

## Identifying psychological factors predicting drug buying and selling behavior in people

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### Abstract

From a pathological perspective, drugs are a strategic and multifaceted threat, one aspect of which may become more prominent over time than others. This threat endangers not only individual security but also national security and the ontological or existential security of a society. The current study aimed to investigate the predictive psychological factors of individuals who were involved in drug dealing. This is a descriptive study whose statistical population included all people who lived in Lordegan in 2019. The target group comprised 50 drug dealers that were selected by the chain sampling method (snowball), while another group was composed of 50 people who were not addicted and did not participate in drug dealing. The latter group was selected by the available sampling method. Zuckerman Excitement Questionnaire (1978) and Johnson & Wister's (2010) dark personality questionnaire were used to gather information, and the data were analyzed using the SPSS software version 24. The findings showed that the variables of age and marital status (single or divorced), seeking of emotion and all subscales of dark personality traits except narcissism were the strong predictors of drug dealing. Also, the comparison of drug dealers with the control group showed that there was a significant difference in the degree of dark personality traits and excitement between the two studied groups. It is important to know the factors influencing the initiation of substance use to determine preventive measures. It is worth mentioning that individuals differ not only in terms of excitement levels but also in personality. The understanding of how personality influences the propensity to engage in criminal activities, including drug dealing, could be of particular significance. The motivation for the drug trade results from a combination of psychological, emotional, and social factors, and people's emotions are used as psychological mechanisms to moderate the incompatible and dark traits of their personalities.

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## Introduction

The issue of drugs is one of the most important and serious issues at the international level, which attracted different views from economic, social, political, and physiological aspects. Due to its strategic location, Iran has always been used as a route to transport drugs to Turkey and other parts of the world. As a result, in the past, due to its proximity to Afghanistan, which is one of the most important drug producers, it has been a bridge between the East and West. Such proximity to Afghanistan and the transit of drugs through Iran has become one of the most significant factors in easy access to these substances, which is why they are used to a significant extent in Iran. Also, the scope and depth of the problem of addiction in Iran are increasing day by day. Notably, teenagers and women are also affected by this problem. The age of addiction tends to be declining in Iran, according to relevant reports. Addicted parents force their children to buy and sell drugs, which causes them to fall into the trap of addiction and drug trafficking. The phenomena of drug addiction and trafficking seem to be complex and multi-dimensional issues. This issue originates from the interaction and combination of numerous conditions and factors at the low, intermediate, and high levels. Hence, when it comes to the analysis of these factors, in addition to individual factors at the low level, such as physical and mental illnesses, treatment and health needs, and personality and psychological characteristics (Apel & Horney, 2017), intermediate-level factors, such as family problems, violence, divorce, type of home-school interaction (Floyd et al., 2010), and even at the high level, such as geographical location, the degree of industrial and urban development, social disorder, cultural development of society, as well as the growth, insight, and the knowledge of people should be taken into account.

In addition, research on drug dealers has shown that drug trafficking is associated with a wide range of dangerous and delinquent behaviors (Magyar et al., 2011). The significant income from buying and selling drugs is tempting for some people, and unemployment, as well as the lack of parental and family supervision, have led young people to use drugs (Floyd et al., 2010; Little & Steinberg, 2006). The increase in drug use among adults in urban areas has helped young people with access to drugs to view drug sales as an opportunity. Individuals' motivation to commit a crime may also be affected by the unavailability of alternative activities (e.g., work and school) and individual characteristics (e.g., low self-control, lack of fear of crime, and risk-taking). Therefore, personality and psychological characteristics can be other factors affecting people's participation in buying and selling drugs. Due to the stability of personality traits and their influence on decision-making and motivation (Kornør & Nordvik, 2007), some personality traits can be associated with turning to criminal activities. Among the annoying and non-morbid characters in the field of psychology, we can mention three dark sides of personality. The dark sides of personality are socially disturbing and associated with interpersonal problems and destructive behaviors, such as aggression, deception, and exploitation. Dark personality traits, including narcissism, *Machiavellianism*, and anti-socialism (McHoskey et al., 1998), can overlap with them and have many behavioral consequences. Dark personality traits are linked with immoral behaviors (Roeser et al., 2016) and risk-taking (Malesza & Ostaszewski, 2016). All three

