KMAN PUBLISHING INSTITUTE
Journal Website

Article history:
Received 22 August 2024
Revised 10 October 2024
Accepted 17 October 2024
Published online 11 November 2024

Journal of Adolescent and Youth Psychological Studies

Volume 5, Issue 11, pp 99-108

E-ISSN: 2981-2526

The Mediating Role of Early Maladaptive Schemas in the Relationship Wbetween Individual and Contextual Risk-Protective Factors and Attitudes towards Substance Use in Adolescents

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A r t i c l e I n f o

Article type:
Original Research

How to cite this article:
Bakhtiari Saeed, F., Imani, S., & Shokri, O. (2024). The Mediating Role of Early Maladaptive Schemas in the Relationship between Individual and Contextual Risk-Protective Factors and Attitudes towards Substance Use in Adolescents. *Journal of Adolescent and Youth Psychological Studies*, *5*(11), 99-108.
http://dx.doi.org/10.61838/kman.jayps.5.11.12

A B S T R A C T

Objective: This study aimed to examine the mediating role of early maladaptive schemas in the relationship between individual and contextual risk-protective factors and attitudes towards substance use in adolescents.

Methods and Materials: The statistical population of this research included all high school students in Gorgan city. A sample of 400 individuals was selected through multi-stage cluster sampling. The research instruments included the Young Schema Questionnaire-Short Form (Young, 1998), the Risk and Protective Factors Scale (Mohammad Khani, 2007), and the Substance Use Attitude Questionnaire (Delavar et al., 2004). Data analysis was conducted using structural equation modeling in the PLS software.

Findings: The findings indicated that the model, which included individual and contextual risk/protective factors as predictors of substance use, significantly explained the variance in scores attributed to the mediating variables of impaired autonomy and performance, impaired limits, other-directedness, and hypervigilance. Additionally, the model, which included individual and contextual risk/protective factors as predictors of substance use, significantly explained the variance in scores attributed to the criterion variable of attitudes towards substance use.

Conclusion: Based on the results, it can be concluded that maladaptive schemas can explain part of the shared variance between the two factors, risk/protective factors, and attitudes towards substance use in adolescents. In fact, maladaptive schemas play a mediating role in the relationship between risk/protective factors and attitudes towards substance use.

Keywords: *Early maladaptive schemas, risk-protective factors, attitudes towards substance use.*

1. Introduction

A look at the statistics of substance use and addiction in Iran shows an increasing trend each year. Unofficial statistics indicate that 14 million people in Iran are directly and indirectly affected by addiction-related problems. The prevalence rate of substance use in the general population aged 15 to 64 years is 4.5%, with 4,402,800 people engaging in continuous, non-continuous, and hazardous substance use. The prevalence rate among university students is 7.4%, and among high school students, it is 1.2%. The annual economic cost of substance use is 199 trillion tomans (Nemati et al., 2020; Tajeryan et al., 2022, 2023). Adolescent substance use disorders have significantly increased in recent years (Abbaspour & Ghanbari, 2020). In recent years, significant progress has been made in prevention based on scientific findings, and new models have emerged in the field of prevention, including models based on risk and protective factors and their interaction. The main positive aspect of these models is their predictive value, meaning that the more children and adolescents are exposed to risk factors, the higher the likelihood of experiencing substance use and related problems (Zuquetto, 2021). However, studies on risk factors do not claim a causal relationship between these factors and subsequent problems. The risk and protective factors model offers a new horizon in primary prevention programs, significantly reducing the exorbitant costs of treating substance intoxication and dependence disorders (Zuquetto et al., 2019). According to the risk and protective factors model, various risk factors can predict substance use behavior in adolescents. Risk factors are situations, characteristics, variables, and events that increase the likelihood of substance intoxication. Conversely, protective factors neutralize the effects of risk factors, thereby reducing the likelihood of problems occurring. Risk and protective factors for problematic behaviors occur at different levels, including family, community, school, peer group, and individual (de Oliveira Pinheiro et al., 2020). Risk factors increase the likelihood of substance use or engagement in violent behaviors. Many risk factors experienced by children and adolescents during their development are not solely related to substance intoxication but also to a range of health and mental health problems. For instance, academic failure is the strongest predictor of substance intoxication, delinquency, and other behavioral problems (Jahanshahloo et al., 2016; Naseri, 2022). Risk factors affect alcohol or cigarette use in various ways. Some risk factors, such as peer group pressure during adolescence, have a stronger impact at specific stages compared to other factors (Garnefski & Kraaij, 2018).

