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The Mediating Role of Drug Attitude in the Relationship between Differentiation of Self and Family Functioning with Addiction Potential in Adolescents

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Abstract

Introduction: Tendency to substance use disorders is one of the main sociopsychological problems that affect individuals both physically and mentally. The present study aimed to investigate the mediating role of drug attitude in the relationship of Differentiation of Self (DoS) and family functioning with addiction potential in adolescents.

Method: This research was a correlational study based on Structural Equation Modeling (SEM). The statistical population consisted of all male adolescents living in Tehran, in 2020-2021, of whom 315 were selected as the sample through convenience sampling. The research instruments included the Addiction Potential Scale (APS), Differentiation of Self Inventory (DSI), The McMaster Family Assessment Device (FAD), and the Drug Attitudes Scale (DAS). The proposed model was examined by SEM, and indirect relationships between variables were tested using Bootstrap hypothesis testing through SPSS-27 and AMOS-25 software.

Results: Findings revealed that there was a significant indirect relationship between DoS and family functioning with addiction potential through the mediating role of drug attitude in the adolescents ($P<0.001$). Moreover, there was a significant and direct relationship between addiction potential and all variables, except family functioning ($P<0.001$).

Conclusion: The study findings confirmed the proposed model's goodness of fit. Therefore, the use of this model is recommended to identify the factors affecting the potential of addiction in adolescents and also to develop programs to prevent and reduce addiction among adolescents.

Keywords: Family, Adolescent, Drug Users, Psychosocial Functioning

Introduction

Substance use disorders is on the rise among adolescents around the world, as it is considered as one of the most common psychiatric disorders among adolescents' boys, and young people [1]. Addiction can cause serious consequences for the family, economy, security, and cultural development of communities. As a major problem of the global community, addiction can irreparably damage individuals depending on their personal, social, and personality characteristics [2]. Studies have revealed that about 1.2 to 6 million Iranians are addicted to drugs or abuse them as a hobby. The existing data also indicate that the number of Iranian addicts has doubled every 12 years and annually increases by 8% [3].

The first factor to discuss is the Differentiation of Self (DoS), which refers to being able to possess and identify your own thoughts and feelings and distinguish them from others. DoS is the ability to resist the emotional reactions of others by separating thoughts from emotions [4]. Individuality is rooted in the belief that makes one follow one's own instructions to have an independent and distinct identity, whereas collectivity is premised

upon the belief that makes one follow the instructions and advice of others to have a dependent and unknown identity [5]. Higher levels of self-segregation allows one to achieve better individual growth and establish a balance with collectivism [6]. Previous studies show that young people with a lower level of DoS are more likely to become addicted to drugs [4, 7, 8].

Family functioning is another factor that can play a major role in addiction potential among children. The family is considered as the most important social institution that can affect children's and adolescents' decisions about committing risky behaviors [9, 10]. Recent studies have indicated that family can be the origin of both many behavioral problems and many human advances [11]. Lander et al. [12]showed that substance use disorders can be associated with the failure of parents in playing their roles, parent-child conflicts, internal conflicts, parents' receptive attitude towards substance use disorders by their children, and parents' smoking or alcohol abuse at home.

It seems that personality and family background can be effective in the acceptance and abuse of drugs. In other words, there is a significant difference between addicts and normal people in the pre-addiction background, such as their beliefs about themselves and personality traits. The theory of addiction potential indicates that some people are more likely to become addicts if they are exposed to substance use disorders. In fact, addiction potential refers to one's background and conditions before becoming an addict [13]. Tendency to substance use disorders is one of the main sociopsychological problems that affect individuals both physically and mentally. Tendency to substance use disorders is a misplaced consumption pattern that can cause undesirable consequences, such as the tendency to abuse drugs in inappropriate situations, and social, occupational, and legal problems. Substance use disorders changes one's mood and makes them feel different, even if it is not permanent [14].

Although studies have corroborated the effects of DoS and family functioning on addiction potential, there is evidence that their effects do not necessarily reduce or increase adolescents' tendency to addiction directly. In fact, it seems that some factors mediate the effects of DoS and family functioning on addiction potential. Drug attitude is one of these mediating factors. In fact, substance use disorders is influenced by one's attitudes toward drugs. One's attitude towards drugs is formed through positive or negative attitudes resulting from a combination of knowledge, information, emotions, and beliefs about drugs, on one hand, and how one values drugs, on the other hand [15].

