

# The Relationship Between Post-Traumatic Stress Disorder and Autism for Children Under 10 Years, Parents' Perspective: A Case Control Study

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## ABSTRACT

**Background:** Post-Traumatic Stress Disorder (PTSD) occurs as a result of exposure to stressful events such as assaults, accidents, and disasters and poses a significant risk to a child's mental health. Children with Autism Spectrum Disorder (ASD) are at a higher risk of developing PTSD compared to their neurotypical peers. This research aimed to investigate the correlation between PTSD & ASD in children under 10 years old.

**Methodology:** A case-control study was conducted in Karbala Governorate from October 2024 to February 2025 among 80 autistic children and 160 non-autistics children. Data were obtained using a standardized questionnaire form of the Child PTSD Symptom Scale for DSM-V (CPSS-V SR) administered to cases and controls through direct interviews with the parents of the children. The questionnaire includes four domains (socio-demographic characteristics, family medical history, frightening or stressful events, and child PTSD symptom scale).

**Results:** Indicated that autistic children were 4.33 times more likely to develop PTSD than non-autistic children with a confidence interval (1.264-14.859), which is statistically significant. Prevalence rates of probable PTSD were 10% among cases and 2.5% among controls. The probable PTSD diagnosis was higher among females (5.9%) than males (4.5%). The age group of 8-9 years showed the highest rate, accounting for 66.66% of probable PTSD cases. Stepwise regression analyses revealed several variables as highly significant predictors of PTSD diagnosis in children.

**Conclusion:** Post-traumatic stress disorder was four times more likely to develop in autistic children compared to non-autistic children, with females being more susceptible than males, and older children at a greater risk of developing PTSD than their younger counterparts.

**Keywords:** Autism Spectrum Disorder, Post-Traumatic Stress Disorder, Gender Differences, CPSS-V SR

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## INTRODUCTION

The correlation between post-traumatic stress disorder (PTSD) and autism spectrum disorder (ASD) has gained more attention recently, especially because children with ASD have unique experiences that affect how they respond to stress. Autism Spectrum Disorder is a group of ongoing neurodevelopmental conditions that impact social skills, communication (both verbal and non-verbal) and include repetitive or stereotyped behaviors and interests. These challenges can affect an individual's daily life to varying degrees, from moderate to significant.<sup>1,2</sup>

Post-Traumatic Stress Disorder is a mental health disorder that appears in people who have experienced or witnessed traumatic events, which can include physical or emotional harm or even death, such as battle, natural catastrophes, or interpersonal violence. The emotional, physical, social, and spiritual well-being of individuals may be significantly impacted by such occurrences.<sup>3</sup> Also, depression, anxiety, flashbacks, and an increased risk of suicide are symptoms that define post-traumatic stress disorder.<sup>4</sup>

Children and adolescents with ASD are more likely to be bullied and victimized because they have trouble with social skills, such as being too naive about social situations and not being able to read social cues. The data showed that 95% of kids with ASD had been victims at some time in their lives and 72% had been victims in the past year. 75% of these incidences happened at school. Parents also said that 80% of kids with ASD had anxiety symptoms.<sup>5</sup> Research shows that children with ASD are more likely to have PTSD than their neurotypical counterparts. A new study found that roughly 21% of kids with ASD had PTSD, while only 4% of kids with typically developing (TD) have it.<sup>6</sup> It is thought that this higher rate is due to more exposure to stressful situations, like bullying and traumatic events that happened when they were kids. A different study found a strong link between PTSD hyperarousal symptoms and autism symptoms. This means that children with ASD may be more likely to show similar signs.<sup>7</sup> It might be hard to tell if a child has PTSD if they also have ASD because both conditions can cause anxiety, hyperactivity, and trouble with social situations. Some kids with ASD also have trouble with language which makes it hard for doctors to get important information about what happened to them. This often results in wrong diagnoses.<sup>8</sup> Even if PTSD symptoms go away, they may still cause other mental health issue.<sup>9</sup> Children with PTSD are more likely to have disabilities and have trouble in school and at work than healthy children.<sup>10</sup>

Children with ASD require specialized therapeutic approaches that take into account their particular needs when treating PTSD. Although behavioral therapies like trauma-focused cognitive behavioral therapy (TF-CBT) have shown promise, they frequently need to be modified to accommodate children

with ASD who might find it difficult to express their traumatic experiences.<sup>11</sup> This study aimed to examine the correlation between post-traumatic stress disorder (PTSD) and autism spectrum disorder (ASD) in children under the age of 10.

