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The Relationship Between Childhood Traumatic Experiences and Rumination with Suicidal Thoughts

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ABSTRACT

This study aimed to investigate the relationship between childhood traumatic experiences and rumination with suicidal thoughts among university students. The present research employed a descriptive-correlational and explanatory design using structural equation modeling (SEM) within a cross-sectional framework. The statistical population included all students at Islamic Azad University of Lahijan (N = 9031), from which 210 participants were selected through purposive convenience sampling. Data were collected using the Childhood Trauma Questionnaire (CTQ), the Beck Scale for Suicidal Ideation, and the Ruminative Responses Scale by Nolen-Hoeksema and Morrow (1991). Descriptive statistics, Pearson correlation coefficients, and multiple regression analyses were used to analyze the data. The results indicated that both childhood traumatic experiences and rumination were significantly correlated with suicidal thoughts. Pearson's correlation coefficients revealed strong positive relationships between childhood trauma and suicidal ideation ($r = 0.90$, $p < .001$), and between rumination and suicidal ideation ($r = 0.95$, $p < .001$). Regression analysis further confirmed the predictive role of these variables, with childhood trauma ($B = 0.54$, $p < .001$) and rumination ($B = 0.22$, $p < .001$) both emerging as significant predictors of suicidal thoughts. These results highlight the direct and independent contributions of both trauma and ruminative thinking to the development of suicidal ideation. The findings suggest that students with a history of childhood trauma and a tendency toward ruminative thinking are at a significantly higher risk for suicidal ideation. Addressing these factors through early screening, trauma-informed interventions, and cognitive-behavioral strategies targeting rumination may be critical for effective suicide prevention among university populations.

Keywords: Childhood trauma, rumination, suicidal ideation, cognitive vulnerability

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Introduction

Suicidal ideation is a multifactorial phenomenon that continues to pose a critical challenge in global mental health. Among young adults and university students, thoughts of suicide are often rooted in a complex interplay of early adverse experiences and psychological processes such as rumination. The

investigation of how childhood trauma contributes to suicidal ideation, either directly or through mediating factors such as repetitive negative thinking, is central to designing effective preventive strategies and psychological interventions. The developmental perspective of psychopathology posits that early life stressors, particularly those involving abuse and neglect, serve as distal risk factors that shape maladaptive cognitive-emotional patterns, which subsequently increase vulnerability to suicide-related outcomes (1).

Adverse childhood experiences (ACEs), including emotional, physical, and sexual abuse, as well as neglect, have consistently been identified as potent predictors of later suicidal ideation and behavior. These traumatic experiences often leave a lasting imprint on the individual's cognitive schemas, emotional regulation capabilities, and self-perception, all of which influence suicidal risk in adolescence and adulthood (2, 3). Recent meta-analytical findings indicate that the relationship between childhood maltreatment and suicide is robust, transcending sociocultural boundaries (1). Childhood trauma increases the likelihood of psychological distress, including depression, feelings of worthlessness, shame, and social disconnection, which are all correlated with suicidal ideation (4, 5). Additionally, the impact of trauma may become more pronounced in later developmental stages when cognitive elaboration and emotional awareness evolve, making past experiences more salient (6).

Rumination, defined as the repetitive and passive focus on symptoms of distress and its potential causes and consequences, has emerged as a critical mediator linking early trauma to later psychological disturbances. Individuals with a history of ACEs often develop ruminative response styles, particularly in emotionally challenging situations (7). This maladaptive coping strategy exacerbates negative mood states and hinders effective problem-solving, thereby increasing the risk of suicidal thoughts (8). Rumination does not only prolong the duration of negative affect but also intensifies it, leading to a cascade of dysregulated emotional responses (9). In fact, a growing body of evidence suggests that the association between childhood adversity and suicidal ideation may be mediated by psychological constructs such as rumination, internalized shame, and emotion dysregulation (10, 11).

Empirical studies confirm the significance of rumination in suicide risk models. In a large-scale investigation of Chinese adolescents, rumination was found to be a significant mediator between childhood trauma and non-suicidal self-injury (NSSI), highlighting its transdiagnostic relevance (12). Similarly, in a multi-center study on depressed adolescents, rumination predicted NSSI behaviors and was influenced by deficits in emotion regulation (9). These findings align with theoretical models of suicide, which emphasize the accumulation of psychological pain and cognitive rigidity as central mechanisms that culminate in suicidal ideation (13). In university populations, students with high levels of ruminative thought patterns exhibit not only greater depressive symptoms but also higher incidences of suicidal ideation and behavior (3, 14).

