




Predicting Anxiety and Depression in Adolescents with Autism Spectrum Disorder Based on Childhood Trauma Severity: The Mediating Role of Emotion Regulation Difficulties

Farshad. Samadi^{1*}, Maedeh. Khoshakhlagh², Melika. Yazdani³

¹ Ph.D in Health Psychology, Imam Ali (AS) Hospital, North Khorasan University of Medical Sciences, Bojnurd, Iran

² Master of Clinical Psychology, Garmsar Branch, Islamic Azad University, Garmsar, Iran

³ Master of Clinical Psychology, Behshahr Branch, Islamic Azad University, Behshahr, Iran

* Corresponding author email address: melikayazdani10@gmail.com

Article Info

Article type:

Original Research

How to cite this article:

Samadi, F., Khoshakhlagh, M., & Yazdani, M. (2025). Predicting Anxiety and Depression in Adolescents with Autism Spectrum Disorder Based on Childhood Trauma Severity: The Mediating Role of Emotion Regulation Difficulties. *Journal of Adolescent and Youth Psychological Studies*, 6(6), 1-7.

<http://dx.doi.org/10.61838/kman.jayps.6.6.5>



© 2025 the authors. Published by KMAN Publication Inc. (KMANPUB), Ontario, Canada. This is an open access article under the terms of the Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

ABSTRACT

Objective: The aim of this study was to investigate the mediating role of emotion regulation difficulties in the relationship between childhood trauma and symptoms of anxiety and depression in adolescents with ASD.

Methods and Materials: This study employed a descriptive-correlational design using a cross-sectional approach. The research sample consisted of 200 adolescents aged 12 to 18 years with ASD, who were selected through convenience sampling from rehabilitation centers in Tehran during the 2024–2025 academic year. The instruments used included the Childhood Trauma Questionnaire (CTQ), the Difficulties in Emotion Regulation Scale (DERS), and the Revised Child Anxiety and Depression Scale (RCADS). Data were analyzed using structural equation modeling (SEM) via AMOS-24 software.

Findings: The results indicated that childhood trauma was directly associated with symptoms of anxiety and depression. Moreover, emotion regulation difficulties significantly mediated the relationship between childhood trauma and both psychological variables. The model fit indices demonstrated acceptable levels of fit.

Conclusion: The findings highlight the significance of emotion regulation as a key mechanism in explaining the adverse effects of childhood trauma on the mental health of adolescents with ASD. Interventions aimed at enhancing emotion regulation may be effective in reducing anxiety and depression symptoms in this population.

Keywords: Autism Spectrum Disorder, Childhood Trauma, Anxiety, Depression, Emotion Regulation.

1. Introduction

Adolescents with Autism Spectrum Disorder (ASD), due to the unique characteristics of the condition—including deficits in social and communicative skills—are at increased risk for developing anxiety and depression. Studies have shown that between 30% to 80% of children and adolescents with ASD exhibit clinical levels of anxiety, and depression is also highly prevalent in this group. These comorbidities can significantly impact their academic performance, social functioning, and overall quality of life (Leachman et al., 2024).

One major risk factor for the emergence of these psychological problems is the experience of childhood trauma, which can have long-term effects on mental health (McDonnell et al., 2020). Trauma, especially among individuals with ASD, may be exacerbated due to heightened cognitive and emotional sensitivities. However, the mediating mechanisms of this relationship—such as emotion regulation difficulties—have received relatively less attention. Emotion regulation, defined as the ability to manage and respond to emotional experiences, plays a critical role in mitigating the negative effects of trauma (Mazefsky et al., 2014). The lack of comprehensive research in this area, particularly within the Iranian population, highlights the need to further explore this issue.

Research suggests that adolescents with ASD experience higher levels of anxiety and depression compared to their typically developing peers. For instance, a study by Rahmani et al. (2021) found that approximately 45% of adolescents with ASD met diagnostic criteria for anxiety (Rahmani et al., 2021). Similarly, Gotham et al. (2020) reported that deficits in cognitive-emotional skills and increased sensitivity to stress make this group more vulnerable to mood disorders (Gotham et al., 2015). Childhood trauma refers to adverse experiences before the age of 18—such as physical abuse, emotional neglect, or other forms of maltreatment—which can have lasting psychological consequences. Research has shown that trauma is associated with increased levels of anxiety and depression across various populations (Safari et al., 2023). However, few studies have investigated this relationship specifically in adolescents with ASD (Kaviani et al., 2024).