## METHODOLOGY

**Study Design and Setting:** From the end of October 2024 to the end of February 2025, a case-control study was carried out in the Karbala Governorate, with controls being kindergartens and primary schools and cases being Al-Sabtain Academy for Autism and Developmental Disorders. Every participant came from the same area. Both groups' participants were chosen at random using the Fifth Diagnostic and Statistical Manual of Mental Disorders' (DSM-5) definition of autism.

**Data Collection Tools:** Study data were obtained using a standardized questionnaire form of the Child PTSD Symptom Scale for DSM-5 (CPSS-5 SR)<sup>12</sup>, administered to both cases and controls. The questionnaire includes four domains: socio-demographic characteristics, family medical history, frightening or stressful events, and the Child PTSD Symptom Scale for DSM-5 (CPSS-5 SR). The study's reliability was tested using Cronbach's alpha ( $\alpha = 0.913$ ). The researcher completed all parts of the questionnaire by conducting direct interviews with the parents of the children.

**Eligibility criteria:** Children aged less than 10 years from both sexes and residents of Karbala Governorate whose parents were able to offer verbal consent and willing to participate were included in the study. To ensure a homogeneous sample and accurately analyze the relationship between ASD and PTSD, children with other developmental disorders (e.g., ID, ADHD, SLD, Communication and Motor Disorders) were excluded, as their differing responses to trauma could confound results and reduce the study's validity. Children whose parents provided incomplete information during the questionnaire were also excluded from the analysis.

**Study Population and Sample Size:** Autistic and non-autistic children aged less than 10 years who attend Al-Sabtain Academy for Autism and Developmental Disorders as cases and kindergartens and primary schools as controls. The sample comprises 240 participants with a 2:1 control/case ratio, matched for age and sex. The autistic group included 80 children, and the control group included 160 non-autistic children.

The formula for calculating sample size was applied.

$$n \text{ (each group)} = \frac{(p_0q_0 + p_1q_1)(z_{1-\alpha/2} + z_{1-\beta})^2}{(p_1 - p_0)^2}$$

Thus, the required sample size for each group is 61 participants. After accounting for a 20% dropout rate, the adjusted sample size for each group was a minimum of 76 participants, which was rounded to

80. For the control group the samples were taken double that the case group to keep ration of 1:2 for cases and controls.

**Statistical analysis:** The collected data were presented using frequencies, percentages, and means. The Mann-Whitney test was used for nonparametric data. Stepwise regression analysis was conducted to identify risk factors related to PTSD. The Odds Ratio (OR) measured the association between exposure (PTSD) and outcome (Autism). Additionally, a one-way ANOVA test was used to examine the effects of PTSD. Significance was tested using the Pearson Chi-square test ( $\chi^2$ -test), with statistical significance considered at a P-value of less than 0.05. Data analysis was performed using the Statistical Package for the Social Sciences (SPSS) version 28.<sup>13</sup>

**Ethical approval:** All required permissions and clearances were obtained by the College of Health and Medical Technologies Ethics Research Committee in Kufa/Al-Furat Al-Awsat Technical University (7/37/4833 and 7/37/4832 in 21/10/2024). Official permission was obtained from Al-Sabtain Academy for Autism and Developmental Disorders and the Karbala Holy Education Directorate.

