

Family Communication Patterns and Emotional Schemas as Predictors of Addiction Tendency in Adolescents: The Mediating Role of Alexithymia

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Abstract

Background: Alexithymia, the incapacity to identify and express emotions, significantly influences the tendency to use drugs. The present study was conducted to determine the mediating role of alexithymia in the relationship between family communication patterns and emotional schemas with addiction tendencies among adolescents.

Methods: This was a cross-sectional study in which 300 adolescent participants were recruited through convenience sampling in Shiraz, Iran, during the second semester of the 2023–2024 academic year. Data were collected using the Severity Measurement Instruments (SMI), the Revised Family Communication Patterns Questionnaire (RFCPQ), the Leahy Emotional Schemas Scale (LESS), and the Toronto Alexithymia Scale (TAS). Descriptive and inferential statistics, including the mean, standard deviation, Pearson correlation, and path analysis, were used to analyze the data in SPSS version 24.

Results: The findings suggested that conformity does not significantly impact the tendency toward addiction via alexithymia ($\beta=-0.043$, $P=0.052$). Conversely, negative emotional schemas were found to have a considerable positive indirect influence on the tendency toward addiction via alexithymia ($\beta=0.005$, $P=0.126$). Additionally, positive emotional schemas had a significant negative indirect influence on the tendency toward addiction via alexithymia ($\beta=-0.007$, $P=0.140$). Furthermore, dialogue exerted a significant negative indirect effect on the tendency toward addiction via alexithymia ($\beta=-0.019$, $P=0.059$).

Conclusions: Family communication and emotional patterns influence adolescent addiction through emotional regulation (alexithymia). Therefore, addiction prevention programs for adolescents should combine family communication training with cognitive-emotional strategies to improve emotional processing and reduce maladaptive coping.

Keywords: Family Communication Patterns, Emotional Schemas, Addiction Tendencies, Adolescent, Alexithymia

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1. Introduction

Drug addiction is an escalating public health concern affecting diverse socioeconomic and educational groups. Although substance use affects people of all ages, adolescents are especially vulnerable because they are more likely to experience peer pressure and struggle with emotion regulation (1–3). Adolescents grappling with substance use disorders have a higher prevalence of physical and psychological comorbidities that profoundly impair their long-term well-being (4). Etiological factors associated with adolescent drug abuse are multifaceted, encompassing early behavioral problems, peer influence, low educational attainment, socioeconomic instability, inadequate parental monitoring, limited opportunities, social marginalization, and

dysfunctional family structures (5). In Iran, where adolescent drug abuse has shown a concerning upward trend, recent estimates suggest a significant prevalence of drug dependence (6); consequently, this growing phenomenon is associated with a substantial socioeconomic burden, contributing to criminal activity and imposing profound costs on both individuals and their families (7).

Research showed that adolescents from dysfunctional families are twice as likely to develop substance use disorders as those from functional families (8). Because family interactions are expressed through observable communication patterns, assessing these dynamics is critical to understanding adolescent adjustment (9). These patterns, categorized as consensual, protective, pluralistic, or laissez-faire, are largely shaped

by parental interaction styles (9). Families with a history of substance abuse often exhibit poor monitoring, conflict, instability, and a lack of intimacy or consistent discipline (10). Ultimately, parental attitudes, beliefs, and explicit messages about substance use are significant factors in shaping adolescent outcomes (11).

Emotional schemas, defined as cognitive frameworks governing emotional perception and regulation, significantly contribute to adolescent addiction susceptibility. Maladaptive engagement with these schemas can impair emotional navigation, ultimately exacerbating psychological distress and increasing vulnerability to substance abuse (12–14). Collectively, early maladaptive schemas (i.e., emotional deprivation, social isolation, defectiveness, failure, enmeshment, subjugation, self-sacrifice, emotional inhibition, and insufficient self-discipline), sensation-seeking (i.e., experience seeking, adventure seeking, boredom susceptibility, and disinhibition), and alexithymia (i.e., difficulty identifying/describing feelings, and externally oriented thinking) accounted for 48% of the variance in addiction readiness (15). While alexithymia significantly predicts increased addiction susceptibility among students, a positive family emotional climate serves as a protective factor against addictive behaviors (16).