On the other hand, early maladaptive schemas are considered core elements of behavioral and personality problems (Efrati et al., 2023). They are cognitive structures that individuals use to encode, screen, and interpret information encountered in the environment (Torabian et al., 2014). Since schemas shape individuals' self-concept, if they contain maladaptive content, they make individuals vulnerable to problems (Jamshidi et al., 2020; Khosravani et al., 2016). Early maladaptive schemas are akin to core beliefs that guide individuals in interpreting and responding to environmental stimuli. These schemas are defined as persistent and pervasive patterns related to oneself, others, and the world (Meyer & Wissemann, 2020). The origin of these schemas lies in unmet emotional needs and develops concerning five basic developmental tasks. These five tasks include disconnection and rejection, impaired autonomy and performance, impaired limits, other-directedness, and hypervigilance and inhibition. Because early maladaptive schemas cause significant emotional disturbances, several hypothetical coping responses have emerged to help individuals reduce their disturbances (Láng, 2015). Most of these coping responses are ineffective, leading to high levels of avoidant behaviors and even resulting in substance abuse as a key mechanism (Albal & Buzlu, 2021). Numerous studies have reported the relationship between maladaptive schemas and the propensity for substance use (Karjouh et al., 2022). Such studies can provide a more realistic and deeper understanding of the contexts and consequences of adolescents' risky behaviors and better illuminate the underlying cognitive and emotional aspects of addressing this phenomenon. Although various studies have examined early maladaptive schemas and risk and protective factors in relation to attitudes towards substance use, there remains a practical importance in identifying which psychological variables and risk factors can predict attitudes towards substance use. Therefore, the results of this research contribute to a better understanding of the etiology of addiction and its use in primary and secondary prevention efforts. Given that early maladaptive schemas play a significant role in attitudes towards addiction, greater attention to this topic in addiction prevention and intervention programs is warranted (Abbaspour & Ghanbari, 2020; Karjouh et al., 2022).

Given the issues discussed and the scarcity of articles focusing on the schemas of substance users (especially adolescents) and the reasons for their attitudes towards

JAYPS Adolescent and Youth Psychological Studies
E-ISSN: 2981-2526

specific types of substances, while this area can impact adolescents' entry into the substance use cycle, the main research question of this study is whether maladaptive schemas can explain part of the shared variance between risk and protective factors and attitudes towards substance use in adolescents. In essence, the researcher seeks to answer whether maladaptive schemas mediate the relationship between risk and protective factors and attitudes towards substance use. The aim of this study is to investigate the mediating role of maladaptive schemas (as identified by Young in five domains) in the relationship between risk and protective factors and attitudes towards substance use.

2. Methods and Materials

2.1. Study Design and Participants

The present study is a descriptive correlational research conducted using structural equation modeling. The statistical population of this study includes 10,324 high school students in Gorgan city. Using multi-stage cluster sampling based on the logic proposed by Klein (2005), which suggests selecting 10 to 20 participants per parameter, 400 individuals were chosen as the sample.

During the implementation phase, selected schools were visited, and contact was made with the participants. They were provided with online questionnaires assessing maladaptive schemas, risk and protective factors for substance use, and attitudes towards substance use. The sampling and tool administration period lasted approximately three months.

