

Abstract

Objective: Substance abuse is a serious global problem that is affected by multiple psychosocial factors, and some personality traits and impulsivity play a central role in its occurrence. The aim of this study was to predict tendency to drug use based on abnormal personality dimensions and the mediating role of impulsivity. **Method:** In a cross-sectional descriptive study, 303 students of Tehran University were selected by convenience sampling in the academic year of 2016. Personality Inventory for DSM-5 (PID-5), Iranian Addiction Potential Scale (IAPS), and Barratt Impulsiveness Scale (BIS) were administered to the sample group. Data were then analyzed using structural equation modeling by AMOS-20 Software. **Results:** The results showed that there is a significant correlation between abnormal personality dimensions and impulsivity and tendency to substance use in students. Moreover, the proposed model enjoyed a desirable goodness of fit ($\chi^2/df = 2.30$, AGFI=0.91, GFI=0.95, CFI=0.96, RMSEA=0.06), and the results also supported the mediating role of impulsivity in the relationship between abnormal personality dimensions and tendency to drug use. **Conclusion:** Abnormal personality dimensions are effective in the incidence of drug use tendency directly and indirectly via impulsivity. In the prevention of vulnerability to addiction, intervention in impulsive and abnormal personality traits of student groups can be of great benefit.

Keywords: abnormal personality dimension, tendency to drug use, impulsivity, university students

The Role of Abnormal Personality Dimensions in Prediction of Substance Use Tendency among Tehran University Students: the Mediating Role of Impulsivity

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Introduction

Substance abuse has always been accompanied by many problems in human life. It is one of the most important social traumas that seriously threatens the society and especially the young generation (Taziki, 2014). Young people are the most vulnerable age group who are at risk of substance abuse (Qoreishi, & Shajari, 2013). The age range of 18 to 25 years is the most prevalent age for substance abuse tendency (McCabe et al., 2007). Substance abuse has increased dramatically in university students (Reza Khani Moghadam et al., 2012). Research has shown that personality traits are among the important etiological factors in the tendency toward high-risk behaviors including substance abuse and play an important role in its talent, speed-up, or continuity (Polimeni, Moore, & Gruenert, 2010). Personality disorders and substance abuse often occur simultaneously (Grant et al., 2006), and the studies conducted on substance abuser populations reported the prevalence of personality disorders between 40 to 100% (George & Krystal, 2000) .

Recent research efforts have been developed to identify personality traits correlated with drug use, and it has been shown that certain personality traits make the individuals vulnerable to substance abuse biologically (Sadock and Sadock, 2011). It seems that many people with substance use disorder, especially young people, have some degrees of personality vulnerability in the tendency toward drug use before the onset of drug consumption, and features such as seeking excitement and impulsivity are more common in this group of people. (Hossein Khanzadeh, & Taher, 2014). People with alcohol and drug abuse disorders have similar personality traits (e.g., anxiety, depression, stress, personality disorders, antisocial disorders, or obsessive-compulsive disorder) that lead them to the tendency toward drug use (Knop et al., 2003). Several studies have indicated that substance users with personality disorders, as compared with substance users without personality disorders, have more frequent patterns of drug and alcohol use (Cacciola, Rutherford, Alterman, McKay, & Snider, 1996), the higher degrees of using multiple drugs (Thomas, Melchert, & Banken, 1999), and are at higher risk for recurrence (Pettinati, 1991).

McCrae and Costa (1998) defined personality traits as the dimensions of individual differences in the desire to show the stable patterns of thought, feeling, and action. Psychologists largely agree that the Big Five Personality Traits is a comprehensive and complete system in order to understand the individual and personality differences (McCrae, & Costa, 1992); the Five Factors include Neuroticism, Extroversion, Openness to new experiences, Agreeableness, and Conscientiousness. These five dimensions are known as the normal dimensions of personality, and the abnormal dimensions are in the other side or at the opposite direction of normal dimensions (Krueger, & Markon, 2014). The department of the DSM-5 personality and personality disorders

