

The Role of Mindfulness and Temperament-Character Dimensions in Prediction of Craving Beliefs and Addiction Relapse

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ABSTRACT: Objective: The purpose of this study is to determine the role of mindfulness and temperament-character dimensions in anticipation of craving beliefs and relapse to addiction. Method: This research is descriptive and correlational. The statistical population are all addicts referred to the rehabilitation centers in the city of Rasht, in Northern Iran, during the second half of 2014. The research sample consists of 60 drug addicts admitted in the rehabilitation centers of Rasht city who are selected by convenience. To collect the data, the questionnaire of return to drug use, craving beliefs, temperament and character and scale of mindfulness is used. The data is analyzed using the method of Pearson correlation coefficient and multiple regression analysis. Findings: The results indicated that mindfulness and temperament-character dimensions have a significant relationship with relapse and craving beliefs. Furthermore, multiple regression analysis revealed that 51 percent of the variance of each variable of craving beliefs and relapse to addiction are explained by mindfulness and temperament-character dimensions. Conclusion: As a result, it can be stated that mindfulness and temperament-character dimensions are among the effective variables in the return to addiction and having craving beliefs.

Introduction

Drug abuse, as a psychiatric disorder with biological, psychological and social dimensions, is one of the consequential plights in Iran. Several factors affect the tendency to drug abuse. These factors in interacting with each other lead to drug abuse and subsequently drug dependence since they are intricately effective in the creation of addiction. Addiction is an individual disorder that involves body, mind, feelings, emotions, values, and personal, family, social and spiritual relationships (Rostami, 2009). In terms of education, when a substance creates dependence and brings about such changes in the person after being consumed that cannot be socially acceptable and sustainable and causes society to become sensitive or react to it, that substance is known as illegal and whoever consumes such material is considered a drug addict (Pourafkari, 2009). Based on rapid assessment of drug abuse in Iran, it has been specified that in recent years the average annual growth of drug abuse in the country has been 8 percent (Aqaei, 2012). In fact, addiction predicament imposes constantly enormous costs on the shoulders of families and society.

Despite developments conducted in addiction treatment, relapse to heavy and uncontrollable periods of consumption still remains a common issue (Witkiewitz & Marlatt, 2004). Understanding the phenomenon of relapse and preventing it is the biggest challenge facing the experts in the field of treatment (Grant et al., 2006). Moreover, studies show that the rate of relapse to addiction varies from 63 to 81 percent (Narimani & Sadeqieh, 2004). In the treatment of addicts, after withdrawal and reaching the state of abstinence, an intense craving to re-experience the effects of drugs is seen. This condition might be seen a few hours after the start of treatment and days or months after the end of treatment. World Health Organization views craving as the foundation of the beginning of drug dependence, loss of control and relapse (Drummond, 2000). Clinical experiences and various studies have shown that craving could be affected by numerous factors. One of these factors is people's personality traits such as temperament and character dimensions. Temperament is the genetic basis of emotions and learnings obtained through emotional and automatic behaviors and is regarded as observable habits early in a person's life and remains steady almost all life. Cloninger in his neurobiological model suggests that temperament systems in the brain contain a functional organization and consist of different systems and are independent of each other for continuity activation

and behavioral inhibition in response to certain groups of stimuli. He describes four dimensions of temperament as novelty seeking, harm avoidance, reward dependence and persistence (Cloninger, Przybeck, Svrakic & Wetzel, 1994). Character also involves logical perceptions about self, others and the world and consists more of features created in an individual's personality traits under the effect of environmental factors. And three dimensions of character are self-directedness, self-transcendence and cooperativeness (Cloninger, et al., 1994). In previous studies, personality is described as a complex adaptive system formed in the interaction with different fields of temperament and character (Cloninger & Svrakic, 2005).

The results of these researches are indicative of the relationship of temperament and character dimensions with substance abuse and relapse (Asghari, et al., 2011; Arnaud et al., 2008). Asghari et al. (2011) demonstrated that patients who had relapse attained higher scores in the temperament dimensions of novelty seeking and harm avoidance and lower scores in the character dimensions of self-directedness and cooperativeness compared with the non-relapse group. In the dimensions of persistence and reward dependence, no significant difference was observed between the two groups. Karami et al (2013) also revealed that between the dimensions of novelty seeking, harm avoidance, persistence, cooperativeness, self-directedness and self-transcendence in opioid and stimulant consumers, there is no significant difference and, in all of the above said scales, the average score of opioid drugs is higher than stimulant drugs. Furthermore, the results of another study indicated that there is a significant difference between the temperament dimensions of novelty seeking, harm avoidance, the character dimensions of self-directedness and cooperativeness of Cloninger's personality system and the dimensions of neuroticism and psychoticism of Eysenck's personality system in the drug addicts and normal people (Abbate-Daqa et al., 2007).

