ORIGINAL RESEARCH



The Mediating Role of Diffuse-Avoidant Identity in the Relationship between Moral Intelligence and Family Functioning with Addiction Potentials of Male Adolescents

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Abstract: Introduction: Substance abuse is a major psychosocial disorder that causes irreparable physical and mental damage based on the different personal, social, and personality characteristics of each person. We aimed to investigate the mediating role of diffuse-avoidant identity in the relationship between moral intelligence and family functioning with addiction potentials of male adolescents.

Methods: In this descriptive-correlational study, multistage cluster sampling was used to enroll 315 individuals among all male adolescents studying in Tehran, Iran, in 2021. The research instruments included the Addiction Potential Scale (APS), the Moral Intelligence Questionnaire (MIQ), the Family Assessment Device (FAD), and the Identity Style Inventory (ISI). The proposed model was assessed using structural equation modeling (SEM), and indirect relationships were examined using the bootstrapping method.

Results: The results revealed that addiction potentials significantly and negatively correlated with moral intelligence and family functioning. Moreover, addiction potentials significantly and positively correlated with diffuse-avoidant identity (P<0.01). The direct paths from all variables (except that from family functioning) to addiction potential were significant (P<0.01). Also, diffuse-avoidant identity meditated the relationships of moral intelligence and family functioning with addiction potential (P<0.01).

Conclusions: The proposed model fitted the data well; therefore, the results considerably improved our understanding of factors affecting addiction potential among male adolescents.

Keywords: Addiction, Moral intelligence, Family functioning, Adolescents, Diffuse-avoidant identity

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1. Introduction

Adolescence is a critical period in a person's life characterized by substantial changes in physical appearance and rapid cognitive development. These changes can be troublesome for adolescents and their families (1). Today, substance abuse is considered a global problem, and addiction tendency/potential is a serious social harm threatening the lives of adolescents (2). Substance abuse is a major psychosocial disorder that causes irreparable physical and mental damage based on different personal, social, and personality characteristics of each person (3, 4). Tendency for drug abuse is an inappropriate behavioral pattern with many undesirable

* **Corresponding Author:** Marjan Alizadeh; Address: Department of Psychology, Ahvaz Branch, Islamic Azad University, Ahvaz, Iran. Email: marjalizad@gmail.com. consequences such as the tendency to use drugs in inappropriate situations and numerous social, professional, and legal problems (5).

Drug abuse changes people's moods, feelings and emotions, and they experience a different feeling even if it is temporary (6). Studies have estimated the total number of drug users (drug addicts and recreational drug users) in Iran at 2 to 4 million. In addition, the number of addicts has doubled almost every 12 years (8 percent increase per year) (7).

Given the catastrophic impact of addiction on individuals, families, and society, investigating factors affecting addiction potential among adolescents, who experience a turbulent transition to adulthood, is especially important. Moral intelligence seems to be one of these factors (8). As one of the dimensions of intelligence that can provide a framework for proper functioning of human beings, moral intelligence is considered a predictor of behavior. A person with moral



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intelligence has the capacity and ability to distinguish right from wrong, has strong moral beliefs and applies them and behaves appropriately (9). Group activities, increased productivity, and decision-making based on moral principles and values are among the most important benefits of moral intelligence that are effective in creating a positive picture the crisis management organization in people's minds (10).

Researchers argue that family functioning has a huge impact on children's addictive tendencies. Families are considered systems that primarily influence and shape the behavior of their members. Family is the first place where people are emotionally bonded; therefore, family functioning can affect the physical, emotional, and social health of children (11). Moreover, parents' behaviors, whether harsh or kind, or compassionate, shape fundamental aspects of a child's personality. Abnormal behaviors of parents predispose children to behavioral disorders. For example, lack of parental supervision and inconsistent parenting rules or imposition of strict rules and regulations by the parents increases the risk of adolescent drug addiction (12, 13). LoBraico et al. (14) found that substance abuse was related to failure in performing the parental role, parent-child and intra-family conflicts, parents' supportive attitudes towards their children's substance abuse behaviors, and the use of alcohol and cigarettes by parents at home.

