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Original Article

The Mediating Role of Dysfunctional Attitudes in the Relationship Between Childhood Trauma and Anhedonia Among Students of Islamic Azad University, Ilam Branch

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Abstract

Background: The present study aimed to examine the mediating role of dysfunctional attitudes in the relationship between childhood trauma and anhedonia among students at the Islamic Azad University, Ilam Branch.

Methods: This study employed a cross-sectional design. The research population consisted of all students enrolled at the Islamic Azad University, Ilam Branch, totaling 4,856 individuals in the 2023–2024 academic year. Based on Cochran's sample size formula, a sample of 365 students was selected using convenience sampling. Research instruments included the Snaith–Hamilton Pleasure Scale (SHAPS) for anhedonia, the Bernstein and Fink Childhood Trauma Questionnaire (CTQ), and the Weissman and Beck Dysfunctional Attitudes Scale (DAS). Data were analyzed using Pearson's correlation, multiple regression, and bootstrapping procedures in SPSS.

Results: Findings indicated a positive and significant relationship between childhood trauma and anhedonia ($\beta = 0.43$, $P < 0.001$). Significant positive relationships were also observed between childhood trauma and dysfunctional attitudes ($\beta = 0.43$, $P < 0.001$), and between dysfunctional attitudes and anhedonia ($\beta = 0.14$, $P < 0.001$). The indirect effect of childhood trauma on anhedonia mediated by dysfunctional attitudes was significant (ab = 0.006, SE = 0.002, 95% CI = 0.002 to 0.010).

Conclusion: Based on the findings, dysfunctional attitudes partially mediate the relationship between childhood trauma and anhedonia. Accordingly, modifying maladaptive cognitive patterns may contribute to reducing the negative effects of trauma on students' capacity for experiencing pleasure, although this mediating effect is relatively modest.

Keywords: Anhedonia, Childhood trauma, Dysfunctional attitudes, Depression

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Introduction

Anhedonia, commonly defined as the "loss of pleasure" or "loss of interest", is a core symptom of major depressive disorder in which affected individuals fail to respond to pleasurable events or stimuli. Anhedonia is also characterized as an impairment in reward responsiveness and reward anticipation, and it further encompasses aspects of reward valuation and reward learning. The presence and severity of anhedonia are strongly associated with more complex illness presentations, greater symptom severity, poor response to selective serotonin reuptake inhibitors (SSRIs), and an increased risk of suicide (1).

Anhedonia is a common symptom across several psychiatric disorders, including schizophrenia, substance dependence, post-traumatic stress disorder (PTSD), anxiety disorders, eating disorders, autism spectrum disorders, and various neurological conditions (2,3,4). Although anhedonia is one of the primary symptoms of depression and is frequently used in diagnosing this disorder, its conceptualization and diagnostic role have evolved over the past century. Initially, anhedonia was described as an independent condition; however, in the third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III), it was incorporated as a symptom used to diagnose a major depressive episode. For some time thereafter, it was regarded merely as an indicator of depressive disorder. Nevertheless, in recent decades, evidence has suggested that anhedonia should be regarded as a phenomenon distinct from depression itself (5).

Historically, anhedonia has been understood as simply the "loss of pleasure," yet neuropsychological and neurobiological studies indicate a more multidimensional reconceptualization, emphasizing different components of hedonic functioning, including desire, effort/

motivation, anticipation, and consummatory pleasure. The prevalence of anhedonia in depression is generally very high, though it varies across studies and populations; up to 70% of individuals with depression may experience anhedonia (6). Other psychiatric disorders also exhibit notable, though comparatively lower, rates of anhedonia (7). Moreover, anhedonia may persist in a significant number of cases even after treatment (8). No consistent gender differences have been reported; despite the higher prevalence of depression in women, evidence does not indicate that anhedonia is more common among women. In contrast, some studies suggest a higher prevalence in men, at least with respect to social anhedonia. Age has also been associated with increases in anhedonia, though predominantly in studies of general populations (9). Given that individuals with anhedonia lose interest in activities they once enjoyed, leading to social withdrawal, reduced emotional expression, and negative feelings toward oneself and others, and considering the importance of psychological well-being among university students, the present study aims to examine the factors influencing anhedonia in this population.

