

Abstract

Objective: This study aimed to compare two groups of substance abusers and healthy people with each other in terms of individual risk factors and to identify the most important individual risk factor that draws a distinction between the two groups. **Method:** A retrospective method was used in this study. Indeed, 120 substance abusers and 120 healthy subjects were matched with each other in demographic characteristics. These participants resounded to the items of anxiety, stress and depression, impulsivity, aggression, attitude to substance, and status of substance use.

Results: The results of this study showed that the patients with substance abuse obtained higher scores in individual risk factors in comparison with the control group. Impulsivity, aggression, depression, and positive attitude to drugs were respectively the most discriminant factors in distinguishing the two groups.

Conclusion: The results show that internal defects in substance users make them susceptible to abuse drugs. Negative emotions, positive attitude to drugs, and the inability to control impulses lead them to use the variety of substances.

Keywords: substance abuse, risk factors, discriminant analysis

On the Comparison of Substance Abusers and Healthy People in Individual Risk Factors

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Introduction

Today, drug use is one of the major problems of human societies. The resulting damage will impose huge economic, social, health, and medical costs on the consumer's family and society at large. For this reason, human societies have been working for many years to develop rigorous regulatory approaches to control, eliminate or reduce drug abuse in the general population (Newton, 2011). Substance abuse is a maladaptive pattern of drug use that results in serious emotional-cognitive-behavioral harm in the family and community (Reber, 1996). According to the UN report in 2005, Iran has the highest proportion of heroin and opium addicts in the world, and 20% of the 15-to-60-year-old population of Iran are involved in drug abuse (Ekhtiari & Jillson, 2008).

Research on the etiology of drug use has shown that substance abuse disorders are created by a complex network of interaction of psychological, social, cultural, biological, and genetic factors (Botvin, 2000; Griffin, Botvin & Scheier, 2001; Avenevoli, Conwa, & Merikangas, 2005; and Kaminer & Wintres, 2011). In this regard, it is emphasized that multi-dimensional approaches should be used at different levels of etiology, diagnosis, and treatment (Belume, 2005, and Razali, & Klierer, 2015). Research findings have shown that the causes of substance abuse are different from those of substance dependence. Substance use has a stronger relationship with poverty and socio-cultural factors, while substance abuse and dependence are more influenced by psychological and biological factors (Glantz, & Pickens, 1992; Kaplan & Jansoon, 1992; cited in Glantz, & Pickens, 1992).

Risk factor perspective is among the multidimensional successful models in explaining substance abuse (Hawkins, Catalano & Miller, 1992). Based on this theoretical model, it is possible to predict drug use by examining a variety of risk factors (Spooner, Hall, & Lynskey, 2001). Risk factors are the situations, features, and events that increase the probability of substance abuse (Spooner et al., 2001). The risk factors that researchers have identified in the field of drug use are placed in the main social institutions, namely, family, school, peer group, community as well as in the individual. Whatever there are a large number of risk factors in a society, the likelihood of drug abuse will be higher in that society; and as a person is confronted with more risk factors, it will be more likely that substance abuse occurs (Hawkins, Catalano, Miller & Miller, 2003). By reviewing the related studies, Spooner et al. (2001) divided these factors into four areas, namely individual domain; family domain; small environments including school and peer group, and larger environments of culture; and socio-economic conditions. There are a number of factors in each area that can increase or decrease the probability of substance abuse (Biglan, Bernan, Foster, & Holder, 2008).