Most studies confirm the effects of moral intelligence and family functioning on addiction potential in adolescents; however, evidence suggests that these variables may indirectly influence addiction potential through some mediating factors. Diffuse-avoidant identity is one of these mediating factors (15, 16). Berzonsky's cognitive-psychosocial model (17), which highlights people's differences in using cognitivesocial processes, making decisions, facing and solving problems, involving in different tasks, and enjoying psychological health, has been widely used in recent identity formation studies. In general, addiction inflicts many mental, physical, family, social, and economic damages to people and drastically disrupts their individual and social actions (18, 19).

According to studies, frequent drug use begins during adolescence and youth; therefore, a proper understanding of the psychosocial factors influencing decisions and behaviors related to addiction potential can help experts design effective methods for resolving this crisis (20, 21). Although many researchers have discussed the role of individual and family characteristics in the initiation and continuation of drug addiction, it is not clear what effects each of these factors has on the tendency for drug abuse (22). Accordingly, addressing these fundamental issues prepares the ground for researchers to conduct relevant applied studies to successfully reduce the tendency to become addicted. Given the various problems that adolescents face during puberty, their complex interactions with peers, and their exposure to highrisk behaviors (e.g., substance abuse), it seems necessary to develop plans for solving the problems that adolescents face. According to the mentioned contents and the importance of addressing the factors affecting the addiction potentials of male adolescents the present study aimed to investigate the mediating role of diffuse-avoidant identity in the relationships of moral intelligence and family functioning with addiction potentials of male adolescents in Tehran.

2. Methods

This descriptive-correlational study used SEM to examine the relationships among the research variables. The study population consisted of all second-year male high school students studying in schools in Municipality District 10, Tehran, Iran, during the academic year 2020-2021. The sample was selected using multistage cluster sampling. To this end, 7 schools were first randomly selected from all second-grade public high schools in District 10 (N=15). Then, 3 different grades were randomly selected from each school, and finally, 350 students were selected based on the inclusion criteria. In SEM, the number of parameters is determined based on the number of exogenous variables, direct paths, and error variances. Kline (23) recommends enrolling at least 15 participants for each parameter.

Finally, 315 individuals in the 15–18 years age group with no history of drug addiction and no history of physical or mental illness completed the questionnaires. Those with incomplete questionnaires were excluded (35 questionnaires). It should be noted that the researchers observed all ethical considerations including obtaining informed consent from the participants and informing them about the research process, their right to leave the study at any time, and the confidentiality of the information on the participants.

2.1. Instruments

2.1.1. Addiction Potential Scale (APS)

This tool was developed by Weed and colleagues (24). It includes two sections with 41 items (36 items and a 5-item lie scale). The items are scored on a four-point scale from completely disagree (score 0) to completely agree (score 3). Items 6, 12, 15, and 21 are scored inversely, and a lie scale is developed using items 12, 13, 15, 21, and 33. The sum of scores given to all items (except those of the lie scale) determines the total APS score. Total scores range from 0 to 108, with higher scores indicating higher addiction potential. Shafikhani et al. (25) reported the reliability for this scale equal to 0.83.

2.1.2. Moral Intelligence Questionnaire (MIQ)

This 40-item questionnaire was designed by Lennick and Kiel (26) to assess the extent to which universal moral principles apply to an individual's ethics, goals, and interactions. MIQ has four subscales including integrity, responsibility, com-



passion, and forgiveness. The items are scored on a fivepoint Likert scale including never (score 1), rarely (score 2), sometimes (score 3), often (score 4), and always (score 5). Each participant receives a total score between 40 and 200, which is divided by 2 to determine the final MIQ score that ranges from 20 to 100. Pourteimour and colleagues (27) reported the reliability for this scale equal to 0.94.

2.1.3. Family Assessment Device (FAD)

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Epstein and colleagues (28) designed this 53-item tool to measure family functioning based on McMaster Model of Family Functioning. FAD determines the degree to which a family is compatible with described characteristics. The items are scored on a four-point Likert scale that ranges from strong agreement (score 1) to strong disagreement (score 4) (total score range: 53-212). FAD has seven subscales including communication, affective involvement, roles, general family functioning, problem solving, affective responsiveness, and behavioral control. Yousefi (29) reported the reliability of this questionnaire based on Cronbach's alpha of 0.92.

2.1.4. Identity Style Inventory (ISI)

This 40-item inventory was developed by Berzonsky and colleagues (30). It includes the 4 subscales of informational identity style (11 items), normative identity style (9 items), diffuse-avoidant identity style (10 items), and identity-related commitment (10 items). In this study, the researchers used only the diffuse-avoidant identity style subscale. The items are scored on a five-point scale from completely disagree (score 1) to completely agree (score 5). Marzban and colleagues (31) reported the reliability of this questionnaire based on Cronbach's alpha of 0.79.