Several studies have demonstrated a relationship between childhood trauma and elevated levels of anhedonia (10, 11). These studies have indicated that when symptom dimensions are considered, childhood trauma may primarily influence the anhedonic component of psychopathology. Major categories of childhood trauma include abuse (emotional, sexual, and physical) and neglect (emotional and physical). Physical abuse refers to intentional injury or the infliction of bodily harm on a child under the age of 18 by an adult, associated with potential risk of death, injury, loss of physical functioning, or compromised health. Emotional abuse refers to a child's perception of themselves as worthless, flawed, unloved, unwanted, or endangered, and to situations in which the child feels valued only when fulfilling others' needs. Childhood sexual abuse involves sexual contact between a child and an adult, or between two children when one is significantly older or uses force or coercion. Physical neglect includes acts of omission in which a child is denied access to necessities such as safety, nutrition, clothing, shelter, medical care, and other basic needs. Emotional neglect similarly refers to acts of omission in which the child does not receive adequate emotional care and support, such as expressions of attention, love, affection, or warmth (12).

According to the diathesis-stress model, childhood trauma may cause vulnerable individuals to develop negative cognitive schemas (13). These negative thinking styles are typically conceptualized as dysfunctional attitudes; rigid and maladaptive beliefs about the self, the world, and the future (14). Dysfunctional attitudes, as cognitive vulnerabilities, interact with adverse life events to influence depression (15). Research has shown that dysfunctional attitudes are not only associated with the severity of depression and the risk of relapse (16) but may also persist as stable traits (17) and mediate the impact of childhood trauma on depression (16). Dysfunctional attitudes were first employed by Beck to describe the thoughts of depressed individuals and have been regarded either directly or as vulnerability factors under stressful environmental conditions (18).

These attitudes bias individuals' perceptions of events, influence their emotions and behaviors, and predispose them to depression and other psychological disturbances (19). Given the association of dysfunctional attitudes with anhedonia and childhood trauma, it is assumed that dysfunctional attitudes may serve as a mediating factor in the relationship between childhood trauma and anhedonia.

In light of the aforementioned background and considerations, the present study seeks to address the following question: *Do dysfunctional attitudes mediate the relationship between childhood trauma and anhedonia among students at the Islamic Azad University, Ilam Branch?*

Methods

The present cross-sectional study employed an analytical design. The research population consisted of all students of Islamic Azad University, Ilam Branch, totaling 4,856 individuals in the 2023-2024 academic year, according to available records. Based on Cochran's sample size formula, a sample of 365 students was selected through convenience sampling. After obtaining the ethical approval code and coordinating with the Research Deputy of the Islamic Azad University, Ilam Branch, data collection was initiated. At the outset, participants were provided with necessary explanations regarding the research objectives, the voluntary nature of participation, and the confidentiality of information. The inclusion criteria were: age between 18 and 30 years, informed consent, and being a student at Islamic Azad University, Ilam Branch. The exclusion criteria were: presence of severe psychological disorders, substance dependence, and receiving professional psychological treatment. Ultimately, the questionnaires were administered among the students, collected upon completion, and analyzed using statistical methods. The instruments used to collect the data were as follows:

Snaith–Hamilton Pleasure Scale (SHAPS)