2.2. Measures

2.2.1. Early Maladaptive Schemas

Young Schema Questionnaire-Short Form (SQ-SF): This 75-item questionnaire was developed by Young (1998) to assess 15 early maladaptive schemas, including emotional deprivation, abandonment/instability, mistrust/abuse, social isolation/alienation, defectiveness/shame, failure, dependence/incompetence, vulnerability to harm or illness, enmeshment/undeveloped self, subjugation, self-sacrifice, emotional inhibition, unrelenting standards/hyper-criticalness, entitlement/grandiosity, and insufficient self-control. Each item is rated on a 6-point scale (1 for completely untrue and 6 for completely true). The reliability and validity of this instrument have been confirmed in numerous studies. The questionnaire was standardized in Iran by Ahi (2005), reporting Cronbach's alpha reliability of 0.97 for females and 0.98 for males (Hadiyan et al., 2023). In the present study, Cronbach's alpha for the entire questionnaire was calculated at 0.93.

2.2.2. Risk-Protective Factors

The short form of this questionnaire includes 86 questions and 3 subscales, assessing variables related to substance use in three domains: social and school factors, family factors, and individual and psychological factors, using a 5-point Likert scale (strongly agree, agree, neutral, disagree, strongly disagree). This questionnaire has satisfactory psychometric properties, with Cronbach's alpha for the psychosocial school environment (5 items) at 0.74, commitment to school (6 items) at 0.75, social environment disorder (10 items) at 0.83, family supervision (4 items) at 0.63, parental attitudes towards substances (4 items) at 0.75, family conflicts (8 items) at 0.83, anxiety sensitivity (5 items) at 0.61, impulsivity (5 items) at 0.79, sensation seeking (8 items) at 0.59, social skills (10 items) at 0.72, hopelessness (10 items) at 0.82, and attitudes towards substances (10 items) at 0.86. The overall reliability of the questionnaire based on Cronbach's alpha was found to be 0.92. Construct validity was assessed using confirmatory and exploratory factor analysis with Varimax rotation, identifying 12 main factors (Jahanshahloo et al., 2016).

2.2.3. Substance Use Attitude

Substance Use Attitude Questionnaire: This 40-item questionnaire was developed by Delavar et al. (2004) to assess high school students' attitudes towards substance use and determine the relationship between individual and family components. The questionnaire includes three subscales: attitudes towards the effects of substance use, attitudes towards substance use, and attitudes towards the risks of substance use. Scoring is based on a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5). Reliability coefficients calculated by Delavar et al. (2004) using test-retest and Cronbach's alpha were 0.908 for the effects of substance use subscale, 0.918 for the tendency to use substances subscale, and 0.910 for the risks of substance use subscale, indicating good internal consistency. The test-retest reliability coefficients were 0.847 for the effects of substance use, 0.861 for the tendency to use substances, and 0.851 for the risks of substance use (Abbaspour & Ghanbari, 2020).

JAYPS Adolescent and Youth Psychological Studies E-ISSN: 2981-2526

2.3. Data analysis

For the analysis of collected data, descriptive statistics including central tendency and dispersion indices such as frequency, percentage frequency, mean, and standard deviation were used. In inferential statistics, structural equation modeling was employed. After examining the assumptions, structural equation modeling was performed using PLS statistical software, version 4, at the 0.05 significance level.

3. Findings and Results

Table 1 describes the variables of early maladaptive schemas in the domains of disconnection and rejection, impaired autonomy and performance, impaired limits, other-directedness, hypervigilance, individual risk-protective factors, familial and social risk-protective factors, and attitudes towards substance use among the study participants. Additionally, skewness and kurtosis values for all variables were between -2 and +2, indicating the assumption of normal data distribution was met.