Attitude has always been one of the interesting and important topics in psychology, especially social and cognitive psychology, as psychologists argue that there is a strong relationship between people's attitudes and their actions and behaviors. Therefore, people may abuse drugs or quit them based on their attitudes towards drugs. It can hence be concluded that people's attitudes toward drugs can be effective in their addiction potential [16]. In other words, substance use disorders is a gradual and evolving process; one may have a positive attitude towards substance use disorders at the beginning of trying drugs, then starts regular substance use disorders, and finally becomes dependent on or addicted to drugs [17]. It can be generally stated that addiction causes many psychological, physical, family, social, and economic problems, in a way that addicts may experience a serious decline in individual-social actions [18].

It is hence necessary to achieve an accurate understanding of socio-psychological factors that can affect addiction potential in order to come up with the best solutions to this crisis. Although the role of individual or family factors and characteristics in the onset and continuation of drug addiction is always discussed in relevant studies, the effect of each of these factors on addiction potential is still unknown. Accordingly, the present study aimed to investigate the mediating role of drug attitude in relationship of differentiation of self and family functioning with addiction potential in adolescents. The theoretical model of the research is presented in Figure 1.

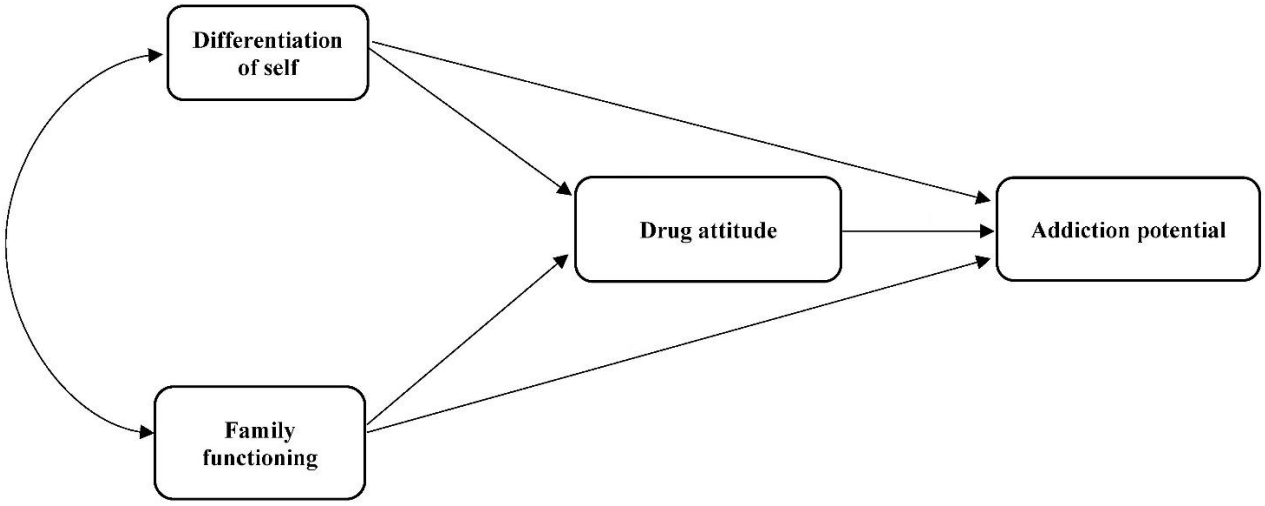

Figure 1. The theoretical model of the research.

Method

This research was a correlational-descriptive study in which the relationship between variables was examined by SEM. The statistical population consisted of male senior high school students of District 10 of Tehran in the academic year 2020-2021. The participants were selected by using the multi-stage random cluster sampling method. For this purpose, seven schools were randomly selected from the 15 public senior high schools in District 10 of Tehran. Then, three classes of different levels were selected from each school, and, finally, 315 students who met the inclusion criteria were selected as the sample. Since the number of parameters in SEM-based studies is determined depending on the number of direct paths, exogenous variables, and error variances, there was a need for at least 15 participants per parameter to be added to the model [19]. Due to the COVID-19 pandemic, the measurement tools were provided to the students through online platforms, and the response time to the questionnaires was 75 minutes. The inclusion criteria were non-addiction to drugs and being 15-18 years old, and the only exclusion criterion was reluctant to participate in the study. To observe ethical considerations, all participants were briefed on the research objectives and procedures, and assured that their information would be kept confidential and they could leave the study whenever they desired.

