

Trauma Characteristics and Risk Factors of Posttraumatic Stress Disorder in Children and Adolescents

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Abstract

Introduction: Exposure to traumatic occurrences followed by intrusive thoughts is Post-traumatic stress disorder (PTSD). Children and adolescents may experience this disease differently. This study aimed to assess trauma characteristics and risk factors related to PTSD in children and adolescents.

Methods: We searched online databases such as Web of Science, PubMed, Scopus, and Google Scholar from April 2013 to May 2023. Two authors separately screened, assessed, and included the studies, and senior reviewers resolved disagreement. This systematic review evaluated factors for PTSD in children and adolescent patients aged 6 to 18 years. Sample size, trauma type, severity, risk factors, measure of PTSD, sex, age, and study location were included

Results: Risk factors for PTSD can be divided into pre-, peri-, and post-trauma risk factors. Pre-trauma factors include sex, race, ethnicity, socioeconomic status, and age. Per-trauma factors include the severity of the trauma, being trapped during the trauma, cumulative exposure to potentially traumatic experiences, dissociation, sexual abuse, being injured, witnessing injury or death, and bereavement. Post-trauma risk factors included low social support, peri-trauma fear, perceived life threats, social withdrawal, comorbid psychological problems, low-income family, distraction, PTSD at time 1, and thought suppression

Conclusion: Characteristics such as the trauma severity or exposure level consistently can anticipate following PTSD levels. Risk factors can increase the likelihood of developing PTSD. There are concerns that someone with risk factors may develop PTSD, so it is essential to seek professional help. A mental health professional can assess your symptoms and provide treatment options. Classifying PTSD based on the type of trauma, the location, and the relationship with PTSD requires further studies.

Keywords: Posttraumatic stress disorder, PTSD, children, adolescents, Trauma.

Introduction

Psychological responses of adolescents, such as PTSD, depression, anxiety, and behavior problems, do occur. PTSD can be a complex and chronic disorder that commonly co-occurs with other illnesses, including anxiety, mood, and substance use disorders¹⁻³. PTSD includes exposure to a traumatic occurrence followed by intrusive thoughts⁴. PTSD Symptoms can generate significant distress and interrupt social and educational functioning. This disease can be incident differently between children and adolescents⁵.

Unfortunately, trauma is prevalent in young people and is one of the leading causes of adolescent death⁶. Also, children and adolescents are more likely to be exposed to potentially traumatic events, placing them at risk for PTSD symptoms⁷. The reasons for PTSD are not fully comprehended, with pre-trauma, peritraumatic, and posttrauma factors thought to interplay in complicated patterns, so some people develop the disease after a traumatic experience⁸. Identifying such risk or protective factors is essential to

enhance prediction and potential prevention techniques⁹⁻¹⁷.

Characteristics that make a child more likely to develop traumatic distress are of academic and clinical interest. Firstly, if clinicians understand which adolescents are most likely to be adversely affected following exposure to events, then those adolescents can be most closely monitored to provide therapy as necessary before problems evolve chronically. The study aimed to assess trauma injury factors related to PTSD in children ND adolescents.

Methods

Published English-language reports in online databases were included from 2010 to 2023. Online databases such as Embase, PubMed, and Web of Science were searched for systematic reviews and meta-analyses of observational studies regarding risk factors for PTSD in children and adolescents. Keywords and terms included suitable combinations of posttraumatic stress disorder, or posttraumatic stress disorder, PTSD; child, children, or adolescent; and predictor, risk, prediction, or predisposition.

A risk factor or predictor was operationally described as any variable investigated as potentially contributing to variability in PTSD symptom class or diagnostic status.

We included studies that have used estimates of adolescent PTSD that considered all three PTSD symptom clusters (avoidance/numbing, intrusion, and hyperarousal), and the PTSD tool should have adequate reliability and validity as shown in psychometric properties. Case reports, reviews, and letters were excluded. Also, the study's primary purpose was to research therapy effectiveness, which was excluded. Two authors independently screened records for titles, abstracts, and methodological validity utilizing a data extraction format before inclusion in the final examination. During the judging stage, discussions with senior faculty were used to resolve judge disagreements.

Results

We included nine records containing results from 319 individual studies of 243658 individuals. These investigations assessed a total of around 45 individual possible risk factors⁹⁻¹⁷. The most frequent reason to exclude personal records was the lack of ICD/DSM

diagnoses evaluated with a validated diagnostic interview. Most studies evaluated variables in trauma-exposed individuals.

