

Predicting Risky Behaviors Based on Emotional Schemas and Rumination in Adolescents

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ABSTRACT

Objective: This study aimed to predict risky behaviors in adolescents based on emotional schemas and rumination.

Methods and Materials: This applied, descriptive–correlational study was conducted among 150 male high school students in District 1 of Baharestan during the 2024–2025 academic year. Participants were selected through purposive sampling based on the population structure of the region. Data were collected using three validated instruments: the Risky Behaviors Questionnaire (Zadehmohammadi & Ahmadi, 2008), the Emotional Schema Scale—Second Version (Leahy, 2012), and the Rumination Response Scale (Nolen-Hoeksema & Morrow, 1991). After verifying statistical assumptions, inferential analyses were performed using Pearson correlation and simultaneous multiple regression in SPSS-27 to examine the predictive power of emotional schemas and rumination for risky behaviors.

Findings: Pearson correlation results indicated significant positive relationships between risky behaviors and rumination, emotional rumination, guilt and shame, and blame, while comprehensibility showed a weak negative correlation. The simultaneous regression model was significant, $F(6,143) = 27.99$, $p = 0.004$, demonstrating that emotional schemas and rumination collectively explained 38.8% of the variance in risky behaviors ($R = 0.623$, $R^2 = 0.388$). Among predictors, rumination ($\beta = 0.14$, $p = 0.01$), guilt and shame ($\beta = 0.08$, $p = 0.04$), emotional rumination ($\beta = 0.09$, $p = 0.05$), and blame ($\beta = 0.12$, $p = 0.01$) had significant positive effects, while comprehensibility did not significantly predict risky behaviors ($p = 0.11$).

Conclusion: The findings highlight the substantial role of emotional schemas and rumination in shaping adolescents' risky behavioral tendencies, demonstrating that maladaptive emotional beliefs and repetitive negative thinking significantly contribute to engagement in harmful behaviors. Interventions targeting emotional schemas and rumination may effectively reduce risk-taking among adolescents.

Keywords: Risky behaviors; Emotional schemas; Rumination; Adolescents

1. Introduction

Adolescence is widely recognized as a sensitive developmental period during which individuals experience rapid biological, cognitive, emotional, and social transformations that often intensify vulnerability to a range of maladaptive behavioral tendencies. These shifts expose adolescents to risky behaviors, which include substance use, violence, unsafe driving, hazardous sexual behavior, and other patterns that threaten physical and psychological well-being. Empirical evidence consistently demonstrates that risky behaviors in adolescence can forecast long-term adverse outcomes such as academic failure, chronic mental health problems, substance dependence, and difficulties in interpersonal functioning (Marengo et al., 2019). In many contexts, risky behavior emerges as a maladaptive coping mechanism in response to emotional distress, developmental pressures, and challenges in self-regulation processes. Scholars have emphasized that understanding the psychological determinants of such behaviors is pivotal for informing targeted interventions and preventive programs aimed at promoting adolescent well-being (Mina & Amini Manesh, 2021).

A growing body of research has highlighted the role of emotional and cognitive vulnerabilities—including emotional dysregulation, maladaptive schemas, rumination, and interpersonal distortions—in predisposing adolescents to risky behaviors. Emotional difficulties often result in a diminished ability to evaluate consequences and inhibit impulsive reactions, thereby fostering an environment where high-risk behaviors appear as accessible outlets for regulating unpleasant emotional states (Kermani et al., 2021). Furthermore, the inability to differentiate emotions, manage frustration, and maintain psychological resilience contributes to maladaptive behavioral patterns among youth. For instance, frustration tolerance and psychological hardiness have been identified as key factors in reducing susceptibility to high-risk behaviors in student populations (Jafarpoor et al., 2023). These findings underscore the interconnectedness of emotional experiences and behavioral regulation during adolescence.

In addition to general emotional difficulties, cognitive and affective schemas formed during earlier developmental stages significantly influence how adolescents perceive themselves and their environments. Emotional schemas—defined as beliefs, interpretations, and meta-emotional judgments—shape how individuals experience, evaluate, and cope with emotions (Nikogoftar & Shourangiz, 2023).

