Structural Modeling of Family Function and Drug Craving in Addicted People under Methadone Maintenance Treatment with an Emphasis on the Mediating Role of Self-Compassion

Tosifian, N. ; Ghaderi Begeh-Jan, K. ; Khaledian, M. ; Farrokhi, NA.

Tosifian, N.
M.A. in Clinical Psychology, Department of Clinical Psychology, Allameh Tabataba'i University, Tehran, Iran
Ghaderi Begeh-Jan, K.
Ph.D. Student of Psychology, Department of Clinical Psychology, Allameh Tabataba'i University, Tehran, Iran
Khaledian, M.
Instructor, Department of Psychology, Payame Noor University, Tehran, Iran, Email: mohamad_khaledian22@yahoo.com
Farrokhi, NA.
Associate Professor, Department of Educational Psychology, Allameh Tabataba'i University, Tehran, Iran

Research on Addiction Quarterly Journal of Drug Abuse
Presidency of the I. R. of Iran
Drug Control Headquarters
Department for Research and Education

Vol. 11, No. 44, Winter 2018
http://www.etiadpajohi.ir

Abstract

Objective: The present study aimed at the structural modeling of family function and drug craving in addicted people under methadone maintenance treatment with the emphasis on the mediator role of self-compassion. **Method:** This research is a correlational study in which path analysis method has been used to examine structural connections between the variables. The statistical population of this research consisted of the addicts who were under methadone maintenance treatment in Ahvaz outpatient treatment centers under the supervision of welfare organization (Behzisti) in 2017. Among them, 150 individuals have been selected based on acceptance criteria and cluster sampling method. These participants were selected in line with the inclusion criteria and responded to Family Assessment Device, Self-Compassion Scale, and Drug Craving Questionnaire. Finally, the data were analyzed using SPSS and AMOS software programs. **Results:** The results demonstrated the adequate precision of the model in which family function directly predicted drug craving ($\beta = 0.329, P < 0.05$). In addition, family function (unhealthy) also indirectly and more precisely predicted drug craving via the mediating role of self-compassion ($\beta = 0.237, P < 0.05$). **Conclusion**: According to the findings of this research, family function and self-compassion are contributing factors to drug craving. Thus, it is essential to pay heed to the role of family function and its correlates during the process of methadone maintenance treatment.

Keywords: family function, self-compassion, drug craving, addiction, methadone maintenance treatment

Introduction

Addiction is one of the most common psychiatric disorders and threatens human societies considerably. Drug dependence is a physical-psychological illness that endangers the health of the individual, family and society, due to its progressive nature in all aspects of life, (Le Moal, & Koob , 2007). According to the latest statistics in Iran, the number of addicts in 2011 was 1 million 325 thousand, and it can be said that directly or indirectly, at least 10 million Iranians are involved in addiction and its consequences, indicating the importance of the issue. (Sarrami, Ghorbani and Minooi, 2013).

Methadone maintenance treatment is internationally recognized as an and effective and safe intervention for drug users (Erdelyan, & Young, 2011). It is believed that in this method, methadone also eliminates the problems related to quitting and also has a positive impact on various aspects of the individual and social aspects of people (Mostashari, 2011). One of the main challenges in methadone maintenance treatment encountered by behavioral scientists is the relapse of drugs after quitting in which there is a strong tendency to re-experience the effects of the substance (Ahmad Panah, Mirzaei, Allah Verdi Pour and Jalilian, 2013). Some experts have reported that nearly 90 percent of the recovered drug users experience relapse during the one year after their quitting (Naderi; Binazadeh and Sefatian, 2008). According to the research results in Iran, the rate of relapse of drug use in patients undergoing methadone maintenance treatment is 48.2% (Afsar, Bashirian, Poural-al-ajal Hazawehi, Vatannavaz and Zinat Motlagh, 2013). Another study showed that 53% of drug addicts experienced relapse less than 3 months, and only 12% of them showed the ability to continue drug use abstinence during one year (Mirzaei, Ravari, Hanifi, Miri, Hagh Doost Skuyi and Mirzaie Khalil Abadi, 2010).