RESULTS

Out of 240 participants, 78.8% were male in both groups, with no significant gender difference. The mean  $\pm$  SD of age in years was  $6 \pm 2$ , and the number of siblings was  $2 \pm 1$  in both groups, with no significant differences ( $p = 1.000$  for gender and age;  $p = 0.516$  for siblings). Regarding education, 100% of the autistic children were not attending school, while the control group had varying levels of education: 49.4% in kindergarten, 18.1% in first grade, 9.4% in second grade, and 23.1% in third grade. This difference in educational status was significant ( $p < 0.001$ ). In terms of family structure, 88.8% of autistic children lived with both parents, compared to 97.5% of controls, while 10% of autistic children lived with their mother only, compared to 1.3% of controls. This difference was significant ( $p = 0.006$ ). Both groups had 83.8% living in urban areas, with no significant differences in residence type (urban vs. rural) or housing status (owned, rented, or other) between the two groups ( $p > 0.05$ ), as shown in Table 1.

The data presented in table 2 show that probable PTSD occurs in 10% of cases compared to only 2.5% of controls, indicating that autistic children are 4.33 times more likely to develop PTSD than non-autistic children. This finding is statistically significant, supported by a confidence interval of 1.264 to 14.859, demonstrating a strong association between autism and increased PTSD risk.

As overall predicted for the study sample, using the stepwise regression analyses identified several variables as highly significant predictors of PTSD diagnosis in children.

Table 1: Distribution of study sample according to the demographic characteristics

Variable	Controls (n=160)(%)	Cases (n=80)(%)	*P-value
<b>Child's Gender</b>			
Male	126 (78.8)	63 (78.8)	0.999
Female	34 (21.3)	17 (21.3)	
Child's Age@	$6 \pm 2$	$6 \pm 2$	0.999
No. of Siblings@	$2 \pm 1$	$2 \pm 1$	0.516
<b>Child's Educational Level</b>			
Not study	0 (0.0)	80 (100.0)	<0.001
Kindergarten	79 (49.4)	0 (0.0)	
First grade	29 (18.1)	0 (0.0)	
Second grade	15 (9.4)	0 (0.0)	
Third grade	37 (23.1)	0 (0.0)	
<b>Child Lives With</b>			
Grandparents	0 (0.0)	0 (0.0)	0.006
Mother only	2 (1.3)	8 (10.0)	
Father only	2 (1.3)	1 (1.3)	
Parents	156 (97.5)	71 (88.8)	
<b>Residence</b>			
Urban	134 (83.8)	67 (83.8)	0.999
Rural	26 (16.3)	13 (16.3)	
<b>Type of Housing</b>			
Other	13 (8.1)	5 (6.3)	0.596
Rent	37 (23.1)	23 (28.7)	
Own	110 (68.8)	52 (65.0)	

\*Chi-square test was applied with a significant level of 0.05; †t-test was applied with a significant level of 0.05. @ Mean  $\pm$  SD

Table 2: PTSD diagnosis Status among study sample

PTSD Diagnosis Status	Controls	Cases
Not PTSD	156(97.5%)	72(90%)
Probable PTSD	4(2.5%)	8(10%)
Total	160(100%)	80(100%)

OR (95% CI) = 4.33 (1.264-14.859)

Psychiatric disorders were the strongest predictor ( $\beta = 0.383$ ,  $p < 0.001$ ), followed by injuries sustained in sports ( $\beta = 0.326$ ,  $p < 0.001$ ), severe natural disaster stress ( $\beta = 0.330$ ,  $p < 0.001$ ), developmental disorders ( $\beta = 0.064$ ,  $p = 0.001$ ), and witnessing the punishment of a stranger ( $\beta = 0.134$ ,  $p = 0.003$ ). Conversely, the child's living situation showed a negative relationship with PTSD ( $\beta = -0.071$ ,  $p = 0.010$ ), suggesting it may serve as a protective factor against developing PTSD, as in table 3.

The results of a stepwise regression analysis identifying significant predictors of post-traumatic stress disorder (PTSD) diagnosis in two groups, cases (people diagnosed with PTSD) and controls (people without PTSD), were presented in table 4.