These schemas can be adaptive or maladaptive; the latter often intensifies emotional distress and increases vulnerability to risky behaviors. Maladaptive schemas may include tendencies toward self-blame, shame, difficulty expressing emotions, hyperactivation of negative feelings, and rigid beliefs regarding emotional experiences. Studies have shown that maladaptive emotional schemas contribute to interpersonal difficulties, avoidance patterns, and faulty cognitive processing—factors strongly related to adolescent risk-taking tendencies (Roshan Chesli et al., 2023).

The literature also indicates that emotional schema therapy, by modifying dysfunctional beliefs about emotions, can reduce maladaptive behavioral tendencies. For example, emotional schema therapy has been found to enhance emotion regulation, distress tolerance, and problem-solving, while simultaneously decreasing risky behaviors in adolescent boys (Khayabani, 2024). These results emphasize the importance of emotional schemas not only as predictors of maladaptive behaviors but also as therapeutic targets in reducing risky tendencies. Additional studies reinforce the notion that emotional schemas contribute meaningfully to psychological functioning in contexts of stress and adversity; in fact, psychological flexibility mediates the relationship between stress and mental health through emotional schemas (Sebastião & Neto, 2024). Thus, emotional schemas appear to play a multifaceted role in the regulation of behavior and emotional well-being during early life stages.

Another key psychological factor associated with risky behaviors is rumination, a perseverative and repetitive pattern of thinking focused on negative emotions and distressing circumstances. Rumination interferes with effective emotional regulation and decision-making, thereby increasing the likelihood of engaging in impulsive or harmful behaviors. Prior research has demonstrated that rumination functions as a chain-mediating mechanism linking other psychological vulnerabilities—such as anxiety, depression, and emotional turmoil—to risky behaviors such as online risk-taking and unhealthy coping strategies (Qiu et al., 2023). Rumination amplifies emotional distress, reduces cognitive flexibility, and leads to self-focused thought cycles that interfere with adaptive behavioral choices. For adolescents, whose regulatory systems are still developing, the burden of rumination may be especially detrimental, contributing significantly to risk-taking tendencies.

Furthermore, rumination has been shown to interact with emotional and cognitive processes shaped earlier in life, reinforcing maladaptive schemas related to danger, mistrust,

or emotional incompetence. These schemas, when activated, can guide the adolescent toward impulsive or risk-related behaviors as a means of coping with heightened negative emotion. Research shows that anger rumination and maladaptive emotional expression strongly predict tendencies toward risky behaviors, supporting the idea that repetitive negative thinking can destabilize emotional functioning and increase susceptibility to harmful behavioral patterns (Maleki et al., 2019). Adolescents who ruminate frequently may also struggle with psychological needs such as autonomy, relatedness, and emotional competence, and these unmet needs can further heighten vulnerability to risky behaviors (Mohammadi-Hosseini-Asl et al., 2022).

Developmental, interpersonal, and contextual factors also contribute to the emergence of risky behaviors through their impact on emotional schemas and rumination. Many adolescents face challenges rooted in early childhood experiences, family environments, and parental interaction patterns. For example, childhood maltreatment has been found to contribute to risky behaviors indirectly by shaping maladaptive schemas, which then guide adolescents toward unhealthy behavioral strategies (Mirzaalian Dastjerdi, 2022). Traumatic and adverse experiences create internal beliefs that influence emotional responses and decision-making processes throughout adolescence and into adulthood. Additionally, parental interaction patterns and psychopathological personality traits, such as those included in the Dark Triad, have been shown to predict risk-taking in adolescent populations, highlighting that environmental and personality-related vulnerabilities often interact with emotional schemes to shape behavior (Motavalli et al., 2025).