formed a basic model of abnormal personality (Kruger, Derringer, Markon, Watson, & Skodol, 2012). In this model, 25 traits including five broad trait dimensions are classified. These five trait areas or dimensions are: negative affectivity versus emotional stability, detachment versus extraversion, antagonism versus agreeableness, disinhibition versus conscientiousness, and psychoticism versus lucidity (Thomas et al., 2013). Negative affectivity is correlated with anxiety, affective instability, and depression. Detachment is closely related to isolation, lack of pleasure, and avoiding intimacy. Antagonism is associated with cheating and hauteur. Irresponsibility and impulsivity are the main characteristics of disinhibition dimension, and components such as abnormal beliefs and experiences have been introduced as psychoticism (Bastiaens et al., 2016). In a study conducted by Thomas et al. (2013) on examining the structural convergence of personality dimensions of DSM-5 and FFM traits, the results revealed that there is a relation and an overlap between these two abnormal and normal models. Based on the evidence, high levels of abnormal personality dimensions, especially the antagonism and disinhibition are accompanied with substance and alcohol use disorders (Creswell et al., 2016).

On the other hand, impulsivity is another personality trait that has been introduced as one of the the core properties of the substance abuse disorder (Jebraeili, Moradi, & Habibi, 2017). Genetic studies related to substance abuse disorders also point to the intervention of disinhibition and impulsivity in the addicted people. For example, studies on individuals with families suffering from substance abuse have shown that impulsivity-disinhibition is noticeably increased in these individuals (Alterman et al., 1998). Individual differences in impulsivity and its related structures is one of the negative attributes in the individuals' tendency to substance abuse, which plays a fundamental role in both the onset and the subsequent development of these behaviors (Gullo, & Dawe, 2008). Impulsivity is lack of planning and losing the control of cognition and behavior that delays the future health and success (Barratt, 1994). Furthermore, impulsivity refers to the preference for immediate rewards, the desire for adventure, the search for new sensations, finding the simple ways to achieve rewards, lack of perseverance and insistence on doing things, and the short duration of individual reactions (McCown, Johnson, & Shure, 1994). In a meta-analysis that Schütz, Sahoo, & Krausz (2014) examined various groups of dependent users including drug, alcohol, cocaine, heroin, marijuana, and nicotine, the results revealed that the impulsivity scores of these individuals were high in comparison to the normal group in all dimensions, especially cognitive impulsivity and lack of planning; impulsivity was also directly associated with aggression and self-harming behaviors.

There is a strong correlation between impulsivity, substance abuse disorder, personality traits and personality disorders, and impulsivity may be a common factor for the strong correlation between these disorders (Alcorn et al., 2013; Tcheremissine, Lane, Cherek, & Pietras, 2003) . However, our understanding of

the role of impulsivity in these disorders is limited due to the lack of attention to the complexity and multi-dimensional nature of impulsivity (Bornovalova, Daughters, Hernandez, Richards, & Lejuez, 2005). The relationship between the tendency toward addiction and impulsivity traits can be investigated in multiple dimensions, so that impulsivity traits sometimes cause addiction, sometimes addiction causes impulsive traits in individuals, and finally the relationship between the tendency toward addiction and impulsivity may be explained through the third common factor including the personality traits (DeWit, 2009). Thus, regarding the growing increase in personality disorders, their negative effects on the individual and society, and the importance of identifying the underlying factors of this group of disorders which have a high degree of diagnostic, therapeutic, and preventing importance, the purpose of this study is to investigate the role of abnormal personality dimensions in predicting the tendency toward drug use in university student with the mediating role of impulsivity. This study employs the following hypothesized model based on the relationships between the studied variables (Fig. 1).

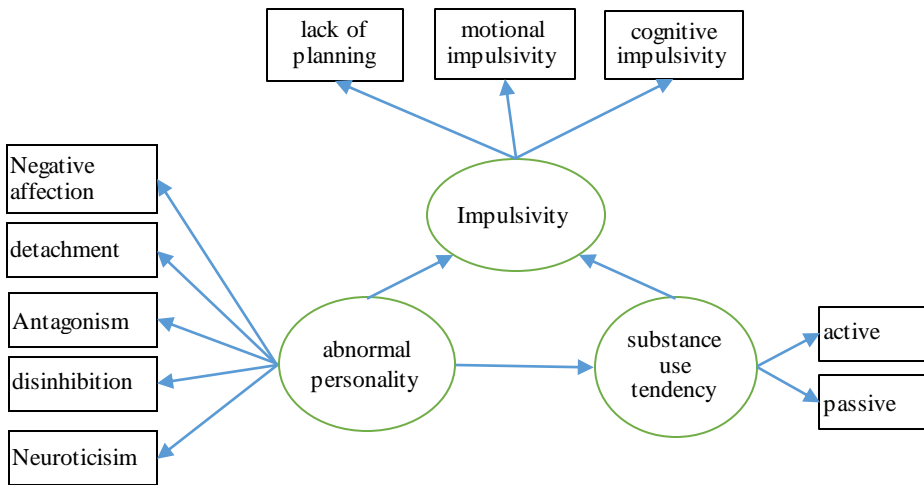


Chart 1: Predictive hypothetical model of substance use tendency based on abnormal personality dimensions with the the mediating role of impulsivity