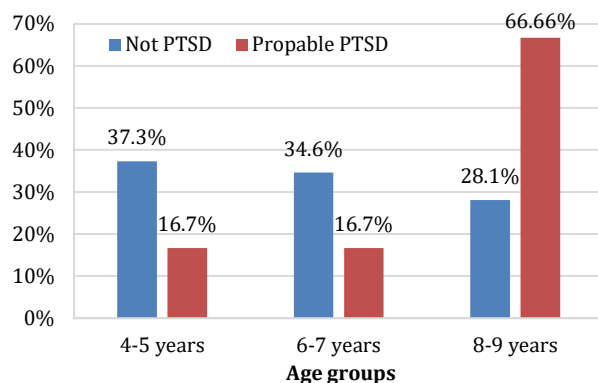
Figure (1) illustrate the distribution of PTSD diagnosis status by age groups, where the probable PTSD diagnosis is highest among the 8–9 years group, accounting for 66.66% of probable cases, and equal at 16.7% among the 4–5 years and 6–7 years groups.

**Table 3: Stepwise regression analyses for the diagnosis status of post-traumatic stress disorder**

Variable	B	Std. Error	Beta	t	P Value
Constant	0.283	0.108	-	2.624	0.009
Psychiatric Disorders	0.144	0.023	0.327	6.352	0.000
Sports-related injury	0.619	0.099	0.316	6.283	0.000
Severe natural disaster (e.g., fire, lightning)	0.622	0.098	0.317	6.362	0.000
Developmental Disorders	0.049	0.019	0.135	2.622	0.009
Witnessing a stranger being punished	0.137	0.044	0.157	3.105	0.002
Child Lives With	- 0.071	0.027	- 0.135	-2.607	0.01

**Table 4: Stepwise regression analyses for the diagnosis status of PTSD among cases and controls**

Variable	B	Std. Error	Beta	t	P Value
<b>Cases</b>					
(Constant)	0.571	0.164	-	3.473	0.001
Sports-related injury	0.981	0.157	0.511	6.245	0.000
Severe natural disaster (e.g., fire, lightning)	0.981	0.221	0.363	4.449	0.000
Child Lives With	-0.138	0.042	-0.279	-3.253	0.002
Psychiatric Disorders	0.081	0.035	0.200	2.333	0.022
<b>Controls</b>					
(Constant)	0.006	0.008	-	0.659	0.51
Psychiatric Disorders	0.355	0.028	0.667	12.617	0.000
Severe natural disaster (e.g., fire, lightning)	0.494	0.074	0.352	6.659	0.000

**Figure 1: Distribution of PTSD diagnosis status by age groups**

## DISCUSSION

The relationship between post-traumatic stress disorder (PTSD) and autism spectrum disorder (ASD) is complex, especially in children under ten. During this developmental stage, children experience various events and traumas that influence their lives. For children with autism, the situation becomes more challenging due to overlapping symptoms between autism and PTSD. Research shows that children with autism are more vulnerable to PTSD than typically developing children.

The results indicate that autistic children were 4.33 times more likely to develop PTSD than non-autistic children, with a confidence interval of 1.264 to 14.859, showing high statistical significance. This may be related to the difficulties faced by both the child and the parents, including the child's inability to express himself and challenges in communication with family and others. Furthermore, the study shows a high prevalence rate of 10% for PTSD among autistic children, compared to 2.5% in non-