Neurocognitive components—including executive functions and inhibitory control—also intersect with emotion-based variables. It has been shown that neurobehavioral systems, executive functions, and emotional regulation jointly influence adolescents' risky behavior tendencies, while sensation-seeking intensifies the likelihood of engaging in these behaviors (Mozaffari, 2022). Similarly, the mediating role of executive functions and emotional regulation between personality traits and risky behaviors has been well established, demonstrating that cognitive and emotional components are interdependent in shaping behavioral outcomes during adolescence (Dabir Ghorusi, 2022). These findings emphasize that emotional schemas and rumination should be understood in relation to broader psychological mechanisms.

Interpersonal variables also play an important role in predicting risky behaviors. Adolescents who struggle with self-differentiation, interpersonal difficulties, and ineffective relational patterns may turn to risky behaviors as maladaptive coping strategies. Interpersonal problems and lower differentiation of self have been shown to predict risky behavior tendencies in female students, further emphasizing that emotional and cognitive vulnerabilities often manifest within interpersonal contexts (Poursaeed Isfahani et al., 2021). Other studies demonstrate that emotional dysregulation, low self-assertion, and unresolved relational conflicts can amplify the tendency for risky behavior tendencies in girls (Mina & Amini Manesh, 2021). This suggests that emotional schemas and rumination should be examined not only from an intrapersonal perspective but also as mechanisms embedded within broader interpersonal experiences.

Risky sexual behavior, in particular, has been linked to early maladaptive schemas and negative childhood experiences. Studies have shown that women with histories of childhood abuse are more likely to develop maladaptive schemas that predispose them to risky sexual tendencies (Roemmele & Messman-Moore, 2011). Therefore, schemas formed early in life may persist and influence behavioral decision-making in adolescence and adulthood. This pattern suggests a developmental continuity between early emotional experiences, schema formation, cognitive vulnerabilities, and behavioral outcomes.

Collectively, the research literature reveals the important and interconnected roles of emotional schemas and rumination in predicting risky behaviors. While previous studies have examined the role of emotional dysregulation, maladaptive schemas, interpersonal problems, personality traits, and psychological hardiness, fewer studies have explored how emotional schemas and rumination jointly predict risky behaviors among male adolescents in Iran—a population with unique sociocultural experiences that shape psychological development. Additionally, although extensive research exists on the predictors of risky behaviors, the specific interplay between emotional schemas and rumination remains underexplored in local contexts, particularly among high school boys facing contemporary sociocultural pressures and emotional challenges (Roshan Chesli et al., 2023). Given the emphasis in recent studies on the importance of psychological flexibility, emotional schemas, and cognitive mechanisms in adolescent mental health, the present investigation offers an important

contribution to this area of research (Sebastião & Neto, 2024).

Therefore, the aim of this study is to predict risky behaviors in adolescents based on emotional schemas and rumination.

2. Methods and Materials

2.1. Study Design and Participants

This study employed an applied research design, aiming to generate findings that can be used to inform practical psychological and educational interventions for adolescents. In terms of data collection, the study followed a descriptive, non-experimental methodology and was specifically structured as a correlational regression study to examine the predictive role of emotional schemas and rumination in risky behaviors. The statistical population consisted of all male high school students enrolled in the second cycle of public secondary schools in District 1 of Baharestan during the 2024–2025 academic year. Because the study focused on a defined geographical and educational area, purposive sampling was selected as the most appropriate strategy for identifying participants who met the inclusion criteria.

To determine an adequate sample size for regression analysis, the study followed the recommendation provided by Tabachnick and Fidell (2007), who suggest the formula $N > 50 + 8m$ for regression models, where m represents the number of predictor variables. Considering the number of predictor variables and their subscales, which totaled nine in this study, the minimum required sample size exceeded 122 students. To account for possible attrition and incomplete questionnaires, 150 male students from Baharestan District 1 were recruited as the final sample. These students were drawn from two schools: Fanavaran Technical School and Shahid Amirreza Tavassoli High School. Participation was voluntary, and all students completed the questionnaires in classroom settings under the supervision of the research team.