traits, to some extent, have some undesirable characteristics, including malice, selfishness, emotional coldness, hypocrisy, and aggressiveness. While dark personality traits can be directly related, they are also conceptually and psychometrically related in a separate structure (Furnham et al., 2013; Jonason et al., 2009). Numerous studies indicated a significant relationship between dark personality traits and manifestations of misbehavior, including crime, delinquency, violent behaviors, and drug abuse (Chabrol et al., 2009; Nathanson et al., 2006). Malevolent social tendencies appear to have dark personality traits, and dark variables are associated with equally dark actions. They can predict the tendency to engage in drug abuse and trafficking (Apel & Horney, 2017; Cossman & Rader, 2011; Friehe & Schildberg-Hörisch, 2017).

The interpersonal aspect of narcissism is known to be the strongest predictor of alcohol abuse disorder and its related problems (Naidu et al., 2019). One study found that high narcissism predicted illicit drug and alcohol use, financial, health/safety, and social risk behaviors (Buelow & Brunell, 2014); however, little is known about the effect of narcissism in the literature. Narcissism could be a predictor of engaging in high-risk behaviors, such as drug dealing.

Machiavellianism is usually the understanding or interpretation of goals for self-interest and selfish actions. There is a statistically significant negative correlation between the Machiavellian and the altruism subscales. People use Machiavellian intelligence to rationalize their behaviors, and they manipulate the behavior of others to make a profit (Rada et al., 2004). Machiavellian traits had a positive and significant correlation with alchemy (Wastell & Booth, 2003), and it has an inverse association with problem-coping and supporting (Aghababaei & Błachnio, 2015).

Machiavellianism was reported to be higher among cocaine users (Quednow et al., 2017), and it is linked with people turning to problematic activities (Demircioğlu & Köse, 2018). Research has shown that Machiavellianism is a strong predictor of deception (McLeod & Genereux, 2008), and Machiavellian people are more adept at lying than others. Also, serving others for their purposes with the help of lies is one of the defining characteristic features of Machiavellianism (Azizli et al., 2016). Therefore, we hypothesized that the trait of Machiavellianism could be a predictor of drug dealing and persuade others to use drugs.

Anti-socialism is known as a syndrome of behavioral and interpersonal personality traits of emotional and anti-social deviance (Hare et al., 2018). The results show an interaction between anti-social character and drug use. Anti-socialism and drug use disorders are in line, and their co-occurrence is associated with more severe addictive behaviors and an increased risk of violent crime. Both substance use disorder and psychiatry are associated with prominent disorders of emotion processing. Drug addicts were more psychologically anti-social than the control group. In the heroin group, anti-social behavior was more associated with impulsive/anti-social characteristics (impulsive, irresponsible, and anti-social behavior) (Psederska et al., 2019). It was also found that anti-socialism was positively related to several characteristics of drug use (symptoms, age of onset of drug use) (Schulz et al., 2016). It has been demonstrated that those with a high score of anti-social sentiment have a higher tendency to engage in behaviors such as defrauding or deceiving others for personal gain. In addition to this dangerous form of deception, people

with anti-social behavior tend to use deception in social situations. This shows that they also lie with passion (Seto et al., 1997). Thus, the trait of anti-socialism can be a predictor of participating in illegal activities, such as buying and selling drugs and deceiving people to abuse them.