2.2. Statistical analysis

The data were analyzed in AMOS 25 and SPSS 27 using Pearson's correlation coefficient test and structural equation modeling (SEM).

3. Results

Thirty-five of the 350 participants who did not complete the questionnaires were excluded from the research and 315 entered the data analysis stage. The mean \pm SD age of the participants was 14 \pm 0.87 years. In addition, 106, 109 and 100 of the students studied in Literature and Humanities, Experimental Sciences and Mathematical Physics, respectively. The data were first analyzed to detect potential outliers and to assess the normality of data distributions and compliance with path analysis assumptions. Moreover, collinearity and variance inflation factor (VIF) were controlled. The obtained tolerance values for moral intelligence (0.579), family functioning (0.897), and diffuse-avoidant identity (0.534) were > 0.1, and VIF values for moral intelligence (1.602), family function

tioning (1.115), and diffuse-avoidant identity (1.580) were < 10; thus, there was no collinearity between the independent variables. The Durbin-Watson (DW) test was used to detect autocorrelation in the residuals from the regression analysis. The obtained DW value (2.12) fell within the acceptable range of 1.5 to 2.5. Therefore, no autocorrelation was detected. Table 1 presents descriptive statistics and the results for normality tests of the research variables.

As shown in Table 1, the skewness and kurtosis values were both within the acceptable ranges of "-1 to +1" and "-2 and +2", respectively. Moreover, the Kolmogorov-Smirnov (K-S) test results showed that the Z-statistic was insignificant. These statistics confirmed that the data had a normal distribution.

Table 2 shows correlation coefficients of the research variables. The results of Pearson's correlation coefficient test showed significant relationships among all research variables (Table 2). Figure 1 presents the proposed preliminary model for explaining addiction potential in adolescents based on moral intelligence, family functioning, and diffuse-avoidant identity.

The root mean square error of approximation (RMSEA) value was 0.338; thus, the initial model needed to be modified (Table 3). In addition, since the initial model was saturated (i.e., all possible paths had been drawn), the researchers were unable to calculate chi-square and the related indices. Therefore, after omitting the path from family functioning to addiction potential, the model became unsaturated, and the chi-square and the other indices were calculated. Figure 2 presents the final model. The obtained RMSEA for the final model (0.005) indicated that it fitted the data well.

The estimated path coefficients used for the analysis of direct paths are presented in Table 4. The results showed there was a negative relationship between moral intelligence and addiction potential (β = -0.41; P<0.001), and between moral intelligence and diffuse-avoidant identity (β = -0.32; P<0.001) in the adolescents. Moreover, there was a negative relationship between family functioning and diffuse-avoidant identity (β = -0.11; P= 0.037). The relationship between diffuse-avoidant identity and addiction potential was positive (β = 0.38; P<0.001), There was no significant relationship between family functioning and addiction potential in the adolescents (Table 4).

According to the confidence levels in Table 5, diffuseavoidant identity meditated the relationships of moral intelligence and family functioning with addiction potential (P<0.01).

4. Discussion

We aimed to investigate the mediating role of diffuseavoidant identity in the relationships of moral intelligence