Evidence suggests that alexithymia, characterized by difficulties in identifying and describing emotions, limited imagination, and externally-oriented thinking, significantly disrupts adolescents' social and emotional functioning (17). Also, developmental evidence indicates that deficits in early emotional processing impair the integration of cognitive and emotional systems. Consequently, this cognitive-emotional disruption leads to emotional dysregulation, misinterpretation of physiological sensations, and heightened somatic distress (17). Moreover, prior research indicated that supportive family relationships, particularly with parents, serve as a protective factor against adolescent substance use (18). Adolescent substance use and addiction susceptibility are linked to family functioning, communication, and emotional climate (2, 8, 11, 16); emotional schemas also influence how individuals interpret and react to emotions (13, 14). However, the combined impact of these factors on adolescent addiction susceptibility, especially with alexithymia as a potential mediator, needs further exploration. The

present study aimed to examine the mediating role of alexithymia in the associations of family communication patterns and emotional schemas with addiction susceptibility among adolescents in Shiraz, Iran.

2. Method

2.1. Design

This cross-sectional study utilized path analysis to explore the relationships between family communication patterns, emotional schemas, alexithymia, and addiction susceptibility in adolescents of Shiraz, Iran.

2.2. Selection and Description of Participants

The target population comprised high school students enrolled in public and private secondary schools in Shiraz, Iran, during the second semester of the 2023–2024 academic year. The final sample consisted of 300 adolescents, including 160 boys (53.3%) and 140 girls (46.7%), recruited from schools across the four educational districts of Shiraz, Iran, using a convenience sampling approach. Participants represented various fields of study, including humanities, experimental sciences, and mathematics/physics. Inclusion criteria were enrollment in high school at the time of data collection, residence with both parents, and provision of written informed consent. Students with incomplete questionnaires or those who withdrew during data collection were excluded from the final analysis.

2.3. Sample Size Determination

A sample of 300 participants was considered adequate based on methodological recommendations for covariance-based structural equation modeling (SEM) and path analysis (19). A minimum sample of 200 participants is generally considered adequate to achieve sufficient statistical power and stable parameter estimates in path analysis; however, a target sample of 300 was selected to enhance the generalizability of the findings and account for potential missing data.

2.4. Data Collection and Measurements

Severity Measurement Instrument (SMI): This 16-item instrument evaluates drug use tendencies

and addiction susceptibility across three dimensions (20). Responses are on a 5-point Likert scale (1=very little, 5=very much), yielding a total score from 16 to 80, with higher scores indicating greater addiction propensity. Subscale scores are derived by summing relevant items within each dimension. While Conway and co-workers (20) reported a Cronbach's alpha of 0.87, CVR of 0.76, and CVI of 0.83, the current study found a Cronbach's alpha of 0.71.

2.4.1. Revised Family Communication Patterns Questionnaire (RFCPQ): This questionnaire developed by Ritchie and Fitzpatrick (21), consists of 26 items, self-report instrument comprising two subscales: conversation orientation (15 items) and conformity orientation (11 items) (21). Items are rated on a 5-point scale ranging from 0 (completely disagree) to 4 (completely agree). The score ranges for conversation and conformity orientations are 0.60 and 0.44, respectively. Separate scores are calculated for each dimension, with higher scores indicating greater levels of conversation orientation and conformity within the family. The instrument has demonstrated good reliability, with a reported Cronbach's alpha of 0.87 and 0.81 (22). In addition, its content validity was confirmed with a content validity index (CVI) of 0.80 and a content validity ratio (CVR) of 0.81 (22). In the present study, the scale demonstrated acceptable internal consistency, with a Cronbach's alpha of 0.70.