Childhood trauma, on the other hand, appears to exert its deleterious effects through various pathways. It compromises the development of secure attachment styles, disrupts the acquisition of emotional regulation skills, and instills maladaptive cognitive schemas centered around helplessness, unlovability, and danger (15). These disrupted developmental processes create fertile ground for the emergence of chronic rumination. Studies have shown that survivors of childhood maltreatment tend to engage more frequently in co-rumination, particularly with peers or caregivers, which further reinforces negative affect and hopelessness (15, 16). Furthermore, trauma-related guilt and shame—which are common sequelae of ACEs—

are themselves strong predictors of suicidal ideation (4, 16). These affective responses not only maintain the cycle of rumination but also contribute to a sense of internalized stigma and self-punishment, both of which are implicated in suicidal behavior.

From a neuropsychological perspective, trauma and rumination jointly impair executive function and increase cortisol reactivity, which further sensitizes the individual to stress and emotional dysregulation (14). Longitudinal data suggest that the interaction between early trauma and rumination creates a developmental trajectory marked by self-injurious behavior, depressive episodes, and suicidal crises (11, 17). Importantly, studies also suggest that these pathways are modifiable through interventions that target maladaptive cognitions and foster resilience through emotion regulation training and mindfulness-based therapies (2, 6).

The gendered nature of these dynamics also merits attention. For instance, female adolescents may exhibit higher levels of rumination in response to trauma due to socialization patterns that promote internalizing behaviors, whereas males may manifest the effects through externalizing behaviors or substance use (17). Understanding these nuanced differences is crucial for tailoring preventive strategies and therapeutic interventions across diverse populations.

In this context, the present study seeks to expand the existing literature by exploring the relationship between childhood traumatic experiences and suicidal ideation in university students, with particular emphasis on the mediating role of rumination.

Methods and Materials

Study Design and Participants

The present study is applied in terms of purpose and descriptive–explanatory and correlational in nature and methodology, utilizing structural equation modeling (SEM). From a temporal perspective, the study is cross-sectional.

The statistical population included all students at Islamic Azad University of Lahijan, totaling 9,031 individuals. Based on the recommendation by Delavar (2008), which suggests that for greater validity, 50 participants should be included per variable, and considering the presence of four variables in the current study, a sample size of 250 individuals was determined (including 50 extra to account for potential dropouts). Due to a lack of interest among some students to participate in the study and the incompleteness of some responses, 40 questionnaires were excluded. Ultimately, 210 participants were selected as the final sample through purposive convenience sampling.

Data Collection

The Childhood Trauma Questionnaire was developed by Bernstein et al. (2003) to assess childhood abuse and trauma. It is a screening tool designed to identify individuals with experiences of childhood abuse and neglect and is applicable for both adults and adolescents. The questionnaire measures five types of childhood maltreatment: sexual abuse, physical abuse, emotional abuse, emotional neglect, and physical neglect. It contains 28 items, of which 25 are used to assess the main components of the questionnaire, and 3 items are used to identify individuals who deny their childhood problems. The subscales and corresponding item numbers are as follows: emotional abuse (items 3, 8, 14, 18, 25), physical abuse (items 9, 11, 12, 15, 17),

sexual abuse (items 20, 21, 23, 24, 27), emotional neglect (items 5, 7, 13, 19, 28), and physical neglect (items 1, 2, 4, 6, 26). Before scoring the components, items 5, 7, 13, 19, 28, 2, and 26 must be reverse-scored. Higher scores on the questionnaire indicate greater trauma, while lower scores suggest less childhood trauma. The score range for each subscale is 5 to 25, and the total questionnaire ranges from 25 to 125. Items 10, 16, and 22 are designed to assess denial of childhood problems; if the total score on these items exceeds 12, the individual's responses are likely invalid. In the study by Bernstein et al. (2003), Cronbach's alpha coefficients for the subscales—emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect—were reported as .87, .86, .95, .89, and .78, respectively. Concurrent validity with clinicians' ratings of childhood trauma was reported in the range of .59 to .78. In Iran, Ebrahimi et al. (2013) reported Cronbach's alpha coefficients ranging from .81 to .98 for the five subscales.