2.2. Measures

Data were collected using standardized self-report instruments with established psychometric properties. Risky behaviors were assessed using the Risky Behavior Questionnaire developed by Zadehmohammadi and Ahmadabadi (2008), a culturally adapted measure designed specifically for Iranian adolescents. This instrument includes 38 items distributed across several domains, including risky

driving, violence, cigarette smoking, drug use, alcohol consumption, and risky sexual behaviors. Responses are recorded on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), allowing participants to indicate the degree to which each statement applies to them. The questionnaire has demonstrated strong internal consistency, with Cronbach's alpha reported at 0.93 for the overall scale and between 0.71 and 0.93 across subscales, as well as validated construct validity through exploratory factor analysis.

Emotional schemas were measured using the second version of the Emotional Schema Scale developed by Leahy (2012). This 28-item tool assesses various beliefs, attitudes, and interpretations individuals hold toward their emotional experiences. The scale comprises multiple components, including validation seeking, comprehensibility, guilt and shame, simplistic views about emotions, values associated with emotions, emotional control, the desire to remain rational, perceived duration of emotions, emotional agreement, acceptance, rumination, emotional expression, and blame. Items are rated on a six-point Likert scale ranging from 1 (completely false) to 6 (completely true), with higher scores indicating stronger endorsement of maladaptive emotional schemas. Psychometric evaluations have demonstrated strong reliability, with Cronbach's alpha coefficients ranging from 0.63 to 0.95 in the original validation, and satisfactory reliability and validity indices confirmed in Iranian samples.

Rumination was assessed using the Rumination Response Scale (RRS), originally designed by Nolen-Hoeksema and Morrow (1991) and later revised (2003). The instrument includes 22 items assessing three components: reflection, brooding, and depression-related rumination. Items are rated on a four-point Likert scale from 1 (never) to 4 (always), with higher total scores reflecting higher levels of ruminative thinking. Previous studies have reported strong internal consistency for the scale, with Cronbach's alpha coefficients ranging from 0.88 to 0.92, and test-retest correlations reported near 0.67. Iranian validation studies have confirmed the construct validity of the scale using principal component analysis with varimax rotation and have reported Cronbach's alpha coefficients around 0.85. These instruments together allowed for comprehensive measurement of the primary constructs under investigation.

2.3. Data Analysis

Data analysis was conducted using SPSS version 27 at both descriptive and inferential levels. Initial descriptive analysis included measures of central tendency and dispersion to summarize the distribution of risky behaviors, emotional schemas, and rumination scores among participants. Before conducting parametric tests, the normality of data distribution was examined using the Kolmogorov–Smirnov test to ensure that the assumptions for parametric statistical analyses were met. Once normality was confirmed, Pearson’s correlation coefficient was used to assess the linear relationships among the study variables.

To examine the predictive capacity of emotional schemas and rumination in explaining variation in risky behaviors, multiple regression analysis was performed. This approach allowed for identifying the extent to which each predictor

variable, both individually and collectively, accounted for variance in students’ risky behaviors. The significance level for all statistical tests was set at 0.05.

3. Findings and Results

The demographic profile of the participants showed that all 150 adolescents were male students enrolled in the second cycle of public high schools in District 1 of Baharestan. Regarding grade level, 27 students (26.8%) were in the tenth grade, 56 students (33.3%) were in the eleventh grade, and 67 students (39.9%) were in the twelfth grade. This distribution indicates that the largest proportion of the sample consisted of final-year students, followed by eleventh graders, while tenth graders represented the smallest subgroup within the study population.