Among the identified risk factors, the roles of individual and psychological factors are of paramount importance (Molaei, Abolghasemi & Agababaei, 2016). Researches have emphasized the role of cognitive, emotional, behavioral, and

personality variables and the risk of substance use disorder (Kirisci, Tarter, Vanyukov, Reynolds, & Habeych, 2004; Whelan et al., 2014), and have shown that there is a relationship between substance abuse and other variables, such as psychological distress (Grant, 1995; Conway, Compton, Stinson, & Grant, 2006; and Moody, Franck, & Bickel, 2016) and personality traits (Hansson et al., 2008 cited in Turiano, Whiteman, Hampson, Roberts, & Mroczke, 2012; Korno, & Nordvik, 2007; Whelan et al., 2014). Personality traits and psychological characteristics can be considered as some part of the etiology of substance abuse and drug dependence and have a high predictive power in explaining substance abuse (Korno, & Nordvik, 2007; Kotov, Gamez, Schmidt, & Watson, 2010; Ball, 2014; Stevens et al., 2014). Personality traits, such as impulsivity (Turiano et al., 2012; Stevens et al., 2014; Walter, Peters, Adams, Lynam, & Milich, 2014; Heinz, Bui, Thomas, & Blonigen, 2015), aggression (Turiano et al., 2012); emotional factors like stress, anxiety and depression (Goeders, 2003; Moodi et al., 2016) play an important role in the formation and continuity of drug dependence. In the history of substance abusers, higher levels of impulsivity, aggression, depression, and anxiety are observed (Ball, 2014; Arteaga, Chen & Reynolds, 2010). Low levels of self-control, sensation seeking, and excitement (Schlauch et al., 2012), emotional distresses, such as negative affect, and restlessness are considered to be the factors influencing drug use (Griffin, Botvin, Scheier, & Diaz, 2001). Some temperament traits, such as impulsivity and negative affect predict behavioral problems, such as drug use, risk taking, and delinquency (Ball, 2014).

Newcomb, & Earlywine (1996) indicated that the higher levels of sensation seeking, aggression, impulsivity, and rebellion along with lower levels of commitment and law breaking increase the risk of substance abuse. The inability to cope with stressors, and the belief that alcohol and drugs produce desired outcomes are among the main reasons behind the development of drug use (Gilman & Abraham, 2001). Schinke, Schwinn, Hopkins, & Wahlstrom (2016) conducted a study on 507 adolescents and reported that negative self-image, high levels of stress, poor coping skills, drug use in peers, low levels of self-control, and intention to use drugs in the future are among the most important risk factors in predicting substance abuse. Xiong Lai, Cleary, TSitharthan & Hun (2015) carried out a meta-analysis and examined the prevalence of comorbidity of mood disorders and anxiety with substance abuse from 1990 and 2014, and reported that substance abuse disorders have a strong relationship with mood and anxiety disorders. In all the studies, this comorbidity has been recognized as an effective factor in the severity, pattern, and outcomes of these disorders. Therefore, psychological variables and personality traits are among the most important predictors of substance abuse (Zvolensky, Jenkins, Johnson, & Goodwin, 2011).

Although research findings have emphasized the critical role of individual and psychological factors in explaining substance abuse, little research has focused on identifying the factors that best differentiate abusive patients from non-users.

The identification of the factors that best discriminate the two groups of abusers and healthy ones from each other is very important in explaining substance abuse. Considering the importance of this issue, this study is an attempt to compare the individual risk factors of impulsivity, aggression, anxiety, stress, depression, and positive attitude towards substance use between the two groups of substance abusers and healthy people, and to identify the most important risk factor distinguishing the two groups from each other.