On the other hand, some personality traits are common in drug addicts, including high motivation sensation, need to seek, and desire to take risks (Blanchard et al., 2009). "Sensation-seeking" is defined as the need for diverse, new, and complex emotions and experiences, as well as the tendency to ignore the physical and social dangers of these types of experiences (Zuckerman et al., 1978). According to a study conducted by Pokhrel and colleagues (Pokhrel et al., 2010), higher sensation-seeking predicted more drug use in US samples and more cigarette, alcohol, and drug use in Russian samples. In another study, researchers found that the frequency of alcohol and marijuana use was predictable, and sensation-seeking can predict the consumption of alcohol and tobacco in the early stages (Meil et al., 2016). High arousal motivates people to engage in drug-related activities (Pokhrel et al., 2010), and it may justify the activities in the field of drug dealing. Based on the statements mentioned above, although the existence of a dark triangle of personality and the search for emotion seems to increase the predisposition for criminal behaviors and tendencies in individuals, the causal factor is not definitive. However, the issue of addiction and drug abuse in adults has been addressed. There is little information about the psychological factors and personality traits of people involved in drug dealing. Given that the recent field is a new and dynamic topic in the field of personality psychology, this study could be a catalyst for its development in psychology. Therefore, the purpose of this study was to assess the predictive psychological factors in drug dealing.

## Methods

This research was a descriptive study. The statistical population of the present study included all people living in Lordegan city in 2019. The community consisted of two groups; the first group was composed of 50 drug dealers who were selected by snowball sampling, while the control group consisted of 50 people who were not drug addicted, and had no role in buying and selling drugs and were selected by convenience sampling method. Subjects were asked to voluntarily participate in this research, ensuring the confidentiality of their information and respecting the principles of confidentiality. After identifying the eligible people for the research, the questionnaire forms were given to the participants after a brief explanation of how to complete them. The comprehensive information about the main purpose of the research was presented to them, and people who did not want to participate in the research were removed from the sample list.

### **Ethical considerations:**

All volunteers in the present study expressed their willingness to participate in the study. Participants were allowed to withdraw at any stage of the study. The information obtained from the participants will remain confidential. Also, none of the volunteers were obliged

to insert their first and last names, and all information was analyzed in the form of codes and without names. The following questionnaire forms were used to collect data;

### **Sensation Seeking Scale-V (SSS-V)**

This scale was developed by Zuckerman et al., (1978) who proposed various paper forms to determine the level of sensation-seeking in individuals. The fifth proposed form was accepted and met the required standards for the first time in Iran by Mahvi (2008) to match the items of this scale with Iranian culture. This scale provides a general description of sensation-seeking traits by measuring four sub-factors (Thrill-seeking, Experience-seeking, Avoidance of inhibition, and Boredom) and 10 scale items are considered for each factor. This scale consists of 40 two-component items. In each item, one of the two components expresses the level of sensation seeking of a person, while the second component is the opposite. It means this scale has two options, A and B, for answers A: +1 and B: -1. After reading each item, the subject must mark each item truthfully in one of the corresponding squares. If their answer matches the scoring key, the subject receives one point for each answer that matches the key. After calculating the scores of subjects, ranging from zero to 40, the sensation-seeking score of an individual is determined. These scores can then be explained based on the mean and standard deviation. The total variance of the questions in the standardized tool is 8.5772, the total variance of the test is 38.93, the mean of the test is 21.02, the standard deviation of the scale is 6.24, the validity of the total test is 0.781, and the standard error of the total test is 2.92. The reliability of this questionnaire has been investigated for use in Iran. The reliability coefficients of this questionnaire were calculated by Ghorbani (2013) with Spearman-Brown and Cronbach's alpha methods, respectively 70%, 75%, and 80%, which shows the satisfactory reliability of this questionnaire. The total forty-item scale in the fifth version showed good internal consistency in a range of 0.83 to 0.86 in American and British samples. Those who engaged in unusual and dangerous activities received scored high on the Zuckerman sensation-seeking scale, whereas individuals who preferred quieter and less dangerous activities had a low score on this scale (Schultz Duane, 1990). There are four factors or components in the general nature of sensation-seeking that include:

- 1- Thrill-seeking: the desire to engage in physical activity that includes elements of speed, danger, novelty, and accident avoidance (e.g., parachuting or diving)
- 2- Experience-seeking: Search for new experiences through travel, music, art, as well as spontaneous and heterogeneous lifestyles despite what people tend to do
- 3- Avoidance of inhibition: The need to seek liberation in unrestricted social activities with or without alcohol
- 4- Boredom: Avoidance of repetitive experiences, normal or monotonous people, or predictable individuals, and if forced to be exposed to such situations, they exhibit restless dissatisfaction reactions (Schultz Duane, 1990).

### Dark Personality Scale

This scale was designed in 2010 by Jonason & Webster (2010). This scale consists of 22 items, scored from 1 (does not describe me at all) to 3 (completely describes me). This scale is a three-factor self-report scale, which includes Machiavellianism (items 1, 2, 3, 4), psychopathy (items 5, 6, 7, and 8), narcissism (items 9, 10, 11, and 12), and item 7 is scored in reverse. Regarding the validity and reliability of the scale, according to the study conducted by (Ghomrani, et al., 2015) Cronbach's alpha coefficients for the Machiavellian, psychopathy, and narcissistic subscales were reported to be 0.91, 0.68, and 0.81, respectively. the validity and reliability of the scale, according to the study conducted by (Ghomrani et al., 2015), Cronbach's alpha coefficients for the Machiavellian, psychopathy, and narcissistic subscales were reported to be 0.91, 0.68, and 0.81, respectively. The validity of the questionnaire has also been reported as acceptable.

### Results

The present study was conducted on individuals involved in substance use as drug dealing, as well as those living in Lordegan city without a history of addiction or drug dealing. The descriptive findings of the present study showed the age distribution and marital status of subjects, as shown in Table 1. The study participants had an age range of 15 to 52 years old. The average ages of drug dealers and normal individuals were 26.32 and 28.44 years old; therefore, both groups were matched in terms of age. In terms of marital status, the number of individuals who were single or divorced was higher among drug dealers than that among normal people. Accordingly, the number of individuals who got married was higher than that of normal individuals compared with drug dealers.

**Table 1.** The demographic characteristics of the subjects

Group	drug dealers			ordinary people		
	Mean	Standard Deviation	Number	Mean	Standard Deviation	Number
Age	26/32	6/99	50	28/44	7/48	50
marital status	single	married	Divorced	single	married	Divorced
	26	14	10	11	34	5

The mean and standard deviation of research variables, including sensation-seeking and dark personality traits, as well as subscales of these two variables, are reported in Table 2.

**Table 2.** The mean and standard deviation of sensation-seeking and dark personality traits

Group	variables	Mean	standard deviation	N
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<b>Drug dealers</b>	Sensation seeking	25/88	4/23	50
	Thrill-seeking	6/34	1/64	
	Empiricism	6/72	1/88	
	Avoidance of inhibition	6/82	1/47	
	Boredom	6/44	1/66	
	Dark personality traits	21/52	4/31	
	Machiavellian	4/86	1/21	
	Antisocial	6/76	1/46	
	Narcissism	7/08	2/08	
<b>Ordinary</b>	Sensation seeking	18/04	3/27	50
	Thrill-seeking	5/38	1/64	
	Empiricism	5/00	1/52	
	Avoidance of inhibition	5/52	1/48	
	Boredom	5/34	1/53	
	Dark personality traits	17/86	3/49	
	Machiavellian	4/28	0/67	
	Antisocial	6/04	1/30	
	Narcissism	7/02	2/21	

Logistic regression analysis was used to assess the effect of several factors on the likelihood of the audience reporting drug dealing. Before the performance of the statistical analysis, its assumptions were examined by the Kolmogorov-Smirnov test, and the results showed that excitement scores and dark personality traits in drug dealers were normally distributed. The model included 10 predictor variables, namely age, marital status, Thrill-seeking, empiricism, Avoidance of inhibition, boredom, Machiavellian personality traits, sociability, and narcissism. The overall model, including all predictions, was statistically significant ( $\chi^2= 11/20$ ,  $n=100$ ,  $p <0.001$ ). This shows that the model can distinguish between drug dealers and normal individuals.