Table 1

Description of Research Variables

Variables	Components	Kurtosis	Skewness	Standard Deviation	Mean	Maximum	Minimum
Early Maladaptive Schemas	Disconnection and Rejection	-0.653	0.349	22.4	63.59	128	25
	Impaired Autonomy and Performance	-0.175	0.776	21.1	45.62	119	20
	Impaired Limits	-0.210	0.106	9.3	30.6	59	10
	Other-Directedness	-0.550	0.493	12.1	27.92	60	10
	Hypervigilance	-0.483	0.089	10.3	32.87	60	10
Individual and Contextual Risk-Protective Factors	Individual Factors	1.18	0.076	19.2	109.03	181	48
	Familial Factors	-0.150	-0.013	8.4	39.69	68	19
	Social Factors	0.036	0.123	10.4	47.5	80	25
Attitude towards Substance Use		-0.576	-0.396	32.5	112.32	179	39

Table 2 shows that the Cronbach's alpha, composite reliability, and average variance extracted (AVE) values were all above acceptable levels, indicating that the questionnaires used had acceptable reliability and validity.

Table 2

Reliability and Validity

Variable	Cronbach's Alpha	Composite Reliability	AVE
Other-Directedness	0.83	0.85	0.85
Impaired Autonomy and Performance	0.89	0.89	0.76
Social Factors	0.76	0.88	0.66
Familial Factors	0.72	0.77	0.63
Individual Factors	0.79	0.80	0.50
Disconnection and Rejection	0.82	0.83	0.59
Impaired Limits	0.70	0.70	0.77
Attitude towards Substance Use	0.85	0.87	0.77
Hypervigilance	0.68	0.72	0.74

Furthermore, the results of Pearson's correlation coefficient showed a positive and significant relationship between individual factors and attitudes towards substance use (P=0.001, r=0.55), familial factors and attitudes towards substance use (P=0.001, r=0.59), and social factors and attitudes towards substance use (P=0.001, r=0.57). There were also positive and significant relationships between early maladaptive schemas in the domains of disconnection and rejection (P=0.001, r=0.59), impaired autonomy and performance (P=0.001, r=0.59), impaired limits (P=0.001, r=0.38), other-directedness (P=0.001, r=0.59), and hypervigilance (P=0.001, r=0.38) with attitudes towards substance use. Therefore, the assumption of a linear relationship between variables was met. Finally, the variance

JAYPS Adolescent and Youth Psychological Studies
E-ISSN: 2981-2526

inflation factor (VIF) values for the research variables were all below the threshold of 10, indicating no multicollinearity among the variables.

Path analysis results using PLS software in Table 3 showed positive and significant relationships between individual risk factors (P=0.033, T=2.12, b=0.10), familial risk factors (P=0.001, T=3.28, b=0.15), and social risk factors (P=0.000, T=5.16, b=0.28) with attitudes towards substance use among adolescents in Gorgan.

Table 3

Coefficients and Values of the Structural Model for Direct Paths

Path	b	SE	T	P
Social Factors -> Attitude towards Substance Use	0.28	0.054	5.16	0.000
Familial Factors -> Attitude towards Substance Use	0.15	0.048	3.28	0.001
Individual Factors -> Attitude towards Substance Use	0.10	0.051	2.12	0.033

Results in Table 4 showed positive and significant relationships between early maladaptive schemas in the domains of disconnection and rejection (P=0.000, T=4.15, b=0.18), impaired autonomy and performance (P=0.001, T=3.43, b=0.16), and other-directedness (P=0.000, T=6.89, b=0.24) with attitudes towards substance use. However, there were no significant relationships between early maladaptive schemas in the domains of impaired limits (P=0.783, T=0.276, b=0.01) and hypervigilance (P=0.515, T=0.651, b=0.02) with attitudes towards substance use.

Table 4

Coefficients and Values of the Structural Model for Direct Paths

Path	b	SE	T	P
Other-Directedness -> Attitude towards Substance Use	0.24	0.035	6.89	0.000
Impaired Autonomy and Performance -> Attitude towards Substance Use	0.16	0.047	3.43	0.001
Disconnection and Rejection -> Attitude towards Substance Use	0.18	0.045	4.15	0.000
Impaired Limits -> Attitude towards Substance Use	0.01	0.038	0.276	0.783
Hypervigilance -> Attitude towards Substance Use	0.02	0.037	0.651	0.515