Table 1 illustrates the main features of the studies, including the type of traumatic incident and risk factors studied⁹⁻¹⁷.

Pre-trauma risk factors

Sociodemographic risk factors are related to a person's social and economic status. These factors include gender, race, ethnicity, socioeconomic status, and age. Pre-trauma risk factors are factors that are present before a traumatic event occurs. These factors can include a history of trauma, mental illness, and a family history of mental illness. These risk factors can increase a person's chances of developing PTSD after experiencing a traumatic event. However, it is essential to remember that not everyone who experiences a traumatic event will develop PTSD. Many other factors can contribute to the development of PTSD, such as the severity of the trauma, the person's coping mechanisms, and the availability of social support. Adversity during childhood and previous traumatic experiences were reported as risk factors. Childhood abuse was also a risk factor for PTSD⁹⁻¹⁷.

Peritraumatic risk factors

Trauma severity: The more severe the trauma, the more likely someone will develop PTSD. This is because more severe traumas are likely to cause intense fear, helplessness, and horror, all risk factors for PTSD. Being trapped during an earthquake: Trapped during a traumatic event can be a very isolating and frightening experience, which can increase the risk of developing PTSD.

Cumulative exposure to potentially traumatic experiences: People who have been exposed to multiple traumatic experiences are more likely to develop PTSD than people who have only been exposed to one traumatic experience. This is because repeated exposure to trauma can make it more challenging to cope with subsequent traumas. Dissociation: Dissociation is a mental state in which people feel detached from themselves or their surroundings. It can occur during or after a traumatic event and is a risk factor for PTSD. Being injured: Being injured during a traumatic event can increase the risk of developing PTSD. This is because injuries can be a reminder of the trauma, and they can also lead to physical pain and disability, which can make it difficult to cope with the

trauma. Witnessing injury or death during trauma: Witnessing injury or death during a traumatic event can also increase the risk of developing PTSD. This is because witnessing violence can be disturbing, leading to helplessness and horror. Bereavement: Bereavement, or the loss of family members or close friends due to a traumatic event, can also increase the risk of developing PTSD. This is because bereavement can be a very stressful and traumatic experience, leading to feelings of grief, sadness, and despair⁹⁻¹⁷.

Post-trauma risk factors

Post-trauma variables that increase the risk of PTSD. Low social support after a traumatic event can increase the risk of developing PTSD. Social support can help people cope with the trauma and feel less alone. Peritrauma fear (fear during a traumatic event) can also increase the risk of developing PTSD. Fear can lead to a heightened sense of threat and anxiety, making it difficult to recover from the trauma. Perceived life threats (the belief that one's life was in danger during the traumatic event) can also increase the risk of developing PTSD. This is because the belief that one's life is in danger can lead to vulnerability and insecurity, making it challenging to feel safe in the world. Social withdrawal (avoiding social interactions) after a traumatic event can increase the risk of developing PTSD. This is because social withdrawal can lead to

isolation and loneliness, making it difficult to cope with the trauma. Comorbid psychological problems (a mental health condition that occurs alongside PTSD) can also increase the risk of developing PTSD. This is because comorbid psychological problems can make coping with and recovering from the trauma more challenging⁹⁻¹⁷.

Low-income family functioning (problems in the family's ability to communicate, support each other, and solve problems) can also increase the risk of developing PTSD. This is because low-income family functioning can make it challenging to get the support and understanding needed to cope with the trauma.

Distraction (attempting to avoid thinking about the traumatic event) can also increase the risk of developing PTSD. This is because distraction can prevent people from processing the trauma and can lead to the development of intrusive thoughts and memories. PTSD at time 1 (having PTSD at the time of the study) can also increase the risk of developing PTSD. This is because having PTSD at the time of the study suggests that the person is already at risk for developing the disorder. Thought suppression (trying to force oneself not to think about the traumatic event) can also increase the risk of developing PTSD. This is because thought suppression can backfire and make the traumatic event more challenging to forget⁹⁻¹⁷.

Table 1: The details of included studies.