**Table 3:** The results of the logistic regression analysis in the prediction of the probability of group membership (drug dealing)

		B	S.E.	(Wald)	df	sig	Exp(B)
Age		0/06	0/02	4/31	1	0/03	1/06
marital status	Single	0/16	0/65	15/12	1	0/00	0/84
	Married	1/58	0/63	0/06	1	0/79	4/85
	Divorced	0/69	0/54	6/23	1	0/01	0/50
Thrill-seeking		0/47	0/12	14/13	1	0/00	0/69
Empiricism		0/39	0/13	8/25	1	0/00	0/67
Avoidance of inhibition		0/49	0/14	12/42	1	0/00	0/61
Boredom		0/42	0/13	9/85	1	0/00	0/65
Machiavellian		0/69	0/26	7/00	1	0/00	0/50

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Antisocial	0/38	0/15	5/97	1	0/01	0/68
Narcissism	0/00	0/20	0/00	1	1/00	1/00
Constant	10/01	4/22	4/46	1	0/20	21/51

As shown in Table 3, predictor variables sensation-seeking factors, including Thrill-seeking, empiricism, Avoidance of inhibition, boredom, and two subscales of dark personality traits, had a statistically significant contribution to the model. But the prediction result for the Narcissism variable was not significant. On other hand, the following table, while providing a summary of the role of each variable in the model, shows which variables remained in the model after logistic regression. This table is the most important in interpreting the results related to the significance and the degree of influence of each independent variable on the dependent variable. More detailed details of the effect of these variables are given. The first variable that has a significant effect on the probability of buying and selling drugs is the thrill-seeking variable. The probability ratio for this variable is 0.69, which shows that with the increase in the level of thrill-seeking, the ratio of buying and selling drugs in people increases by 0.69. The second variable is antisocial. The probability ratio for this variable is 0.68, which shows that with the increase in antisocial behavior in people, the ratio of buying and selling drugs increases by 0.68. The next variables are experimentalism, boredom, avoidance of inhibition, and Machiavellianism, which are significant in the model and are interpreted according to the same procedure. To compare the scores of sensation-seeking and dark personality traits between drug dealers and normal people, a multivariate analysis of covariance with age control was performed, and the results are reported in Table 4. The use of multivariate analysis of covariance requires the observance of assumptions, such as the equality of variance of groups, along with the homogeneity of the covariance matrix. In the present study, both hypotheses were confirmed.

**Table 4.** The results of covariance analysis by controlling the impact of age on sensation seeking and dark personality traits in drug dealers and normal people

Sources of changes	of variable	Total squares	df	Mean squares	F	Sig.
	Sensation Seeking	2/82	1	2/82	0/15	0/69
	Thrill-seeking	1/07	1	1/07	0/34	0/55
	Empiricism	1/13	1	1/13	0/43	0/51
	Avoidance of inhibition	3/76	1	3/76	0/00	0/99
Age	Boredom	0/09	1	0/09	0/03	0/84
	Dark personality traits	16/07	1	16/07	1/41	0/23
	Machiavellian	0/07	1	0/07	0/08	0/77
	Antisocial	0/48	1	0/48	0/25	0/61
	Narcissism	17/93	1	17/93	3/98	0/04