Based on the results of studies in the treatment and prevention of relapse of drug addiction, positive and negative emotional states, desire and craving are among the most substantial main risk factors for relapse (Witkiewitz et al., 2004). Mindfulness has attracted much attention in the scientific community and is defined as the moment-to-moment awareness of the experience gained from targeted attention, along with the acceptance of the existing experiences without judgment (Kabat, 2003; quot. Dabbaghi et al., 2008). Mindfulness due to concepts such as acceptance, increasing awareness, desensitization, being in the moment, observation without judgment, confrontation and release can enhance the effectiveness of treatment and prevention of patient slip, in addition to reducing the symptoms and consequences of exclusion (Witkiewitz et al., 2005). In a research, Dabbaghi et al., (2008) showed that mindfulness had a significant effect in the prevention of relapse and had caused decrease in relapse and recurrence to consumption. Furthermore, Terry Mac et al (2012) revealed in their research that there is a significant relationship between the beliefs associated with substances (mindfulness) and craving beliefs such that individuals who have more craving beliefs and beliefs related with drugs experience more craving after withdrawal and in the period of abstinence. This study was carried out in order to answer this fundamental question: Do mindfulness and temperament-character dimensions play a role in the prediction of craving beliefs and relapse to addiction?

Method

Population, Sample and Sampling Method

This research is descriptive and correlational. The statistical population of this study are all the addicts referred to rehabilitation centers of Rasht city in the first half of 2014. The number of these people was, according to the statistics by Social Welfare Department of Rasht, 12780 people (addicts referred to rehabilitation centers in Rasht). The research sample consisted of 120 addicts admitted in rehab centers of Tolue-Dobareh, Fajr, Saba and Afaq selected by convenience. This means that after obtaining the necessary permits and coordination, rehabilitation centers in Rasht city (addiction centers of Tolue-Dobareh, Fajr, Saba and Afaq) were visited and, having selected the statistical sample, the research objectives were explained to them. Afterwards, the research questionnaires (mindfulness, temperament and character dimensions, craving beliefs and relapse) were provided for them to fill out. In the end, the questionnaires were gathered after completion and the data was analyzed with SPSS Software and using methods of Pearson correlation coefficient and multiple regression analysis.

Tools

Temperament and Character Inventory

The Temperament and Character Inventory has been constructed by Cloninger et al (1994) to measure the biogenetic temperament and the acquired character. This questionnaire contains 125 questions and each subject responds to these questions as true and false. In this questionnaire, temperament has 4 components (novelty seeking, harm avoidance, reward dependence and persistence) and character has three dimensions (self-directedness, cooperativeness and self-transcendence). In a research, Alonso et al (2006; quot. Malayeri et al., 2008) argued that the Cronbach's alpha coefficient of the inventory was above 0.68. According to Malayeri et al. (2008), the retest reliability coefficient of this inventory was achieved in seven scales from 0.61 to 0.96. Between the four scales of temperament together and the three scales of character, no significant correlation was obtained. This means that the scales are independent of each other. The correlation coefficient of the short form of this questionnaire with the long form was obtained as 0.62.

Brown and Ryan Mindfulness Scale (2003)

This scale was designed to assess the level of consciousness and attention to the current events and experiences of life. This scale is a 15-question test that evaluates the mindfulness structure at the 6-point Likert Scale (from score 1 for “almost always” to score 6 for “almost never”). The said scale offers an overall score for mindfulness whose range varies from 15 to 90, the higher score represents more mindfulness. The internal consistency of the test questions has been reported, based on Cronbach’s alpha coefficient, from 0.80 to 0.87 (Ryan & Brown, 2003). The scale validity is outlined as sufficient due to its negative correlation with depression and anxiety assessment tools and its positive correlation with positive emotion and self-esteem assessment tools. The retest reliability coefficient of this scale has been reported as constant in a one month period (Ryan & Brown, 2003). The Cronbach’s alpha for Farsi version questions of this scale on a sample of 732 students was calculated 0.81 (Qorbani et al., 2009).