autistic children, this similar to a research in New York University, USA by Haruvi-Lamdan et al, in 2020<sup>14</sup> which showed a high rate in the Autism Spectrum Disorder group (32%) compared with the typical group (4%), and is also compatible with a systematic review by Rumball F et al.<sup>6</sup> showing 21% among autistic and 4% non-autistic children, perhaps the people with Autism Spectrum Disorder experience more symptoms of Post-Traumatic Stress Disorder, especially re-experiencing trauma and heightened physiological arousal, compared to typical adults. However, increased physiological arousal was only higher in females with autism spectrum disorder, which matches our results showing PTSD diagnosis more among females (5.9%) than males (4.5%). This may be due to differences in coping between males and females and aligns with Haruvi-Lamdan N et al.'s findings<sup>14</sup> which indicated females are more vulnerable to PTSD than males. Other research in Iraq by AlShawi AF<sup>15</sup>, among internally displaced people found that 66% of those with PTSD were females. The age group of 8-9 years had the highest rate of probable PTSD cases (66.66%). Cognitive maturity and emotional awareness at an older age could explain the increased internalization of traumatic experiences, making older children more susceptible to PTSD. This aligns with Haruvi-Lamdan N et al. (2020), who demonstrated that children with ASD face difficulties related to emotional regulation and coping mechanisms, which increase their risk of PTSD.<sup>14</sup> Consequently, our result indicated a significant association between probable PTSD and symptom severity (P=0.000). This finding is consistent with clinical reasoning, as greater symptom severity is associated with a higher likelihood of an accurate diagnosis. These results are consistent with previous literature by Asnaani A et al. (2021), which confirmed that symptom severity is associated with an increased likelihood of confirming the diagnosis.<sup>16</sup>



The stepwise regression analyses identified several significant predictors of PTSD diagnosis in the study sample. Psychiatric disorders were the strongest predictor [ $\beta = 0.383$ ,  $p < 0.001$ ], consistent with results by B. El-Khodary B et al. (2020), who indicated that psychological problems in the family may serve as predictors of PTSD development.<sup>17</sup> This may be related to impair family skills in managing the events and situations the child experiences, which can exacerbate the condition. Sports injuries ( $\beta = 0.326$ ,  $p < 0.001$ ) also showed a potential risk for developing post-traumatic stress disorder. This finding aligns with studies by Stewart GR<sup>18</sup> in 2022, Jeong L<sup>19</sup> in 2024 and Yang SX<sup>20</sup> in 2022, which found that physical injuries, especially those involving severe pain or long recovery periods can have a significant psychological impact on children. This is partly due to children's limited exposure to such situations, leading to heightened perceptions of danger and a developmental response appropriate for their age and coping abilities.

Severe natural disaster stress [ $\beta = 0.330$ ,  $p < 0.001$ ] appears to be a more predictive factor for PTSD development among children than other traumatic events. This is in line with the study by Molua CO (2021), which indicates that natural disasters are increasing in frequency and severity and have widespread mental health consequences.<sup>21</sup> Regarding developmental disorders in the child or a family member, the possibility of developing PTSD was also demonstrated ( $\beta = 0.064$ ,  $p = 0.001$ ). This is consistent with findings by Song Y et al (2024), who reported that children with autism spectrum disorder or attention deficit hyperactivity disorder (ADHD) have a reduced ability to cope with sudden changes and psychological shocks. Families with a child suffering from a developmental disorder may experience greater psychological stress, increasing their risk of PTSD.<sup>22</sup> This stress is often compounded by stigma, leading to harsh and neglectful treatment of the child, worsening the situation. Additionally, the child may struggle more with these challenges compared to typically developing children.

Meanwhile, the stepwise regression indicated that witnessing a stranger being punished or subjected to other forms of violence ( $\beta = 0.134$ ,  $p = 0.003$ ) had a significant effect on PTSD development among children. This is consistent with research by Kemal S et al. (2023), which found that indirect exposure to violence can have effects similar to direct exposure, potentially leading to mental health consequences in youth, although the effects may differ based on the type of exposure.<sup>23</sup> This is especially true for children with autism, as autistic children react differently to events than their typical counterparts, exhibiting more severe symptoms such as fear, avoidance, and hyperarousal.