Researches on the relapse process, which is the return of an individual to the pre-treatment level, presents a high risk factor and one of these factors is drug craving (Witkiewitz, & Bowen, 2010, Caselli, Gemelli, Querci, & Lugli, 2013). Among the risk factors of relapse, which are mostly one-dimensional, drug craving is a multidimensional factor (emotional, cognitive, behavioral, and psychophysiological), and is the main element of drug use and has a complex relationship with the continuity of dependence and relapse (Heinz, Epstein, Schroeder, & Singleton, 2006), and as a mental experience of a temptation or severe craving, predicts drug use relapse strongly for all abusive drugs (Witkiewitz, & Bowen, 2010) . Hormes, & Rozin (2010) define craving as: a very strong feeling and an immediate desire for one thing, so that it is impossible to focus on anything other than the subject matter.

Regarding the evaluation of the effective factors on drug craving, social factors play a very important role in the onsent, prevalence and continuation of addiction (Hashemi, Fotohibanab, Karimi and Beiraami, 2010). One of these factors is family-related characteristics (Piko, & Kovacs, 2010, Atadakht, Hajilu,

Karimi & Narimani, 2015). Ineffective family characteristics can predict the severity of opioid use disorders in addicts (Besharat, Ranjbar Noshari and Rostami, 2008). Family functioning is a method in which members are socially and emotionally connected by maintaining kinship relationships, and is also a way for individuals to decide on their own problems (Botey, & Kulig, 2014).

McMaster model of family functioninging evaluates six dimensions of family life: problem solving (indicating the ability to solve problems at a level that maintains the family functioning), communication (refers to how to exchange information among members of the family)), roles (the effectiveness of family style in distribution and fulfillment of duties), emotional response (refers to the ability of family members to respond to emotional responses to different stimuli), emotional mix (Refers to the degree of interest, attention and investment of family members against each other) and behavioral control (describes standards and behavioral desires) (Miller, Ryan, Kietner, Bishop & Epstein, 2000). According to the research findings, the quality of life associated with the health of individuals undergoing methadone maintenance treatment is low and greatly related to the received social support and perceived support of individuals (Zhou, Li, Wei, & Yin , 2017). In another study, the simultaneous use of heroin in people with methadone maintenance treatment was associated with heterogeneous family relationships (Luo, Zhao, Gong, & Zhang, 2016). In a study by Ashrafi Hafez, Tektam and Shayan (2014), on addicts treated with methadone maintenance, they found that relapse rates were lower in individuals with more family support. Levi and Althos investigated familial relationships as predictors of relapse of post-treatment drug use.

Their research showed that men who remained clean throughout the entire period had closer and more intimate relationships with their families (quoted by Hosseini Badanjani, Beirami and Hashemi, 2012). According to other research results, perceived family support was associated with physical, psychological, environmental and social health of methadone maintenance subjects. In addition, familial support could predict their simultaneous use during treatment (Lin, Wu, & Detels, 2011).

In addition to family functioning, personality factors can also predict the outcomes of treatment of drug dependent individuals. Self-affection is one of the personality traits that can be related to addictive behaviors and act as a personality protector against craving. Neff (2003) defined the structure of this construct and studied it empirically. In his opinion, self-compassion consists of three bipolar components: self-kindness / self-judgment (involves warmth and affect with self instead of strict judgments about oneself), the sense of common humanity / isolation (accepting Life problems as part of common human experience that these problems are not just for specific people), mindfulness / over identification (including awareness of painful thoughts and feelings in relation to their full absorption) . According to the research results, self-compassion components play important role in predicting the motivation for

treatment , preparation for the change and decrease the craving of drug among addicts (Basharpour, Khosravian, Atadokht, Daneshvar and Narimani, 2014), also self-compassion is negatively associated with substance abuse disorders (Phelps, Paniagua, Willcockson , &.Potter, 2018). Research has shown that family functioning can also be significantly related to self-compassion. According to the results of his research, self-compassion can fully play a mediating role in the relationship between parental criticism and social anxiety and is predicted (Potter, Yar, Francis, & Schuster, 2014), through family functioning (Neff, & McGehee, 2010), and is also related to family communication patterns (Sadeghi and Khosravi, 2016).