Table 1

Descriptive Statistics of Study Variables (N = 150)

Main Variable	Subscales	Mean	Standard Deviation	Skewness	Kurtosis
Risky Behaviors	Risky Driving	20.12	6.03	0.12	−0.67
	Violence	15.15	4.23	0.43	−0.55
	Cigarette Smoking	27.32	9.28	1.02	−0.32
	Substance Use	3.23	1.12	0.98	1.01
	Total	65.81	14.85	0.18	0.29
Rumination	-----	48.48	7.70	1.18	0.23
Emotional Schemas	Comprehensibility	17.36	4.34	−1.23	−0.52
	Guilt and Shame	14.81	5.50	0.02	−0.35
	Emotional Rumination	15.62	4.79	−0.61	−0.42
	Blame	16.26	4.62	−1.05	−0.55

The descriptive statistics presented in Table 1 show the mean, standard deviation, skewness, and kurtosis for all major variables and their respective subscales in the study. The results indicate that among the risky behavior subscales, cigarette smoking had the highest mean score, suggesting it is the most frequently reported form of risky behavior among the participants, while substance use had the lowest mean. The overall risky behavior score ($M = 65.81$, $SD = 14.85$) reflects moderate variability within the sample. Rumination also showed a relatively high mean ($M = 48.48$), with a slight positive skewness, indicating that higher levels of rumination were more common. For emotional schemas, the subscales demonstrated moderate means, with comprehensibility showing a negatively skewed distribution, suggesting that many students endorsed higher levels of difficulty understanding their emotions. The kurtosis values across variables indicated generally normal or slightly platykurtic distributions, supporting the

suitability of parametric analyses in later stages of the research.

Before conducting the inferential analyses, several statistical assumptions were evaluated to ensure the validity of the results. The normality of the distribution for all major variables—including risky behaviors, emotional schemas, and rumination—was assessed using the Kolmogorov–Smirnov test alongside visual indicators such as skewness and kurtosis values, all of which fell within acceptable ranges for parametric analysis. Linearity between predictor and criterion variables was examined through scatterplots, confirming consistent linear patterns suitable for correlation and regression analyses. The assumption of homoscedasticity was checked by reviewing the distribution of residuals, which demonstrated a relatively even spread across predicted values. Multicollinearity was assessed through correlation matrices and tolerance/variance inflation factors, showing no problematic overlap among predictor

variables. Collectively, these evaluations indicated that the data met the necessary assumptions required for reliable Pearson correlation and multiple regression analyses.

Table 2

Correlation Matrix Between Study Variables

Variables	Rumination	Comprehensibility	Guilt & Shame	Emotional Rumination	Blame	Risky Behaviors
Rumination	—	—	—	—	—	—
Comprehensibility	—	0.33**	—	—	—	—
Guilt & Shame	—	0.31**	0.25**	—	—	—
Emotional Rumination	—	0.55**	0.20*	0.37**	—	—
Blame	—	0.45**	0.23**	0.39**	0.41**	—
Risky Behaviors	0.33**	-0.15*	0.27**	0.28**	0.31**	—

Note: * $p < 0.05$, ** $p < 0.01$

The correlation results in Table 2 indicate significant relationships among the primary variables of the study. Rumination showed positive correlations with risky behaviors, suggesting that adolescents who engage more in ruminative thinking are more likely to exhibit risky behaviors. Among emotional schemas, the blame subscale demonstrated the strongest positive association with risky behaviors, implying that adolescents who attribute emotional difficulties to others show a higher tendency toward harmful actions. Emotional rumination and guilt–shame also correlated positively with risky behaviors,

reflecting the role of maladaptive emotional patterns in increasing vulnerability to risky tendencies. Interestingly, the comprehensibility subscale showed a small but significant negative correlation with risky behaviors, suggesting that adolescents who perceive their emotions as more understandable may be less likely to engage in such behaviors. Overall, the correlations support the conceptual model of the study, indicating that both rumination and maladaptive emotional schemas are meaningfully related to risky behavior patterns in adolescents.