The Snaith–Hamilton Pleasure Scale (SHAPS) is a 14-item self-report instrument designed to assess an individual's ability to experience pleasure (food/drink, interest/pastime, social interactions, and sensory experiences) over the past few days (20). SHAPS is not affected by demographic or clinical characteristics of participants, demonstrates excellent psychometric properties, and is

considered suitable for both clinical and research settings (21). Items are scored on a five-point Likert scale ranging from 0 to 4 (strongly agree = 4 to strongly disagree = 0). The total score is calculated by summing all items; higher scores indicate greater hedonic capacity, whereas lower scores indicate reduced hedonic capacity and higher anhedonia. According to Snaith and Hamilton, validity and reliability coefficients were 0.87 and 0.85, respectively. In a study by Mahmood Aliloo et al. (22), Cronbach's alpha ranged from 0.73 to 0.76. In the present study, Cronbach's alpha for this scale ranged from 0.71 to 0.74. Given that higher scores on the Snaith–Hamilton Pleasure Scale (SHAPS) indicate greater hedonic capacity and lower scores reflect anhedonia, this point must be considered when interpreting relationships and data. Thus, whenever the term *anhedonia* is used in the present study, it refers to *low scores* on the Snaith–Hamilton Pleasure Scale (SHAPS), even though the analyses were conducted using hedonic capacity scores in relation to the other variables.

Childhood Trauma Questionnaire (CTQ)

Developed by Bernstein and Fink in 1998, this 28-item self-report instrument assesses five domains: emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect. Each item is rated on a five-point Likert scale. For all five subscales, total scores range from "Never True" (1) to "Often True" (5). Items 2, 5, 7, 13, 19, 26, and 28 are reverse-scored. Each domain also has established cut-off points indicating moderate-to-severe levels (emotional abuse ≥ 13; physical abuse ≥ 10; sexual abuse ≥ 8; emotional neglect ≥ 10; physical neglect ≥ 10). Bernstein and Fink (1998) reported high levels of validity and reliability for the scale (23). Internal consistency coefficients ranged from 0.37 to 0.75, and the five factors collectively accounted for 55% of the variance. In the Persian validation study by Garrusi and Nakhaee (24), the test-retest reliability coefficient was 0.90, and internal consistency reliability was 0.94.

Dysfunctional Attitudes Scale (DAS)

The Dysfunctional Attitudes Scale (DAS), developed by Weissman and Beck in 1978 based on Beck's theory of cognitive structure in depression, contains 40 items and four subscales: Achievement-Perfectionism, Need for Approval, Need to Please Others, and Vulnerability-Performance Evaluation. Items are scored on a 7-point Likert scale ranging from strongly disagree to strongly agree. The Iranian version of the scale consists of 26 items and the same four subscales: perfectionism, need for approval, need to please others, and vulnerability. Responses range from strongly agree (7) to strongly disagree (1), with total scores ranging from 26 to 182. Higher scores indicate higher levels of dysfunctional attitudes. The reliability and validity of this scale were evaluated in 1991, and satisfactory psychometric coefficients were reported (25). The scale showed high test-retest reliability over more than six weeks (0.90), good internal consistency, and a Cronbach's alpha of 0.75. In a study by Ebrahimi and Moosavi (26), psychometric properties were also confirmed, with a Cronbach's alpha of 0.92 and a concurrent validity coefficient of 0.56 based on correlations with the Mental Health Questionnaire. In the present study, Cronbach's alpha for the total scale was 0.78.

Data Analysis

Data were analyzed using SPSS software (version 24). In the descriptive statistics section, indices such as frequency, percentage, mean, standard deviation, minimum, and maximum were reported. For inferential statistics, Pearson's correlation test was first used to examine the relationships among the variables. Subsequently, to test the mediating role of dysfunctional attitudes, hierarchical multiple regression analysis and the bootstrapping method were conducted, and 95% confidence intervals for the indirect effect were calculated.

Results

The demographic data of the participants are presented in Table 1. The mean age of the participants was 22.69 ± 3.74 years. The minimum and maximum ages of the participants were 19 and 45 years, respectively. Additional demographic characteristics are shown in Table 1.