Results in Table 5 showed positive and significant relationships between individual risk factors (P=0.000, T=7.28, b=0.37) and familial risk factors (P=0.031, T=2.15, b=0.11) with early maladaptive schemas in the domain of disconnection and rejection, but no significant relationship between social risk factors and early maladaptive schemas in the domain of disconnection and rejection among adolescents in Gorgan (P=0.174, T=1.36, b=0.06). Similarly, there were positive and significant relationships between individual risk factors (P=0.000, T=5.06, b=0.31) and familial risk factors (P=0.000, T=3.82, b=0.21) with early maladaptive schemas in the domain of impaired autonomy and performance, but no significant relationship between social risk factors and early maladaptive schemas in the domain of impaired autonomy and performance (P=0.322, T=0.990, b=0.05). There was a positive and significant relationship between individual risk factors (P=0.000, T=5.19, b=0.30) and early maladaptive schemas in the domain of impaired limits, but no significant relationship between familial (P=0.693, T=0.395, b=0.02) and social risk factors (P=0.230, T=1.20, b=0.06) and early maladaptive schemas in the domain of impaired limits among adolescents in Gorgan. There were positive and significant relationships between individual (P=0.000, T=6.67, b=0.32) and familial risk factors (P=0.002, T=3.15, b=0.16) and early maladaptive schemas in the domain of other-directedness, but no significant relationship between social risk factors and early maladaptive schemas in the domain of other-directedness (P=0.155, T=1.42, b=0.06). There was a positive and significant relationship between individual risk factors and early maladaptive schemas in the domain of hypervigilance (P=0.000, T=6.17, b=0.32), but no significant relationship between familial (P=0.128, T=1.52, b=0.09) and social risk factors (P=0.409, T=0.825, b=0.03) and early maladaptive schemas in the domain of hypervigilance among adolescents in Gorgan.

JAYPS Adolescent and Youth Psychological Studies
E-ISSN: 2981-2526

Table 5

Coefficients and Values of the Structural Model for Direct Paths

Path	b	SE	T	P
Social Factors -> Other-Directedness	0.06	0.048	1.42	0.155
Social Factors -> Impaired Autonomy and Performance	0.05	0.057	0.990	0.322
Social Factors -> Disconnection and Rejection	0.06	0.049	1.36	0.174
Social Factors -> Impaired Limits	0.06	0.050	1.20	0.230
Social Factors -> Attitude towards Substance Use	0.28	0.054	5.16	0.000
Social Factors -> Hypervigilance	0.03	0.048	0.825	0.409
Familial Factors -> Other-Directedness	0.16	0.053	3.15	0.002
Familial Factors -> Impaired Autonomy and Performance	0.21	0.056	3.82	0.000
Familial Factors -> Disconnection and Rejection	0.11	0.055	2.15	0.031
Familial Factors -> Impaired Limits	0.02	0.058	0.395	0.693
Familial Factors -> Hypervigilance	0.09	0.060	1.52	0.128
Individual Factors -> Other-Directedness	0.32	0.049	6.67	0.000
Individual Factors -> Impaired Autonomy and Performance	0.31	0.062	5.06	0.000
Individual Factors -> Disconnection and Rejection	0.37	0.051	7.28	0.000
Individual Factors -> Impaired Limits	0.30	0.058	5.19	0.000
Individual Factors -> Hypervigilance	0.32	0.052	6.17	0.000