The Beck Scale for Suicidal Ideation (1979) is a 19-item self-report questionnaire. Each item is scored from 0 to 2, yielding a total score range of 0 to 38. Higher scores indicate greater suicidal ideation. The Cronbach's alpha coefficient for this questionnaire was reported as .97 in the general population and .94 for high-risk groups. Convergent validity with the Beck Depression Inventory was reported at .36, and divergent validity with the Satisfaction with Life Scale at .27. In Iran, Anisi et al. (2005) examined this scale, and the findings indicated concurrent validity with the General Health Questionnaire at .76 and reliability using Cronbach's alpha at .97. According to the scoring instructions, a total score of 0 to 3 on the first five items indicates absence of suicidal thoughts, while a score between 4 and 11 suggests moderate suicidal ideation. In the present study, the reliability of this scale was confirmed with a Cronbach's alpha of .72.

Developed by Nolen-Hoeksema and Morrow in 1991, the Ruminative Responses Scale consists of 22 items designed to measure rumination. The scale uses a four-point Likert-type format and includes the following subscales: reflection (items 7, 11, 12, 20, 21), brooding (items 5, 10, 13, 15, 16), and depression-related rumination (items 1–4, 6, 8, 9, 14, 17, 18, 19, 22). A score between 22 and 32 indicates low rumination; scores between 33 and 55 reflect moderate rumination; and scores above 55 indicate high levels of rumination. The internal consistency of the scale was confirmed with a Cronbach's alpha coefficient of .88.

Data analysis

Data analysis in this study was conducted using SPSS software and included both descriptive and inferential statistical methods. Descriptive statistics such as mean, standard deviation, skewness, and kurtosis were used to summarize the demographic and psychological variables. To assess the relationships between childhood traumatic experiences, rumination, and suicidal thoughts, Pearson correlation coefficients were calculated. Multiple regression analysis was then employed to determine the predictive power of childhood trauma and rumination on suicidal ideation. Additionally, structural equation modeling (SEM) was used to test the fit of the hypothesized model and to evaluate the direct effects of the independent variables on the dependent variable. A significance level of $p < .05$ was considered for all inferential tests.

Findings and Results

Table 1 presents the descriptive statistics (mean and standard deviation) for the variables of adverse childhood experiences, rumination, self-harm, and internalized shame.

Table 1. Descriptive Statistics (Mean and Standard Deviation) of Research Variables in Youth (N = 210)

Variable	Mean	SD	Skewness	Kurtosis
Reflection	22.18	4.73	-0.607	0.391
Brooding	21.63	4.71	0.511	-0.041
Depression	20.55	3.25	0.473	-0.531
Shyness	10.57	2.19	-0.752	0.647
Self-Esteem	16.24	2.79	0.598	0.478
Maltreatment Aspects	18.36	2.05	1.257	1.548
Parental Problems	14.12	2.26	1.409	2.211
Rumination	76.79	21.58	-0.641	-0.684
Suicidal Thoughts	43.17	15.01	-0.684	-0.824
Childhood Traumatic Experiences	26.79	8.10	-0.691	-0.774

The dependent variable, suicidal thoughts, had a mean of 43.17 and a standard deviation of 15.01. The independent variables, childhood traumatic experiences and rumination, had means of 26.79 (SD = 8.10) and 76.79 (SD = 21.58), respectively.

Table 2 presents the Pearson correlation coefficients between the research variables.

Table 2. Correlation Matrix of Research Variables

Variables	1	2	3
1. Rumination	1		
2. Adverse Childhood Experiences	0.91	1	
3. Suicidal Thoughts	0.95	0.90	1

According to the results from the correlation matrix, there is a significant positive relationship between adverse childhood experiences and suicidal thoughts (r = 0.90), and between rumination and suicidal thoughts (r = 0.95), both at the significance level of p < .001.

Table 3. Regression Analysis Results for Predicting Suicidal Thoughts

Predictor Variable	B	t	Lower 95% CI	Upper 95% CI	p-value
Childhood Traumatic Experiences → Suicidal Thoughts	0.54	7.59	0.147	0.458	< .001
Rumination → Suicidal Thoughts	0.22	3.37	0.219	0.559	< .001

Based on the results in Table 3, there is a significant relationship between childhood traumatic experiences and suicidal thoughts. Additionally, a significant relationship exists between rumination and suicidal thoughts.