As it was said, today, one of the greatest challenges of methadone maintenance treatment is sustained treatment and avoiding drug relapse (Fareed et al., 2011). There are a few studies on the role of family factors, including family functioning, in the methadone maintenance treatment. According to the research findings, family factors can lead to exacerbation or weakening of drug craving. In addition, self-compassion as one of the consequences of a healthy and unhealthy family functioning can be among the factors protecting personality against drugs craving. In other words, it seems that it can act as a mediating variable between family functioning and craving for substance use. Therefore, in the present research, the question arises as to whether self-compassion can have a mediating role in the relationship between the craving of individuals under methadone maintenance treatment and their family functioning?

Method

Population, sample and sampling method

This research is a correlational study in which path analysis method has been used to examine structural connections between the variables. The statistical population of this research consisted of the addicts who were under methadone maintenance treatment in Ahvaz outpatient treatment centers under the supervision of wellbeing organization (Behzisti) in 2017.

The inclusion were: minimum education, single, aged 20 to 40, and at least 2 months of methadone maintenance treatment to achieve a stable dose. For sampling, at first five centers were randomly selected and then from each center, 30 individuals who met the study criteria were selected using purposeful method and finally, 150 individuals were considered as sample. They method of completing questionnaires was as at first, general explanation regarding the nature and purpose of study were presented and it was ensured that, given the unknown nature of the questionnaires, their information and responses were completely confidential, and thus all people entered the study with informed consent.

Instrument

1-Family Assessment Device: This is a 60-question questionnaire developed by Epstein, Baldwin, & Bishop in 1983 based on McMaster's Pattern. This questionnaire was developed to measure the dimensions of McMaster's model of family functioning, namely six dimensions (problem solving, communication, roles, affective responsiveness, affective involvement and behavioral control) and also an overall family functioning is presented. The scale consists of seven subscales. It is rated on a four-point Likert scale, as the higher scores indicate that the function is unhealthy (Sanayi, 2006). According to Sanayi (2006), the reliability of this scale has been studied in various Iranian studies, so that its internal consistency for each of the subscales is between 0.48 and 0.90, and its concurrent validity is 0.86. In the study of Zademohammadi and Malek Khosravi (2006), the Cronbach Alpha coefficient for each subscale is higher than 0.66. In the factor analysis, the structural dimensions of this scale have been confirmed. Cronbach's alpha coefficient was 0.85 in the present study.

2-Self-Compassion Scale: This questionnaire is a 26-item tool designed to measure self-compassion (Neff, 2003). The questions are divided into six categories of self-kindness, self-judgment, a sense of common humanity, isolation, mindfulness and over identification that determine the quality of an individual's relationship with his or her experiences. The rating is performed on a 5-point Likert scale from 0 to 4. The research done by Neff (2003) reported high validity and reliability for the mentioned scale. The overall reliability was obtained through Cronbach's alpha of 0.92. Also, the sub-scales alpha is between 0.75 and 0.81. In addition, the test re-test reliability is reported to be 0.93 per two weeks. Also, in Iran, the Cronbach's Alpha coefficient of self-compassion is reported 0.81, 0.79, 0.84, 0.85, 0.80, 0.83, respectively and the total scale reliability is 0.76. (Momeni, Shahidi, Motabi and Heidari, 2013). Cronbach's alpha coefficient in the present study was 0.80.

3-Drug Craving Questionnaire: This questionnaire was developed by Salehi Fadardi, Barerfan and Amin Yazdi (2010). This self-report questionnaire is regarding the thoughts and desire of drugs and temptation after quitting and contains 20 items. The minimum score is 20 and maximum score is 100, as the higher score indicates intense drug craving temptation. The Cronbach's alpha coefficient was reported 0.94 by the developers of this instrument. The correlation of the instrument was achieved with the questionnaires of situational confidence r = 0.53, psychological desire was r = 0.48, positive affect = r = 0.32 and negative affect = r = 0.55, which confirms validity. Cronbach's alpha coefficient was 0.91 in the present study.

Findings

Descriptive statistics of demographic variables are presented in Table 1.