2.4.2. Leahy Emotional Schema Scale (LESS): This scale was developed by Leahy to assess individuals' emotional schemas (23). This scale enables the quantification of emotional schemas across different individuals, employing a six-point Likert scale ranging from completely disagree to completely agree. Leahy reported a Cronbach's alpha of 0.81 for the questionnaire (23). The construct validity of the Persian version was supported by CVI and CVR evaluations, with the extracted factors accounting for 57.91% of the total variance (23). Previous research indicated an overall internal consistency (Cronbach's alpha) of 0.82, with subscale coefficients ranging from 0.59 to 0.72 (24). For the current investigation, the scale demonstrated a Cronbach's alpha of 0.73.

2.4.3. Toronto Alexithymia Scale (TAS-20): The 20-item Toronto Alexithymia Scale (TAS-20), developed by Bagby and colleagues, measures alexithymia across three subscales including difficulty identifying feelings, difficulty describing

feelings, and externally oriented thinking (25). Responses are rated on a five-point Likert scale, yielding scores from 20 to 100. Bagby and colleagues reported a reliability of 0.81 and a Cronbach's alpha of 0.77 (25). The Persian version, validated by Besharat, showed concurrent validity through correlations with emotional intelligence, psychological well-being, and distress, with a CVI of 0.91 and CVR of 0.86. This validation study also reported an overall Cronbach's alpha of 0.85, with subscale alpha of 0.82, 0.75, and 0.72 (26). In the current study, the instrument demonstrated an overall Cronbach's alpha of 0.84.

2.5. Procedure

Before administering the questionnaires, the participants were provided with a clear explanation of the study objectives, the procedures for completing the questionnaires, and the voluntary participation. Throughout the study, ethical and legal principles were carefully observed. Written informed consent was obtained from all the participants. They were also assured that their responses would remain confidential and would be used solely for research purposes. The questionnaires were administered in person, and the researchers provided the necessary instructions to ensure accurate completion. After the questionnaires were collected, the data were analyzed using appropriate statistical methods.

2.6. Data Analysis

Data analysis was performed using SPSS version 24. Statistical analyses such as descriptive statistics, the Kolmogorov-Smirnov test, Pearson's correlation coefficient, and path analysis were applied to analyze the data. The normality of the data distribution was verified using the Kolmogorov-Smirnov test. Bivariate relationships among the study variables were evaluated using Pearson's correlation coefficient. Furthermore, path analysis was conducted to examine the hypothesized structural model.

3. Results

As Table 1 depicts the demographic characteristics of the participants, a total of 300 adolescents were included in the study, of whom 53% were boys and 47% were girls. Participants were distributed across four age groups, including 15 years (25%), 16 years (22%), 17 years (26%), and 18 years (27%).

Table 1: Demographic variables of the participants

Demographic Variables	Group	N	%
Gender	Boy	160	53
	Girl	140	47
Age	15	76	25
	16	67	22
	17	77	26
	18	80	27

Table 2: Mean, Standard Deviation, and Normality test of the study variables

Variables	Mean	SD	Min	Max	Skewness	Kurtosis	Shapiro-Wilk	P value
Tendency to Addiction	47.167	10.877	28.000	66.000	0.236	-0.943	0.927	<0.001
Conformity	29.490	6.964	17.000	46.000	0.126	-1.114	0.955	<0.001
Dialogue	32.893	9.957	18.000	46.000	-0.264	-1.546	0.867	<0.001
Positive Emotional Schemas	34.950	8.317	21.000	49.000	0.090	-1.610	0.883	<0.001
Negative Emotional Schemas	41.827	9.590	26.000	57.000	-0.291	-1.406	0.900	<0.001
Difficulty in Recognizing Emotions	17.157	5.509	7.000	28.000	-0.103	-0.747	0.955	<0.001
Difficulty in Describing Emotions	16.643	4.419	9.000	27.000	0.236	-0.929	0.959	<0.001
External Orientation	15.787	4.038	8.000	24.000	0.022	-1.294	0.933	<0.001