Craving Beliefs Questionnaire

This questionnaire is a self-report scale that measures beliefs on craving for drug consumption (Beck, 1993) and comprises 20 items each of which is scored on a scale from 1 to 7 degrees. The reliability of this test on the basis of Cronbach’s alpha coefficient is delineated as 0.84 (Beck, 1993). Mirjafari (2005, quot. Mohammadkhani et al., 2011) has disclosed the internal consistency coefficient of this test based on Cronbach’s alpha coefficient as 0.84. Moreover, this coefficient is obtained as equivalent to 0.77 in the research conducted by Mohammadkhani et al (2011).

Relapse Inventory

This scale is a 45-question tool provided by Wright et al which can be used to measure the craving rate and the possibility of drug abuse in the individuals dependent on drugs (Wright et al, quot. Narimani et al., 2004). The range of the questionnaire scores varies between zero and 180. Firoozabadi (2008), using Cronbach’s alpha, has announced internal consistency as 0.74 for the craving rate and 0.78 for the possibility of substance abuse. Furthermore, in their study, Asghari et al (2011) have reported the Cronbach’s alpha of this test as 0.87.

Findings

The research findings indicate that 40 percent of respondents are below high school diploma, 35 percent have high school diploma, 13.3 percent associate degree, and 11.7 percent are university graduates. Furthermore, 32.5 percent of respondents are single, 35.3 percent are married and 14.7 percent are divorced.

Table 1: Mean and standard deviation of studied variables

Variable	Mean	Standard deviation
Age	40.0200	8.05717
Time of drug abuse	13.1800	6.85920
Frequency of addiction treatment history	2.6600	3.54338

According to the results of Table (1), the mean age of the addicts is 40.02, time of drug abuse is 13.18 and the frequency of addiction treatment history is 2.66.

Table 2: Mean and standard deviation of craving beliefs, mindfulness and relapse to addiction

Variable	Mean	Standard deviation
Craving beliefs	78.2600	33.1600
Mindfulness	18.33900	15.90451
Relapse to addiction	Possibility of consumption	77.5600
	Power of desires	84.8600
	Total	162.4200

According to Table (2), the mean of craving beliefs is 78.26 and mindfulness 33.16, the possibility of consumption 77.56, power of desires 84.86 and relapse 162.42.

Table 3: mean and standard deviation of temperament and character dimensions

Variables	Statistic	Mean	Standard deviation
Temperament dimensions	Novelty seeking	9.6200	2.48169
	Harm avoidance	10.8600	2.59521
	Reward dependence	8.9600	2.21276
	Persistence	2.7200	1.66648
Character dimensions	Cooperativeness	13.8000	2.77010

Self-directedness	11.6200	2.93390
Self-transcendence	8.3200	2.28964

According to Table (3), the mean of novelty seeking is 9.62, harm avoidance 10.86, reward dependence 8.96 and persistence 2.72 and the mean of cooperativeness 13.80, self-directedness 11.62 and self-transcendence 8.32.

Table 4: Pearson Correlation coefficient between mindfulness and craving beliefs and relapse

Variable	Statistic	Craving beliefs
Mindfulness	Correlation coefficient	-0.55**
	Significance level	0.001
Possibility of consumption	Correlation coefficient	-0.41**
	Significance level	0.002
Power of desires	Correlation coefficient	-0.55**
	Significance level	0.000
Relapse to addiction	Correlation coefficient	-0.55**
	Significance level	0.000

** Significance of test for 0.01 level of error

According to Table (4), mindfulness and craving beliefs have a significant negative relationship with the possibility of consumption, power of desires and relapse to addiction (p<0.01).

Table 5: Matrix of correlation coefficient between temperament dimensions with craving beliefs and relapse

Temperament dimensions	Statistic	Craving beliefs	Relapse Possibility of consumption	Power of desires	Total
Novelty seeking	Correlation coefficient	-0.39**	-0.26	-0.39**	-0.39**
	Significance level	0.004	0.06	0.005	0.004
Harm avoidance	Correlation coefficient	-0.16	-0.31*	-0.17	-0.16
	Significance level	0.25	0.02	0.23	0.25
Reward dependence	Correlation coefficient	-0.38**	-0.25	-0.37**	-0.38**
	Significance level	0.006	0.07	0.007	0.006
persistence	Correlation coefficient	-0.53**	-0.41**	-0.51**	-0.54**
	Significance level	0.004	0.002	0.001	0.001

* Significance of test for 0.05 level of error

** Significance of test for 0.01 level of error

According to Table (5), craving beliefs and relapse have a significant negative relationship with novelty seeking, reward dependence and persistence (p<0.01).