Table 1: Descriptive Statistics of Demographic Variables

Variables	*Range*	*F*	*%*	*Central tendency statistics*
Age	20-25 years	24	% 16	Mean =31.17 SD=15.57
	26-30 years	55	% 36	
	31-35 years	42	% 28	
	36-40 years	29	% 20	
Durations of maintenance treatment	2-5 months	67	% 45	Mean=5.31 SD=4.30
	5-10 months	44	% 29	
	10-15 months	26	% 17	
	15-20 months and above	13	% 9	
Education	Guidance school	62	% 41	
	High school and diploma	53	% 35	
	Associate and BA	27	% 18	
	MA and above	8	% 6	

The descriptive statistics of the variables studied are presented in Table 2.

Table 2: Descriptive Statistics of the Studied Variables

Variables	*Dimensions*	*Min*	*Max*	*Mean*	*SD*
Family functioning	Problem-solving	8	21	16/9	2/4
	Affective responsiveness	7	24	18/09	4/8
	Affective involvement	7	26	19/94	¾
	Communication	9	33	25/86	5/2
	Behavioral control	10	36	26/41	8/5
	Roles	13	43	32/43	4/6
	Total functioning	14	48	37/05	5/36
	Family functioning (total)	60	240	198/47	58/13
Self-compassion	Self-kindness	1	20	11/24	4/31
	Self-judgment	3	20	10/87	5/39
	Common humanity	1	16	8/29	4/31
	Isolation	4	16	9/01	3/79
	Mindfulness	3	15	10/16	8/12
	Over identification	2	15	9/75	4/41
	Self-compassion (total)	7	101	47/55	19/31
Drug craving	Drug craving	25	95	74/41	34/21

Correlation matrix of studied variables is shown in Table 3.

Table 3: Correlation Matrix of the Studied Variables

Variables	*Self-kindness*	*Self-judgment*	*Common humanity*	*Isolation*	*Mindfulness*	*Over identification*	*Self-compassion (total)(*	*Drug craving*
Problem solving	**-0/31	**-0/21	**-0/34	0/09	*-0/13	**-0/33	**-0/33	**-0/42
Affective responsiveness	*-0/11	**-0/31	**-0/24	**-0/31	**0/24	**-0/28	**-0/50	**0/45
Affective involvement	**-0/30	*-0/12	**-0/34	**-0/23	**-0/56	**-0/73	**-0/39	**-0/54
Communication	**-0/20	**-0/29	**-0/31	**-0/42	**-0/22	**-0/19	**-0/45	**0/47
Behavioral control	**-0/35	**0/24	**-0/25	**-0/33	**-0/43	**-0/29	***-0/47	**0/52
Roles	**-0/35	**-0/40	**-0/47	**-0/40	**-0/28	**-0/41	**-0/40	**0/42
Total functioning	**-0/50	**-0/44	**-0/42	**-0/40	**-0/53	**-0/48	**-0/43	**0/48
Family functioning (total)	**-0/24	**-0/43	**-0/32	**-0/32	**-0/47	**-0/36	**-0/37	**0/52
Drug craving	**-0/32	**-0/27	**-0/51	**-0/33	**-0/40	**-0/34	**-0/42	1

*P <0.05, ** P <0.01

Structural equations were used to examine the structural modeling and the effect of independent variable dimensions on the dependent variable and the mediating role of the intermediate variable. In this regard, two primary models were extracted and evaluated. In the first model, the effect of seven dimensions of family functioning was investigated directly and indirectly (through the overall self-compassion variable). In the second model, the effect of the overall variable of family functioning was measured by means of each of its six dimensions of self-affection on the degree of craving. In Tables 4 and 5, the results of each model are presented.

Table 4: Direct and Indirect Effects of Family Functioning on Drug Craving

Variables	*Direct effect*	*Via self-compassion*
Problem solving	0/293	0/126
Affective responsiveness	0/181	0/139
Affective involvement	0/246	0/112
Communication	0/312	0/158
Behavioral control	0/205	0/142
Roles	0/183	0/103
Total functioning	0/319	0/071
Family functioning (total)	0/329	0/237

As shown, family functioning has a direct and positive effect on craving and has high effects. However, considering self-compassion variable as a mediating variable, these effects were reduced in all dimensions. The effects of the overall dimension of the unhealthy family functioning have been significantly reduced by considering the mediating variable.