SD: Standard Deviation

Table 3: Pearson Correlation Coefficients of the studied variables

Variables	Tendency to Addiction	Conformity	Dialogue	Positive Emotional Schemas	Negative Emotional Schemas	Difficulty in Recognizing Emotions	Difficulty in Describing Emotions	External Orientation
Tendency to Addiction	—							
Conformity	-0.508	—						
Dialogue	-0.614	0.633	—					
Positive Emotional Schemas	-0.670	0.689	0.799	—				
Negative Emotional Schemas	0.674	-0.740	-0.775	-0.708	—			
Difficulty in Recognizing Emotions	0.622	-0.667	-0.671	-0.771	0.717	—		
Difficulty in Describing Emotions	0.663	-0.603	-0.719	-0.712	0.787	0.740	—	
External Orientation	0.574	-0.646	-0.708	-0.763	0.737	0.696	0.662	—

Table 4: Direct and indirect paths between study variables

Variables	Path Coefficient	SD	T Value	P value	Result
Alexithymia → Tendency to Addiction	0.377	0.112	3.383	0.001	Confirmed
Conformity → Alexithymia	-0.113	0.047	2.421	0.015	Confirmed
Conformity → Tendency to Addiction	0.054	0.051	1.057	0.291	Rejected
Dialogue → Alexithymia	-0.157	0.046	3.428	0.001	Confirmed
Dialogue → Tendency to Addiction	-0.116	0.086	1.353	0.176	Rejected
Negative Emotional Schemas → Alexithymia	0.333	0.062	5.356	<0.001	Confirmed
Negative Emotional Schemas → Tendency to Addiction	0.205	0.102	2.021	0.043	Confirmed
Positive Emotional Schemas → Alexithymia	-0.370	0.068	5.436	<0.001	Confirmed
Positive Emotional Schemas → Tendency to Addiction	-0.097	0.089	1.090	0.276	Rejected
Conformity → Alexithymia → Tendency to Addiction	-0.043	0.022	1.941	0.052	Rejected
Negative Emotional Schemas → Alexithymia → Tendency to Addiction	0.126	0.044	2.834	0.005	Confirmed
Dialogue → Alexithymia → Tendency to Addiction	0.059	0.025	2.348	0.019	Confirmed
Positive Emotional Schemas → Alexithymia → Tendency to Addiction	0.140	0.052	2.696	0.007	Confirmed