Method

Population, sample, and sampling method

The present study was a descriptive correlational study. The statistical population consisted of the university students of Tehran University (Faculty of Electrical and Computer Engineering, Chemical Engineering, Mechanical Engineering, and Engineering Sciences) in 2016. Using the convenience sampling method and the structural equation modeling in which the sample size can be between 5 to 15 participants per variable (Hooman, 2005), a sample size

of 303 people was selected. In this study, the Declaration of Helsinki was observed, which includes the explanation of the goals of the study and obtaining of the informed consent from the study units, the optional participation in the research, the right to withdraw the study, the answers to the questions should involve no harm, and the results should be given to the participants if desired. To conduct this research, the purpose of the study was first described to the university students, the participants' consent was obtained for participation in the study, and it was assured that their information and their names would remain confidential. In the process of conducting the study, moral considerations were observed. The questionnaires were simple, had no harm to the participants, and had no expenses for them. During the completion of the questionnaires, if the person was reluctant to continue to cooperate, he/she was not prevented. By obtaining the written permission from the university authorities, the questionnaires were completed as a self-report.

Instruments

1. Personality Inventory for DSM-5—Brief Form (PID-5-BF): This questionnaire was designed to measure the DSM-5 personality traits model by Kruger et al. (2012). In fact, this instrument is designed to evaluate the dimensional model of the five abnormal dimensions of personality; its short form measures 25 procedures and 5 personality areas (Widiger, & Simonsen, 2005). Kruger et al. reported that the internal consistency of its sub-scales including negative affection, detachment, antagonism, disinhibition, and neuroticism is 0.91, 0.96, 0.97, 0.93, and 0.89 respectively (Kruger et al., 2012). The factorial structure of this questionnaire introduced five factors including negative affection (e.g., anxiety, insecurity, dissociation), detachment (e.g., isolation, lack of pleasure, intimacy avoidance), antagonism (e.g., manipulation, fraud, hauteur), disinhibition (e.g., irresponsibility, impulsivity, distractions) and neuroticism (e.g., unusual beliefs and experiences, social escape, and perceptual dysregulation) (American Psychiatric Association, 2013). The items were scored based on a 4-point Likert scale ranging from completely disagree (0) to completely agree (3). The psychometric properties of this version were confirmed by Abdi and Chalibianlou in Iran; its validity and internal consistency were 0.86 and 0.76 to 0.89 respectively.

2. Addiction Potential Scale (IAPS): It is designed by Weed and Butcher (1992), and some attempts have been made in order to determine its validity in Iran. This questionnaire is the Iranian Addiction Potential Scale (IAPS) developed by Zargar (2006) according to the psychological-social status of Iranian society. It consists of two factors, 36 items, and 5 items are lie detector. Scoring each item is performed on a continuum ranging from 0 (completely disagree) to 3 (completely agree). Two methods were used to calculate the validity of this scale. For criterion validity, it has distinguished the two groups of addicts and non-addicts from each other in an acceptable way. The construct

validity of the scale was reported through correlating it with the 25-items scale of the Symptom Checklist-90 (SCL-90); it was 0.45 which was significant at the level of 0.001. Cronbach's Alpha of 0.90 has been reported for it (Zargar, 2006, quoted by Zargar, Najjarian, & Na'ami, 2008).

3. Barratt Impulsiveness Scale (BIS): The self-report Impulsiveness Scale was designed by Patton, Stanford, and Barratt (1995). It includes 30 items on a 4-point Likert scale that are scored from never = 1 to always = 4. It is in the form of three factors of impulsivity, lack of planning, motional and cognitive impulsivity. Cognitive impulsivity represents the tolerance of complexities and resistances in instant decision making situations. Motional impulsivity indicates an action without thought and contemplation, and the impulsivity based on non-planning represents lack of attention to providence in behavior and action (Ekhtiyari et al., 2007).