Method

Population, sample, and sampling method

The present study is a causal-comparative study that embarks on comparing the risk factors between the two groups of patients with substance abuse and healthy people. The self-introduced male addicts referring to addiction treatment centers and healthy men aged from 25 to 40 in Qazvin city constituted the statistical population of this study. After obtaining the list of private centers of addiction treatment from the Department of Pharmacy and Treatment in Qazvin province, an equal number of centers were included in the final sample from each of the three municipal districts. From among the total of 30 drug addiction centers in the southern, central, and northern parts of the city, four centers were randomly selected from each part, which amounted to a total of 12 centers. In fact, the lists of all drug addiction centers in the southern, central, and northern parts of the city were written down on a piece of paper and four centers were drawn from each area. Then, 10 people were selected from each center and the total of 120 patients was selected via convenience sampling method. The criterion for the patients' entrance was the absence of acute and chronic psychiatric illnesses where this criterion was measured by referring to the patient's medical history and by the diagnostic view of the physicians and psychologists at the centers. In addition, patients should also have been under treatment for at least six and at most 15 months. After ensuring the satisfaction of the entry criterion, the questionnaires were distributed among the patients and they were asked to answer the questions in accordance with the instructions and in complete honesty. In the case of some patients who were unable to answer all the questions in one session due to lack of time or fatigue, the questionnaire administration was carried out in two steps; thus, they filled out a series of the questionnaires in the next week that they came to the center. The selection of the healthy sample was begun after the completion of questionnaires by the patient group. In this regard, participants were selected from the general population of the city and from those who were willing to participate in the research. The healthy sample was matched with the patient group in terms of demographic characteristics, such as age, marital status, education, type of occupation, and type of housing via Chi-square test. The criterion for the entry of the healthy group in the study was the absence of any psychiatric illnesses that was verified through a lack of referral to a psychiatrist or psychologist over the past year. In

addition, a questionnaire on the status of substance use was used to ensure the non-abuse in the healthy group.

Instruments

1. Buss & Perry's Aggression Questionnaire: Buss & Perry (1992) conducted the aggressive behavior assessment questionnaire with 52 questions on three groups of students in three stages and, finally, they came with four factors, namely physical aggression, verbal aggression, anger, and hostility with 29 questions (cited in Samani, 2007). Samani (2007), in a research, changed the four factors introduced by Buss and Perry as verbal and physical aggression, anger, resentment, and suspicion, and committed two questions of the original form because they had obtained the loading value of higher than 0.40 in more than one factor. Samani (2007) reported the Cronbach's alpha coefficients of 0.83, 0.79, 0.77, and 0.70 for anger, physical and verbal aggression, resentment, and suspicion, respectively. Mohammadi (006) assessed the reliability of this questionnaire using Cronbach's alpha, re-test, and split half methods with the coefficients of 0.89, 0.78, and 0.73, respectively. In addition, Mohammadi examined the convergent validity of the scale by calculating the correlation coefficient of its sub-scales with each other and with the whole questionnaire and reported the availability for the significant correlation coefficients from 0.37 to 0.78. This research has used Buss and Perry's questionnaire (cited in Samani, 2007) with 27 items. All the questions in this questionnaire are scored directly except the item numbered 25. The questions numbered 1, 2, 3, 4, 5, 6, 20, and 25 measure anger; the questions numbered 7, 8, 12, 13, 15, 16, and 21 measure verbal aggression; the questions numbered 9, 14, 17, 19, 23 measure resentment; and the questions numbered 10, 11, 18, 22, 24, 26, and 27 measure suspicion. In this study, the internal consistency of the scale was obtained equal to 0.79 by calculating the Cronbach's alpha coefficient.

2. Barratt Impulsivity Scale: This questionnaire consists of 30 items that measure three factors, namely attentional impulsiveness (rapid cognitive decision-making) with 8 items; motor impulsiveness (acting without thought) with 11 items; and non-planning impulsiveness (immediate orientation or lack of foresight) with 11 items based on a five-point Likert scale from strongly agree to strongly disagree. In the present study, the Persian version of the scale has been used (Ekhtiari, Safai, Esmaili Javid, Atefvahid & Mokri, 2008). The questions numbered 1, 7, 8, 9, 10, 12, 13, 15, 20, 29, and 30 are scored in reverse. Ekhtiari, et al. (2008) calculated the Cronbach's alpha coefficient for both healthy people and opiate users and reported it to range from 0.41 to 0.83. Cronbach's alpha coefficients for the total score in the group of addicts and healthy subjects were obtained equal to 0.84 and 0.83, respectively. Patton, Stanford, Barratt (1995) reported the internal consistency of 0.79 to 0.83 for the total score. In this study, Cronbach's alpha was obtained equal to 0.86.