The tools used in this study were as follows:

Addiction Potential Scale (APS): This scale was developed by Weed in 1992. This questionnaire consists of 39 items plus five lie detectors. The items are scored based on a 4-point scale (from 0: totally disagree to 3: totally agree), and items 6, 12, 15, and 21 are scored inversely. Items 12, 13, 15, 21, and 33 serve as lie detectors. The minimum and maximum scores on this scale are 0 and 180, respectively, and higher scores indicate greater addiction potential [20]. Shafikhani et al. [21] reported the reliability for this scale equal to 0.83. In this study, the Cronbach's alpha coefficient of 0.85 was obtained.

Differentiation of Self Inventory (DSI): This 46-item questionnaire was developed by Skowron and Schmitt in 2003 to measure the self-differentiation level of individuals in four subscales: emotional reactivity, taking an "I" position, emotional cutoff, and fusion with others. The items are scored based on a 6-point Likert scale (from 1: totally agree to 6: totally disagree). The total score of this scale is obtained from the sum score of all items. Scores on select items are reversed and summed across scales. Higher scores on each subscale and the full scale all reflect greater differentiation of self [22]. Jahanbakhshi and Kalantarkousheh [23] reported a Cronbach's Alpha coefficient of 0.69 for the reliability of this questionnaire. In the present study, the Cronbach's alpha coefficient for this questionnaire was 0.78.

The McMaster Family Assessment Device (FAD): This 53-item questionnaire was developed by Epshtano in1983 based on the McMaster model to measure one's perceptions of his/her family. The items are scored based on a 4-point Likert scale (totally agree, agree, disagree, and totally disagree); the respondents express how their family conditions are consistent with each of the items by choosing one of the choices. This scale includes seven subscales as follows: problem-solving, communication, roles, affective responsiveness, affective involvement, behavior control, and general functioning. The minimum and maximum scores on this scale are 53 and 212, respectively [24]. Yousefi [25] reported Cronbach's alpha coefficient of 0.92 for the questionnaire. In this study, the Cronbach's alpha coefficient for the questionnaire was 0.86.

Drug Attitude Scale (DAS): This 32-item scale was developed by Nazari in 2001 to measure people's attitudes toward addiction. The items are scored based on a 5-point Likert scale; 5: totally agree, 4: agree, 3: no comment, 2: disagree, and 1: totally disagree for positive attitudes and 1: totally agree, 2: agree, 3: no comment, 4: disagree, and 5: totally disagree for negative attitudes. The minimum and maximum scores on this questionnaire are 32 and 160, respectively, and higher scores indicate more positive attitudes towards addiction and substance use disorders. The face and content validity, parallel forms reliability, and internal consistency of this scale have been reported as acceptable. Mokhtari et al. [26] reported a Cronbach's Alpha coefficient of 0.89 for the reliability of this questionnaire. In the present study, the Cronbach's alpha coefficient was 0.84 for this questionnaire.

The obtained data were statistically analyzed by using Pearson correlation coefficient and SEM in AMOS-25 and SPSS-27.

Results

The data obtained from 315 questionnaires were used for further analysis. The results of the demographic variables showed that the mean age of participants was 15.57±4.71. The results also indicated that 106, 109, and 100 participants were studying humanities, experimental sciences, and mathematics-physics, respectively. First, the data were monitored in terms of outliers, normality, path analysis assumptions, collinearity, and variance inflation factor. Since the tolerance index for DoS (0.61), family functioning (0.89), and drug attitude (0.62) was greater than 0.10 and the variance inflation factor for DoS (1.64), family functioning (1.12), and drug attitude (1.62) was smaller than 10, this assumption was confirmed. The Durbin–Watson statistic was used to check the independence of errors. Since this statistic (1.87) ranged between 1.5 and 2.5, this assumption was confirmed. Table 1 presents the descriptive

information and normality of data distribution. As shown in Table 1, the skewness and kurtosis of data distribution ranged between 1 ± 1 and 2 ± 2, respectively. The Kolmogorov-Smirnov test also showed that the Z-statistic level was not statistically significant, confirming the normality of data distribution.

Correlation coefficients of the research variables are provided in Table 2. Based on Table 2, Pearson correlation coefficients showed that there was a significant relationship between all research variables. The initial model proposed in this study to explain addiction potential based on DoS, family functioning, and drug attitude is shown in Figure 2.