Results

The sample of the study consisted of 303 people including 157 women (51.8%) and 146 males (48.2%), of whom 265 people (87.46%) were single and 38 people (12.54%) were married. Among the participants, 75 people (24.8%) had Associate's degree and 228 (75.2%) had Bachelor's degree. The age range of the sample group was from 18 to 28 years. The participants' mean age was 22.6 with the standard deviation of 2.14 years.

The Kolmogorov-Smirnov test was used to check the normal distribution of the data; the results showed that the data are normally distributed ($P > 0.05$). The correlation matrix of Table 1 indicated that there is a positive relationship between abnormal dimensions of personality and impulsivity with substance use tendency among university students ($p < 0.01$).

Table 1: Descriptive Statistics and Volatility Matrix Abnormal Dimensions of Personality and Impulsivity with Substance Use Tendency

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. negative affection	1											
2. detachment	0.42**	1										
3. antagonism	0.37**	0.32**	1									
4. inhibition	0.48**	0.43**	0.36**	1								
5. neuroticism	0.50**	0.46**	0.45**	0.56	1							
6. cognitive impulsivity	0.47**	0.37**	0.27**	0.50**	0.43**	1						
7. motional impulsivity	0.40**	0.37**	0.33**	0.55**	0.41**	0.47**	1					
8. lack of planning	0.24**	0.26**	0.16**	0.42**	0.24**	0.34**	0.48**	1				
9. total impulsivity	0.47	0.42**	0.32**	0.62**	0.45**	0.75**	0.83**	0.77**	1			
10. active potential	0.25**	0.19**	0.26**	0.36**	0.40**	0.25**	0.38**	0.31**	0.40**	1		
11. passive potential	0.54**	0.43**	0.34**	0.50**	0.45**	0.44**	0.48**	0.34**	0.54**	0.51**	1	
12. The addiction potential	0.36**	0.28**	0.22	0.44**	0.46**	0.33**	0.45**	0.36**	0.48**	0.97**	0.70**	1
Mean	6.04	5.04	4.35	4.03	5.08	18.03	20.72	24.55	63.34	16.77	12.68	29.46
SD	3.02	3.15	2.88	2.99	3.09	4.07	4.61	4.65	10.76	14.67	5.03	17.79

** $p < 0.01$

In order to investigate the structural coefficients, the fitness of the main pattern was studied. As shown in Table 2, the fitting of the proposed model is highly desirable.

Table 2: The Index of Fit for the Model Presented in the Study

The fitness indices of the model	χ^2	χ^2/df	DF	GFI	AGFI	CFI	RMSEA
Index values	71.339	2.30	31	0.95	0.91	0.96	0.06

Figure 2 shows the structural pattern, their paths, and thier standard coefficients in the research model. In this study, all the relationships between the abnormal dimensions of personality and impulsivity with substance use tendency are significant.