The child's living status appears to have a negative relationship with PTSD ( $\beta = -0.071$ ,  $p = 0.010$ ), where most children living with their parents showed a lower risk of developing PTSD. This finding

is supported by Echeburúa E and Amor PJ (2022), who found that children living in safe and supportive environments are less likely to develop PTSD due to the emotional support they receive from their families.<sup>24</sup> The results emphasize the critical role of psychological and environmental factors in understanding PTSD in children, especially those with autism. Due to the limited research on this group, there is an urgent need to create specialized diagnostic tools and develop preventive and therapeutic strategies to better support autistic children and improve their coping skills.

## CONCLUSION

Post-traumatic stress disorder was four times more likely to develop in autistic children compared to non-autistic children, with females showing greater susceptibility than males. Additionally, older children were at higher risk of developing PTSD than their younger counterparts, and children with probable PTSD exhibited more severe symptoms than those without the disorder.

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**Availability of Data and Material:** Data generated during this study are available from the corresponding author upon reasonable request.

**Authors' Contributions:** AHA contributed to the completion of the practical part as well as the discussion section. MSA contributed by writing the introduction and the abstract, completing the statistical analysis of the data, and writing the research methods and references.

**No use of generative AI tools:** This article was prepared without the use of generative AI tools for content creation, analysis, or data generation. All findings and interpretations are based solely on the authors' independent work and expertise.

## REFERENCES

1. Hirota T, King BH. Autism Spectrum Disorder: A Review. JAMA. 2023;329(2):157-168. DOI: <https://doi.org/10.1001/jama>.