Between groups	Sensation Seeking	469/11	1	469/11	25/46	0/00
	Thrill-seeking	58/47	1	58/47	18/83	0/00
	Empiricism	26/13	1	26/13	10/01	0/00
	Avoidance of inhibition	40/35	1	40/35	15/18	0/00
	Boredom	28/17	1	28/17	10/86	0/00
	Dark personality traits	0/00	1	0/00	0/00	0/99
	Machiavellian	8/37	1	8/37	8/63	0/00
	Antisocial	11/35	1	11/35	5/84	0/01
	Narcissism	0/36	1	0/36	0/08	0/77
Intragroup	Sensation Seeking	1786/93	97	18/42		
	Thrill-seeking	301/16	97	3/10		
	Empiricism	253/02	97	2/60		
	Avoidance of inhibition	257/86	97	2/65		
	Boredom	251/44	97	2/95		
	Dark personality traits	1105/86	97	11/40		
	Machiavellian	94/02	97	0/96		
	Antisocial	188/55	97	1/94		
	Narcissism	436/72	97	4/50		

As depicted in Table 4, using controlling the effect of age, the two studied groups are significantly different in all four subscales of the sensation-seeking factor, including Thrill-seeking, empiricism, Avoidance of inhibition, and boredom, On the other hand, two subscales of dark personality traits, namely Machiavellianism and anti-socialism, significantly differed between the two groups of drug dealers and ordinary people, According to Table 3, these factors statistically predicted positively the likelihood of drug dealing. However, the difference in narcissistic traits between the two groups of drug dealers and normal people was not statistically significant and this factor was not able to predict the buying and selling of drugs.

## Discussion

The purpose of this study was to evaluate the psychological factors predicting drug trafficking. According to Table 3, people in the drug-dealing group differed in terms of marital status. The number of divorced and single individuals was significantly higher in this group than that of normal individuals. This finding was consistent with the results of (DeLisi & Piquero, 2011; Siennick & Osgood, 2008). In a study, it was found that regarding the individual factors of drug addiction, single men had more anxiety and a history of abuse than married men. Also, addicted single men mentioned fun and

entertainment, curiosity, and imitation of others as the reasons for turning to drugs (Allahverdi et al., 2018). Among young men, criminal behavior was inversely related to marital status (King & South, 2011). Some theories claim that marriage leads to fear of crime. Several studies have shown that married people are less likely to engage in illegal activities (Sampson et al., 2006). Marriage has been linked to a reduction in criminal activity, and people who are committed to their spouses feel more responsibility and show fewer criminal behaviors (Barnes et al., 2014). Therefore, it seems that married people are less likely to engage in criminal activities and illegal activities (e.g., drug dealing) than single or divorced people.

As displayed in Table 4, all four subscales of the sensation-seeking factor, including thrill-seeking, empiricism, avoidance of inhibition, and boredom, were significantly different between the two groups. According to Table 3, these factors statistically predicted positively the likelihood of drug dealing. This result was consistent with the findings of Blanchard et al., (2009); Meil et al., (2016); Pokhrel et al., (2010). Sensation-seeking is defined as a variety of experiences, boredom, and the search for excitement. These traits have been associated with the tendency to use drugs in various studies (Gullo et al., 2011). Big drug traffickers have a mysterious and complicated life. An anthropological study was conducted on US and Mexican individuals to examine factors that motivate and discourage drug traffickers. It was shown that the pinnacle of life for many international drug traffickers, especially young men, is the reputation and initial success of trafficking. They said in an interview that nothing is more enjoyable for them than earning a lot of money in a short period and experiencing exciting events (Campbell & Hansen, 2012). Also, the results of the study carried out by Puente et al. were consistent with the direct effects of sensation-seeking on the motivation of drug dealing. A moderating effect of this variable was observed in the relationship between positive attitude towards the use of ecstasy and the frequency of its usage. People with sensation-seeking may be increasingly influenced by friends, peers, and personal temptations; this motivates them to initiate or escalate drug use.