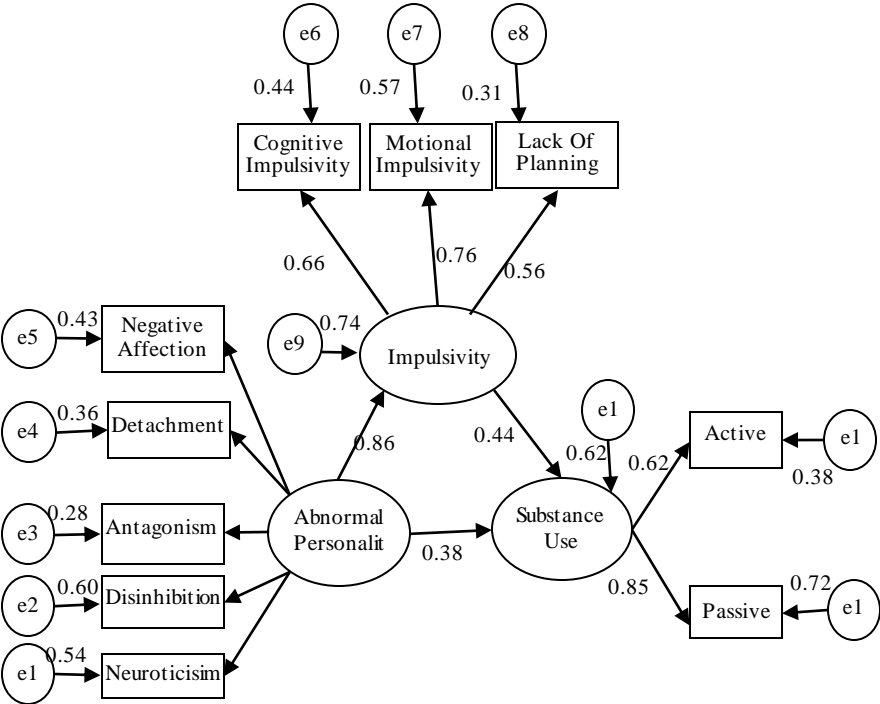


Figure 2: Standardized Loads of the Predictive Model of the Substance Use Tendency from the Abnormal Dimensions of Personality with the Mediating role of Impulsivity

Table 3 illustrates the structural pattern, their paths, and their standard coefficients in the research model. According to the results of this table, the abnormal dimensions of personality with the total effect ($p < 0.001$, $\beta = 0.75$), the direct effect ($p < 0.01$, $\beta = 0.37$), and the mediating and indirect effects ($p < 0.01$), $\beta = 0.38$) explained the university students' potential to addiction.

Table 3: Structural Pattern, their Paths, and their Standard Coefficients in the Study

<i>Pathes</i>	<i>Dirrect effect</i>	<i>Indirect effect</i>	<i>Total effect</i>
Abnormal personality dimensions→ impulsivity	0.861***	-	0.861***
Substance use tendency→ impulsivity	0.443***	-	0.443***
Abnormal personality dimensions→ Substance use tendency	0.376**	0.381**	0.757***
Abnormal personality dimensions→ passive substance use tendency	-	0.641***	0.641***
Impulsivity→ the passive substance use tendency	-	0.375**	0.375***
Abnormal personality dimensions→ active substance use tendency	-	0.468***	0.590***
Impulsivity→ active substance use tendency	-	0.274**	0.468**
Abnormal personality dimensions→lack of planning	-	0.481***	0.481**
Abnormal personality dimensions→motional impulsivity	-	0.652***	0.652**
Abnormal personality dimensions→cognitive impulsivity	-	0.572***	0.572***

*** P <0.001 & ** P <0.01

Bootstrap was used to determine the significance of the mediating relationships. Table 4 shows the results of bootstrap in the relationship between the abnormal personality dimensions and the substance use tendency with the mediating role of impulsivity.

Table 4: Bootstrap Test Results for Checking the Mediating Path

<i>The mediating path</i>			<i>Bootsrap</i>	<i>Lower bound</i>	<i>Upper bound</i>	<i>Confidence interval</i>
Independent variable	Mediating variable	Dependent variable				
Abnormal personality dimensions	Impulsivity	Substance use tendency	0.122	0.086	0.733	0.95

Discussion and Conclusion

The purpose of the present study was to investigate the role of abnormal personality dimensions in predicting university students' substance use tendency through the variable of impulsivity. The results of this study revealed that the proposed model had a goodness of fit with the empirical data; the results could well explain the role of abnormal personality with mediating impulsivity and the university students' substance use tendency. The path of abnormal dimensions to substance use tendency was more significant; it is in line with the results of the studies conducted by VanDerBleek and Clark (2015), Creswell et al. (2015) and Gunnarsson (2012). For example, in VanDerBleek and Clark's (2015) study, various types of legal crimes, disinhibition, and neuroticism had the most association with substance use, alcohol, as well as property theft, crime, and delinquency. Furthermore, Creswell et al. (2015) investigated the personality traits of negative excitement and the ability to withstand drinking alcohol in the

negative affecting conditions related to drinking behavior in adolescents; the results indicated that there was a significant relationship between the traits of negative excitement and the individual drinking in adolescents.