According to Table 3, the Root Mean Square Error of Approximation (RMSEA) (0.417) indicated that the initial model needed to be modified. Since the initial model was saturated, i.e., all possible paths were drawn, it was not possible to calculate the chi-square and some other indicators. Therefore, one of the paths (family functioning to addiction potential) was eliminated to desaturate the model and make it possible for the software application to calculate the chi-square and other indicators. The RMSEA of the final model, which is shown in Figure 3, was equal to 0.074, indicating the model's goodness of fit (Table 3).

The results of estimating path coefficients for testing direct hypotheses are presented in Table 4. The results showed there was a direct association between drug attitude and addiction potential in adolescents (β= 0.29; P= 0.001). Moreover, there was a negative association between DoS and addiction potential (β= -0.39; P= 0.001) and drug attitude (β= -0.59; P= 0.001), and between family functioning and drug attitude in the adolescents (β= -0.11; P= 0.018). There was no significant association between family functioning and addiction potential in adolescents.

The results showed there was a significant indirect path from DoS (β= -0.07; P= 0.005) and family functioning (β= -0.02; P= 0.035) to addiction potential through the mediating role of drug attitude in the adolescents (Table 5).

Table 1. Mean, SD, Skewness, and Kurtosis of Research Variables

Variables	Mean ± SD	Skewness	Kurtosis	Z	P
Addiction potential	52.45 ± 25.83	0.21	-1.18	0.08	0.29
Differentiation of self	177.06 ± 65.88	-0.57	-1.06	0.12	0.26
Family functioning	120.92 ± 34.54	0.14	-0.55	0.07	0.32
Drug attitude	94.93 ± 36.06	-0.01	-1.39	0.14	0.23

SD: Standard Deviation

Table 2. Pearson Correlation Coefficients of the Research Variables

Variables	1	2	3	4
1- Addiction potential	1			
2- Differentiation of self	0.57**	1		
3- Family functioning	0.26**	0.29**	1	
4- Drug attitude	0.53**	0.61**	-0.28**	1

**: P <0.01

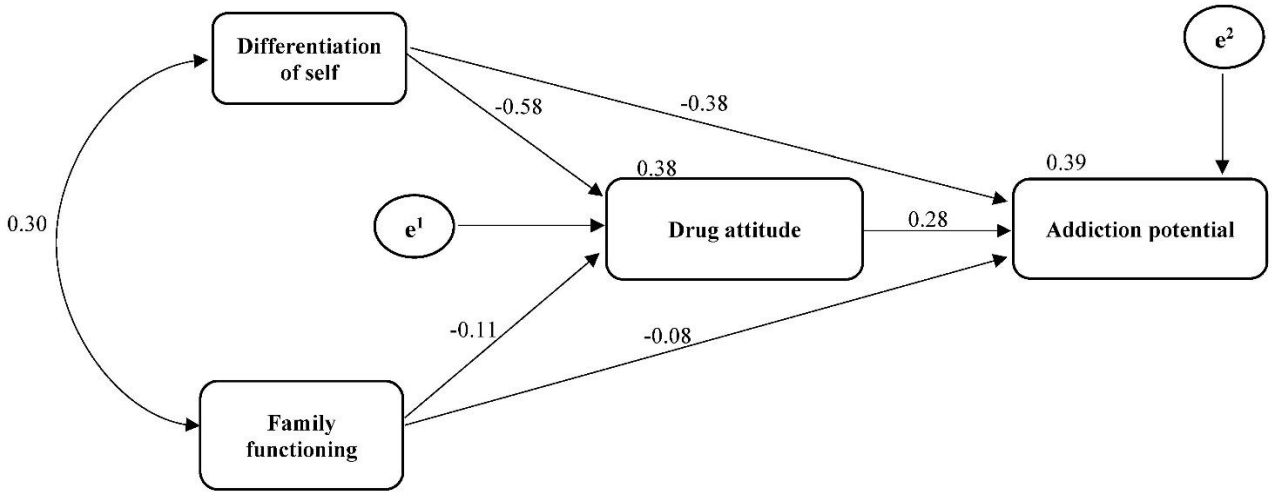

Figure 2. Initial model pertaining to the mediating role of drug attitude in the relationship of differentiation of self and family functioning with addiction potential.

