

Comparison of temperament and character personality traits in opiate and stimulant addicts

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Abstract

Background: Phenomenon of addiction as one of the social problems has a high prevalence, especially among youth. The aim of the present study was to compare personality traits based on the temperament and character inventory in opiate and stimulant addicts in Tehran.

Methods: In the present quasi-experimental study, 60 male addicts (30 opiate and 30 stimulant addicts) who referred to addiction treatment centers in the suburbs of Tehran were selected through convenience sampling method and were studied using Temperament and Character Inventory (TCI). The participants were sorted according to their age and education.

Results: There was a significant difference between the two groups with regard to harm avoidance, reward dependence, cooperativeness, and self-transcendence traits. Thus, opiate addicts had higher levels of harm avoidance, reward dependence, and cooperativeness, and stimulant addicts had higher levels of self-transcendence. The significance level was set at $P < 0.01$.

Conclusion: The obtained results showed that there was a significant difference between opiate and stimulant addicts. Opiate addicts gained higher scores, compared with stimulant addicts, in Temperament and Character Inventory variables. The obtained results also showed that stimulant addicts were suffering from more severe disorders than opiate addicts. Based on the means of the values of the TCI, personality traits reflecting personality disorders are detectable and predictable in substance abusers. This new understanding is important in the prevention and treatment of addiction.

Keywords: Addict; Character; Opiate; Personality; Stimulant; Temperament

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Introduction

Addiction is a significant social problem that has much prevalence, especially among the youth. It can lead to various social and healthcare issues such as damaging individuals' economic background, increased violence, increased risk of AIDS, delinquency, unemployment, increased mental disorders, and suicidal

thoughts (1). In addition to harming abusers' physical health, substance abuse plays a significant role in many social issues such as accidents, aggression and violence, criminal behaviors, and family problems (2). That is why addiction is mainly considered as a social problem by various researchers (3). Substance abuse disorder and its grave

and unpleasant consequences are considered among the most significant threats to mental and physical health throughout the world. These disorders account for some serious medical, psychiatric, vocational, legal, spiritual, and moral problems. Substance abuse disorders not only inflict much pain on the abuser, they also cause much damage to his/her family and society (4).

Opiates are substances that make physical senses dull and they slow down body's response to stimulants through slowing down the central nervous system's activity. Opium and its derivatives (codeine, heroin, and morphine) and methadone are considered as the main opiates. In contrast to opiates, stimulants improve alertness and excitement. Some common stimulants include amphetamines (Benzedrine, Dexedrine, and Methedrine), cocaine, nicotine, and caffeine (5). United Nation Office for Drug Control estimated the number of 15 to 65-year-old substance abusers, throughout the world, about 200 million. This population makes up 5% of the whole world population. Opiate consumers make up 0.4% or 16 million persons of the world population (6). The number of opiate consumers in Iran is estimated at about 1.8 to 3.3 million. According to various statistics, 20% of 15- to 60-year-old individuals are engaged in this issue. Thus, Iran seems to have the largest population of opiate addicts in the world (7). Hamdieh et al. conducted a research on teenagers and youth of 15 to 35 years old in Tehran and estimated that the prevalence of stimulants is 7.2% (8).

According to the previous studies, personality traits play a significant role in the outbreak and prevalence of addiction (9). Studies carried out by Evren et al., Abbate-Daga et al., and Hosak et al. showed that there was a significant difference between addicts and non-addicts in Novelty Seeking personality trait, as proposed by Cloninger (10-12). Since novelty seeking requires receiving repeated stimulations for optimum maintenance of postsynaptic dopaminergic, higher degrees of novelty seeking trait are

associated with smoking and substance abuse (13). Also, according to Cloninger's TCI, there is a significant difference between addicts and non-addicts in harm avoidance personality trait. Addicts showed a higher harm avoidance level than non-addicts (11, 12, 14). Of course, Cloninger pointed out that among all personality traits, only harm avoidance increases temporarily upon depression and excitement. Thus, one cannot precisely determine whether addicts' higher harm avoidance scores are affected by their addiction or their personality trait leading them to addiction.

According to the previous studies, there is a significant difference between addicts and non-addicts in self-directedness dimension of character. Addicts are of lower self-directedness than non-addicts (12, 15, 16). As indicated by Cloninger, success in overcoming drug abuse can be predicted based on an addict's self-efficiency and not his/her level of physical dependence on consumption of substances such as heroin and tobacco (17). It seems that training in self-direction skills can be helpful in prevention and treatment of addiction.

Abbate-Daga et al. and Hosak et al. showed in their studies that there is a significant difference between addicts and non-addicts with respect to cooperativeness trait. Addicts are in a lower cooperativeness level than non-addicts (11, 12). Cloninger maintained that cooperativeness is based on self-perception and part of individual's human and social world; thus, poor skills in this personality trait can lead a person to addiction (17).