Table 6: Pearson correlation matrix between character dimensions and craving beliefs and relapse

Character dimensions	statistic	Craving beliefs	Relapse Possibility of consumption	Power of desires	Total
Cooperativeness	Correlation coefficient	-0.29*	-0.14	-0.30*	-0.29*
	Significance level	0.047	0.30	0.044	0.047
Self-directedness	Correlation coefficient	-0.41**	-0.28*	-0.40**	-0.41**
	Significance level	0.003	0.04	0.003	0.003
Self-transcendence	Correlation coefficient	-0.67**	-0.52**	-0.67**	-0.67**
	Significance	0.001	0.001	0.001	0.001

level

* Significance of test for 0.05 level of error ** Significance of test for 0.01 level of error

As indicated in Tables (4-9), craving beliefs and relapse have a significant negative relationship with cooperativeness, self-directedness and self-transcendence (p<0.01).

Table 7: Results of multivariate regression analysis

Model	ss	df	ms		F	P		
Regression	8553.291	7	1221.899		6.475	0.000		
Remainder	7926.329	43	188.722					
Total	16479.620	47						
Predictor variables	R	R2	ARS	Non-standard coefficients		Standard coefficients	T	P
				B	SE	BETA		
Constant	-	-	-	45.87	5.49	-	7.72	0.001
Mindfulness	0.55	0.30	0.29	-0.331	0.072	-0.554	-4.608	0.000
Novelty seeking	0.55	0.31	0.28	0.060	0.105	0.112	0.567	0.574
Harm avoidance	0.59	0.35	0.31	0.133	0.075	0.261	1.771	0.083
Reward dependence	0.59	0.35	0.30	0.033	0.080	0.070	0.416	0.680
Persistence	0.59	0.35	0.30	-0.539	0.164	-0.902	-3.281	0.002
cooperativeness	0.61	0.37	0.30	0.079	0.070	0.179	1.122	0.268
Self-directedness	0.61	0.37	0.28	0.016	0.125	0.032	0.131	0.896
Self-transcendence	0.72	0.51	0.43	-0.635	0.180	-0.921	-3.534	0.001

To determine the effect, each of the variables of mindfulness and temperament and character dimensions is analyzed as the predictor variable and craving beliefs as the criterion variable in the regression equation. The amount of F observed is significant (p<0.01) (Table 7) and 51% of the variance of craving beliefs of addicts are described by the studied variables. Based on the amounts of BETA, mindfulness ($\beta = -0.55$), persistence ($\beta = -0.90$) and self-transcendence ($\beta = -0.92$) can significantly predict changes related to craving beliefs of addicts.

Table 8: Results of multivariate regression analysis

Model	SS	DF	MS		F	P		
Regression	8742.302	7	1264.711		8.146	0.000		
Remainder	8116.244	41	194.087					
Total	1685.546	49						
Predictor variables	R	R2	ARS	Non-standard coefficients		Standard coefficients	T	P
				B	SE	BETA		
Constant	-	-	-	56.12	5.11	-	8.66	0.001
Mindfulness	0.58	0.33	0.30	-0.38	0.080	-0.561	-4.71	0.000
Novelty seeking	0.59	0.34	0.30	0.112	0.109	0.121	0.592	0.441
Harm avoidance	0.61	0.37	0.31	0.141	0.081	0.272	1.819	0.064
Reward dependence	0.62	0.38	0.32	0.042	0.090	0.086	0.522	0.591
Persistence	0.64	0.40	0.34	-0.611	0.172	0.911	-4.01	0.001
cooperativeness	0.67	0.45	0.37	0.109	0.081	0.191	1.981	0.223
Self-directedness	0.68	0.46	0.39	0.029	0.136	0.072	0.213	0.741
Self-transcendence	0.71	0.52	0.44	-0.647	0.194	-0.926	-4.11	0.001

To determine the effect, each of the variables of mindfulness and temperament and character dimensions is analyzed as the predictor variable and relapse as the criterion variable in the regression equation. The amount of F observed is

significant ($p < 0.01$) (Table 8) and 51% of the variance of relapse of addicts are described by the studied variables. Based on the amounts of BETA, mindfulness ($\beta = -0.56$), persistence ($\beta = -0.91$) and self-transcendence ($\beta = -0.92$) can significantly predict changes related to relapse of addicts.