Table 3

Results of Multiple Regression Analysis Predicting Risky Behaviors from Rumination and Emotional Schemas (Simultaneous Method)

Statistical Index	Sum of Squares	df	Mean Square	F	Sig.	R	R ²
Regression	14551.80	6	2425.30	27.99	0.004	0.623	0.388
Residual	12389.52	143	86.64	—	—	—	—
Total	26941.32	149	—	—	—	—	—

Table 3 presents the results of the simultaneous multiple regression analysis conducted to determine the extent to which rumination and emotional schemas predict risky behaviors among adolescents. The model was statistically significant, $F(6, 143) = 27.99$, $p = 0.004$, indicating that the set of predictors collectively explains a meaningful portion of the variance in risky behaviors. The multiple correlation coefficient ($R = 0.623$) shows a strong relationship between the predictors and the criterion variable, while the coefficient

of determination ($R^2 = 0.388$) indicates that approximately 38.8% of the variance in risky behaviors is explained by rumination and emotional schemas combined. The remaining 61.2% of variance is attributable to other factors outside the scope of this model. These findings suggest that the psychological constructs included in the study provide a substantial, though not exhaustive, explanation for adolescents' engagement in risky behaviors.

Table 4

Summary of Regression Coefficients for Predicting Risky Behaviors

Variable	B	Beta	t	Sig.
Constant	19.23	—	4.39	0.000
Rumination	0.28	0.14	3.40	0.01**
Comprehensibility	0.16	0.05	1.18	0.11
Guilt and Shame	0.18	0.08	2.29	0.04*
Emotional Rumination	0.19	0.09	2.38	0.05*
Blame	0.31	0.12	3.27	0.01**

Note: * $p < 0.05$, ** $p < 0.01$

Table 4 provides the regression coefficients for each predictor variable included in the model. Rumination emerged as a significant positive predictor of risky behaviors ($\beta = 0.14$, $p = 0.01$), indicating that increases in ruminative thinking are associated with higher engagement in risky actions. Among the emotional schema components, blame demonstrated the strongest predictive power ($\beta = 0.12$, $p = 0.01$), suggesting that adolescents who attribute emotional difficulties to others are more likely to display risky behavioral tendencies. Guilt and shame ($\beta = 0.08$, $p = 0.04$) and emotional rumination ($\beta = 0.09$, $p = 0.05$) were also significant predictors, showing that maladaptive emotional processing contributes to vulnerability toward risky behaviors. In contrast, the comprehensibility of emotions did not significantly predict risky behaviors ($p = 0.11$), indicating that understanding one's emotions alone does not meaningfully influence risk-taking tendencies. Overall, the regression model highlights that both cognitive patterns—such as rumination—and maladaptive emotional schemas collectively play significant roles in shaping adolescents' risky behavioral profiles.

4. Discussion and Conclusion

The present study aimed to investigate the extent to which emotional schemas and rumination predict risky behaviors among male adolescents, and the results demonstrated that both constructs significantly contribute to explaining these behaviors. The regression model indicated that rumination, along with several dimensions of emotional schemas—specifically blame, guilt and shame, and emotional rumination—were significant predictors of adolescents' engagement in risky patterns of behavior. These findings align well with the established theoretical understanding that adolescents' cognitive-emotional vulnerabilities play a central role in shaping their behavioral tendencies. The significant relationship between rumination and risky behaviors can be interpreted through the lens of the

emotional cascade model and previous evidence suggesting that repetitive negative thinking intensifies emotional arousal and drives individuals toward maladaptive behavioral outlets. This interpretation corresponds with prior findings showing that rumination contributes to impulsive and harmful actions among youth, particularly in digital and social contexts (Qiu et al., 2023). The present findings further strengthen the view that persistent negative thought cycles are a crucial mechanism linking emotional distress to risky behavioral tendencies.

The predictive role of emotional schemas, particularly blame, guilt and shame, and emotional rumination, provides additional insight into the emotional processes underlying adolescents' engagement in risky behaviors. The finding that blame significantly predicts risky behavior is consistent with literature showing that adolescents who attribute emotional difficulties to others or external circumstances tend to cope through maladaptive behavioral strategies. Such individuals often externalize responsibility for emotional states, making them more vulnerable to impulsive and high-risk actions. This is supported by research demonstrating that maladaptive cognitive-emotional strategies, including interpersonal cognitive distortions, predict risk-taking behaviors among adolescent boys (Kermani et al., 2021). Likewise, the significance of guilt and shame suggests that adolescents who struggle with internalized negative emotions may resort to risky behaviors as a means of escape or self-regulation, which echoes findings that emotional dysregulation and unresolved emotional conflicts significantly influence risk-taking among both male and female adolescents (Mina & Amini Manesh, 2021).