3. Short Form of Depression Anxiety Stress Scale: Depression Anxiety Stress Scale (DASS) was developed by Lovibond & Lovibond in 1995 to measure depression, anxiety, and stress. The questions in this questionnaire are directly scored from never (zero), little (1), sometimes (2), and always (3). The questions numbered 1, 6, 8, 9, 11, 14, and 15 measure anxiety; the questions numbered 3, 10, 13, 16, 17, 18, and 21 measure depression; and the questions numbered 2, 4, 5, 7, 12, 19, and 20 measure stress. Lovibond & Lovibond (1995) calculated the reliability of the scale through Cronbach's alpha and reported the coefficients of 0.91, 0.84, and 0.90 for three subscales of depression, anxiety, and stress, respectively (cited in Sahebi, Asghari & Salari, 2005). In Sahebi et al.'s study (2005), the internal consistency of the three subscales of depression, anxiety, and stress subscales was obtained equal to 0.77, 0.79, and 0.78, respectively. Sasani & Jokar (2007) also showed that this questionnaire enjoys appropriate reliability and validity for use in Iran. In the present study, the scale reliability was calculated via Cronbach's alpha coefficient, which equaled 0.88.

4. Positive Attitude to Substance Scale: This is a researcher-constructed scale in which the questions in two pieces of research conducted by Sedigh Sarvestani (2004) and Sydow, Lieb, Pfister, Hoßler, & Wittchen (2000) have been used. There are 14 questions in this scale, which are scored on a 5-point scale from strongly agree to strongly disagree. The questions numbered 3, 5, 7, 12, and 13 are scored in reverse. The Cronbach's alpha coefficient in Sedigh Sarvestani's research (2004) has been reported equal to 0.87 while the Cronbach's alpha coefficients of 0.82 and 0.81 were obtained for the two groups of substance abusers and healthy subjects in this study, respectively. Moreover, the internal consistency of the total score of the questions was obtained equal to 0.84.

5. Substance Use Status Questionnaire: The substance use status in the healthy group was measured based on the Substance Use Status Questionnaire, which has been used in Partov's research (2010). The questionnaire examines the index of consumption and abuse of substances at the present time and in the past; and has been designed based on the questionnaires used in other pieces of research (e.g. Mohammadkhani, 2006). Mohammadkhani (2006) obtained the internal consistency coefficient of the questionnaire in adolescents (average age of 15.54 years) equal to 0.87. Partov (2010) reported the Cronbach's Alpha coefficient of 0.81 for this questionnaire. Mohammadkhani (2006) reported the content validity of this test as acceptable. In this study, the alpha coefficient of 0.83 was obtained for the questionnaire.

Results

Age range of substance abusers was 26-40 and healthy individuals 26-40 and mean age of substance abusers was 33.15 ± 4.53 and healthy people were 32.89 ± 5.02 . 87 patients (65%) were patients of opioid abuses and 24 patients (20%) used stimulant drugs and 9 patients (7.05%) did not report the type of substance abuse. chi-square test was used to ensure that the two groups have no

significant differences in demographic variables. Descriptive statistics, chi-square test results and demographic groups are presented in Table 1.

Table 1. Sample demographic statistics based on categories

<i>Variables</i>	<i>Level</i>	<i>Patient group</i>		<i>Healthy group</i>		<i>Indicators</i>	
		<i>Number</i>	<i>Percentage</i>	<i>Number</i>	<i>Percentage</i>	<i>x²</i>	<i>Sig.</i>
Kind of Job	Unemployed	16	13.3	13	10.8	0.670	0.368
	Workers, security guards, gardeners, masons,	70	58.3	66	55		
	Clerk, secretary, Contractual	4	33.3	5	4.2		
	Shopkeeper	14	11.7	17	14.2		
	Seller	16	13.3	19	15.8		
Education	Illiterate or elementary	10	8.3	7	5.8	0.075	0.851
	Secondary	23	19.1	26	21.6		
	High School or diploma	44	36.6	41	34.16		
	Associate Degree and Bachelor's Degree	37	30.8	40	33.3		
	master degree	6	5	6	5		
marital status	Single	40	33.3	35	29.2	0.051	0.728
	Married	71	59.2	77	52		
	Divorced	9	5.7	8	6.7		
Housing status	Personal	55	45.8	59	49.1	0.576	0.571
	rental	65	54.1	61	50.8		
Location of House	Downtown	38	31.7	41	34.2	0.072	0.873
	Central	25	20.08	20	16.7		
	North of City	22	17.3	19	15.8		
	Suburbs	30	25	34	28.3		
	Village	5	4.2	6	5		

