

Childhood trauma and negative emotions: The chain-mediated role of psychological resilience and sense of life meaning

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Abstract: Childhood trauma is an important predictor of negative emotions in individuals, and the underlying mechanism of this relationship has received relatively less research. This study explores the continuous mediating role of psychological resilience and life meaning in the relationship between childhood trauma and negative emotions. A questionnaire survey was administered to 646 university students at a certain institution using the Childhood Trauma Questionnaire, the Short Version of the Psychological Resilience Scale, the Life Meaning Scale, and the Depression-Anxiety-Stress Scale. The results showed (1) Childhood trauma was significantly negatively correlated with psychological resilience and sense of life meaning, and significantly positively correlated with negative emotions; psychological resilience and sense of life meaning were significantly negatively correlated with negative emotions; (2) Mediation analysis revealed that childhood trauma influences negative emotions through the independent mediating roles of psychological resilience and sense of life meaning, as well as the serial mediating role between these two factors; the mediating effect accounted for 31.438% of the total effect. The study found that psychological resilience and life meaning play a chain-like mediating role in the path from childhood trauma to negative emotions, highlighting their potential as intervention targets, and helping to alleviate the psychological impacts of early adversity on college students.

1. Introduction

In today's highly competitive society, university students in their early adulthood face not only the challenge of adapting to their own physical and psychological changes but also a range of additional difficulties. Both internal and external factors increase the likelihood of university students experiencing negative emotions; existing research indicates that depressive symptoms, anxiety, and perceived stress among this population should not be overlooked^[1]. Negative emotions—such as depression, anxiety, and stress—are core predisposing factors underlying various psychological disorders and exert negative impacts on both individuals and society. Therefore, investigating the influencing factors and underlying mechanisms of negative emotions

among university students holds significant practical importance for preventing and alleviating such emotions and enhancing overall mental health among this demographic.

Childhood trauma refers to traumatic events experienced before the age of 18, which have long-term negative effects on mental health. The association between childhood trauma and negative emotions has been well-documented in numerous studies. Regardless of the type or number of adverse childhood experiences, they may serve as risk factors for the development of depression^[2]. Longitudinal studies with large sample sizes have found that childhood trauma exerts a lasting impact on depression in adulthood^[3]. Furthermore, research has found that adverse childhood experiences are positively correlated with anxiety symptoms and exert a significant, enduring impact on an individual's anxiety levels^[4]. Therefore, childhood trauma is not merely an early-life event but also a developmental risk factor that continuously shapes emotional processing patterns. Psychological resilience refers to the dynamic process by which individuals maintain good adaptation or recover quickly in adversity, and is a core protective factor explaining heterogeneity in post-traumatic outcomes^[5]. A meta-analysis study found that individuals with a history of childhood trauma have lower psychological resilience in adulthood. To some extent, the trauma experienced during childhood can negatively predict the psychological resilience of individuals in their adult years^[6]. Although early adversity may increase an individual's susceptibility to future problems related to self-and mental health, it is noteworthy that not every person who experiences early trauma inevitably develops negative emotions; psychological resilience, as an intermediate variable, may help mitigate these adverse effects significantly.

The sense of meaning in life, which refers to an individual's perception of the purposefulness, consistency and value of their existence, is regarded as a key psychological resource for buffering the impact of adverse circumstances^[7]. When researchers investigated the relationship between childhood abuse and the sense of life meaning, they found that childhood abuse directly influences this sense of meaning; college students who had experienced psychological abuse during childhood often reported a lower sense of life meaning^[8]. At the same time, the sense of meaning in life can have an impact on negative emotions^[9]. Furthermore, adolescents with greater psychological resilience are more likely to exhibit adaptive traits and participate more actively in the process of meaning construction. This indicates that individuals with high resilience may be more inclined to explore and pursue the meaning in life^[10]. Therefore, this study examines the relationship between childhood trauma and negative emotions, as well as the mediating role of psychological resilience and the sense of life meaning in this relationship.

2. Subjects and Methods

2.1 Study Subjects

An online survey was conducted in September 2023 among current students at a certain university using cluster sampling; all participants voluntarily agreed to take part in the study. Invalid questionnaires were excluded according to the following criteria: (1) Missing data. 13 participants were excluded due to missing responses on the questionnaire; (2) Uniform response pattern. 18 participants were excluded because they selected the same option for all questions. A total of 646 valid questionnaires were collected, of which males accounted for 44.3%.