The role of emotional rumination as a predictor complements previous studies emphasizing that repetitive emotional processing often exacerbates distress, thereby increasing the likelihood of engaging in harmful behavioral alternatives. This is in line with prior work establishing that anger rumination and maladaptive emotional expression

contribute to tendencies toward risky behavior (Maleki et al., 2019). The present results add empirical support to the conceptual notion that emotional schemas serve as fundamental structures influencing how adolescents interpret and respond to emotional experiences, in turn shaping their risk-related decision-making. Furthermore, the findings correspond with studies showing that maladaptive schemas predict anticipated risky behaviors in emerging adults (Marengo et al., 2019). Taken together, these results indicate that emotional schemas are an important intrapsychic mechanism by which earlier emotional experiences, interpersonal challenges, and cognitive vulnerabilities translate into risk-taking behavior.

In addition, the current findings corroborate earlier research that highlights the influence of childhood experiences and interpersonal environments on adolescents' emotional functioning and behavioral patterns. The demonstrated predictive role of emotional schemas reflects broader developmental pathways through which early maltreatment or dysfunctional family interactions may lead to maladaptive schema formation, ultimately increasing risk-taking tendencies. This interpretation aligns with work showing that childhood maltreatment predicts risky behavior through the mediating role of maladaptive schemas (Mirzaalian Dastjerdi, 2022) and with evidence indicating that emotional schemas are strongly shaped by earlier interpersonal environments. Comparable patterns have been documented in studies linking childhood abuse with risky sexual behavior through schema-related processes (Roemmele & Messman-Moore, 2011). These parallels indicate that emotional schemas are a meaningful psychosocial mechanism carrying forward the emotional consequences of early experiences into adolescence.

The results also resonate with research emphasizing the importance of emotional regulation and cognitive-emotional mechanisms in predicting adolescents' high-risk behaviors. Studies have demonstrated that psychological vulnerabilities such as frustration intolerance and low psychological hardiness are associated with higher tendencies toward risky behaviors (Jafarpoor et al., 2023), and the current findings regarding guilt, shame, and rumination support the notion that emotional vulnerability increases risk-taking likelihood. Furthermore, the significant predictive relationship observed in this study aligns with evidence that emotional regulation difficulties and maladaptive cognitive strategies contribute to risky behaviors among adolescents from different demographic groups. For instance, emotion regulation and cognitive-emotional mediation have been found to predict

risky behaviors in female adolescents (Mohammadi-Hosseini-Asl et al., 2022), suggesting that the mechanism observed in the current male sample may generalize across genders.

The present study's findings are also consistent with research highlighting that personality dispositions, cognitive emotion regulation strategies, and neurobehavioral systems all contribute to shaping risky behavioral tendencies. For example, research suggests that executive functions and emotional regulation mediate the relationship between personality traits and risky behaviors (Dabir Ghorusi, 2022), reinforcing the idea that risk-taking is a multifactorial process involving cognitive, emotional, and regulatory dimensions. Similarly, the role of emotional schemas in the current study aligns with work highlighting the influence of neurobehavioral and executive processes on adolescent risk-taking (Mozaffari, 2022). These connections underscore the interactive nature of cognitive-emotional processes underlying risky behavior and support the relevance of emotional schemas as predictors.

Furthermore, the significance of blame and emotional rumination as predictors links the present study to broader interpersonal and behavioral research. Emotional schemas influence not only intrapersonal experiences but also interpersonal functioning, and the current findings extend this framework by highlighting how these schemas can influence risk-taking behaviors. Research has shown that emotional schemas predict relational tendencies, emotional flexibility, and interpersonal functioning (Roshan Chesli et al., 2023). Moreover, the association between emotional schemas and emotional rigidity or psychological inflexibility under conditions of stress supports the broader theoretical argument that schemas create enduring patterns of response that influence behavioral outcomes, including risk-taking (Sebastião & Neto, 2024). The current findings therefore reinforce a multidimensional model in which emotional schemas, cognitive vulnerabilities, and interpersonal tendencies converge to shape risk-related behaviors among adolescents.