Two groups are matched on all variables According to the results of Chi-square test and significance level of the (P>0.05).

Multivariate analysis of variance was used in order to compare risk factors variables between the two groups of patients and healthy individuals and levene's test and box test were used to evaluate the assumption of equality of variance-covariance matrices and homogeneity of variance in the dependent variables. Results of Box test showed that there was no serious violation of the assumption of the equality of covariance -variance matrices (P>0.05, F=1.126, M Box=9.31). According to the levene's test, assumption of equality of variance of dependent on observance was performed (P>0.05, F=1.056). After confirmation of the main assumptions of MANOVA, and no serious violations in its default, this test was conducted to study the differences between the

variables. Wilks Lambda abusers showed significant difference between patients and healthy subjects in the study-level variables ($P < 0.001$) is significant. Univariate analysis of variance was used to evaluate different patterns as follows.

Table 2. Descriptive statistics and effects between the two groups of subjects of the dependent variables

<i>Variables</i>	<i>Healthy People</i>		<i>Patient People</i>		<i>Mean of Square</i>	<i>F statistic</i>	<i>Sig.</i>
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>			
aggression	52.15	15.53	66.05	12.19	33725.10	181.48	0.0005
Impulsivity	43.53	11.81	62.74	0.86	21755.10	182.78	0.0005
Anxiety	4.70	3.21	9.06	3.78	1382.50	112.97	0.0005
Stress	5.39	3.57	10.69	3.81	1659.00	122.43	0.0005
Depression	4.31	3.54	10.75	3.85	2438.30	182.25	0.0005
Attitudes to drugs	17.62	8.12	24.40	7.89	2760.81	42.063	0.0005

As seen in Table 2, the two groups have significant differences in all variables. The difference between the two groups of substance abusers and healthy people ($P < 0.001$) is significant. Substance Abusers patients at risk variables, impulsivity, and aggression, positive attitude to drugs, anxiety, stress and depression in comparison with the control group gained more scores. Also in order to best distinguish between the variables of discriminant analysis was used. Discriminant analysis is a statistical method that combines independent variables highlights the difference between the two groups. The results of discriminant analysis are presented in Table 3.

Table 3: Variables included in the stepwise analysis

<i>Steps</i>	<i>Variables</i>	<i>Tolerance</i>	<i>To remove statistic F</i>	<i>Wilks Lambda</i>	<i>Sig.</i>
1	Impulsivity	1.000	182.798	0.566	0.001
	Impulsivity	0.745	34.015	0.566	
2	Depression	0.745	33.668	0.566	0.001
	Impulsivity	0.621	10.523	0.483	
3	Depression	0.711	19.683	0.501	0.001
	aggression	0.682	19.943	0.495	
	Impulsivity	0.618	9.406	0.442	
4	Depression	0.709	18.218	0.489	0.001
	Aggression	0.674	14.450	0.482	
	Positive attitude to drugs	0.954	4.298	0.462	

The results in Table 3 were calculated in step 4 analyses that impulsivity is the first variable that shows significant distinction between the two groups in between all variables in the analysis and the next steps; depression, aggression and positive attitude to the substance abuse are the best factors to distinguish the two groups of substance abusers and healthy individuals. This table shows the risk indicators of anxiety; stress that cannot be detected and removed from the equation. Table 4 would present Summary of discriminate analysis.