The descriptive findings, including statistical indices such as mean, standard deviation, minimum, and maximum scores for all research variables, are presented in Table 2:

In this section, hypotheses and research relationships are examined using Pearson correlation coefficients and regression analyses (to test mediation). Table 3 presents the bivariate correlation coefficients among the research variables.

As shown in Table 3, there is a significant negative correlation between hedonism (the inverse of anhedonia) and childhood traumas ($r = -0.53$, $P < 0.0001$). A significant positive correlation exists between childhood traumas and dysfunctional attitudes ($r = 0.69$, $P < 0.0001$).

Table 1. Demographic Information

Variable	Category	Frequency	Percentage
Gender	Female	183	50.1%
	Male	182	49.9%
Marital Status	Single	266	72.8%
	Married	99	27.2%
Educational Level	Associate's to Bachelor's degree	297	81.3%
	Master's degree	53	14.5%
	Ph.D.	15	4.2%

Table 2. The descriptive statistics for the research variables

Variable	Mean	SD	Min	Max
Hedonism (inverse of anhedonia)	12.89	5.80	1	29
Childhood traumas	39.43	12.10	25	69
Dysfunctional attitudes	58.04	12.00	26	120

Table 3. Bivariate correlation coefficients among the research variables

Variables	Hedonism (inverse of anhedonia)	Childhood traumas	Dysfunctional attitudes
Hedonism (inverse of anhedonia)	1	–0.53**	–0.44**
Childhood traumas		1	0.69**
Dysfunctional attitudes			1

**: $P<0.0001$

Moreover, dysfunctional attitudes show a significant negative correlation with hedonism (r = –0.44, $P<0.0001$).

The results regarding indirect pathways and mediating effects are presented. This study hypothesizes that dysfunctional attitudes mediate the relationship between childhood traumas and anhedonia among students at Ilam Islamic Azad University. To examine the mediating role of dysfunctional attitudes, childhood traumas (X), and dysfunctional attitudes (M) were entered as predictors of anhedonia (Y, operationalized as reduced hedonic capacity). The results are summarized in Table 4:

Based on the data presented in Table 4, in the first model, the direct effect of childhood trauma on anhedonia was examined without the presence of the mediating variable. The findings indicated that childhood trauma is a significant predictor of anhedonia ($P<0.001$, t = 5.75, $\beta = 0.46$, B = 0.23).

In the second model, after entering dysfunctional attitudes into the equation, the coefficient for childhood trauma decreased slightly but remained significant ($P<0.001$, t = 6.89, $\beta = 0.43$, B = 0.20). Furthermore, dysfunctional attitudes significantly predicted anhedonia ($P=0.001$, t = 2.36, $\beta = 0.14$, B = 0.03). These findings indicate that the strength of the relationship between childhood trauma and anhedonia diminished after entering the mediator, suggesting the presence of a partial mediation effect.

Table 5 presents the bootstrap results for the indirect pathway from childhood trauma to anhedonia through dysfunctional attitudes.

To test the indirect effect, the bootstrap method with 2000 resamples was employed. As shown in Table 5, the indirect effect of childhood trauma on anhedonia mediated by dysfunctional attitudes was significant (ab = 0.006, SE = 0.002, 95% CI = 0.002 to 0.010). Table 5 indicates that the lower bound of the confidence interval is 0.002 and the upper bound is 0.010. Since zero lies outside this interval, the mediating relationship is statistically significant. Accordingly, it can be concluded that dysfunctional attitudes partially mediate the relationship between childhood trauma and anhedonia. However, the mediating effect of dysfunctional attitudes is weak and represents only a small portion of the overall relationship.