Table 5: Direct and Indirect Effects of Family Functioning (total) on Craving Through Self-compassion Dimensions

Direct effect	*0/329*		
Indirect effect via each of minor dimensions of self-compassion			
Self-kindness	0/211	**Mindfulness**	0/158
Self-judgment	0/198	**Over identification**	0/213
Common humanity	0/206	**Self-compassion (total)**	0/237
Isolation	0/139	-	-

Table 5 also shows the direct and indirect effects of family functioning on drug craving. The direct effect of family functioning is 0.329, and indirect effects are shown through each of its dimensions of self-compassion. The indirect effect of family functioning through its total self-compassion variable is 0.237, which indicates the self-decreasing effect of self-compassion on drug craving. The above information is extracted through structural analysis whose fit is presented in Table 6. As you can see, the values indicate the model's acceptability.

Table 6: Fit Indices of Study Model

Indices	*Chi-square*	*Significance*	*GFI*	*PRATIO*	*RMSEA*	*IFI*	*CFI*
Acceptable range	-	<0/05	0/90<	0/60<	0/08>	0/90<	0/90<
Model value	1/512	0/848	0/999	0/713	0/004	0/999	0/971

Chart 1 shows the general equation of research. As it is seen, the direct effect of family functioning (unhealthy) on craving is equal to 0.329, while the effect of this variable on self-compassion is -0.438, and on the other hand its impact on craving is equal to -0.542, and by multiplication of the effects of the independent variable on the mediating variable (self-compassion) and the effect of the mediating variable on the dependent variable, the indirect effect is achieved (-0.542×-0.438=0.237). As shown, the indirect effect of family functioning through self-compassion is far lower than that of direct effects on craving.

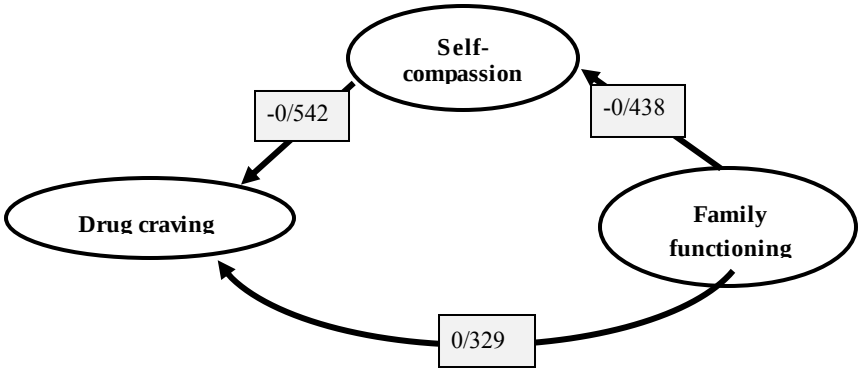

Chart 1: Structural Equation Analysis of the Research Model

Discussion and Conclusion

The purpose of this study was to investigate the mediating role of self-compassion in the relationship between family functioning and drug craving under methadone maintenance treatment. The correlation results showed that there is a relationship between family functioning, self-compassion and drug craving. Also, the results of path analysis showed that self-compassion can play a role in the relationship between family functioning and drug craving.

These findings were consistent with the results of other studies on the relationship between family functioning and drugs craving. These studies include Zhou et al. (2017), Lou et al. (2016), Levi and Altus (2012), Lin et al (2011), and Ashrafi Hafez et al. (2014). Family functioning is an important aspect of the family environment that affects one's physical, social and emotional health (Silborn, Zubrick, De Maio, Shepherad, & Greeffin, 2006). When a family member is afflicted with addiction, the normal functioning of the family may be more difficult and more difficult to maintain. The addicted person needs to get support from the family in the course of treatment so that they can take an effective step towards faster recovery and more success by accompanying them (Liu et al., 2010). In a family with abnormal function, relations between members are not explicit, members do not actively listen to each other's conversations, parents transfer their message by talking about irrelevant items, or blame, reject and compared the addict. In this family, the range of expressed emotions is very limited and in fact its members, including the addict, do not correctly understand some of their emotions. Family members show their companionship with their emotional, rather than extreme, emotional responses to methadone maintenance treatment, including expressing sympathy with negative affect such as addict’s despair and anger. Expressing the interest of family members and giving attention to the activities that the addict is doing, and also setting standards and laws in accordance to the ability of the addicted person on behalf of the family, can weaken craving. A family that can properly investigate related and unrelated affiliate issues and adequately find alternative solutions for them can be useful in reducing craving.