Table 4: Summary of discriminate analysis

<i>Dimension</i>	<i>canonical correlation</i>	<i>Shared variance</i>	<i>Wilks Lambda</i>	x^2	<i>df</i>	<i>Sig.</i>
1	0.739	56.35	0.454	186.47	4	0.0005

As can be seen from the above table only one function of detecting is statistically significant at 0.001. The canonical correlation between dependent and independent variables for the function 1 is $R=0.744$, and this indicates that the 55.35% of the variance explained by this model. Also Wilks Lambda equals 0.454 and its conversion Chi-square test is 186.476 that indicate the significance of obtained diagnostic function at least 99%. Other findings of discriminant analysis provide a classification analysis. Individual membership based analysis predicts the dependent variables. In other words, the auditor's analysis shows how many members of the right or the wrong number of research groups has been classified. The results of discriminant analysis showed 87.5% of these samples were classified correctly that are presented in the below table.

Table 5: The rat of successful detection function in the classification of group

<i>The actual group membership</i>	<i>anticipated membership group</i>					
	<i>Accept</i>		<i>rejection</i>		<i>Total</i>	
	<i>Number</i>	<i>Percentage</i>	<i>Number</i>	<i>Percentage</i>	<i>Number</i>	<i>Percentage</i>
Healthy	100	83.3	18	15	240	100
Patient	110	91.6	12	10	240	100
Total	210	87.5	30	12.5	240	100

As seen in Table 5, 87.5% (210 people) correctly, and 12.5 % (30 people) incorrectly were sorted in this research. Hence, it seems discriminant analysis model, generally with validity of equal to 87.5 focused on classification of people correctly.

Discussion and Conclusion

The findings of this study showed that the two groups significantly differ from each other in terms of individual risk variables. Substance abusers gained higher scores in the risk variables, including impulsivity, aggression, anxiety, stress, depression, and positive attitude toward substances. This finding is consistent with those of previous studies that have shown impulsivity (Brady, & Randall, 1999; Paton et al., 1995, Allen, Moeller, Rhoades, & Cherek, 1998; Moeller, Barratt, Deugherty, Schminz, & Swann, 2001; Wills & Stoolmiller, 2002; Lee, Humphreys, Flory, Liu, & Glass, 2011; Ashton, & Lee, 2005; Gunnarsson, Gustavsson, Tengstrm, Franck, & Fahlke, 2008; Mirmahadi & Karimi, 2012); aggression (Hayatbakhsh, Najman, Bor, O'Callaghan, & Williams, 2009; Sinha, 2011; Langbehn, Cadoret, Caspers, Troughton, & Yucuis, 2003; Fothergill, & Ensminger, 2006; Ashton & Lee, 2005; Gunnarsson et al., 2008); attitude to drugs (Stone, Becker, Huber, & Catalano, 2012; Sussman, Dent, & Lew, 2000;

Seidou et al., 2000; Golpaygani & Khademi Ashkzari, 2012); anxiety, stress, and depression (Grant, 1995; and Conway et al., 2006; Green, Zebrak, Robertson, Fothergill, & Ensminger, 2012; Brook, Cohen, & Brook, 1998; Chassin, For, & King, 2004) are among the most effective factors in predicting substance abuse. Kirisci et al. (2004) have shown that poor control of behavior, impulsivity, and aggression are among the most common attributes associated with drug abuse. Stone et al. (2012), in a review study, identified the most important risk factors for drug abuse at the beginning of adulthood and showed that positive attitudes toward drugs and depression are among the most important factors in substance abuse at the beginning of adulthood.

One of the objectives of this research was to identify the variables among the risk factors that can distinguish the two groups from each other in a desirable way. Among the six variables that were studied, three variables, namely impulsivity, depression, and aggression, as well as positive attitudes towards substances, could differentiate substance abusers and healthy individuals from each other to a larger degree than other variables.