Discussion

The present study examined the mediating role of dysfunctional attitudes in the relationship between childhood trauma and anhedonia among students of the Islamic Azad University, Ilam Branch. Based on the findings, dysfunctional attitudes mediate the relationship between childhood trauma and anhedonia among these students. Consequently, the research hypothesis was supported. Accordingly, it can be argued that childhood traumas contribute to the formation of dysfunctional attitudes, which pertain to individuals' irrational beliefs about themselves, the future, and the world. Traumatic childhood events may facilitate the development of a core belief that these experiences are inevitable and uncontrollable, thereby fostering pessimism toward others and the surrounding world and hindering the individual's efforts to change circumstances. Ultimately, these adverse experiences lead to the development of negative belief systems and self-critical patterns, such as the enduring belief in personal mistakes (27). In general, childhood trauma can predict anhedonia in adulthood through its impact on the formation of dysfunctional attitudes.

The findings further indicated a significant negative relationship between childhood trauma and hedonic capacity, or equivalently, a significant positive relationship between childhood trauma and anhedonia. This suggests that increased childhood trauma is associated with reduced hedonic capacity or heightened anhedonia. This result aligns with the findings reported by Wong et al. (1). A possible explanation for this finding is as follows: childhood traumas occur when fundamental needs of children are unmet, leading to the development of negative schemas about the self and others (e.g., distrust, failure, incompetence), which predispose individuals to psychological disturbances (28). When children experience emotional maltreatment, they may perceive the world as unsafe and develop a sense of distrust

Table 4. Regression Analysis and Mediation Effects

Path	B	SE	β	t	*P*	R^2
X → M (childhood traumas → dysfunctional attitudes)	0.20	0.03	0.43	6.89	<0.001	0.19
M → Y (dysfunctional attitudes → hedonism/ inverse of anhedonia)	0.03	0.01	0.14	2.36	0.001	–
X → Y (childhood traumas → hedonism) with M	0.20	0.03	0.43	6.89	<0.001	0.20
X → Y (childhood traumas → hedonism) without M	0.23	0.04	0.46	5.75	<0.001	0.21

Table 5. Bootstrap results for the pathway childhood trauma → dysfunctional attitudes → anhedonia

Indirect Effect	Standard Error	Bootstrap CI (Lower)	Bootstrap CI (Upper)
0.006	0.002	0.002	0.010

toward others. This distrust can impair the formation and maintenance of interpersonal relationships, ultimately contributing to depression (29). Furthermore, children who experience emotional abuse may internalize a belief that they are deserving of maltreatment. If such abuse becomes chronic, they may conclude that these negative experiences are inevitable and attributable to inherent flaws within themselves. This can lead to the generalization of negative conclusions to other life events (27). Consequently, the adverse effects of childhood abuse do not end in childhood but continue to impact personality development and adaptive functioning. Individuals who experience high levels of early trauma are more likely to exhibit insecure attachment patterns in adulthood and face challenges in developing appropriate interpersonal skills (30). Childhood trauma has been shown to be associated with numerous psychological and social difficulties, including impaired interpersonal relationships, social withdrawal, emotional dysregulation, impulse control problems, and persistent feelings of inferiority, guilt, and shame (31). Overall, childhood trauma affects the socio-emotional development of adults by promoting negative cognitions about the self and others, facilitating the formation of conditioned emotional responses to trauma-related stimuli, and impairing the development of mature emotional regulation. In other words, childhood trauma hinders the ability to regulate painful emotions, thereby increasing the risk of depression in adulthood.

Moreover, the findings of the present study revealed a significant positive relationship between childhood trauma and dysfunctional attitudes among students. In other words, an increase in childhood trauma is associated with heightened dysfunctional attitudes. These results are consistent with the findings of the studies by Wong et al. (1), Fan et al. (10), and Sonmez et al. (11). Experiencing traumatic events during childhood reduces positive reinforcement, while increased negative reinforcement contributes to the formation of dysfunctional attitudes in the individual (32). The impact of childhood trauma on dysfunctional attitudes can also be explained based on the diathesis-stress model, a psychological theory that seeks to explain a disorder or its trajectory as the result of the interaction between an individual's vulnerability (diathesis) and stress derived from life experiences. Childhood trauma leads to the development of negative cognitive schemas in affected individuals. These negative thinking patterns are typically conceptualized as dysfunctional attitudes, rigid and maladaptive beliefs about the self, the world, and the future. Furthermore, traumatic childhood events may foster core beliefs that such events are inevitable and uncontrollable, leading to pessimism about others and the surrounding world and inhibiting attempts to change circumstances. Ultimately, these adverse experiences contribute to negative belief patterns and self-critical tendencies, such as the enduring belief in personal mistakes (27).