Emotion regulation refers to an individual's capacity to manage and modulate emotional responses. Adolescents with ASD often face challenges in this domain (Amiri & Moradi, 2022; Mazefsky et al., 2014). Evidence indicates that childhood trauma can lead to deficits in emotion

regulation (McLaughlin et al., 2019; Zare et al., 2021), and these difficulties, in turn, are associated with heightened symptoms of anxiety and depression (Aldao et al., 2023; Safari et al., 2023).

Although the relationship between childhood trauma and emotional disorders has been well-documented in general populations, the underlying mechanisms of this association in adolescents with ASD remain understudied. In particular, the mediating role of emotion regulation difficulties in this group requires further exploration (A. Mahdavi et al., 2022; Mazefsky et al., 2014; Weiss et al., 2021). The findings of the present study may contribute to the development of targeted psychological interventions—such as emotion regulation training—to reduce anxiety and depression in adolescents with ASD. This study aims to examine the relationship between childhood trauma, emotion regulation difficulties, and symptoms of anxiety and depression in adolescents with ASD. The research hypotheses are as follows:

1. The severity of childhood trauma is associated with higher levels of anxiety and depression in adolescents with ASD.
2. Emotion regulation difficulties mediate the relationship between childhood trauma and symptoms of anxiety/depression.

2. Methods and Materials

2.1. Study Design and Participants

This research employed a descriptive-correlational design using a structural equation modeling (SEM) approach in a cross-sectional format.

The statistical population included adolescents aged 12 to 18 years with Autism Spectrum Disorder (ASD) who had been referred to rehabilitation centers and psychological clinics in Tehran during the period from 2024 to 2025. Sampling was conducted through a convenience sampling method, and the sample size was determined to be 200 participants, in accordance with the SEM rule of a minimum of 10 participants per variable.

Inclusion criteria were as follows:

- A confirmed diagnosis of ASD by a psychiatrist based on the DSM-5-TR criteria
- Age between 12 and 18 years
- No severe intellectual disability (IQ above 70)
- Provision of informed consent by both parents and adolescents

Exclusion criteria included:

- Presence of acute psychiatric disorders such as psychosis

- Use of psychotropic medications during the study period

The questionnaires were administered through structured interviews conducted by trained clinical psychologists. Prior to data collection, written informed consent was obtained from both parents and adolescents. All collected data were treated as confidential, and participants were assured of their right to withdraw from the study at any time.

2.2. Measures

2.2.1. Trauma Severity

Childhood Trauma Questionnaire (CTQ): Developed by Bernstein et al. in 2003, this scale assesses experiences of abuse and neglect during childhood. It includes 28 items across five subscales: emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect. Items are rated on a 5-point Likert scale ranging from "Never" (score 1) to "Always" (score 5). The Persian version was standardized by Zare et al. in 2021, reporting a total reliability coefficient of 0.89. Construct validity was confirmed using factor analysis (Zare & Ahmadi, 2021).

2.2.2. Emotion Regulation

Difficulties in Emotion Regulation Scale (DERS): Developed by Gratz and Roemer in 2004, this scale contains 36 items and measures six subscales: nonacceptance of emotional responses, difficulties engaging in goal-directed behavior, impulse control difficulties, lack of emotional awareness, limited access to emotion regulation strategies, and lack of emotional clarity. Items are rated on a 5-point Likert scale (from "Almost never" to "Almost always"). The

Persian version was translated and validated by Amiri et al. in 2022, with a total reliability of 0.92 and subscale reliabilities ranging from 0.78 to 0.87. Both face and content validity were confirmed by experts in psychology (Amiri & Moradi, 2022).

2.2.3. Anxiety and Depression

Revised Child Anxiety and Depression Scale (RCADS): Developed by Chorpita et al. in 2000, this 47-item scale is designed to assess symptoms of anxiety disorders (including social anxiety, generalized anxiety disorder, obsessive-compulsive disorder, specific phobia, and school phobia) and major depressive disorder. Items are rated on a 4-point Likert scale from 0 ("Never") to 3 ("Always"). The Persian version was standardized by Mahdavi et al. in 2022, reporting a total reliability of 0.91 and construct validity confirmed through factor analysis (N. Mahdavi et al., 2022).

2.3. Data Analysis

Descriptive statistics (mean, standard deviation, and score distributions) and inferential statistics were used for data analysis. Initially, Pearson correlation coefficients were calculated to assess the relationships among variables. Subsequently, structural equation modeling (SEM) was conducted using AMOS-24 software to test the mediating role of emotion regulation difficulties.