Authors' name	Number of studies	Total cases	Types and causes of Traumas	Risk factors	Population
Woolgar et al. (2021) ⁹	18	1941	Interpersonal trauma, non-interpersonal trauma, single-event trauma, repeated trauma, group, individual trauma, and mix of traumas	Interpersonal trauma Repeated traumas	Children with age of less than 6.5 years
Triantafyllou et al. (2019) ¹⁰	16	---	Various types of traumas	Female gender and psychotherapy and initial high Posttraumatic Stress Symptoms in parents Traumatic injuries and illness Medical-related hospital admission, previous health problems, Pediatric Intensive Care Unit hospitalization, attendance at a hospital for child and adolescent psychiatry	Children after hospitalization
Yu et al. (2019) ¹¹	47	65298	Earthquake, mudslides, floods and hurricanes	Girls, senior high school children, in rural areas, and in ethnic minority children	Chinese Children After Exposure to an Injury
Rezayat et al. (2020) ¹²	59	82674	Earthquakes and floods	Girls' sex. Absence of psychological support	Children and adolescents under 21 years old
Tang et al. (2017) ¹³	15	3461	Earthquakes	Older age, female gender, high education level; Being trapped, experiencing fear, injury, or bereavement, witnessing injury/death during the earthquakes Loss of property	Children
Trickey et al. (2012) ¹⁴	64	32238	Various types of traumas	Large effect size: Post-trauma variables (low social support, peri-trauma fear, perceived life threat, social withdrawal, comorbid psychological problem, poor family	Children and adolescents aged 6-18 years

				<p>functioning, distraction, PTSD at time 1, and thought suppression)</p> <p>Small to medium-sized effect:</p> <p>Female gender, low intelligence, low SES, pre-and post-trauma life events, pre-trauma psychological problems in the individual and parent, pre-trauma low self-esteem, post-trauma parental psychological problems, bereavement, time post-trauma (an inverse relationship), trauma severity, and exposure to the event by media.</p> <p>Small effect size: Race and younger age</p>	
Memarzia et al. (2021) ¹⁵	32	15432	Various types of traumas	<p>Medium effect size: Peritraumatic experiences, particularly relating to subjective threat.</p> <p>Smaller effect size: Dissociation and data-driven processing (feeling muddled or confused during the trauma).</p> <p>Medium sized effect: Perceived life threat.</p>	children and adolescents
Allen et al. (2021) ¹⁶	50	27073	Various types of traumas	<p>Small effect size was reported for following risk factors.</p> <p>Social support scale.</p> <p>Peer support.</p> <p>Family support.</p> <p>Teacher support</p>	children and adolescents
Yang et al. (2022) ¹⁷	18	15521	Covid-19	<p>Personal factors, family factors, social factors (female gender, less education and household income, poor health status)</p> <p>Infectious diseases (perceived threat of COVID-19, health worries, or hospitalization, lockdown-related stressors, quarantine, school closures, and financial hardship)</p>	General children varied in ages

Discussion

The current study represents several risk factors for PTSD. These risk factors can be divided into pre-trauma, Peritraumatic, and post-trauma risk factors⁹⁻¹⁷. Pre-trauma risk factors are factors that are present before a traumatic event occurs. These factors include gender, race, ethnicity, socioeconomic status, and age. For example, females are more likely than men to develop PTSD, and people from lower socioeconomic backgrounds are more likely to develop the disorder.

Peritraumatic and Post-trauma risk factors are factors that occur after a traumatic event. These factors include the severity of the trauma, being trapped during the trauma, cumulative exposure to potentially traumatic experiences, dissociation, being injured, witnessing injury or death, bereavement, low social support, peri-trauma fear, perceived life threats, social withdrawal, comorbid psychological problems, low-income family functioning, distraction, PTSD at time 1, and thought suppression.

The study also discusses how these risk factors can increase the likelihood of developing PTSD. For example, the severity of the trauma can increase the risk of developing PTSD because more severe traumas are likely to cause intense fear, helplessness, and horror, all of which are risk factors for PTSD⁹⁻¹².

Miquel et al. (2019)¹⁸, in an umbrella review study on risk factors related to PTSD in adults, showed that factors such as female gender or an indigenous person of the Americas were associated with PTSD, a history of physical illness, and a family history of psychiatric disorder among the pre-trauma factors, cumulative exposure to potentially traumatic experiences, trauma severity, and being trapped during an earthquake among the peritraumatic factors all demonstrated convincing or highly suggestive evidence of an association with PTSD. In other words, these factors were strongly linked to the development of PTSD. This means that, in general, people who are female, indigenous, have a history of physical disease or a family history of psychiatric disorder or have been exposed to multiple traumatic experiences are more likely to develop PTSD if they experience a traumatic event. This is compatible with a report by the WHO that also revealed sex differences in the capacity to cope with stress after disasters¹⁹.