2.2 Research Tools

2.2.1 Child Trauma Questionnaire

This questionnaire was developed by Bernstein et al. It consists of 28 items, comprising 25

measurement items and 3 validity items^[11]. The scale includes five subscales: emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect; each subscale contains 5 items and employs a 5-point Likert scale. A higher score indicates a lower level of emotional neglect in the individual. In this study, the Cronbach's α coefficient was 0.861.

2.2.2 Psychological Resilience Questionnaire

This study employed the Simplified Psychological Resilience Scale developed by Campbell-Sills and Stein to measure psychological resilience^[12]. The scale consists of 10 items and uses a 5-point Likert scale, with response options ranging from "Never" (1) to "Always" (5); a higher score indicates greater psychological resilience. The Cronbach's α coefficient for this study was 0.951.

2.2.3 Life Meaning Scale Questionnaire

The Meaning in Life Questionnaire (MLQ) was developed in 2006 by Steger et al^[13]. The questionnaire comprises two dimensions: experiencing life meaning and seeking life meaning. It consists of ten items, each rated on a 7-point Likert scale ranging from 1 (very disagree) to 7 (very agree). A higher total score indicates a stronger sense of life meaning among the respondents. In this study, the Cronbach's α coefficient was 0.885.

2.2.4 Negative Emotion Questionnaire

The 21-item Depression, Anxiety and Stress Scale (DASS-21), developed by Lovibond et al. in 1995, was used for measurement^[14]. This scale comprises three subscales—Depression, Anxiety, and Stress—with each subscale containing seven items; the items are scored using a 4-point Likert scale (ranging from "not at all" to "very much"). A higher score indicates that the participant is experiencing more intense negative emotions in the recent past. In this study, the Cronbach's α coefficient was 0.951.

2.3 Statistical Analyses

Statistical analyses were performed using SPSS 26.0 and PROCESS v4.1. Descriptive statistics were calculated for all variables in SPSS, and Pearson correlation analysis was employed to explore the correlations among the variables. In PROCESS v4.1, a bootstrap-based mediation effect test was used. A confidence interval that does not contain zero indicates that the corresponding effect is statistically significant; a P-value <0.05 is considered statistically significant.

3. Results

3.1 Descriptive statistics and correlation analysis

The correlation analysis revealed that childhood trauma experience is negatively correlated with the sense of life meaning and psychological resilience, and positively correlated with negative emotions; the sense of life meaning and psychological resilience are negatively correlated with negative emotions; and the sense of life meaning and psychological resilience are positively correlated with each other. In other words, the higher the level of childhood trauma, the higher the level of negative emotions in adulthood; conversely, the higher the levels of sense of life meaning and psychological resilience, the lower the level of negative emotions. The specific values are presented in Table 1.

Table 1: Descriptive statistics and correlation analysis

	M	SD	childhood	Psychological resilience	Sense of life meaning	Negative emotions
Childhood trauma	1.369	.368	-			
Psychological resilience	3.598	.693	-0.274**	-		
Sense of life meaning	3.610	.622	-0.267**	0.568**	-	
Negative emotions	2.350	.716	0.325**	-0.383**	-0.328**	-

Note: **p < 0.01.

3.2 Intermediary Analysis

This study employed Model 6 from the PROCESS 4.1 plugin to conduct a mediation analysis. After controlling for gender and age, childhood trauma was used as the independent variable, negative emotion as the dependent variable, and psychological resilience and sense of life meaning as the mediator variables. The results are presented in Table 2, all paths were statistically significant.

The total effect of childhood trauma on negative emotions is 0.633 (95% CI: [0.490,0.775]); the direct effect is 0.434 (95% CI: [0.293,0.574]). The total indirect effect is 0.199 (95% CI: [0.129,0.282]). Further analysis revealed that the mediating effect of life meaning and psychological resilience consists of indirect effects generated through the following three pathways: childhood trauma → life meaning → negative emotions; childhood trauma → psychological resilience → negative emotions; and childhood trauma → life meaning → psychological resilience → negative emotions. The mediating effect accounts for 31.438% of the total effect. The specific values for these influence pathways are presented in Table 3.