3. Findings and Results

The results of the descriptive statistics for the primary research variables are presented in Table 1. The mean and standard deviation values for each variable are as follows:

Table 1

Descriptive Statistics of Research Variables

Variable	Mean	Standard Deviation
Childhood Trauma	45.32	12.67
Emotion Regulation Difficulties	78.45	15.23
Anxiety	32.19	8.54
Depression	28.76	7.89

The frequency distribution of demographic characteristics of the sample is shown in Table 2. Of the 200 participants, 65% (130 individuals) were male and 35% (70

individuals) were female. The mean age of the sample was 15.2 years (SD = 1.8).

Table 2*Frequency Distribution of Demographic Characteristics*

Characteristic	Frequency	Percentage
Male	130	65%
Female	70	35%
Age 12–14 years	80	40%
Age 15–16 years	90	45%
Age 17–18 years	30	15%

The results of the Pearson correlation analysis are presented in Table 3. Childhood trauma showed a positive and significant correlation with anxiety ($r = 0.48$, $p < 0.01$) and depression ($r = 0.52$, $p < 0.01$). Additionally, childhood trauma had a significant negative correlation with emotion

regulation difficulties ($r = -0.39$, $p < 0.05$). Emotion regulation difficulties were also positively and significantly correlated with anxiety ($r = 0.45$, $p < 0.01$) and depression ($r = 0.50$, $p < 0.01$).

Table 3*Correlation Matrix of Research Variables*

Variable	1	2	3	4
1. Childhood Trauma	—			
2. Emotion Regulation Difficulties	-0.39*	—		
3. Anxiety	0.48**	0.45**	—	
4. Depression	0.52**	0.50**	0.61**	—

** $p < 0.01$

The results of the structural equation modeling indicated that the proposed model demonstrated good fit indices (CFI = 0.92, RMSEA = 0.06, $\chi^2/df = 2.45$). In the direct paths, childhood trauma had a significant positive effect on anxiety ($\beta = 0.42$, $p < 0.01$) and depression ($\beta = 0.47$, $p < 0.01$). In the indirect paths, emotion regulation difficulties played a

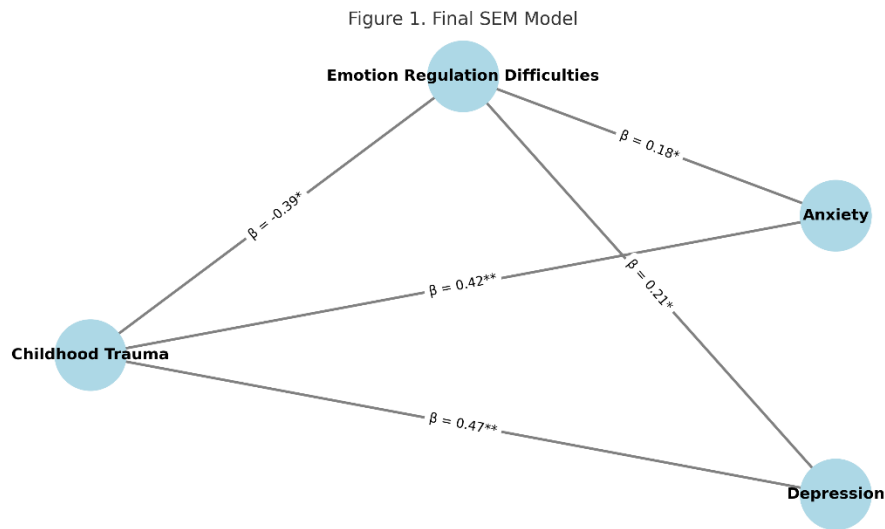
significant mediating role in the relationship between childhood trauma and anxiety ($\beta = 0.18$, $p < 0.05$), and between childhood trauma and depression ($\beta = 0.21$, $p < 0.05$). The results of the direct and indirect path analyses are presented in Table 4.

Table 4*Results of Direct and Indirect Path Analyses*

Path	β	Significance Level
Direct Paths		
Childhood Trauma → Anxiety	0.42	$p < 0.01$
Childhood Trauma → Depression	0.47	$p < 0.01$
Indirect Paths (Mediated by Emotion Regulation)		
Childhood Trauma → Emotion Regulation → Anxiety	0.18	$p < 0.05$
Childhood Trauma → Emotion Regulation → Depression	0.21	$p < 0.05$

The findings of this study confirmed the proposed hypotheses. The severity of childhood trauma is significantly associated with increased symptoms of anxiety and depression in adolescents with Autism Spectrum Disorder. Furthermore, emotion regulation difficulties serve

as a mediating variable that partially explains this relationship. These results underscore the critical role of emotion regulation in mitigating the negative psychological effects of childhood trauma on this population.

