335.
16. Koushesh HR, Afshari R , Afshari R. A new illicit opioid dependence outbreak, evidence for a combination of opioids and steroids. Drug Chem Toxicol 2009; 32: 114-119.

17. Krentzman AR, Robinson EA, Moore BC, Kelly JF, Laudet AB, White WL, et al. How Alcoholics Anonymous (AA) and Narcotics Anonymous (NA) Work: Cross-Disciplinary Perspectives. Alcohol Treat Q 2010; 29: 75-84.
18. Laudet AB, Magura S, Cleland CM, Vogel HS , Knight EL. Predictors of retention in dual-focus self-help groups. Community Ment Health J 2003; 39: 281-297.
19. Malekinejad M , Vazirian M. Transition to injection amongst opioid users in Iran: implications for harm reduction. Int J Drug Policy 2012; 23: 333-337.
20. Nichols H. Narcotics Anonymous. Journal of Substance Abuse Treatment 1988; 5: 195-196.
21. McCrae RR, John OP. An introduction to the five-factor model and its applications. J Pers 1992; 60: 175-215.
22. Turiano NA, Whiteman SD, Hampson SE, Roberts BW, Mroczek DK. Personality and Substance Use in Midlife: Conscientiousness as a Moderator and the Effects of Trait Change. J Res Pers 2012; 46: 295-305.
23. Weijers HG, Wiesbeck GA, Wodarz N, Keller H, Michel T , Boning J. Gender and personality in alcoholism. Arch Womens Ment Health 2003; 6: 245-252.
24. Woff I, Toumbourou J, Herlihy E, Hamilton M , Wales S. Service providers' perceptions of substance use self-help groups. Subst Use Misuse 1996; 31: 1241-1258.