and family functioning with addiction potentials of male adolescents in Tehran. The direct paths from all variables (except that from family functioning) to addiction potential were significant. The indirect paths to addiction potential were also significant with the mediation of the diffuseavoidant identity style. The first finding of the research indicated that there was a direct relationship between moral intelligence and addiction potential. This finding is consistent with the findings of previous studies (32). The explanation for this finding is that moral beliefs cause people to delay hedonism, inhibit impulses and exhibit high levels of selfcontrol. People with high moral values can control their behaviors and thoughts. In other words, people with high moral values have greater commitment that allows them to refrain from drinking alcohol or using drugs (32). Therefore, it seems that if people with high moral values promise to themselves not to use drugs, they can abide by their commitment. On the other hand, people with poor ethics have great tendency for experiencing excitement without anticipating the longterm negative consequences; therefore, they readily engage in risky behaviors such as substance abuse. No significant positive relationship was observed between family functioning and addiction potential. This finding is inconsistent with the findings of previous studies (33, 34). However, the mentioned previous studies used correlation coefficient and regression testing and found a significant relationship between these two variables. Due to the presence of mediating variables, the researchers in this study used SEM to test the proposed hypotheses. However, family functioning was found to significantly influence addiction potential with the mediating role of diffuse-avoidant identity. In other words, family functioning indirectly influences addition potential with the mediation of diffuse-avoidant identity. Nevertheless, it can be said that if children learn in the family how to deal with their issues, there are clear and defined roles for the family members, there is a suitable way for controlling behaviors in the family, the relationships between members of the family are clear and coherent, each family member pays the necessary attention to the interests and wishes of other family members, and the members of the family exhibit appropriate reactions to the positive and negative feelings of each other, the family will function best and the children will have very few problems. Many adolescents have a tendency to drug addiction because they have poor social skills, experience feelings of anxiety, want to escape the feeling of loneliness, face social isolation, or suffer from mental health problems. However, cases of adolescent addiction are rare in families that function well (33). Therefore, families need to enhance family functioning in addition to increasing awareness and media literacy of all family members. The variables of general family functioning, the relationships between roles, affective involvement, affective responsiveness, and behavioral con-

trol had significant direct correlations with addiction potential. These strong correlations indicate that family functioning problems are often associated with peer pressure and addiction in children.

There was a direct relationship between diffuse-avoidant identity and addiction potential. In other words, development of diffuse-avoidant identity style in adolescents is expected to increase their addiction potential. This finding is consistent with the findings of previous studies (35). The underlying mechanism of drug abuse in individuals with diffuse-avoidant identity style is not very complicated. Lack of commitment to positive goals, membership in antisocial groups, pessimism, anger and feelings of helplessness and despair, and lack of a clear sense of identity can increase the tendency of these people for substance abuse. On the other hand, people with high self-efficacy cope well with undesirable and stressful events and resist negative thoughts about themselves and their abilities; therefore, they can easily control their behavior and withstand peer pressure for substance abuse. Moreover, people with diffuse-avoidant identity seem to be very confused and skeptical, are unable to coordinate different sources of identity and, compared to individuals with other identity styles, are very open to new experiences such as substance abuse (35). On the other hand, due to their immature, dependent and weak identity, these people perform poorly in establishing healthy interpersonal relationships, acquiring essential life skills and other psychological functions, and fail to manage their relationships with others and solve their life problems; therefore, they experience academic failure and social incompatibility, and are more likely to become members of a drug subculture in traumatic situations.

The results concerning the indirect paths also suggested that there was an indirect relationship between moral intelligence and family functioning that was mediated by disuseavoidant identity. There was also an indirect relationship between family functioning and addiction potential mediated by diffuse-avoidant identity. The authors found no previous studies to compare this finding with theirs.

Both direct paths showed that diffuse-avoidant identity played the role of mediator well in the relationship between moral intelligence and family functioning with addiction potential. In general, if people have a positive attitude toward any type of substance abuse, they must try to correct it. Since beliefs drive people to make important decisions, they need to change their positive or even neutral beliefs about the use of addictive substances. Lennick and Kiel (26) define moral intelligence as an individual's mental capacity to apply universal moral principles to his/her values, goals and actions. In fact, moral intelligence reveals a person's ability to process and manage moral issues. Desirable family functioning reduces tension and stress in adolescents, thereby decreasing



their tendency towards addiction and high-risk behaviors. Family functioning can also enhance the impact of perceived social support on a person's overall mental health. Therefore, desirable moral intelligence and family functioning decrease people's addiction potential by restricting the development of diffuse-avoidant identity, increasing their tolerance of stress and tension, improving their perceived family support, and raising their hope for the future. Accordingly, it can be said that diffuse-avoidant identity successfully meditates the relationships of moral intelligence and family functioning with addiction potential.

The present study was carried out on a group of male adolescents residing in Tehran; therefore, researchers must be cautious in generalizing its results to other groups with different cultures. Accordingly, researchers are suggested to increase the generalizability of the results by conducting similar studies on other populations that include female and male participants of different age groups.