Path analysis results using PLS software in Table 6 showed that early maladaptive schemas in the domains of disconnection and rejection (P=0.001, T=3.35, b=0.06), impaired autonomy and performance (P=0.004, T=2.91, b=0.05), and other-directedness (P=0.000, T=4.75, b=0.07) had significant mediating roles in the relationship between individual risk factors and attitudes towards substance use in adolescents. However, early maladaptive schemas in the domains of impaired limits (P=0.790, T=0.266, b=0.003) and hypervigilance (P=0.530, T=0.627, b=0.008) did not have significant mediating roles in the relationship between individual risk factors and attitudes towards substance use in adolescents. Similarly, early maladaptive schemas in the domains of impaired autonomy and performance (P=0.021, T=2.31, b=0.03) and other-directedness (P=0.004, T=2.87, b=0.04) had significant mediating roles in the relationship between familial risk factors and attitudes towards substance use in adolescents. However, early maladaptive schemas in the domains of disconnection and rejection (P=0.063, T=1.86, b=0.02), impaired limits (P=0.922, T=0.098, b=0.001), and hypervigilance (P=0.625, T=0.489, b=0.002) did not have significant mediating roles in the relationship between familial risk factors and attitudes towards substance use in adolescents. Additionally, early maladaptive schemas in the domains of disconnection and rejection (P=0.219, T=1.22, b=0.01), impaired limits (P=0.842, T=0.200, b=0.001), impaired autonomy and performance (P=0.388, T=0.863, b=0.009), other-directedness (P=0.163, T=1.39, b=0.01), and hypervigilance (P=0.717, T=0.362, b=0.001) did not have significant mediating roles in the relationship between social risk factors and attitudes towards substance use in adolescents.

Table 6

Coefficients and Values of the Structural Model for Indirect Paths

Indirect Path	b	SE	T	P
Social Factors -> Other-Directedness -> Attitude towards Substance Use	0.016	0.012	1.39	0.163
Familial Factors -> Other-Directedness -> Attitude towards Substance Use	0.040	0.014	2.87	0.004
Familial Factors -> Impaired Limits -> Attitude towards Substance Use	0.000	0.002	0.098	0.922
Individual Factors -> Impaired Limits -> Attitude towards Substance Use	0.003	0.012	0.266	0.790
Individual Factors -> Other-Directedness -> Attitude towards Substance Use	0.079	0.017	4.75	0.000
Social Factors -> Disconnection and Rejection -> Attitude towards Substance Use	0.012	0.010	1.22	0.219
Familial Factors -> Hypervigilance -> Attitude towards Substance Use	0.002	0.004	0.489	0.625
Social Factors -> Impaired Autonomy and Performance -> Attitude towards Substance Use	0.009	0.010	0.863	0.388
Familial Factors -> Disconnection and Rejection -> Attitude towards Substance Use	0.022	0.012	1.86	0.063
Individual Factors -> Impaired Autonomy and Performance -> Attitude towards Substance Use	0.050	0.017	2.91	0.004
Social Factors -> Hypervigilance -> Attitude towards Substance Use	0.001	0.003	0.362	0.717

JAYPS Adolescent and Youth Psychological Studies
E-ISSN: 2981-2526

Individual Factors -> Hypervigilance -> Attitude towards Substance Use	0.008	0.012	0.627	0.530
Individual Factors -> Disconnection and Rejection -> Attitude towards Substance Use	0.069	0.021	3.35	0.001
Familial Factors -> Impaired Autonomy and Performance -> Attitude towards Substance Use	0.034	0.015	2.31	0.021
Social Factors -> Impaired Limits -> Attitude towards Substance Use	0.001	0.003	0.200	0.841

Positive values of the Stone-Geisser Q2 statistic in Table 7 indicate that the structural model has good predictive quality. The predictive strength of the model for endogenous latent variables was strong. The R2 value for the attitude towards substance use variable was 0.67, meaning the model explained 67% of the variance in attitudes towards substance use. The SRMR value was 0.078, which is less than the 0.08 threshold. The goodness of fit index (GOF) for the overall model was 0.43, which is greater than 0.36, indicating a good model fit.