In the present study, we compared personality traits of opiate addicts with those of stimulant addicts using the Temperament and Character Inventory (TCI) to see whether there was any significant difference between these two groups' personality traits with regard to traits such as harm avoidance, reward dependence, cooperativeness, and self-transcendence.

Methods

The current research was a quasi-experimental study and the population of the study consisted of all male addicts who had referred to Shahid Family addiction treatment center and also to the addiction treatment campuses in the suburbs of Tehran in winter 2013. Shahid Family treatment center is a free-of-charge center and addicts can voluntarily register in this center and get hospitalized and receive their care plan and treatment procedures. This center is located in Eastern part of Tehran.

In the current research, at first, 100 individuals - 50 people in each group - were selected. Then, the number of the sample was reduced to 60 people - 30 in each group - removing those who were reluctant to cooperate and also those who were not ready to complete the questionnaires due to personal issues and also those who could not continue their cooperation as they did not complete the questionnaires.

To select the participants, convenience sampling method was used. The samples were matched according to their age and education. The included participants in the study were: those addicted to opiates and stimulants who only consumed one type of opiates or stimulants during the past year, individuals who were in the age range of 25 to 40, those who had education level between middle school and diploma, and individuals who met the DSM5 diagnostic criteria for substance use disorder (addiction) regarding opiates and stimulants. Also, the exclusion criteria were: the reluctance of the participant to cooperate, consumption of more than one type of opiates and stimulants during the past year, comorbidity to another chronic physical disease, such as Multiple Sclerosis, and comorbidity to another psychological disease.

To collect data, the TCI was distributed among the study population.

All participants in the present research studied and signed the consent form first and then they were included in the study.

Temperament and Character Inventory (TCI-125)

The 226-item TCI was first introduced by Cloninger in 1987 based on the social-biological model of character (18). This questionnaire is designed for assessing personality traits acquired by an individual through either inheritance (temperament) or environment (character). The inventory examines seven personality traits: 1. Novelty Seeking, 2. Harm Avoidance, 3. Reward Dependence, 4. Persistence, 5. Self-Directedness, 6. Cooperativeness, and 7. Self-Transcendence. The first four traits are associated with Temperament and the other three are concerned with Character (18). Using Cronbach's alpha coefficient, Kavyani et al. estimated the internal consistency of the scales for a population of 1212. The internal consistency was estimated at 72% for novelty seeking, 80% for harm avoidance, 73% for reward dependence, 55% for persistence, 77% for cooperativeness, 84% for self-directedness, and 72% for self-transcendence. The validity coefficients (n=100) of TCI dimensions are estimated at 75% for novelty seeking, 72% for harm avoidance, 87% for reward dependence, 90% for persistence, 76% for cooperativeness, 66% for self-directedness, and 86% for self-transcendence (19).

Multivariate Analysis of Variance (MANOVA) was employed for comparing character and temperament differences of opiate and stimulants addicts with regard to traits of novelty seeking, harm avoidance, persistence, reward dependence, cooperativeness, self-transcendence, and self-directedness as the variables of the study. P values <0.01 were considered significant.

Results

According to the results, these addicts had consumed opiates for 3.4 years on average and the standard of deviation was 6.06 years. The range of consumption was 12 years for opiate addicts and the minimum and maximum duration of consumption were 1 and 13 years, respectively.

The most frequent duration of consumption among this group of addicts was 3 years. On the other hand, stimulant addicts' average duration of consuming stimulants was 2.9 and the standard of deviation was 1.56 years for them and the range of consumption was 7 years for this group of addicts and the minimum and maximum duration of consumption for them were 1 and 8 years, respectively. The most frequent consumption periods among the stimulant addicts were 1, 2, and 3 years of consumption. According to Table 1, the age profile of the participants of the study who were opiate and stimulant addicts was 20 to 45 years old. Also, regarding the education level, as shown in Table 2, the most frequent degree or level of education in both opiate and stimulant addicts was diploma.

In Table 2, it can be noted that the most frequent status regarding the marital status of opiate and stimulant addicts was singleness. Moreover, the most frequent method of consuming substance among opiate and stimulant addicts was consuming them through smoking method (vaporization) (Table 2).

In addition, as shown in Table 3, there was a significant difference between the two groups with regard to harm avoidance, reward dependence, cooperativeness, and self-transcendence dimensions so that opiate addicts had higher levels of harm avoidance, reward dependence, and cooperativeness dimensions, and stimulant addicts had higher levels of self-transcendence.