According to the results of this study, family functioning can be more strongly associated with the substance craving of addicts under methadone-maintenance treatment via self-compassion. These findings are in line with the results of Basharapur et al. (2014), Potter et al. (2014), Iscandar and Eckin (2011), Neff and McGee Hey (2010) and Sadeghi and Khosrawi (2016). In explaining this finding, it can be said that a family that sets strict and inflexible rules for the behaviors members, provides strict judgment of people from childhood to self and others. (Neff and McGee Hey, 2010). Therefore, the emergence and exacerbation of such negative affect and the person's perception of the inability to control individual behavior tend to exacerbate the tendency to use drugs (self-judgment in self-compassion). If the family expresses its emotional attachment by expressing its interest and dependence on the addict

and increases her kindness by creating a sense of self-worth in the addict (self-kindness toward self-compassion) reduces craving. In this family with problem-solving ability, the addict instead of immersing in problems and ruminating with disturbing thoughts finds suitable and alternative solutions with family members and consultation with qualified individuals (mindfulness dimension in self-compassion). Also, along with proper affective responsiveness of self and family with negative emotions, they recognize them well and in general will realize that the problems created can be part of the common experiences of all human beings and the important point is his ability and the ability of his family in perceiving this important principle (common humanity).

So, in short, it can be said that self-compassion in an addict is considered as a consequence of family functioning can be a protective factor against drug craving.

Like other studies, this study has limitations that require attention to be made in generalizing the results. The present study is a correlation type, and any inference of cause and effect relationships should be avoided regarding the findings. The study population of the present study was addicts under methadone maintenance treatment referring in Ahvaz city, therefore generalization of the results should be done with caution. It is suggested that a broader research population is considered in future studies. Also, due to the innovation in the subject and the fact that a few studies have been conducted on the important role of family in methadone maintenance treatment, it is suggested that in further studies, given the background of the mediating role of other psychological variables in the relationship between family functioning and drugs craving in patients undergoing methadone maintenance treatment can be investigated or these variables can enter the further studies as a moderating variable. Finally, for enriching the research background, the psychological interventions of addicts under methadone maintenance treatment, it is suggested to investigate the variables to perform experimental design.

Reference

Afsar, A., Bashirian, S., Pourajal, J., Hazawahi, S. M., Vatan Nawaz, E., & Zinat Motlagh, F. (2013). Prediction of effective factors on the relapse of drug use among patients undergoing methadone maintenance treatment at the addiction treatment center of Hamedan using the Health Belief Model. *Journal of Health Systems Research, Health Education Specialty*, 2034-2045.

Ahmadpanah, M., Mirzaei Alavijeh, M., Allahver-Dipour, H., Jalilian, F. (2013). Effectiveness of coping skills education program to reduce craving beliefs among addicts referred to addiction centers in Hamadan: a randomized controlled trial. *Iranian Journal of Public Health*, 42(10), 1139-1144.

Ashrafi Hafez, A., Kazemini, T., & Shayan, Sh. (2014). Relationship between social support and religious orientation with the rate of relapse in addicts treated with methadone maintenance. *Journal of Nursing and Midwifery Faculty*, 24(84), 35-44.

Atadokht, A., Hajiloo, N., Karimi, M., & Narimani, M. (2015). The role of family expressed emotion and perceived social support in predicting addiction relapse. *International Journal of High Risk Behavior Addiction*, 4(1), DOI: 10.5812/ijhrba.21250.