- 2022.23661 PMID:36625807
2. American Psychiatric Association. Diagnostic and statistical manual of mental disorders: DSM-5. 5th ed. Arlington (VA): American Psychiatric Publishing; 2013. DOI: <https://doi.org/10.1176/appi.books.9780890425596>
3. Mavranzeouli I, Megnin Viggars O, Daly C, et al. Psychological and psychosocial treatments for children and young people with PTSD: a network meta-analysis. *J Child Psychol Psychiatry*. 2020;61(1):18-29. DOI: <https://doi.org/10.1111/jcpp.13094> PMID:31313834
4. Sareen J. Posttraumatic stress disorder in adults: impact, comorbidity, risk factors, and treatment. *Can J Psychiatry*. 2014;59(9):460-467. DOI: <https://doi.org/10.1177/070674371405900902> PMID:25565692 PMCID:PMC4168808
5. Paul A, Gallot C, Lelouche C, Bouvard MP, Amestoy A. Victimization in a French population of children and youths with autism spectrum disorder: a case control study. *Child Adolesc Psychiatry Ment Health*. 2018;12:48. DOI: <https://doi.org/10.1186/s13034-018-0256-x> PMID:30524501
6. Rumball F, Parker R, Madigan AE, Happe F, Spain D. Elucidating the presentation and identification of PTSD in autistic adults: a modified Delphi study. *Adv Autism*. 2024;10(3):163-184. DOI: <https://doi.org/10.1108/AIA-08-2023-0053>
7. Haruvi-Lamdan N, Horesh D, Golan O. PTSD and autism spectrum disorder: co-morbidity, gaps in research, and potential shared mechanisms. *Psychol Trauma*. 2018;10(3):290-299. DOI: <https://doi.org/10.1037/tra0000298> PMID:28726442
8. Hollocks MJ, Lerh JW, Magiati I, Meiser-Stedman R, Brugha TS. Anxiety and depression in adults with autism spectrum disorder: a systematic review and meta-analysis. *Psychol Med*. 2019;49(4):559-572. DOI: <https://doi.org/10.1017/S0033291718002283> PMID:30178724
9. Morina N, Wicherts JM, Lobrecht J, Priebe S. Remission from post-traumatic stress disorder in adults: a systematic review and meta-analysis of long-term outcome studies. *Clin Psychol Rev*. 2014;34(3):249-255. DOI: <https://doi.org/10.1016/j.cpr.2014.03.002> PMID:24681171
10. Polimanti R, Ratanatharathorn A, Maihofer AX, Choi KW, Stein MB, Morey RA, et al. Association of economic status and educational attainment with posttraumatic stress disorder: a Mendelian randomization study. *JAMA Netw Open*. 2019; 2(5): e193447. DOI: <https://doi.org/10.1001/jamanetworkopen.2019.3447> PMID:31050786 PMCID:PMC6503495
11. Peterson JL, et al. Trauma and autism spectrum disorder: review, proposed treatment adaptations and future directions. *J Child Adolesc Trauma*. 2019;12(4):529-547. DOI: <https://doi.org/10.1007/s40653-019-00253-5> PMID:31819782
12. Foa EB, Asnaani A, Zang Y, Capaldi S, Yeh R. Psychometrics of the Child PTSD Symptom Scale for DSM-5 for trauma-exposed children and adolescents. *J Clin Child Adolesc Psychol*. 2018;47(1):38-46. DOI: <https://doi.org/10.1080/15374416.2017.1350962> PMID:28820616
13. IBM Corp. IBM SPSS Statistics for Windows, Version 28.0. Armonk (NY): IBM Corp; 2021.
14. Haruvi-Lamdan N, Horesh D, Zohar S, Kraus M, Golan O. Autism spectrum disorder and post-traumatic stress disorder: an unexplored co-occurrence of conditions. *Autism*. 2020; 24(4): 884-898. DOI: <https://doi.org/10.1177/1362361320912143> PMID:32245333
15. AlShawi AF. Prevalence of posttraumatic stress disorders among a sample of internally displaced persons in Iraq: a preliminary study. *J Community Med Health Educ*. 2018;8(2):599. DOI: <https://doi.org/10.4172/2161-0711.1000599>
16. Asnaani A, et al. An innovative mobile game for screening of pediatric PTSD: a study in primary care settings. *J Child Adolesc Trauma*. 2021;14(3):357-366. DOI: <https://doi.org/10.1007/s40653-020-00300-6> PMID:34471454
17. El-Khodary B, Samara M, Askew C. Traumatic events and PTSD among Palestinian children and adolescents: the effect of demographic and socioeconomic factors. *Front Psychiatry*. 2020;11:4. DOI: <https://doi.org/10.3389/fpsy.2020.00004> PMID:32296346 PMCID:PMC7137754
18. Stewart GR, et al. Traumatic life experiences and post-traumatic stress symptoms in middle-aged and older adults with and without autistic traits. *Int J Geriatr Psychiatry*. 2022; 37(2):e5669. DOI: <https://doi.org/10.1002/gps.5669>
19. Jeong L, Li D. Psychological well-being from sports injuries in adolescence: a narrative review. *Cureus*. 2024;16(7):e64018. DOI: <https://doi.org/10.7759/cureus.64018>
20. Yang SX, Cheng S, Su DL. Sports injury and stressor-related disorder in competitive athletes: a systematic review and a new framework. *Burn Trauma*. 2022;10:tkac017. DOI: <https://doi.org/10.1093/burnst/tkac017> PMID:35702266
21. Molua CO. Impact of natural disasters on mental health and behavioral changes. *J Ment Heal Issues Behav*. 2021;1(2):21-33. DOI: <https://doi.org/10.55529/Jmhib.12.21.33>
22. Song Y, Zhao Y, Baranova A, Cao H, Yue W, Zhang F. Causal association of attention-deficit/hyperactivity disorder and autism spectrum disorder with post-traumatic stress disorder. *Psychiatr Genet*. 2024;34(2):37-42. DOI: <https://doi.org/10.1097/YPG.0000000000000357> PMID:38288984
23. Kemal S, Nwabuo A, Hoffmann J. Mental health and violence in children and adolescents. *Pediatr Clin North Am*. 2023;70(6):1201-1215. DOI: <https://doi.org/10.1016/j.pcl.2023.06.011> PMID:37865440
24. Echeburúa E, Amor PJ. Keys to emotional well-being and resilience in minors who have suffered trauma. *Ansiedad y Estrés*. 2022;28(3):153-159. DOI: <https://doi.org/10.5093/anyes2022a18>