Discussion and Conclusion

The present study sought to examine the relationship between childhood traumatic experiences, rumination, and suicidal thoughts among university students. The results of Pearson correlation and regression analyses demonstrated that both childhood trauma and rumination significantly predict suicidal ideation. Specifically, adverse childhood experiences were strongly correlated with suicidal thoughts (r = 0.90, $p < .001$), and rumination also exhibited a significant positive correlation with suicidal ideation (r = 0.95, $p < .001$). Furthermore, structural regression results confirmed the predictive role of both variables, with trauma (B = 0.54) and rumination (B = 0.22) significantly contributing to suicidal thoughts. These findings support the growing consensus in psychological research that early negative experiences and maladaptive cognitive styles interact to increase vulnerability to suicidal ideation in young adults.

The observed relationship between childhood trauma and suicidal ideation aligns with a substantial body of international research emphasizing the detrimental impact of adverse childhood experiences on mental health outcomes. Childhood maltreatment, particularly in the form of abuse and neglect, impairs fundamental developmental processes such as emotional regulation, trust in others, and the formation of a coherent self-concept (1). These disruptions increase the likelihood of later psychopathology, including depressive symptoms and suicidal ideation (3, 5). For example, research conducted among Iranian youth has indicated that emotional and physical abuse in childhood significantly predicts the onset of suicidal thoughts, often mediated by internalized shame and cognitive distortions (4). Similarly, in a meta-analysis by (1), childhood maltreatment was found to be a consistent predictor of suicide attempts and ideation across diverse cultural contexts.

The strong predictive role of rumination found in this study further reinforces the notion that repetitive, negative thinking styles function as cognitive vulnerabilities in the development of suicidality. Rumination not only prolongs emotional distress but also intensifies negative self-appraisals, feelings of helplessness, and hopelessness, which are central to the suicidal mind-state (8). This finding is in line with the theoretical models positing rumination as a mediator between early life stress and suicidal ideation (7). Prior research by (9) has also shown that adolescents with depressive symptoms who engage in high levels of rumination are more likely to report non-suicidal self-injury (NSSI), a known correlate of suicidal ideation. Moreover, rumination often co-occurs with other maladaptive processes such as internalized shame, social withdrawal, and emotional suppression, all of which are implicated in the emergence of suicidal thoughts (10).

Another key insight from the findings is the possible cumulative or compounding effect of childhood trauma and rumination. That is, individuals who have experienced trauma and have developed a tendency toward rumination may be at particularly high risk for suicidal ideation. This aligns with the chain mediation models proposed in recent studies, which suggest that childhood trauma affects mental health not only directly but also indirectly through psychological mechanisms such as alexithymia and cognitive inflexibility (12, 17). In particular, (15) found that negative co-rumination between adolescents and caregivers exacerbates the internalization of distress, further increasing suicide risk. Similarly, (13) emphasized that rumination and depression jointly mediate the relationship between childhood maltreatment and non-suicidal self-injury in adolescents.

The developmental timing of trauma exposure may also influence the intensity of its psychological consequences. As (11) argue, trauma during sensitive periods of emotional development—such as early childhood or adolescence—can impair mentalizing abilities and emotional regulation, both of which are crucial for adaptive coping. When these abilities are compromised, individuals may rely on maladaptive strategies such as rumination. This cognitive-emotional dysfunction may then lead to suicidal ideation, especially when combined with contextual stressors in adulthood. In this regard, the findings of the present study confirm that university students—already navigating identity formation, academic pressures, and increased autonomy—are especially vulnerable to the cumulative impact of early trauma and chronic rumination.

In addition to cognitive and emotional pathways, the biological underpinnings of trauma and rumination may also interact to shape suicidal ideation. According to (14), adolescents with a history of childhood adversity show altered cortisol responses, indicating dysregulation in the hypothalamic-pituitary-adrenal

(HPA) axis. This dysregulation has been associated with increased susceptibility to stress and emotion dysregulation. Rumination may amplify these biological vulnerabilities by maintaining prolonged physiological arousal and stress responses. This neuroendocrine perspective provides additional support for the interplay between cognitive and physiological mechanisms in the development of suicidal thoughts.