Basharat, M. A., Ranjbar Nooshari, F., & Rostami, R. (2008). Comparison of family functioning of patients with substance use disorder and family members of normalpeople. *Journal of Psychology and Educational Sciences (Tehran University)*, 20, 137-156.

Basharpoor, S., Khosravinia, D., Atadokht, A., Daneshvar, S., Narimani M, Massah, O. (2014). The role of self-compassion, cognitive self-control, and illness perception in predicting craving in people with substance dependency. *Practice in ClinicalPsychology*, 2(3), 155-164.

Botey, A. P., & Kulig, J. C. (2014). Family functioning following wildfires: recovering from the 2011 slave lake fires. *Journal of Child and Family Studies*, 23(8), 1471-83.

Caselli, G., Gemelli, A., Querci, S., Lugli, A. M., Canfora, F., Annovi, C., …, Watkins, E. R. (2013). The effect of rumination on craving across the continuum of drinking behavior. *Addiction Behavior*, 38(12), 2879-2883.

Ekhtiari, H., AlamMehrjerdi, Z., Hosni Abharian, P., Nouri, M., Farnam, R., & Makarry, A. (2010). Investigating and evaluating craving inducing words in the Persian language methamphetamine abusers. *Journal of Cognitive Science*, 12(2), 69-82.

Epstein, N. B., Baldwin, L. M., & Bishop, D. S. (1983). The McMaster family assessment device. *Journal of Marital and Family Therapy*, 9(2), 171-180.

Erdelyan, M., & Young, C. (2011). *Methadone maintenance treatment: a community planning guide*. Toronto: Centre for Addiction and Medical Health.

Fareed, A., Vayalapalli, S., Stout, S., Casarella, J., Drexler, K., Bailey, S. P. (2011). Effect of MMT on heroin craving, a literature review. *Journal of Addictive Diseases*, 30, 27-38.

Hashemi, T., Fotouhibonab, S., Karimi, H. R., & Beirami, M. (2010). The role of irrational beliefs, perceptions, self-efficacy and social support on recurrence of substance abuse disorder. *Journal of Addiction Research*, 4(13), 7-23.

Heinz, A. J., Epstein, D. H., Schroeder, J. R., Singleton, E. G., Heishman, S. J., Preston, K. L. (2006). Heroin and cocaine craving and use during treatment: measurement validation and potential relationships. *Journal of Substance Abuse Treatment*, 31(4), 355-364.

Hormes, G. M., & Rozin, P. (2010). Does craving crave nature at the joints? Absence of a synonym for craving in many languages. *Addictive Behaviors*, 35, 459-463.

Hosseini Badanjani, S. M., Beyrami, M., & Hashemi Nusrat-Abad, T. (2012). The prediction of the vulnerability of family-headed women to stress based on social support, coping strategies and source control. *Psychological Studies*, 8(1), 117-140.

Iskender, M., & Akin, A. (2011). Self-compassion and internet addiction. *The TurkishOnline Journal of Educational Technology*, 10(3), 215-221.

Le Moal, M., & Koob, G. F. (2007). Drug addiction: pathways to the disease and pathophysiological perspectives. *European Neuro psychopharmacology*, 17(6), 377-393.

Lin, C., Wu, Z., & Detels, R. (2011). Family support, quality of life and concurrent substance use among methadone maintenance therapy clients in China. *Public Health*, 125(5), 269-274.

Liu, H., Li, J., Lu, Z., Liu, W., & Zhang, Z. (2010). Does Chinese culture influence psychosocial factors for heroin use among young adolescents in China? A cross-sectional study. *BMC Public Health*, 10, 2359-2368. DOI: 10.1186/1471-2458-10-563.

Luo, X., Zhao, P., Gong, X., Zhang, L., Tang, W., Zou, X., …, & Ling, L. (2016). Concurrent heroin use and correlates among methadone maintenance treatment clients: a 12-month follow up study in Guangdong Province, China. *International Journal of Environment Research Public Health*, 13(3), 305. DOI: 10.3390/ijerph13030305.

Miller, I. W., Ryan, C. E., Kietner, G. I., Bishop, D. S.,& Epstein N, B. . (2000). The McMaster approach to families: theory, assessment, treatment and research. *Journal of Family Therapy*, 22, 168-189.