In addition to the risk factors mentioned in the text,

several other factors can increase the risk of developing PTSD. These include having a history of trauma, a family history of mental illness, and certain personality traits¹¹⁻¹².

Treatment for PTSD can help patients manage their symptoms and improve their quality of life. The study showed several post-trauma risk factors for PTSD. These factors include low social support, peri-trauma fear, perceived life threats, social withdrawal, comorbid psychological problems, low-income family functioning, distraction, PTSD at time 1, and thought suppression. Low social support can increase the risk of developing PTSD because it can lead to feelings of isolation and loneliness. These feelings can make it difficult to cope with the trauma and increase the likelihood of developing PTSD symptoms. Peri-trauma fear can also increase the risk of developing PTSD. Fear can lead to a heightened sense of threat and anxiety, making it difficult to recover from the trauma. Perceived life threats can also increase the risk of developing PTSD. This is because the belief that one's life was in danger during the traumatic event can lead to feelings of vulnerability and insecurity, making it challenging to feel safe in the world¹⁶. Memarzia et al. (2021) showed that peri-traumatic knowledge, especially connecting to subjective threat, is a significant correlate of following PTSD, which implicates timely examination of these backgrounds in childhood and adolescents to announce the designation of at-risk groups and implementation and structure of the treatments¹⁵.

Social withdrawal can also increase the risk of developing PTSD. This is because social withdrawal can lead to isolation and loneliness, making it difficult to cope with the trauma.

Comorbid psychological problems can also increase the risk of developing PTSD. Comorbid psychological problems can make coping and recovering from the trauma more challenging. Low-income family functioning can also increase the risk of developing PTSD. This is because low-income family functioning can make it challenging to get the support and understanding needed to cope with the trauma^{12, 16}.

Distraction can also increase the risk of developing PTSD. This is because distraction can prevent people from processing the trauma and can lead to the development of intrusive thoughts and memories. PTSD, at times, can also increase the risk of developing

PTSD. This is because having PTSD at the time of the study suggests that the person is already at risk for developing the disorder. Thought suppression can also increase the risk of developing PTSD. This is because thought suppression can backfire and make the traumatic event more challenging to forget.

The study concludes by discussing the implications of these findings for preventing and treating PTSD. The authors suggest that addressing post-trauma risk factors could help to prevent the disorder from developing in the first place. They also indicate that treatment for PTSD should focus on addressing the specific risk factors present in each case.

Overall, the text provides a comprehensive overview of the post-trauma risk factors for PTSD. The findings of this study have important implications for the prevention and treatment of this disorder. In addition to the post-trauma risk factors mentioned in the text, several other factors can increase the risk of developing PTSD. These include having a history of trauma, a family history of mental illness, and certain personality traits.

The studies suggest that identifying and addressing risk factors for PTSD could help prevent the disorder from developing in the first place. They also indicate that treatment for PTSD should focus on addressing the specific risk factors present in each case. Overall, the text provides a comprehensive overview of the risk factors for PTSD. The findings of this study have important implications for the prevention and treatment of this disorder.

Conclusion

Risk factors can increase the likelihood of developing PTSD. There are concerns that someone with risk factors may develop PTSD, so it is essential to seek professional help. A mental health professional can assess symptoms and provide treatment options for patients.

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Conflict of Interest Disclosures

We declare there is not any conflict of interest.

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Authors' Contributions

Concept and design: Narges Vahidniya, Hamid Reza Javadzadeh, Sadrollah Mahmoodi; Writing and preparing the manuscript: Narges Vahidniya, Hamid Reza Javadzadeh, Sadrollah Mahmoodi.

Ethical Statement

Not applicable.