Discussion and Conclusion

The purpose of the current study is to evaluate the role of mindfulness and temperament-character dimensions in the prediction of craving beliefs and relapse. The results revealed that there is a significant negative relationship between mindfulness and relapse and craving beliefs. These results were aligned with the research findings of Jahangir pour and Kavand (2013), Pardini et al (2003), Witkiewitz, Marlatt and Walker (2008), Terry Mac et al (2012). Pardini et al (2003) revealed in their investigation that high mindfulness can enhance the patient's coping ability to deal with craving and withdrawal symptoms. Moreover, the research results of Witkiewitz, Marlatt and Walker (2008) were indicative of the relationship between high mindfulness and reduction of dependence and alcohol abuse. In addition, Terry Mac et al. (2012) showed in a research that there is a significant relationship between substance-related beliefs and craving beliefs such that those who had higher craving beliefs and substance-related beliefs experience more craving after opioid withdrawal and in the abstinence period. Mindfulness, as one of the main methods of acceptance-based strategies, induces people to accept their disturbing thoughts and feelings without judgment and appraisal and this way cope with them by establishing a different communication style without reaction and a new method of processing information, instead of challenging and abstaining from those uncomfortable thoughts and feelings led by withdrawal and/or substance application for their relief. Thus, increasing mindfulness can prevent relapse to addiction and reduce craving beliefs by affecting disturbing thoughts and feelings and altering the processing of information. Furthermore, mindfulness is an important fundamental factor to achieve liberation; since it is an effective and powerful method to extinguish and stop pressures of the world and/or one's own mental pressures. Mindfulness or presence of mind means awareness of thoughts, behavior, emotions and incentives so as to be able to better manage and adjust them; whereby the same factors can result in the prevention of relapse and reduction of craving beliefs by affecting individuals' thoughts.

Another part of the results revealed that there is a significant negative relationship between temperament dimensions and relapse and craving beliefs. The obtained results were compatible with the research findings of Bakhshipour Rudsari et al. (2008), Ketabi et al (2008), Asghari et al. (2011), Abbate Daqa et al. (2007) and Ben et al. (2014). Ketabi et al. (2008) demonstrated in their appraisal that there is a significant difference between temperament dimensions of novelty seeking (innovativeness), harm avoidance, the character dimensions of self-directedness and cooperativeness of Cloninger personality system and the neuroticism and psychoticism dimensions of Eysenck Personality system in drug addicts and normal people. Also, Asghari et al. (2011) proclaimed that patients who had a recurrence compared with non-recurrent group attained higher scores in the temperament dimensions of novelty seeking and harm avoidance and lower scores in the character dimensions of self-directedness and cooperativeness and no significant difference was observed between the two groups with regard to the dimensions of persistence and reward dependence.

It can be said that people with high novelty seeking endeavor to find new experiences, are powerless in their control and act impulsively and irrationally in their decision-making and, as a consequence, have a tendency towards high risk behaviors especially narcotics; in fact, they have the most craving desires to abuse drugs. Furthermore, it can be said that innovative people are usually interested in exploration activities, demand stimulation and excitement and are opposed to uniformity and tend to experience new things. These people make decisions hastily and with very little information and thus they are more at risk and ultimately resort to drugs due to such characteristics. In addition, having lower persistence and high vulnerability in addicts causing the preference of immediate rewards, the desire for adventure, novelty seeking, finding simple ways to achieve reward, lack of persistence and perseverance to do things and also short individual reaction time among the components which put people at more risk, high craving for consumption and also relapse to addiction (Mac Cowan et al., 1994). Besides, harm avoidance, which is identified with features such as escaping and avoiding hazardous situations and being cautious and aloof, acts as a barrier to addiction symptoms and stimulation. These individuals on account of using drugs, gain false self-esteem and act without regard to the damaging behavioral and situational consequences. Low harm avoidance features such as self-confidence in the face of uncertainty, lead to great efforts with minimum personal discomfort and the disadvantage of this condition is lack of responsiveness to risks and unrealistic optimism and its potential high-risk outcomes are in situations that the possibility of danger is high and completely in the direction of enhancing symptoms like excitability and impulsivity for people with drug addiction (Zuckerman, 1993). Moreover, these traits can affect relapse in these individuals.