4. Discussion and Conclusion

The predictor components of individual and contextual risk-protective factors for substance use and the components of disconnection and rejection, impaired autonomy and performance, impaired limits, other-directedness, and hypervigilance from the mediator variable are significantly related to the criterion variable of attitudes towards substance use. These results are consistent with the prior findings (Ameri, 2023; Karjouh et al., 2022; Naseri, 2022; Zuquetto et al., 2019; Zuquetto, 2021). According to the risk-protective factors model, risk factors increase the likelihood of substance use or engagement in violent behaviors (Baartmans et al., 2022). Research has identified various factors as risks and protective factors against substance abuse. Studies have identified poor family functioning, substance abuse in the family, ineffective parental supervision, lack of attachment to parents, low family support, availability of substances, parental conflict, parental substance use, socio-cultural environment, peer group, and individual psychosocial variables such as sensation seeking, defiance, aggression, and low academic achievement as risk factors. Additionally, various other factors can lead to, reinforce, and stabilize psychological and emotional harm in students. One of the factors contributing to the formation of psychological harm in students is the presence of early maladaptive schemas (Albal & Buzlu, 2021; Torabian et al., 2014). Schemas are described as cognitive structures for selecting, encoding, and evaluating stimuli that affect individuals. Early maladaptive schemas can arise from early adverse experiences and become activated in similar situations (Karjouh et al., 2022). Since schemas form the core of individuals' self-concept, if they contain maladaptive content, they make individuals vulnerable to problems. The origin of these schemas is fundamental emotional needs (Ameri, 2023). Psychological theories have explained that behaviors such as addiction arise to reduce negative emotions resulting from the activation of maladaptive schemas.

Based on the obtained results, the predictor variables of individual and contextual risk-protective factors for substance use are significantly related to the criterion variable of attitudes towards substance use. These findings align with the prior results (Abdullah et al., 2015; Ameri, 2023; de Oliveira Pinheiro et al., 2020; Jahanshahloo et al., 2016; Meyer & Wissemann, 2020; Naseri, 2022; Nemati et al., 2020; Zuquetto, 2021). Adolescents' tendency towards risk-taking may expose them to risky behaviors, leading to problems. Adolescence is a crucial developmental period associated with identity formation. Part of this developmental process involves sensation seeking, which manifests as risky sexual behaviors, alcohol consumption, smoking, and other substance use. In recent years, significant progress has been made in prevention based on scientific findings, and new models have emerged in the field of prevention, including models based on risk and protective factors and their interaction. The main positive aspect of these models is their predictive value, meaning that the more children and adolescents are exposed to risk factors, the higher the likelihood of experiencing substance use and related problems (Nemati et al., 2020). However, studies on risk factors do not claim a causal relationship between these factors and subsequent problems (Zuquetto et al., 2019). According to this model, various risk factors can predict substance use behavior in adolescents. Risk factors are situations, characteristics, variables, and events that increase the likelihood of substance abuse (de Oliveira Pinheiro et al., 2020). Additionally, according to the risk-protective factors model, protective factors are elements that neutralize the effects of risk factors, thereby reducing the likelihood of problems. Risk and protective factors for problematic behaviors are diverse and occur at different levels, including family, community, school, peer group, and individual (de Oliveira Pinheiro et al., 2020). Positive social bonds counteract many risk factors or environmental characteristics (Naseri, 2022; Nemati et al., 2020).

JAYPS Adolescent and Youth Psychological Studies
E-ISSN: 2981-2526

One of the factors contributing to the formation of psychological harm in adolescents is the presence of early maladaptive schemas. According to research findings by Jacobs (1986) and Juliano (2003), early psychological contexts influence the formation of habitual patterns and behaviors such as substance abuse. These core beliefs and habitual patterns act as mediators between childhood problems and behaviors in adulthood (Jahanshahloo et al., 2016). The developmental roots of early maladaptive schemas lie in adverse childhood experiences. Schemas that form early are usually the strongest because they originate from nuclear families. Early maladaptive schemas may be associated with substance abuse as they act as a coping strategy, allowing individuals to avoid negative emotions (Abbaspour & Ghanbari, 2020).