These results confirm that previous studies have shown that impulsivity and aggression are the strongest predictors of drug use (Paton et al., 1995; Allen et al., 1998; Moos, Yao, & Panzak, 1990; Walton, & Roberts, 2004; Gonarson et al., 2008; Acton, 2003; Kuntsche, Knibbe, Gme, & Engels; 2006; Korno, & Nordvik, 2007; Terracciano, Löckenhoff, Bierven, & Costa, 2008; Dubey, Arora, Gupta, & Kumar, 2010; Zvolensky et al., 2011). From an etiological point of view, the impulsivity arising from the use of addictive substances can be explained by two different strategies. Impulsivity is one of the consequences of the continuous consumption of substances on its own that leads to neurochemical changes in the brain. In consequence, high impulsivity and inability to control the desire for drug use show up. Secondly, impulsivity can exist before the onset of consumption, which, as a trait, predicts the consumption of the substance and represents one of the personality traits (Verdejo-Garcia, Lawrence, & Clark, 2008). The individuals who are more readily prepared for anger and hostile behaviors are prone to substance abuse. They seek to escape from the hostile feelings that they experience and seek refuge in drugs (Moss, & Tarter, 1993). Therefore, these two important personality constructs have a prominent role in explaining substance abuse and substance dependence.

In addition to aggression and impulsivity, studies have widely shown that psychological distresses, especially anxiety and depression, play a significant role in substance abuse (Grant, 1995; Conway et al., 2006; Moody et al., 2016). According to some studies, drug use predicts psychological distress in the future (Brooke et al., 1998). While some other studies have shown that psychological distresses in adolescence predict the use of drugs in adulthood (Johnson & Kaplan, 1999; McGee, Williams, Poulton, & Moffitt, 2000). According to Green et al. (2012), psychological disorders and drug use during adolescence lead to

higher levels of substance abuse in adolescence, and this relationship continues through the middle age.

An explanation for the comorbidity of drug abuse disorders and psychological disturbances is the use of drugs as self-cure (Green et al., 2012). This means that people consume drugs to relieve their clinical symptoms (Blume, Scaling & Marlatt, 2000; Swendsen et al., 2000; cited in Green et al., 2012). Another explanation is that drug use leads to psychological disturbances (Grant et al., 2004). Abstinence signs and substance poisoning create symptoms of depression and anxiety that may be resolved by the elimination of spontaneous symptoms of poisoning (Davidson, 1995, cited in Green et al., 2012). The last theoretical model emphasizes the third variable or a common causality. In this model, there is no causal relationship between substance abuse and psychological disturbances; rather, both are influenced by a third variable, such as genetic and temperamental tendencies (Merikangas et al., 1998, and McGee et al., 2000). The research findings reported by Moody et al. (2016) supports the third hypothesis and the existence of genetic and inherent tendencies between substance abuse and psychological disturbances. From this perspective, a person with a genetically neurotic personality experiences more negative emotions and this involves him/her in substance abuse (McGee et al., 2000, Moody et al., 2016). Therefore, there are personality weaknesses in the substance abusers that make them willing to drug abuse (Kornor & Nordvik, 2007; Trachiano et al., 2012) while the lack of some psychological abilities makes them involved with substance abuse (Griffin et al., 2001).

These findings emphasize the need for specific temperamental and personality backgrounds to make a person involved in the behavior of drug use. Pain and discomfort arising from negative thoughts and emotions, on the one hand, and the positive attitude towards drugs to reduce and cope with these painful experiences on the other hand, as well as the inability to control the emotions and impulses lead to the use of drugs (Breslin, Zack & McMMain, 2002; Pullen, 2001; Goodarz, 2004). The uniqueness of the current research sample to men, lack of control over the type of substance abused by patients, failure to examine other variables that affect substance abuse, such as family and social factors, are among the limitations of this research. It is suggested that drug abusers and healthy individuals be compared with each other in terms of the type of substance they use. It is also suggested that appropriate intervening, educational, and training programs and interventions be designed using the results of this study.

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