Another section of the findings indicate that there is a significant negative relationship between character dimensions and relapse and craving beliefs. The obtained results are aligned with the findings of Ketabi et al. (2008), Adram and Nikmanesh (2011), Asghari et al. (2011), Karami et al. (2013), Abbate Daqa et al. (2007), Olari et al. (2013) and Ben et al. (2014). Karami et al. (2013) demonstrated that there is a significant difference between the dimensions of novelty seeking, harm avoidance, persistence, cooperativeness, self-directedness, self-transcendence in the consumers of opioid and stimulant

and in all the above mentioned scales the mean score is higher in stimulants than opioids. Furthermore, Abbate Daqa et al. (2007) showed that there is a significant difference between the temperament dimensions of novelty seeking, harm avoidance, the character dimensions of self-directedness and cooperativeness of Cloninger personality system and the neuroticism and psychoticism dimensions of Eysenck personality system in drug addicts and normal people. In addition, Olari et al. (2013) concluded in their research that there is a significant relationship between temperament and character dimensions and relapse to addiction.

People with low self-directedness are faultfinding, hopeless, irresponsible, unreliable and passive and are incapable of significantly defining, adjusting and pursuing internal goals. Such weak executive performances, representative of unrealistic behavior and internal control deficiency, are rarely useful to people (Cloninger, 1994) and people who have low cooperativeness are self-absorbed, impatient, intolerant, critical, non-helpful, vengeful and opportunistic individuals. They see themselves first and are inconsiderate of the rights and feelings of other people (Cloninger, 1994); also people who have low self-transcendence have a tendency for pragmatism, objectiveness and materialism and are controlling and pretentious. Based on neurological approaches, the low presence of the components indicates concept avoidance and response inhibition, which may contribute to people's craving or relapse (Biedermann et al., 2008). Moreover, according to the results of the studies the low levels of self-directedness and cooperativeness are related to high levels of behavioral problems, impulsivity, anxiety / depression, attention problems, behavioral problems and violent behaviors in people with drug addiction.

In the end, the last part of the research findings revealed that 51 percent of the variance of craving beliefs as well as 51 percent of variance of relapse are described with the studied variables. Regarding the effectiveness of craving beliefs and relapse of the variables of mindfulness and temperament and character dimensions, it must be stated that the effective application of mindfulness reduces drug abuse rate, anxiety and social dysfunction and enhances mental health. However, lack of effective application and skills to effectively use mindfulness leads to the intensification of disturbing thoughts and feelings caused by withdrawal and/or the use of substances to relieve them (relapse). Yet effective mindfulness increases the recovery rate by emphasizing acceptance rather than suppression of thoughts and breaking the chain of stress-relapse in drug abuse. Mindfulness is related to attention control and emotion regulation and thus can be effective in the alcohol and drug abuse by enhancing control on visual clues (Imani et al., 2013) thereby people accept their disturbing thoughts and feelings without judgment and appraisal hence coping with them by establishing a different communication style without reaction and a new type of processing information, rather than challenging and avoiding those uncomfortable drug-induced thoughts and feelings (having craving beliefs). Moreover, people's temperament and character dimensions are unstable due to high harm avoidance (nervous, shy) and high novelty seeking (impulsive, rapidly reactive), reward dependence (cold, reserved). Based on neurological approaches, the existence of low character components are indicative of concept avoidance and response inhibition which exposes people to craving for drug consumption or relapse to addiction (Biedermann et al., 2008). Furthermore, according to the results of the studies the low levels of self-directedness and cooperativeness are related to high levels of behavioral problems, attention problems, behavioral problems and violent behaviors in drug addicts. Therefore, they usually experience a mixture of anxiety and anger and adjust social problems and intense feelings with immature methods which subject people to more risk, high craving and also relapse. Since the statistical sample of this research includes the addicts in five rehabilitation centers of Rasht city, we should be cautious in generalizing this finding to addicts in other regions. Also lack of control in the type of substance used and time of consumption is another limitation of the research. Thus it is suggested that such research should be conducted in other regions as well. Moreover, in future studies the type of used drugs and consumption time should be controlled as well.

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