Mirza'i, T., Ravari, A., Hanifi, N., Miri, S., Haghdustoskuyi, S. F., & Mirzaie Khalilabadi, S. (2010). Factors related to addiction relapse from the viewpoint of drug addicts referred to Rafsanjan addiction center. *Iranian Journal of Nursing*, 23(67), 49-58.

Momeni, F., Shahidi, Sh., Motabi, F., & Heydari, M. (2013). Psychometric Properties of Persian Version of Self-Compassion Scale. *Contemporary Psychology*, 8(2), 27-40.

Mostashari, G. (2011). Preliminary guideline for the execution of methadone maintenance treatment. Ministry of Health and Medical Education, office for prevention and treatment of substance abuse. Available at: URL: http://www.sapto.hbi.ir.

Naderi, Sh., Binazadeh, M., & Safatian, S. (2008). *Comprehensive Addiction Manual*. Tehran: Medical Organization Publication.

Neff, K. D. (2003a). Development and validation of a scale to measure self-compassion. *Self and Identity*, 2, 223-250.

Neff, K. D. (2003b). Self-compassion: an alternative conceptualization of a healthy attitude toward oneself. *Self and Identity*, 2, 85-101.

Neff, K. D., & McGehee, P. (2010). Self-compassion and psychological resilience among adolescents and young adults. *Self and Identity*, 9, 225-240.

Phelps, C. L., Paniagua, S. M., Willcockson, I. U., & Potter, J. S. (2018). The relationship between self-compassion and the risk for substance use disorder. *Drug and Alcohol Dependence*, 183, 78-81.

Piko, B. F., & Kovacs, E. (2010). Do parents and school matter? Protective factors for adolescent substance use. *Addictive Behaviors*, 35(1), 53-56.

Potter, R. F., Yar, K., Francis, A. J. P., & Schuster, S. (2014). Self-compassion mediates the relationship between parental criticism and social anxiety. *International Journal of Psychology and Psychological Therapy*, 14(1), 33-43.

Sadeghi, M., & Khosravi, S. (2016). The predictive role of family communication models in self- compassion, mindfulness and emotion regulation styles. *Journal of Psychology and Educational Sciences*, 2(10), 21-36.

Salehi Fadardi, J., Barefaran, Z., & Amin Yazdi, S. A. (2010). The effectiveness of attention control training on reducing the bias of attention to drugs and improving the therapeutic indices of addicts treated with detoxification. *Educational Studies and Psychology*, 11(2), 29-56.

Sanayi, B. (2006). *Family and Marriage Measurement Scales*. Tehran. Besat Publishing.

Sarrami, H., Ghorbani, M., & Minooei, M. (2013). Four decades of research on addiction prevalence in Iran. *Journal of Research on Addiction*, 7(26), 29-52.

Silborn, S., Zubrick, S., De Maio, J., Shepherad, C., Greeffin, J. (2006). The western Australian Aboriginal child health survey: strengthening the capacity of Aboriginal children, families and communities. Perthicurtin University of technology and telethon institute for child health research students. *College Student Journal*, 33(2), 312-318.

United Nations Office on Drugs and Crime, World Drug Report. (2014). *United Nations Publication*, Sales No. E. 14. XI. 7.

Witkiewitz, K., & Bowen, S. (2010). Depression, craving, and substance use following a randomized trial of mindfulness-based relapse prevention. *Journal of Consultant Clinical Psychology*, 78(3), 362-374. DOI: 10.1037/a0019172.

Zadeh Mohammadi, A., & Malek Khosravi, Gh. (2006). Preliminary Study of Psychometric Properties and Validation of the Family Functioning Measurement Scale, *Journal of Family-Research*, 2(5), 69-89.

Zhou, K., Li, H, Wei, X., Yin, J., Liang, P., Zhang, H., …, Zhuang, G. (2017). Relationships between received and perceived social support and health-related quality of life among patients receiving methadone maintenance treatment in Mainland China. *Substance Abuse Treatment, Prevention, and Policy*, DOI: 10.1186/s13011-017-0116-3.