Gunnarsson (2012) studied the psychological factors associated with drug use in 18-year-old adolescents. The results showed that the risk of substance use was associated with the traits of antagonism and impulsivity. Moreover, in a study by Francis (1996), the relationship between Eysenck's personality factors and addiction potential in adolescents aged 13 to 15 was examined; the findings indicated that the neuroticism factors are the strongest predictor of addiction potential for this group of people. According to the results of these findings, it can be stated that: The negative side effect of an abnormal person tends to experience negative emotions such as anxiety and emotional stress. These negative emotions can interfere with cognition in an unmoderated manner, persistence and interference with interpersonal behavior in the form of anger and submission. In explaining the results of these findings, it can be stated that: The negative affection dimension of the abnormal personality tends to be in the form of the desire to experience negative emotions such as anxiety and emotional disorder. These negative emotions can interfere cognition in the insecurity, continuity, and the interference manner with the interpersonal behaviors in the form of anger and submission. With regard to the self-concept of vulnerability, people who have this dimension may show the necessity to stay away from some individuals and situations, dependency on them (avoidance / dependency), or distrust (paranoid). They may suppress the negative emotions through attention-seeking behaviors or through compulsory actions on their environment (Hopwood, Thomas, Markon, Wright, & Krueger). Substance use can lead to an increase in the sense of power in these individuals, which makes them feel more control on their own environment. Moreover, for all personality disorders, the substance use is a kind of treatment for the unpleasant feelings and emotions. In the detachment dimension, the individuals' abnormal personality is emotionally deprived of feeling of pleasure, they are depressed, and have the tendency to avoid others who are suspected. People with detachment may have self-haughtiness beliefs that indicate the interpersonal distress (Hopwood et al., 2012). Regarding the relationship between substance abuse and this personality dimension, it can be stated that these individuals are cold and out of population people from the perspective of others. However, these individuals are sensitive the reason for choosing loneliness is that they feel security when they are alone; they believe that when they are alone nobody can hurt them. This makes them introverted and weary individuals who lack the necessary social skills. It can cause them to grow alone and turn to substance use in order to cure the pain of the loneliness. Another possible reason for substance use might be their failures which has damaged their self-esteem; they turn to substance use in order to deal with the unpleasant feelings caused by this situation (Armstrong, 2002).

The antagonism dimension includes the tendency to ignore the needs of others, being plausible, deceitful and controlling behaviors, being hard-hearted, *hauteur*, and attention-seeking. The results of Hepwood et al.'s (2012) study showed that the individuals with antagonism try to get a higher impression of themselves as a particular person (*hauteur*); an attitude that facilitates the antagonism behaviors with others and the attention-seeking (Histrionic) behaviors. The closest personality disorders to this dimension are the borderline personality disorder and the antisocial personality disorder (Wygant et al., 2016; Tahirovic, & Bajric, 2016). People with this pattern do not pay attention to the feelings and difficulties of others; they lack the feeling of being guilty and regret about the negative effects of their actions on people; they fear loneliness because of being rejected or separated from the important people of their life which is the result of lack of confidence in their ability to physical and emotional self-care. The fact that they are not able to tolerate tedium makes them to try to test everything; this diversityism combined with their general impulsivity, and the defect in the system of inhibition and affective control creates the potential of using almost all kinds of drugs for them (Alcorn et al., 2013). Mello, Liappas, & Paparrigopoulos (2010) concluded that the antisocial and borderline personality disorders had the highest comorbidity with alcohol consumption.

The disinhibition dimension of the abnormal personality includes the desire to irresponsibility, impulsive behaviors, distraction, and risk-taking. People with disinhibition are likely to obtain low scores in the flexibility and perfectionism indices. Individuals with a disinhibited personality are dominant in ambivalent (dependent / avoiding) and arrogant (narcissist) in the interpersonal relationships. They probably believe that the best way to grow and obtain social relationships is to express themselves through high-risk behaviors (Heprowood et al., 2012). The individuals with this personality dimensions have traits such as irresponsibility, impulsivity, distraction, risk taking, strict perfectionism, sudden action in response to the immediate stimuli, instantaneous action without a previous plan based on the results, difficulty in project preparation or commitment to the projects, the feeling of exigency and self-harm behavior in the emotional turmoil situations. It can make them vulnerable to high-risk behaviors such as drug or alcohol use and high-risk sexual behaviors (VanDerBleek and Clark, 2015). The neuroticism dimension of the abnormal personality includes implies the tendency to experience the unusual and weird things in the form of social signs and unconventional behaviors. The results of Hopwood et al.'s (2012) study showed that these individuals have beliefs that are associated with schizoid and paranoid personality disorders. Furthermore, they believe that they need to do compulsive actions against the lack of emotional control over their environment. They also tend to be unique or different from others (Hopwood et al., 2012). Regarding its association with the use of materials, it can be said that the characteristics of these individuals are alone. These people, in the eyes of others, seem to be the people of the group,