An additional noteworthy implication of the present findings arises from their alignment with research on therapeutic interventions targeting emotional schemas. Emotional schema therapy has been shown to reduce risky behaviors by modifying dysfunctional emotional beliefs, improving emotional expression, and enhancing regulation strategies (Khayabani, 2024). The predictive significance of guilt, blame, and emotional rumination in the current study lends further support to the relevance of schema-focused

interventions for adolescents exhibiting risk-taking tendencies. Moreover, the study's results parallel findings demonstrating that emotional flexibility mediates stress-related mental health outcomes through its relationship with emotional schemas (Sebastião & Neto, 2024), suggesting that resilience-based interventions that target emotional rigidity may also help reduce risky behavioral tendencies.

The overall pattern of results also complements findings from interpersonal and relational research indicating that difficulties in self-differentiation and interpersonal problems increase tendencies toward risky behaviors (Poursaeed Isfahani et al., 2021). This is consistent with the role of blame and emotional rumination identified in the present study, as these schema-related tendencies often manifest in interpersonal contexts and influence behavioral decision-making. Additionally, research has shown that maladaptive emotional schemas can predict growth outcomes or maladaptive coping tendencies after traumatic or stressful experiences (Nikogoftar & Shourangiz, 2023). Thus, emotional schemas appear to operate both as vulnerabilities and as potential targets for promoting adaptive growth or behavioral regulation. The current study deepens this understanding by showing their direct relevance to risky behaviors in a male adolescent population.

In synthesizing these findings, the present study contributes to a growing literature establishing that emotional schemas and rumination are not merely correlates but significant predictors of adolescents' engagement in risky behaviors. These psychological constructs appear to influence how emotional experiences are processed, interpreted, and managed, thereby shaping an adolescent's propensity to engage in behaviors that pose physical, social, and emotional risks. The results support a comprehensive view in which risk-taking is shaped by the combined influence of early experiences, emotional vulnerabilities, cognitive tendencies, and interpersonal contexts. Importantly, the predictive significance of schemas and rumination underscores the need for integrative therapeutic and preventive programs that target both cognitive-emotional processes and broader developmental factors.

5. Limitations & Suggestions

The present study, however, is not without limitations. The use of self-report questionnaires may introduce response bias, including social desirability tendencies, which may affect the accuracy of reported risky behaviors. The study was also limited to male students from a single educational

district, which restricts generalizability. Additionally, the cross-sectional nature of the design prevents causal inference, and the absence of longitudinal data limits the ability to observe changes in risky behaviors over time. A final limitation pertains to the reliance on quantitative measures, which may not capture the full depth of emotional experiences or the complexities of adolescent behavior.

Future research should expand the sample to include both genders and students from more diverse geographical and cultural backgrounds. Longitudinal studies are needed to examine the developmental progression of emotional schemas, rumination, and risky behaviors, as well as the directionality of these relationships. Integrating qualitative methods could also enrich understanding by exploring adolescents' subjective experiences, emotional narratives, and contextual influences. Future studies may additionally examine how peer dynamics, family functioning, and digital environments interact with emotional schemas and rumination to influence risky behaviors.

In practical terms, the findings underscore the importance of designing school-based and community-based interventions that target emotional schemas, reduce rumination, and strengthen adaptive emotion regulation skills. Mental health practitioners, school counselors, and educators can incorporate schema-focused techniques, cognitive-behavioral strategies, and emotional literacy training into adolescent support programs. Preventive efforts should emphasize helping adolescents develop healthier ways of interpreting emotions, resolving emotional conflicts, and managing negative thought cycles to reduce vulnerability to risky behaviors.

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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.

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Authors' Contributions

All authors equally contributed to this article.

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