Table 3. Fit Indicators of the Initial and Final Models

Fit Indicators	χ^2	df	(χ^2/df)	RFI	IFI	TLI	CFI	NFI	RMSEA
Initial model	-	-	-	-	0.99	-	0.99	0.99	0.41
Final model	2.69	1	2.69	0.95	0.99	0.96	0.99	0.99	0.07

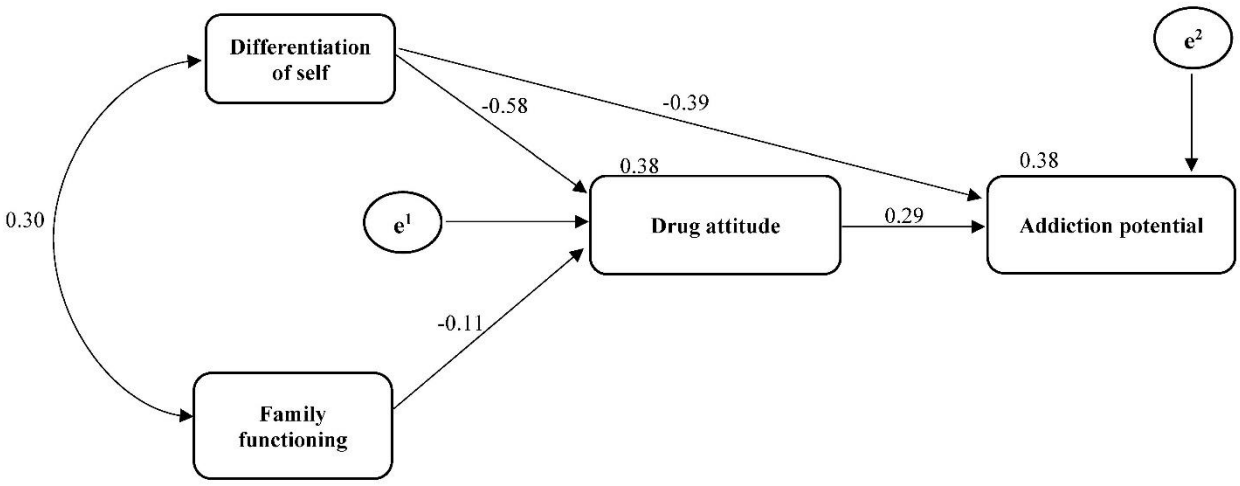

Figure 3. The modified final model pertaining to the mediating role of drug attitude in the relationship of differentiation of self and family functioning with addiction potential.

Table 4. Direct effects between studied variables in the initial and final modified models.

Path	Initial Model		Final Modified Model	
	β	P	β	P
Differentiation of self to addiction potential	-0.38	0.001	-0.39	0.001
Family functioning to addiction potential	-0.08	0.999	-	-
Differentiation of self to drug attitude	-0.29	0.001	-0.59	0.001
Family functioning to drug attitude	-0.11	0.018	-0.11	0.018
Drug attitude to addiction potential	0.28	0.001	0.29	0.001

Table 5. Analysis Results of Indirect and Intermediary Paths in Final Models

Predictor Variable	Mediator Variable	Criterion Variable	Initial Model		Final Modified Model	
			β	P	β	P
Differentiation of self	Drug attitude	Addiction potential	-0.06	0.007	-0.07	0.005
Family functioning	Drug attitude	Addiction potential	-0.02	0.028	-0.02	0.035

Discussion

This study aimed to investigate the mediating role of drug attitude in relationship between differentiation of self and family functioning with addiction potential in adolescents in Tehran (Iran). The first study finding was the direct relationship between DoS and addiction potential.

The result can be explained based on the results of the study of Rahimi Pordanjani and Mohamadzade Ebrahimi [27], as follows: chronic anxiety, which is the characteristic feature of undifferentiated individuals and systems, causes inefficiency of individuals and family systems and poses problems such as addiction. The high level of chronic anxiety in individuals with low levels of DoS makes them more vulnerable to psychological and physical problems. Psychological problems and physical symptoms, including drug addiction, can also contribute to the absorption of chronic anxiety [8]. Undifferentiated individuals experience chronic anxiety and are always looking for ways to absorb anxiety. Emotional reaction and emotional diffusion are two common patterns undifferentiated individuals apply to deal with stressful and problematic situations. Emotional reactions originate from separation anxiety, which refers to one's fear of being separated from important persons in one's life. This process includes three types of reactions: self-defense, counterattack, or withdrawal. These reactions are involuntary and one feels unable to control them. On the other hand, those who have managed to differentiate themselves are more likely to take an "I" position, which is accompanied by lower chronic anxiety and higher psychological adjustment [28].