because of what they are, it is because of their loneliness, because they alone feel safe when they can not hurt them. It can be due to the fact that these individuals grow alone. Other possible reasons for the use of these substances in these individuals may be their defects, which can damage their self-esteem and bring them into the mood to deal with the unpleasant feelings of this condition (Armstrong, 2002). Regarding its association with substance use, it can be stated that among the characteristics of these individuals are choosing loneliness and isolation. These people, in the eyes of others, seem to be the people that are cold and out of population. However, these individuals are sensitive the reason for choosing loneliness is that they feel security when they are alone; they believe that when they are alone nobody can hurt them. This makes them introverted and weary individuals who lack the necessary social skills. It can cause them to grow alone and turn to substance use in order to cure the pain of the loneliness. Another possible reason for substance use might be individuals' failures which have damaged their self-esteem; they turn to substance use in order to deal with the unpleasant feelings caused by this situation (Armstrong, 2002).

The findings also showed that impulsivity has a significant relationship with the tendency toward drug use and has a mediating role in the relationship between the abnormal personality dimensions and the substance use tendency. These findings are in agreement with the results of Ghamari and Mojarrad (2016), Garnarson (2012), Dévieux et al. (2002), Cooper, Wood, Orcutt, & Albino (2003), and Hoyle, Fejfar, and Miller (2000). In Hoyle et al.'s (2000) research on 30 studies on university student populations who were at risk, the results revealed that the two personality dimensions of seeking excitement and impulsivity predict a number of behaviors including the high-risk sexual behaviors, having sexual relationship with strangers, having multiple sexual partners, having sexual intercourse after substance or alcohol use. In another study, Ghamari and Mojarrad (2016) investigated the prediction of addiction tendency in university students of Mohaghegh Ardabili using the attachment style and impulsivity. They found that the secure attachment, ambivalent attachment, lack of planning, motional impulsivity, and cognitive impulsivity are associated with the tendency toward addiction. Was. In a study conducted by Ganarsson (2012), the psychological factors associated with drug use in 18-year-old adolescents were examined; the results revealed that the risk of substance use was associated with the traits of antagonism and impulsivity.

Dévieux et al. (2002) examined the role of the impulsivity component in taking risky behaviors and attitudes for getting infected by AIDS in a sample of adolescents including 266 males and 111 females. The participants were divided into two groups with high impulsivity and low impulsivity. According to the Millon Adolescent Clinical Inventory (MACI). The results of that study indicated that the group with high impulsivity had more alcohol and marijuana use in the past 3 months in comparison with the low impulsivity group. Cooper et al. (2003) investigated the personality traits of addicts and concluded that the core

personality features such as impulsivity, seeking excitement, negative excitement, and the forms of avoidance coping with negative emotions can be considered as common factors of conflict in a range of high-risk or problematic behavior. The impulsive behaviors refer to the performances that, despite being accompanied by some degrees of potential damage or loss, have also the potential to achieve a variety of early rewards (Ettelt et al., 2007). In impulsivity, individuals tend to react to internal or external stimuli rapidly, quickly, without planning, and without considering their negative consequences for themselves or others (Moeller et al., 2001). In fact, impulsivity and disinhibition also play a central role in the tendency toward a variety of risky behaviors and drug use. This study has some limitations that are important in generalizing the results. Overall, the results of this study showed that the abnormal personality dimensions are directly and indirectly effective in university students' substance use tendency through impulsivity. In groups of university students, the intervention in abnormal personality traits and impulsivity can be important in order to prevent vulnerability to addiction.

The limitations of this study include using self-report instruments and ignoring the diagnostic interviews as a complementary method, the impossibility of examining more mediating variables due to the length of the questionnaire items, not using the qualitative study design, and using the convenience sampling method. The present study was conducted in a university context and in a sample of ordinary people. Thus, generalization to other groups and clinical samples should be done with cautious. Therefore, future studies are recommended to consider the importance of diagnostic interviews as a complementary method for self-report questionnaires. This study should also be conducted on people with substance use disorder in order to obtain more accurate results and a better description of the proposed model. It is also suggested that similar studies be carried out in different samples in other cities using longitudinal methods and mixed research designs (quantitative-qualitative).

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