Figure 1*Final Structural Equation Model*

4. Discussion and Conclusion

The findings of the present study demonstrated that childhood trauma is significantly associated with increased symptoms of anxiety and depression in adolescents with Autism Spectrum Disorder (ASD). This relationship was observed both directly and indirectly through emotion regulation difficulties. Specifically, in the direct pathways, the severity of childhood trauma had a significant positive effect on anxiety ($\beta = 0.42$, $p < 0.01$) and depression ($\beta = 0.47$, $p < 0.01$). In the indirect pathways, emotion regulation difficulties played a significant mediating role in the relationship between childhood trauma and anxiety ($\beta = 0.18$, $p < 0.05$), as well as between childhood trauma and depression ($\beta = 0.21$, $p < 0.05$). These results align with previous research findings. For instance, a study (Leachman et al., 2024) also reported high levels of anxiety among adolescents with ASD who had a history of environmental stressors. Additionally, the research conducted by Weiss et al. (2021) and Shields et al. (2020) indicated that emotion regulation is impaired in individuals with developmental disorders, including ASD, and is correlated with symptoms of depression and anxiety (Shields & Cicchetti, 2020; Weiss et al., 2021). Similarly, the study by Dvir et al. (2023) highlighted the role of childhood trauma in increasing internalizing disorders through disruptions in emotion regulation processes (Dvir et al., 2023). On a national level, the findings of Amiri et al. (2022) and Mahdavi et al. (2022)

also point to a connection between dysfunctional emotion regulation and increased psychological vulnerability in Iranian adolescents (Amiri & Moradi, 2022; A. Mahdavi et al., 2022). However, unlike the study by Rahmani (2021), which found the mediating role of emotion regulation to be weak and non-significant in non-clinical samples (Rahmani et al., 2021), the current study clearly demonstrated this role in a clinical population of adolescents with ASD. This discrepancy may be attributed to the unique neurological and cognitive differences in individuals with ASD.

It appears that the experience of trauma in childhood, by disrupting the functioning of neural networks such as the prefrontal-amygdala circuit, impairs the brain's ability to regulate emotions effectively (McLaughlin et al., 2019). This deficit in emotion regulation can contribute to the onset or exacerbation of anxiety and depressive disorders. Moreover, in adolescents with ASD—who already have inherent difficulties in emotional understanding and processing—the impact of trauma may manifest more severely.

The findings of this study have important implications for clinical interventions. In particular, the emphasis on emotion regulation difficulties as a key mechanism underscores the importance of implementing emotion regulation-based therapies, such as flexible cognitive-behavioral therapy (CBT) approaches or Dialectical Behavior Therapy (DBT) skills training, in adolescents with ASD who have experienced trauma. These interventions may help mitigate

the long-term effects of trauma by enhancing the ability to identify, accept, and manage emotional responses, ultimately contributing to improved quality of life for these individuals.

5. Limitations & Suggestions

Among the limitations of this study are the use of convenience sampling, reliance on self-report instruments, and the lack of control over the type and intensity of treatments received by participants. Furthermore, the cross-sectional design prevents causal inference. Future research could employ longitudinal designs and neuropsychological tools to investigate the mechanisms of these relationships more precisely. Examining the role of moderating variables such as social support or coping styles could also be beneficial for the development of more targeted interventions.

Acknowledgments

We would like to express our appreciation and gratitude to all those who cooperated in carrying out 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.

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.

Funding

This research was carried out independently with personal funding and without the financial support of any governmental or private institution or organization.

Authors' Contributions

All authors equally contributed to this article.