SD: Standard Deviation

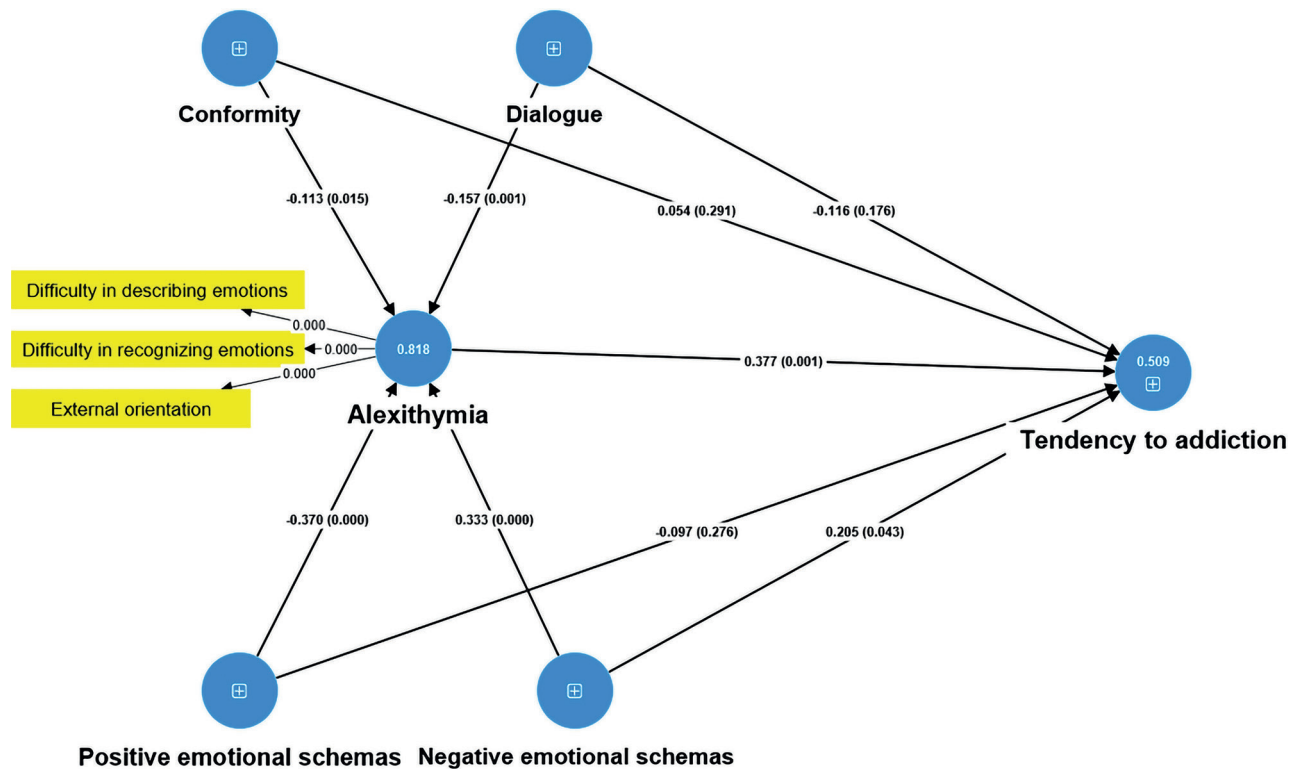


Figure 1: The figure shows the path coefficients between variables and the significance level.

Descriptive statistics for the study variables, including means and standard deviations, are presented in Table 2. Participants reported an average addiction tendency score of 47.17 with a standard deviation of 10.88. Although Shapiro-Wilk tests were statistically significant, the skewness and kurtosis values for all variables remained within the acceptable range of -1.61 to 0.24, confirming that the data distribution was suitable for structural equation modeling.

Table 3 displays the bivariate correlations between the study variables. The correlation analysis revealed that addiction tendency was strongly and positively associated with negative emotional schemas, yielding a coefficient of 0.67. Addiction tendency is inversely related to dialogue patterns, with open family communication correlating to lower addiction scores ($r = -0.61$).

Regarding indirect effects, path analysis confirmed that alexithymia directly predicted addiction tendency with a coefficient of 0.38 (Table 4 and Figure 1). Alexithymia was a significant mediator, indirectly linking negative emotional schemas to addiction tendency (Path Coefficient=0.13, $P = 0.005$).

4. Discussion

The primary objective of this study was to examine the mediating role of alexithymia in the relationships between family communication patterns (conformity and conversation orientations), emotional schemas, and addiction susceptibility in adolescents. Path analysis demonstrated that conversation orientation exerted a significant indirect effect on addiction tendency through the mediating pathway of alexithymia. These findings partially align with prior empirical literature indicating that dysfunctional family environments and impaired emotional processing are critical risk factors for adolescent substance use (27-31).

In families with open communication, parents encourage discussion and shared decisions, which helps prevent alexithymia. Conversely, dysfunctional family systems characterized by communication deficits and rigid structures often serve as barriers to healthy adolescent development, steering individuals toward maladaptive coping mechanisms, such as substance use or academic difficulties (27, 28). This cognitive style impedes the conscious processing of personal distress, prompting adolescents to adopt externalizing

behaviors, such as substance abuse, to regulate negative emotional states (29-31).

The developmental trajectory of alexithymia can also be conceptualized as a transient and defensive response to acute environmental stressors and systemic anxiety. This phenomenon is conceptualized as secondary alexithymia, a psychological defense mechanism protecting individuals from overwhelming emotional pain, distressing memories, and autonomic hyperarousal. While primary alexithymia is a stable personality trait chronically impairing emotional differentiation, both forms lead to somatic manifestations (e.g., elevated heart rate, gastrointestinal distress) (32).