On the other hand, in Table 4, two subscales of dark personality traits, namely Machiavellianism and anti-socialism, significantly differed between the two groups of drug dealers and ordinary people. Our findings agreed with the results of (Curtis, Richards, & Jones, 2020; Demircioğlu & Köse, 2018; Psederska et al., 2019; Quednow et al., 2017; Schulz et al., 2016). indicated that anti-socialism was the best predictor of influencing others to use and turn to drugs. Also, anti-socialism has been associated with the tendency to buy and sell drugs. In explaining this finding, it can be concluded that individuals with high anti-socialism encourage deviant behaviors in others, even if they are not personally involved in those behaviors. Another explanation is that anti-social people illegally provide substances to others for some personal motive (e.g., vulnerability, trafficking, and profits). Therefore, even if anti-social people have not used illegal substances themselves, they may still share these substances with others and find it "fun" to supply and sell drugs to others (Curtis et al., 2020). People with high Machiavellian

scores often engage in anti-social behaviors only to an end (Jones & Paulhus, 2017). They may also be better able to influence others to use drugs (Jones, 2016).

The results demonstrated that the trait of narcissism was not statistically significant between the two groups of drug dealers and ordinary people, and it was not able to predict drug dealing. In a study that examined the role of narcissism in risky behaviors and health protection, it was observed that narcissism predicted alcohol consumption, marijuana use, and risky driving behaviors. Also, narcissism was associated with the increased use of a healthy eating pattern and physical activity (Hill, 2016). Research has identified two distinct forms of narcissism: self-involved narcissism and vulnerable narcissism. Various studies have examined the relationship between narcissism and addictive behaviors, and all have considered vulnerable narcissism; but there is no positive evidence for a link between addiction and narcissism (Bilevicius et al., 2019). Given that narcissists tend to present a favorable face, less research has been conducted on the relationship between deception and narcissism (Morf et al., 2011). In addition, they are less likely to lure others into drug dealing and similar crimes. Therefore, it can be said that narcissism has both positive and negative aspects, and simply having a high narcissistic trait cannot be a predictor of drug use or sale. The need for more research in this area seems necessary.

## Conclusion

According to what has been said, marital status, including singleness and divorce, as family factors related to responsibility and legality, were highly predictive of people's willingness to buy and sell drugs. Besides, dark personality traits and the degree of excitement are different between the two groups of drug dealers and ordinary people. It is worth noting that all subscales, except narcissism, could predict drug sales to an acceptable level. It is important to know the factors influencing the initiation of substance use for awareness of preventive measures. It is worth noting that individuals differ not only in terms of excitement levels but also in personality. The understanding of how personality influences the propensity to engage in criminal activities, including drug dealing, could be of particular significance.

One of the limitations of the present study was difficulties in gaining access to drug users and sellers due to its illegality. Also, the lack of control of intervening variables such as education level, and social, economic, and cultural status limited the generalization of the results to the whole society. It is suggested that future research be conducted on the relationship between narcissism and illegal activities, including drug dealing, due to the lack of literature review and contradictions.

## Disclosure Statements

We would like to thank all people who participated and cooperated in the study. The authors of this study declare that they have not been supported by any organizations, and this study was entirely self-funded by the authors. Also, the authors declare no conflict of interest. The datasets generated during the current study are available from the corresponding author upon reasonable request. The study was approved by the Research

Ethics Committee of Ardakan University. Participants were asked to voluntarily participate in this research, ensuring the confidentiality of the information and respecting the principles of secrecy. Written informed consent was obtained from all individuals. After identifying participants who met the required criteria, questionnaire forms were given to individuals after a brief explanation about how to complete them. The comprehensive information about the main purpose of the research was presented to them, and people who did not want to participate in the research were removed from the sample list;

1. All volunteers in the present study expressed their willingness to participate in the study.
2. Participants were allowed to withdraw at any stage of the study.
3. The information obtained from the participants will remain confidential.
4. Also, none of the volunteers were obliged to insert their first and last names, and all information was analyzed in the form of codes without writing names.

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