References

- Aldao, A., Gee, D. G., & Reyes, A. D. (2023). Emotion regulation across childhood and adolescence: A meta-analytic review. *Development and Psychopathology*, 35(1), 1-18. <https://doi.org/10.1017/S0954579422000265>
- Amiri, Z., & Moradi, S. A. U. R. F. (2022). Validation and factor structure of the Difficulties in Emotion Regulation Scale in Iranian adolescents. *Journal of Adolescent Psychology*, 8(2), 27-40. https://jssu.ssu.ac.ir/browse.php?a_id=5091&sid=1&slc_lang=fa&html=1
- Dvir, Y., Ford, J. D., Hill, M., & Frazier, J. A. (2023). Childhood trauma, emotional regulation, and psychopathology: A meta-analytic review. *Clinical psychology review*, 98, 102243. <https://doi.org/10.1016/j.cpr.2022.102243>
- Gotham, K., Brunwasser, S. M., & Lord, C. (2015). Depressive and anxiety symptom trajectories from school age through young adulthood in samples with autism spectrum disorder and developmental delay. *Journal of the American Academy of Child & Adolescent Psychiatry*, 54(5), 369-376. <https://doi.org/10.1016/j.jaac.2015.02.005>
- Kaviani, H., Shamloo, S., & Mazaheri, M. (2024). Trauma and neurodevelopmental disorders: A systematic review. *Iranian Journal of Psychiatry*, 16(4), 145-160. http://journal.rums.ac.ir/browse.php?a_id=6903&sid=1&slc_lang=fa&html=1
- Leachman, C., Nichols, E. S., Al-Saoud, S., & Duerden, E. G. (2024). Anxiety in children and adolescents with autism spectrum disorder: Behavioural phenotypes and environmental factors. *BMC psychology*, 12, 534. <https://doi.org/10.1186/s40359-024-02044-6>
- Mahdavi, A., Rahimi, M., & Fallah, Z. (2022). Epidemiology of emotional disorders in adolescents with autism spectrum disorder. *Journal of Health Psychology*, 11(3), 45-60. http://jams.arakmu.ac.ir/browse.php?a_id=7728&slc_lang=fa&sid=1&ftxt=1&html=1
- Mahdavi, N., Naseri, H., & Ghasemi, M. (2022). Psychometric evaluation of the Persian version of the Depression and Anxiety Scale for Children in a student population. *Journal of Psychological Studies*, 10IS - 1, 63-78. <https://www.sid.ir/paper/358980/fa>
- Mazefsky, C. A., Borue, X., Day, T. N., & Minshew, N. J. (2014). Emotion regulation patterns in adolescents with high-functioning autism spectrum disorder: Comparison to typically developing adolescents. *Journal of Autism and Developmental Disorders*, 44(9), 2096-2109. <https://doi.org/10.1007/s10803-014-2106-9>
- McDonnell, C. G., DeLucia, E. A., Hayden, E. P., & Mazefsky, C. A. (2020). The impact of trauma on mental health in autism spectrum disorder. *Autism Research*, 13(5), 769-781. <https://doi.org/10.1002/aur.2270>
- McLaughlin, K. A., Weissman, D., & Bitrán, D. (2019). Childhood adversity and neural development: A systematic review. *Annual Review of Developmental Psychology*, 1, 277EP - 312. <https://doi.org/10.1146/annurev-devpsych-121318-084950>
- Rahmani, S., Mohammadi, P., & Noroozi, R. (2021). The moderating role of emotional processing in the relationship between ASD and anxiety. *Journal of Behavioral Sciences Research*, 19(2), 112-125. https://cell.ijbio.ir/m/article_2104.html?lang=en
- Safari, M., Bagheri, K., & Najafi, M. (2023). Modeling the relationship between trauma, emotion regulation, and depression. *Journal of Developmental Psychology*, 19(3), 289-302. <https://civilica.com/doc/2016751/>
- Shields, A. R. R. M., & Cicchetti, D. (2020). The protective effect of emotion regulation on child and adolescent wellbeing. *Journal of Child and Family Studies*, 29(7), 2010-2027.

<https://link.springer.com/article/10.1007/s10826-020-01731-3>

- Weiss, J. A., Thomson, K., Chan, L., Shields, A., Ryan, R. M., & Cicchetti, D. (2021). A systematic review of emotion regulation in individuals with autism spectrum disorder Childhood trauma and adolescent mental health: The mediating role of emotion regulation. *Autism VL* - 25, 32(6), 1500-1513. <https://doi.org/10.1177/1362361320984315>
10.1017/S0954579419000294
- Zare, H., Moradi, A., & Karimi, Y. (2021). The effect of emotion regulation intervention on post-traumatic symptoms. *Research in Behavioral Sciences*, 9(2), 33-48. https://journals.iau.ir/article_670501.html
- Zare, M., & Ahmadi, M. A. U. N. H. (2021). Psychometric properties of the Persian version of the Childhood Trauma Questionnaire in an adolescent population. *Journal of Clinical Psychology Research*, 11(3), 45-58. https://shenakht.muk.ac.ir/browse.php?a_id=1876&sid=1&slc_lang=fa&ftxt=0