Lacking the cognitive framework to link these physical sensations to underlying psychological distress, alexithymic individuals frequently attribute their symptoms solely to physical illness, seeking medical interventions rather than psychological support (31). Over time, this chronic decoupling of somatic sensations from emotional awareness increases the risk for somatic symptom disorders, psychiatric comorbidities, and substance dependence (8, 15, 33-35). The structural model of this study supports the idea that both positive and negative emotional schemas indirectly contribute to addiction susceptibility through alexithymia; emotional schemas are internal cognitive frameworks that dictate how individuals interpret, evaluate, and react to their emotions. Dysfunctional beliefs about emotions, such as perceiving them as dangerous or unacceptable, often lead to maladaptive coping mechanisms. Changing these dysfunctional schemas can promote emotional acceptance and normalization, thus decreasing reliance on avoidance, cognitive suppression, self-harm, disordered eating, and substance abuse (13).

Adolescents who present with deficient emotional processing often possess early cognitive schemas that distort how sensory and emotional information is integrated, laying the groundwork for clinical emotional disorders. This deficit prevented the formation of symbolic mental representations of feelings, impairing the integration of affect, cognition, and behavior. From a psychodynamic perspective, this aligns with the mechanism of repression (36). While primary repression prevents threatening material from entering consciousness, secondary repression

actively expels conscious reminders of distressing experiences. Highly alexithymic individuals struggle with symbolization, leading them to focus on concrete, external realities. Due to their limited emotional vocabulary and symbolic processing, their communication remains superficial and ties to immediate stimuli. Consequently, they attribute internal emotional turmoil to external causes, manifesting it through impulsive acting-out behaviors, such as substance abuse, to escape unnamable distress (35, 36).

4.1. Limitations

This study had several limitations. Primarily, the cross-sectional design precluded causal inferences regarding the development of addiction tendencies; therefore, longitudinal studies are required to establish temporal precedence. Furthermore, the small sample size, restricted to a single city (Shiraz, Iran), limited the generalizability of the findings to broader populations.

5. Conclusions

The present study underscored the critical role of alexithymia in mediating the relationship between family dynamics, emotional schemas, and adolescent addiction tendencies. Our findings demonstrated that open conversation orientation within the family fosters emotional awareness and may reduce the risk of addiction. In contrast, rigid, non-communicative, or highly conforming family structures, especially when accompanied by dysfunctional emotional schemas, may increase alexithymia and heighten susceptibility to substance use. These results substantiate the proposed model, confirming that alexithymia acts as a significant mediator in the pathway from family and cognitive factors to addictive behaviors. Consequently, clinical interventions and prevention programs should move beyond symptom management and focus on improving parent-child communication and restructuring maladaptive emotional schemas. By addressing these underlying psychological mechanisms, it is possible to enhance emotional processing and significantly decrease the likelihood of addiction in at-risk adolescents. Future research should employ longitudinal designs to establish causality and explore both maternal and paternal influences, as well as clinical populations. In practice, school-based mental health programs that prioritize

emotional regulation are crucial.

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Authors' Contribution

Maryam Siami Alighialou: Contributions to the conception and design of the work; the acquisition, analysis, and interpretation of data for the work; drafting the work. Mahin Eksir: Contributions to the acquisition, analysis, and interpretation of data for the work; drafting the work and reviewing it critically for important intellectual content. Bahareh Boustani: Contributions to the design of the work; drafting the work and reviewing it critically for important intellectual content. Zohreh Ramezani: Contributions to the conception and design of the work; the acquisition, analysis, and interpretation of data for the work; drafting the work. Shahnaz Alim: Contributions to the conception of the work; drafting the work and reviewing it critically for important intellectual content. All authors have read and approved the final manuscript and agree to be accountable for all aspects of the work, such that the questions related to the accuracy or integrity of any part of the work.

Declaration of AI

The authors acknowledge the use of AI-assisted tools (ChatGPT/OpenAI) for editing the language and improving the flow of the manuscript. All content was manually reviewed and edited by the authors to ensure its accuracy and academic integrity; the authors take full responsibility for the final content of the manuscript.

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Ethical Approval

The Ethics Review Board of Islamic Azad University, Kerman Branch, Iran, approved the present study with the code of IR.IAU.SHIRAZ.

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