Table 1. The age profile of the participants

Group	Age	20-25	25-30	30-35	35-40	40-45	Total
Opiates (N)		8	7	8	4	3	30
Stimulants (N)		5	8	10	4	3	30

Table 2. Education level, marital status, and consumption method of the participants

Group	Education level					Total (N)
	Elementary (N)	Middle School (N)	Diploma (N)	Associate (N)	Bachelor Degree (N)	
Opiates	1	3	14	4	8	30
Stimulants	0	5	13	4	8	30

Group	Marital status				Total (N)
	Single (N)	Married (N)	Divorced (N)	Separated (N)	
Opiates	13	12	3	2	30
Stimulants	14	10	2	4	30

Group	Consumption method			Total (N)
	Oral (N)	Smoking (N)	Sniffing (N)	
Opiates	4	18	8	30
Stimulants	0	19	11	30

Table 3. Results of MANOVA for the participants of the study and their differences in temperament and character dimensions

Variable	Dimension	Index Group	Population Volume	Mean (SD)	F	df	P	
Temperament	Novelty Seeking	Opiates	30	9.23 (1.34)	1.942	1	0.194	
		Simulants	30	7.57 (1.09)				
	Harm Avoidance	Opiates	30	7.06 (2.18)	36.268	1	0.001*	
		Simulants	30	2.76 (1.74)				
	Persistence	Opiates	30	2.45 (1.23)	0.028	1	0.405	
		Simulants	30	1.88 (0.96)				
	Reward Dependence	Opiates	30	4.82 (0.79)	10.358	1	0.001*	
		Simulants	30	2.87 (0.61)				
	Character	Cooperativeness	Opiates	30	8.23 (1.34)	7.156	1	0.003*
			Simulants	30	7.89 (1.49)			
		Self-Transcendence	Opiates	30	6.99 (1.38)	5.241	1	0.01*
			Simulants	30	7.08 (1.48)			
Self-Directedness		Opiates	30	2.23 (0.84)	1.056	1	0.145	
		Simulants	30	2.98 (0.87)				

* $P < 0.01$

Discussion

The current research was carried out with the aim of comparing temperament and character personality traits in opiate and stimulant addicts. The results showed that there was no significant difference between opiate and stimulant addicts regarding their mean scores in novelty seeking. The scores of both groups were consistent with the results of the research reported by Ryb et al. (20). Thus, it could be argued that opiate and stimulant addicts experience more anxiety and nervousness due to their higher levels of novelty seeking and they adjust their social issues and their severe emotions using rough approaches. In order to justify this finding, it could be stated that individuals with higher levels of novelty seeking are in search for new experiences and are unable to control themselves, decide impulsively and illogically in their actions, and are thus more inclined to risky behaviors specially to consuming opiates and stimulants so that they experience new things and

this trait shows that opiate and stimulant addicts decide impulsively due to their very low and limited knowledge. Yet, both of these groups of addicts are susceptible compared to normal people and eventually they appeal to substance abuse.

The results showed that the mean score of opiate addicts in harm avoidance was significantly more than that of stimulant addicts. This finding can be justified in that the perception of reality is not harmed by addiction to opiates. To put it differently, it can be explained by the fact that perception of reality is harmed by addiction to stimulants and thus the opiate addicts are afraid of suffering from further harms. This finding is consistent with the results of other researches (20-22). The higher level of harm avoidance is characterized with being cautious and secluded and escaping and avoiding risky situations and hence it acts as a barrier against addiction and irritability symptoms in opiate addicts. The stimulant addicts gain overconfidence because of

substance use and they wage on acts regardless of the harmful consequences of their behaviors and the situation. Individuals who score higher in harm avoidance are not able to control themselves and thus their chance to be inclined toward substance use is more. Just as self-confidence and as opposed to uncertainty, the low level of harm avoidance will cause these individuals to perform many activities with the least uneasiness. The downside of this fact is that the individuals will not respond to risks and have an unrealistic optimism and the potential dangerous consequences of this situation include conditions in which the risk is very likely and the irritability and impulsivity symptoms of the addicts is increasing (23).

The results of the study indicated that there was no significant difference between the mean score of self-directedness in opiate and stimulant addicts but both of them enjoyed a weak persistence level. This finding is consistent with the results of other studies (24-27). The results also indicated that the lower persistence will increase the susceptibility of the opiate and stimulant addicts. Thus, it could be justified that a number of factors will expose opiate and stimulant addicts to more risks including the preference for immediate rewards, the desire for adventure, novelty seeking, seeking easy ways for getting rewards, not having persistence and insisting on doing activities and also having a short reaction time (28).

It can be seen in the results that the mean score of opiate addicts in reward-dependence scale was significantly higher than that of stimulant addicts. This finding is consistent with the results of other investigations. The justification for this finding is that opiate addicts make a greater effort to obtain the substance they need and this may be because of their physiological dependence on opiates. Those individuals who score low in reward dependence scale have cold, secluded, fragile, and irresponsible behaviors and those individuals, who are low in cooperativeness scale, are narcissist, prejudiced, blamer, and revengeful (24-27).