Furthermore, the present study demonstrated a significant negative relationship between dysfunctional attitudes and hedonic capacity, or equivalently, a significant positive relationship between dysfunctional attitudes and anhedonia. This means that increased dysfunctional attitudes are associated with decreased hedonic capacity or increased anhedonia. These findings are consistent with previous studies conducted by Wong et al. (1), Liu et al. (17), and Ju et al. (16). In explaining this result, it can be argued that dysfunctional attitudes, which are key components of cognitive schemas, play a crucial role in interpreting and evaluating life situations. The presence of these attitudes is associated with low self-esteem, weak self-concept, reduced self-efficacy, and rigid, fixed beliefs. Most psychological disorders are rooted in individuals' thoughts and emotions, which are inseparable components; irrational thoughts often generate unpleasant emotions, leading to maladaptive behaviors. According to Beck's theory, the attitudes and assumptions that individuals hold about themselves, the world, and the future influence their ability to control their lives. In fact, negative cognitions, schemas, and attitudes regarding these three domains can jeopardize mental health and lead to numerous behavioral problems (33). According to this theory, when attitudes and thoughts are negative and dysfunctional, individuals anticipate a future in which positive outcomes are scarce and minimal change occurs. This cognitive pattern can increase susceptibility to depression and anhedonia, accompanied by pronounced feelings of hopelessness and low self-efficacy (34).

Limitations and Recommendations

The population examined in this study comprised students

at the Islamic Azad University, Ilam Branch. The limited scope of this population restricts the generalizability of the findings. The data collection instruments used in this study were questionnaires. Despite the standardization of these questionnaires, factors such as response bias may limit the accuracy of the findings. The research design employed was cross-sectional, which prevents the establishment of causal relationships between variables.

Accordingly, future researchers are recommended to employ qualitative methods, such as grounded theory, in-depth interviews, and participatory observation, to further investigate these issues. Moreover, future studies need to explore other factors influencing anhedonia. Based on the findings of the present study, it is also recommended that training packages and workshops be organized for psychologists and social workers to enhance their skills and promote targeted, positive interventions aimed at improving the mental health awareness of university students.

Conclusion

The findings of this study indicated that dysfunctional attitudes may serve as a mediating variable between childhood trauma and anhedonia. Childhood trauma contributes to the formation of dysfunctional attitudes in individuals, and through these attitudes, it influences their capacity for experiencing pleasure. In light of these findings, identifying students who exhibit signs of anhedonia (loss of pleasure) becomes essential for relevant authorities. Through appropriate decision-making, timely counseling, and preventive and intervention-based measures, it is possible to prevent or reduce the psychological and social consequences of this condition among students.

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Authors' Contribution

Conceptualization and design: Sattar Keikhavani.
Data Curation: Ramin Hayatian.
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Investigation: Mahmoud Bahramkhani, Ramin Hayatian, Sattar Keikhavani.
Methodology: Mahmoud Bahramkhani.
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Supervision: Sattar Keikhavani.
Writing–original draft: Ramin Hayatian.
Writing–review & editing: Mahmoud Bahramkhani, Ramin Hayatian, Sattar Keikhavani.

Competing Interests

The authors declared no conflict of interest regarding the publication of this article.

Ethical Approval

The present study was conducted with the approval of the Research Ethics Committee of Islamic Azad University, Ilam Branch, under the ethics code IR.IAU.ILAMREC.1403.097.

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