Based on the obtained results, the components of disconnection and rejection, impaired autonomy and performance, and other-directedness from the maladaptive schemas variable are related to the criterion variable of attitudes towards substance use. However, there is no significant relationship between the components of impaired limits and hypervigilance from the maladaptive schemas variable and the criterion variable (attitudes towards substance use). Therefore, part of the research hypothesis is confirmed. Thus, three components of the five components of maladaptive schemas can predict part of the variance in attitudes towards substance use. These findings align with the prior results (Ameri, 2023; Karjouh et al., 2022; Torabian et al., 2014). In this regard, Young (1999) believes that some of these schemas, particularly those formed due to adverse childhood experiences, may form the core of personality disorders, milder characterological problems, and many chronic disorders. To examine this idea further, Young identified a set of schemas called "early maladaptive schemas" (Torabian et al., 2014). The characteristics of early maladaptive schemas include unconditional beliefs and feelings formed through interactions with the environment, which are self-perpetuating and resistant to change. They are remarkably repetitive and dysfunctional. Although not all schemas have developmental roots in traumatic events, they are all disruptive to a healthy life. Most schemas result from adverse experiences faced continuously during childhood and adolescence. The impact of these adverse experiences accumulates during development, leading to the formation of a fully maladaptive schema. Early maladaptive schemas fight for their survival (Karjouh et al., 2022).

Consistent with the results of the present study, patients with disconnection and rejection schemas cannot form secure and satisfying attachments with others. Such individuals believe their needs for stability, security, affection, love, and belonging will not be met. Their primary families are usually unstable (abandonment/instability), abusive (mistrust/abuse), cold and unaffectionate (emotional deprivation), rejecting (defectiveness/shame), or isolated (social isolation/alienation). Patients with schemas in the disconnection and rejection domain, especially the first four schemas, often experience the most harm. Many have had traumatic childhoods and tend to impulsively move from one self-destructive relationship to another or avoid close interpersonal relationships altogether in adulthood (Láng, 2015).

The impaired autonomy schema refers to the individual's ability to separate from the family and function independently, compared to peers. Patients with schemas in this domain have expectations from themselves and their environment that hinder their ability to separate from parental symbols and achieve independent functioning. Their parents did everything for them and supported them intensely, or conversely, rarely cared for or nurtured them (the latter being very rare). Extremes in support lead to autonomy issues. Parents of these patients often undermine their child's self-confidence and fail to promote skilled performance outside the home. Consequently, these patients cannot establish an independent identity and cannot manage their lives without substantial help from others. They cannot set specific goals and develop necessary skills, resulting in childlike efficiency and competence in adulthood (Ameri, 2023).

Patients with other-directedness schemas prioritize others' needs over their own to gain approval, maintain emotional relationships, or avoid retaliation. These patients emphasize others' responses over their needs in social relationships and are often unaware of their own anger and desires. In childhood, they were not free to follow their natural inclinations and, in adulthood, are externally directed and follow others' wishes. The developmental roots of schemas in this domain are based on conditional acceptance: children had to suppress significant aspects of their personality to gain others' love or approval. In most of these families, parents prioritized their emotional needs or social status over the child's unique needs (Ameri, 2023; Karjouh et al., 2022).

5. Limitations & Suggestions

JAYPS Adolescent and Youth Psychological Studies E-ISSN: 2981-2526

The limitations of the present study include conducting the research in an urban area. Considering the extensive rural areas surrounding the city, more homogeneous results might have been obtained. Additionally, not considering demographic characteristics of the family, such as parental occupation and education, could have provided more precise results. Future researchers are recommended to consider demographic characteristics such as gender and education. Moreover, qualitative and longitudinal research using other tools, such as interviews, should be conducted to determine the dimensions of addiction attitudes more precisely.

Acknowledgments

We would like to express our appreciation and gratitude to all those who cooperated in carrying out this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

Funding

This research was carried out independently with personal funding and without the financial support of any governmental or private institution or organization.

Authors' Contributions

This article is derived from the master's thesis of the first author, with the second author serving as the advisor, Khorram Abad Branch, Islamic Azad University. Both authors equally contributed to this article.

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JAYPS Adolescent and Youth Psychological Studies
E-ISSN: 2981-2526