Table 2: Regression analysis between variables in the mediation model

Outcome variables	Independent variables	R	R ²	F	β	t
Psychological resilience		0.2744	0.075	52.432		
	Childhood trauma				-0.274	-7.241**
Sense of life meaning		0.579	0.336	162.452		
	Childhood trauma				-0.120	-6.071**
	Psychological resilience				0.535	15.997**
Negative emotions		0.458	0.209	56.701		
	Childhood trauma				0.223	6.043**
	Psychological resilience				-0.249	-5.789**
	Sense of life meaning				-0.127	-2.939**

Note: **p < 0.01.

Table 3: Mediation Effect Test

way	Effect size	SE	95% confidence interval
Childhood trauma- Psychological resilience - Negative emotions	0.133	0.038	[0.066,0.215]
Childhood trauma - sense of life meaning - negative emotions	0.030	0.018	[0.003,0.073]
Childhood trauma- Psychological resilience - Sense of life meaning - Negative emotions	0.036	0.015	[0.006,0.067]

4. Discussion

This study aims to explore the relationship between childhood trauma and negative emotions in adulthood, and to examine the mediating role of the sense of life meaning and psychological resilience. The findings indicate that childhood trauma positively predicts the onset of negative emotions, which is consistent with previous research findings^[15]. This further confirms that childhood trauma, as a long-term developmental risk factor, exerts a negative influence on individuals' mental health in adulthood. It suggests that college students who have experienced more childhood trauma are more likely to experience varying degrees of negative emotions, such as depression, anxiety, or stress. Traumatic experiences may alter neural circuits in the brain responsible for emotional regulation, affecting the entire emotional process—from physiological responses to cognitive appraisals^[16], thereby continuously impairing individuals' emotional regulation and increasing the risk of negative emotional states^[17].

This study also found that psychological resilience plays an independent mediating role between childhood trauma and negative emotions among college students. That is, childhood trauma weakens the individual's psychological resilience level, thereby further exacerbating negative emotions. The Stress Buffering Model posits that psychological resilience is not a static trait but rather a dynamic protective system^[18]. As a severe chronic stressor, childhood trauma directly depletes or undermines an individual's psychological resilience resources. When psychological resilience is weakened, individuals find it more difficult to mobilize adaptive resources when facing everyday stressors or new challenges, thereby becoming more susceptible to developing negative emotions such as anxiety and depression. This finding further confirms that psychological resilience serves as the core protective factor in explaining the heterogeneity of post-traumatic outcomes.

Furthermore, the sense of life meaning serves as an independent mediating factor between childhood trauma and negative emotions; this indicates that childhood trauma can further increase the level of negative emotions by diminishing an individual's sense of life meaning. These findings support the perspective of the Meaning Construction Theory, which posits that childhood trauma disrupts an individual's core beliefs regarding the meaning of life; it is precisely this weakened sense of life meaning that reduces an individual's perception of their own life value and purpose, making them more susceptible to experiencing negative emotions in subsequent life contexts^[19].

This study verifies the chain-mediated effect of psychological resilience and the sense of life meaning in the process through which childhood trauma influences negative emotions: specifically, childhood trauma first reduces an individual's psychological resilience, and this diminished psychological resilience further hinders the individual's exploration and construction of life meaning, ultimately exacerbating the emergence of negative emotions. This discovery of the

chain-like mediating effect not only clearly reveals the internal path by which childhood trauma affects negative emotions, but also expands the existing research's explanation of the heterogeneity of post-traumatic psychological development. Psychological resilience, as the fundamental ability of an individual to cope with adversity, will further influence the subsequent process of meaning construction. Individuals with high psychological resilience have the ability to carry out positive meaning exploration, thereby buffering the negative effects brought by childhood trauma. However, individuals with impaired psychological resilience find it more difficult to complete the meaning reconstruction after trauma, and are more likely to fall into negative emotions.

This study also has certain limitations. Firstly, this study adopted a cross-sectional design, which limited the exploration of causal relationships between variables. Future research could adopt a longitudinal tracking design to further verify these relationships. Secondly, the sample in this study was taken from a single university. In the future, the sample range could be expanded to further verify the generalizability of the conclusions. Overall, the conclusions of this study have important practical implications for mental health intervention for college students. When conducting mental health work for college students with a history of childhood trauma, intervention paths such as enhancing psychological resilience and rebuilding the meaning of life can be adopted to effectively reduce the negative impact of childhood trauma on negative emotions and improve the mental health level of college students.

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