Another study finding showed there was no significant positive relationship between family functioning and addiction potential. This finding is inconsistent to the findings of previous studies [18, 29]. The literature review indicated that some studies reported a significant positive relationship between these two variables based on correlation coefficient and regression analysis. In this study, since there was a mediating variable, SEM showed that the direct relationship between family functioning and addiction potential was not statistically significant, but the indirect relationship between these two variables, mediated by drug attitude, was statistically significant. In other words, family functioning indirectly affects addiction potential through drug attitude. However, the family will function desirably and children will face fewer problems if children learn how to deal with their problems, family roles are defined and clarified, there is a good way to control behaviors in the family, there is clear and coherent communication between family members, and family members respect each other's interests and desires and appropriately react to each other's positive and negative emotions. Many adolescents become addicted to drugs because of poor social skills, anxiety, social isolation, and mental health problems or to escape loneliness. Such cases are less common in well-

functioning families [30]. Accordingly, families should focus on and strengthen their functions, in addition to increasing the media awareness and literacy of themselves and their children. The overall family functioning, relationship between roles, emotional association, emotional responsiveness, and behavioral control have a strong significant and direct correlation with addiction, revealing the association of increased problems with the family functioning with addiction potential in children.

The results also showed that there was a direct relationship between drug attitude and addiction potential. This means that adolescents who have more positive attitudes towards drugs are more likely to become addicted to them. No study consistent with this finding was found in the research literature. To explain this result, it can be stated that substance use disorders is a gradual and evolving process; one may have a positive attitude towards substance use disorders at the beginning of trying drugs, then starts regular substance use disorders, and finally becomes dependent on or addicted to drugs. There are many cases where people have become addicted while adopting less positive attitudes towards drugs. The review of studies, opinions of experts, and experiences of addicts demonstrates that a simple curiosity or a fleeting excitement is usually among the factors of beginning substance use disorders. In fact, such individuals experience substance use disorders and may become addicted despite their less positive attitudes towards drugs. The conditions may become exacerbated when recreational substance use disorders leads to dependence and addiction to drugs. Therefore, it is necessary to guide children and adolescents to adopt highly negative attitudes to drugs.

Another study finding was the indirect relationship between DoS and addiction potential, mediated by drug attitude. There was also an indirect relationship between family functioning and addiction potential, mediated by drug attitude. No study consistent with this finding was found in the research literature. Both direct paths showed that drug attitudes well mediate the relationship of DoS and family functioning with addiction potential. In general, an emotional system governs the structure of the family that can be transmitted between generations; one's mental health status depends on how much one can differentiate and separate himself/herself from this system. DoS refers to the ability to balance intellectual and emotional processes at the intra-psychological level and to establish a balance between individuality and experiencing intimacy at the interpersonal level. In addition, good family functioning can be effective in reducing environmental stresses and making children and adolescents less prone to addiction and high-risk behaviors. Social support is more effective in maintaining mental health when family functioning is at the optimal level. On the other hand, people with a higher level of DoS and more optimal family functioning can better tolerate and resist environmental stresses and pressures and adopt more negative attitudes towards drugs. Based on greater family support, such individuals are more flexible when facing stressful situations and are more hopeful about the future and also are less likely to become addicted to drugs. It can hence be concluded that drug attitude has managed to successfully mediate the relationship of DoS and family functioning with addiction potential.

A research limitation was the evaluation of drug attitude by a self-reporting tool that could increase the possibility of biased responses and presenting a good face by reporting more negative attitudes towards drugs. Since the study population consisted of male adolescents of Tehran, the results should be cautiously generalized to groups and communities with different cultures. The limited number of participants and the lack of access to them due to the COVID-19 pandemic were the other limitations of the present study. Hence, future studies are recommended to be conducted on samples of different populations. Since the study findings suggested the role of DoS in predicting addiction potential, counselors and therapists are recommended to measure the level of client's DoS in addiction screening programs. Moreover, genograms can help evaluate the DoS and family functioning of clients in the face of chronic anxiety, which can cause problems such as addiction.

Conclusion

Drug attitude mediated the association between differentiation of self and family functioning and addiction potential. Drug attitude had a direct and positive association with addiction potential in adolescents. DoS and family functioning had a negative association with drug attitude in the adolescents. Since the study findings confirmed the proposed model's goodness of fit, this model can be used to identify the factors affecting addiction potential in adolescents and also to develop programs and interventions to prevent and reduce addiction among adolescents.

Conflict of Interest

All the authors declare that they have no conflicts of interest.

Ethical Approval

The study was approved by the Ethical Committee of Islamic Azad University-Ahvaz Branch (code: IR.IAU.AHVAZ.REC.1400.076).

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