5. Conclusion

Since the proposed model fitted the data well, it is considered an important step in identifying factors affecting addiction potentials in adolescents. The model also helps researchers and therapists design and develop appropriate addiction prevention programs for adolescents. In addition, the present results facilitate the development of comprehensive educational and therapeutic programs to prevent drug abuse in vulnerable groups. Moral intelligence and diffuseavoidant identity are acquired attributes that can be learned by individuals; therefore, planners and therapists should attempt to teach people the necessary skills by using mass media and holding appropriate workshops. In addition, the Iranian Ministry of Education is suggested to provide students with formal courses on important life skills taught by experienced counselors, and to design entertaining, constructive and attractive g programs for students' leisure time.

6. Appendix

6.1. Acknowledgment

The researchers wish to thank all the individuals who participated in the study.

6.2. Conflict of interest

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

6.3. Funding support

Self-funding.

6.4. Author's contributions

All the authors have the same contribution.

6.5. 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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 Table 1:
 Mean, standard deviation (SD), skewness, and kurtosis of the variables.

Variables	Mean± SD	Skewness	Kurtosis	K-S	Р
Addiction potential	52.45 ± 25.83	0.21	-1.18	0.12	0.764
Moral intelligence	124.26 ± 53.07	-0.16	0.23	0.34	0.406
Family functioning	120.92 ± 34.54	-0.01	-0.49	0.19	0.700
Diffuse-avoidant identity	29.53 ± 9.04	-0.55	-0.56	0.28	0.611

 Table 2:
 Pearson correlation coefficients between the research variables.

Variables	1	2	3	4
Addiction potential	1			
Moral intelligence	-0.54**	1		
Family functioning	-0.26**	0.24**	1	
Diffuse-avoidant identity	0.46**	-0.46**	-0.31**	1

 Table 3:
 Fit indicators of the initial and final model.

Fit indicators	\mathbf{X}^2	df	(X ² /df)	RFI	IFI	TLI	CFI	NFI	RMSEA
Initial model	-	-	-	-	0.99	-	0.89	0.99	0.338
Final model	1.01	1	1.01	0.97	0.99	0.99	0.99	0.99	0.005

 Table 4:
 Direct relationship between variables in the initial and final modified model.

Path	Initial	model	Final modified model	
	β	Р	β	Р
Moral intelligence \rightarrow Addiction potential	-0.40	0.001	-0.41	0.001
Family functioning \rightarrow Addiction potential	-0.04	0.315	-	-
Moral intelligence \rightarrow Diffuse-avoidant identity	-0.32	0.001	-0.32	0.001
Family functioning \rightarrow Diffuse-avoidant identity	-0.11	0.037	-0.11	0.037
Diffuse-avoidant identity \rightarrow Addiction potential	0.38	0.001	0.38	0.001

 Table 5:
 Results of analysis of indirect and intermediary paths in the final modified model.

Path	Initial model		Final modified model		
-	β	Р	β	Р	
Moral intelligence to addiction potential through the mediator role diffuse-avoidant identity	-0.058	0.004	-0.059	0.005	
Family functioning to addiction potential through the mediator role diffuse-avoidant identity	-0.029	0.005	-0.030	0.008	



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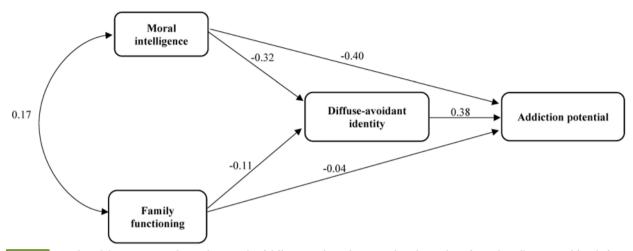


Figure 1: Initial model pertaining to the mediating role of diffuse-avoidant identity in the relationship of moral intelligence and family functioning with addiction potential

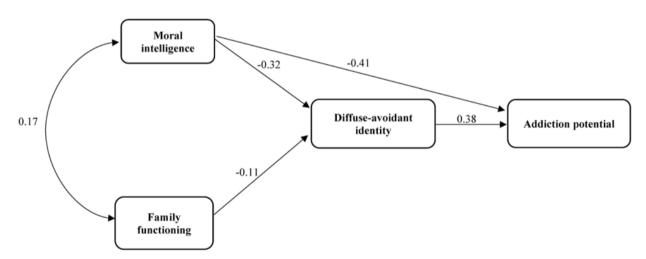


Figure 2: The modified final model pertaining to the mediating role of diffuse-avoidant identity in the relationship of moral intelligence and family functioning with addiction potential.