References

1. Shaw JA. Children, adolescents and trauma. *Psychiatric Quarterly*. 2000 Sep; 71:227-43.
2. Shalev AY, Gevonden M, Ratanatharathorn A, Laska E, Van Der Mei WF, Qi W, Lowe S, Lai BS, Bryant RA, Delahanty D, Matsuoka YJ. Estimating the risk of PTSD in recent trauma survivors: results of the International Consortium to Predict PTSD (ICPP). *World Psychiatry*. 2019 Feb;18(1):77-87.
3. Kearney CA, Wechsler A, Kaur H, Lemos-Miller A. Posttraumatic stress disorder in maltreated youth: A review of contemporary research and thought. *Clinical child and family psychology review*. 2010 Mar; 13:46-76.
4. Wadsworth LP, Van Kirk N, August M, Kelly JM, Jackson F, Nelson J, Luehrs R. Understanding the overlap between OCD and trauma: development of the OCD trauma timeline interview (OTTI) for clinical settings. *Current Psychology*. 2023 Mar;42(9):6937-47.
5. Imran N, Zeshan M, Pervaiz Z. Mental health considerations for children & adolescents in COVID-19 Pandemic. *Pakistan journal of medical sciences*. 2020 May;36(COVID19-S4): S67.
6. Lee LK, Douglas K, Hemenway D. Crossing lines—a change in the leading cause of death among US children. *New England Journal of Medicine*. 2022 Apr 21;386(16):1485-7.
7. Kazlauskas E, Zelviene P, Daniunaite I, Hyland P, Kvedaraite M, Shevlin M, Cloitre M. The structure of ICD-11 PTSD and Complex PTSD in adolescents exposed to potentially traumatic experiences. *Journal of Affective Disorders*. 2020 Mar 15; 265:169-74.
8. Wilcoxon LA, Meiser-Stedman R, Burgess A. Post-traumatic stress disorder in parents following their child's single-event trauma: A meta-analysis of prevalence rates and risk factor correlates. *Clinical child and family psychology review*. 2021 Dec 1:1-9.
9. Woolgar F, Garfield H, Dalgleish T, Meiser-Stedman R. Systematic review and meta-analysis: Prevalence of posttraumatic stress disorder in trauma-exposed preschool-aged children. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2022 Mar 1;61(3):366-77.
10. Triantafyllou C, Matziou V. Aggravating factors and assessment tools for posttraumatic stress disorder in children after hospitalization. *Psychiatriki*. 2019 Jul;30(3):264-70.
11. Yu H, Nie C, Zhou Y, Wang X, Wang H, Shi X. Epidemiological characteristics and risk factors of posttraumatic stress disorder in Chinese children after exposure to an injury. *Disaster medicine and public health preparedness*. 2020 Aug;14(4):486-93.
12. Rezayat AA, Sahebdel S, Jafari S, Kabirian A, Rahnejat AM, Farahani RH, Mosaed R, Nour MG. Evaluating the prevalence of PTSD among children and adolescents after earthquakes and floods: a systematic review and meta-analysis. *Psychiatric quarterly*. 2020 Dec; 91:1265-90.

13. Tang B, Deng Q, Glik D, Dong J, Zhang L. A meta-analysis of risk factors for post-traumatic stress disorder (PTSD) in adults and children after earthquakes. *International journal of environmental research and public health*. 2017 Dec;14(12):1537.
14. Trickey D, Siddaway AP, Meiser-Stedman R, Serpell L, Field AP. A meta-analysis of risk factors for post-traumatic stress disorder in children and adolescents. *Clinical psychology review*. 2012 Mar 1;32(2):122-38.
15. Memarzia J, Walker J, Meiser-Stedman R. Psychological peritraumatic risk factors for post-traumatic stress disorder in children and adolescents: A meta-analytic review. *Journal of affective disorders*. 2021 Mar 1; 282:1036-47.
16. Allen L, Jones C, Fox A, Copello A, Jones N, Meiser-Stedman R. The correlation between social support and post-traumatic stress disorder in children and adolescents: A meta-analysis. *Journal of affective disorders*. 2021 Nov 1; 294:543-57.
17. Yang F, Wen J, Huang N, Riem MM, Lodder P, Guo J. Prevalence and related factors of child posttraumatic stress disorder during COVID-19 pandemic: A systematic review and meta-analysis. *European Psychiatry*. 2022;65(1): e37.
18. Tortella-Feliu M, Fullana MA, Pérez-Vigil A, Torres X, Chamorro J, Littarelli SA, Solanes A, Ramella-Cravaro V, Vilar A, González-Parra JA, Andero R. Risk factors for posttraumatic stress disorder: An umbrella review of systematic reviews and meta-analyses. *Neuroscience & Biobehavioral Reviews*. 2019 Dec 1; 107:154-65.
19. WHO. Determinants of Mental and Behavioural Disorders. 2016. Available online: <http://www.who.int/whr/2001/chapter2/en/index7.html> (accessed on 18 July 2016).