As can be seen in the results, the mean score of the opiate addicts in cooperativeness scale was more than that of stimulant addicts. This finding was consistent with the results of other researches (27, 29, 30, 33). The results suggested that stimulant addicts indicated low levels of cooperativeness. This can be explained in that stimulant addicts, who demonstrated to be less cooperativeness, are characterized by frigidity, inattention to others' sensitivities, having a tendency to distance themselves from others, individuality, indifference to others' feelings, and rejecting others due to the paranoia and psychotic disorders they have (31). Also, neurological approaches indicate that low levels of cooperative scale in these individuals show the concept aversion and response inhibition among them. This fact exposes stimulant addicts to the risk of impulsivity and behavior problems (32). The low levels of cooperativeness are associated with high levels of behavior problem, impulsivity, and psychological disorders in stimulant addicts.

The results also showed that there was no significant difference between the mean score of opiate addicts in self-transcendence and that of stimulant addicts. This finding is inconsistent with the results of other studies (27, 29, 30). In justifying this finding, it could be argued that the self-transcendence comes in conjunction with unconditioned religious faith, self-possession, and patience and it acts as a barrier against impulsivity in individuals.

Lack of any significant difference between opiate and stimulant addicts in self-directedness dimension can be justified due to the fact that these addictive substances are consumed by these types, or even all types, of addicts as they are believed to help them overcome their helplessness and control themselves. Thus, addicts turn to these substances as a form of self-treatment (16).

On the other hand, lack of any significant difference between opiate and stimulant addicts in persistence and novelty seeking dimensions can be explained due to the fact that persevering people are serious,

decided, and perfectionist and all these traits can lead a person to substance abuse (34). Novelty seeking is also indicative of great curiosity, impulsivity, and fondness of diversity. People with novelty seeking traits are fond of experiencing diverse things in life and get bored with life quickly. These two factors, regardless of the type of the substance consumed, can explain their dependence on these substances. The results of the present study confirm those obtained by other researchers (10, 12, 34, 35). The main findings of the research carried out by Hansenne et al. was that depressed patients exhibit higher harm avoidance and self-transcendence scores as well as lower self-directedness and cooperativeness scores as compared to healthy controls. However, the three other dimensions do not differ between depressive patients and controls. The results of the research by Hansson et al. indicated that lower levels of harm avoidance and lower levels of self-directedness were significantly correlated to a better subjective quality of life (34). The main result of the research by Hosak et al. was that novelty seeking, harm avoidance, and self-transcendence were significantly higher, and persistence, self-directedness and cooperativeness were significantly lower in the patients than in the healthy volunteers (12).

The results of the research conducted by Evren et al. suggested that among the temperament dimensions, novelty seeking score was higher and reward dependency score was lower in drug-dependent patients than in alcohol-dependent patients and among the character dimensions, self-directedness and cooperativeness scores were lower in drug-dependent patients (10).

These findings conform to the results of the researches conducted by PourNaghsh Tehrani and Hassantash (36) and others (37, 38). In the research conducted by PourNaghsh (36), addicts gained high scores on the scales of novelty seeking, harm avoidance, and reward dependence. The results of the research by Thomas Kosten and

Rounsaville indicated anti-social and narcissism disorders in substance addicts (39). The sample of the study was small; further studies could be conducted with larger sample sizes to explore the effects of the participants' particular characteristics on the outcomes obtained in the present study.

Some other limitations of the study pertain to particular characteristics of the population of the study and some considerations which may make some of the participants refrain from sharing their true opinions on some items. Moreover, the information and data collected through self-reports of examinees are always under the influence of multiple effective factors such as the respondents' preferences to give answers that are in conformity with society norms.

Based on the results of the current research, the stimulant consumers are more likely to be diagnosed with mental disorders particularly personality disorders and exacerbation of symptoms while consuming substance regarding the dimensions of personality than the opiate consumers. The existence and outbreak of personality disorders can be diagnosed and predicted based on the average scores on temperament and character inventory and by taking into account all its scales, which is of particular importance in prevention and treatment of the disorders associated with substance consumption. Considering the fact that there is a close relationship between some of the traits and personality disorders which play significant roles in the onset of addiction in consumers, diagnosing these traits is effective in the preventing or decreasing the intensity of the addictive disorders and in their treatment. It is thus recommended that a comprehensive evaluation of the personality of the individuals, prior to starting their treatment, be conducted so that planning of the treatment would be done with perfect understanding of the patient's condition.

Conflict of interest

Authors declare no conflict of interests.

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