Furthermore, the protective and risk-modifying roles of other psychological variables such as self-efficacy, attachment security, and social connectedness have been emphasized in recent studies. For instance, (2) demonstrated that self-efficacy serves as a protective buffer in the relationship between adverse childhood experiences and self-injurious behaviors among Chinese university students. Similarly, (16) found that prosocial behaviors can mediate the negative impact of trauma-related guilt and shame on NSSI. These findings suggest that while trauma and rumination are significant risk factors, the presence of protective factors can mitigate their impact on suicidal ideation. Nonetheless, the current study's findings underscore the necessity of targeting both trauma history and ruminative thought patterns in suicide prevention programs.

In the Iranian context, research also supports the mediating role of shame and maladaptive attributional styles in the trauma–suicidal ideation link. (4) found that students with childhood trauma and internalized shame were significantly more likely to report suicidal thoughts. These findings are particularly relevant in collectivist cultures where external perceptions and social stigma surrounding mental health may exacerbate feelings of isolation and self-condemnation. Interventions that incorporate cultural sensitivity, self-compassion training, and community-based mental health services could therefore play a significant role in reducing suicide risk among trauma-exposed youth.

Moreover, gender and sociocultural factors may influence the manifestation of trauma and rumination. Studies suggest that female adolescents are more likely to internalize distress through rumination and depression, whereas males may externalize through aggression or substance use (17). Understanding these gendered patterns is crucial for designing tailored interventions. For example, mental health programs for young women may benefit from targeting ruminative and perfectionistic thinking styles, while those for men may focus on emotional expression and help-seeking behavior.

Taken together, the results of this study contribute to the expanding literature on the multifaceted pathways leading from childhood trauma to suicidal ideation, particularly through cognitive-emotional mechanisms like rumination. By empirically validating these relationships in a university sample, the study enhances our understanding of the proximal and distal risk factors for suicidality and emphasizes the need for trauma-informed psychological interventions.

Despite its contributions, this study is not without limitations. First, the cross-sectional design precludes any inference about the directionality or causality between the studied variables. While trauma and rumination were predictive of suicidal ideation, it is plausible that suicidal thoughts may also reinforce rumination or even shape the recall of traumatic memories. Second, data collection relied solely on self-report questionnaires, which may be subject to social desirability bias or memory distortions, particularly regarding sensitive issues such as childhood trauma and suicidality. Third, the sample was limited to students at a single university in Iran, which may restrict the generalizability of the findings to other age groups, cultural contexts, or non-student populations. Finally, the study did not account for potential

confounding factors such as psychiatric diagnoses, substance use, or family history of mental illness, which may have influenced the observed associations.

Future studies should consider employing longitudinal designs to better understand the temporal dynamics between childhood trauma, rumination, and suicidal ideation. Such research would clarify whether rumination acts as a mediator or moderator over time, and whether interventions targeting rumination can reduce suicidal risk longitudinally. Additionally, incorporating clinical interviews or biological measures—such as cortisol levels or neuroimaging—could offer a more comprehensive understanding of the underlying mechanisms. Research should also explore the roles of protective variables such as social support, emotion regulation, resilience, and self-efficacy. Including diverse populations across different cultures, age groups, and risk profiles will also enhance the applicability of findings and help tailor interventions to various demographic contexts.

Mental health professionals working with youth and university students should incorporate trauma-informed care and cognitive-behavioral strategies to address both the impact of early adversity and maladaptive thought patterns like rumination. Psychoeducational programs aimed at raising awareness about the consequences of trauma and teaching adaptive emotion regulation strategies could be implemented in university counseling centers. Given the high predictive value of rumination, therapeutic approaches such as mindfulness-based cognitive therapy, acceptance and commitment therapy, or dialectical behavior therapy may prove effective in reducing suicidal ideation. Furthermore, universities should adopt screening protocols for trauma and suicidal risk, followed by referral pathways to appropriate psychological support services. Finally, culturally sensitive interventions that account for local beliefs, stigma, and help-seeking norms should be prioritized in program design and implementation.

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Authors' Contributions

All authors equally contributed to 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. This article is extracted from the first author's Master's thesis at Lahijan Branch, Islamic Azad University, Lahijan, Iran. It has received ethics approval with the code IR.IAU.TON.REC.1403.155 from the Research Ethics Committee of the Islamic Azad University, Tonekabon Branch.

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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