

The Association between Childhood Trauma and Adult Mental Disorders: a General Overview

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Abstract. Childhood trauma has emerged as a prominent research field in comprehending the progression of mental disorders, with numerous studies exploring the complex relationship between early traumatic experiences and subsequent psychological outcomes. This review provides a comprehensive overview of the relationship between childhood trauma and adult psychological disorders, which examines how childhood trauma impacts the development of psychological issues and associated types of mental illnesses, investigates potential interventions and treatments to promote mental well-being, summarizes current research limitations, and provides guidance for future research endeavors. By conducting a systematic search on the Google Scholar database, relevant literature was thoroughly examined to comprehensively evaluate the impact of childhood trauma on individuals, while also exploring potential interventions and treatments. The findings emphasize the causal relationship and interactions between traumatic experiences and psychological issues. Understanding this association is crucial in the development of effective strategies for preventing and addressing adult mental disorders that result from childhood trauma. And it also serves as a reminder to closely monitor children who display psychological symptoms, emphasizing the importance of the implementation of appropriate measures to protect them from further harm caused by abuse or neglect resulting from their behavioral and psychological abnormalities.

1 Introduction

The term "childhood trauma" refers to experiences that involve real or potential danger, which can have profound and long-lasting effects on individuals' well-being [1,2]. These experiences may include various forms of abuse, neglect, or witnessing violence within the family or community [3].

The current comprehension of the correlation between childhood trauma and adult mental issues is multifaceted, including biological, psychological, and social factors. Significant progress has been made in identifying the intricate correlation between childhood trauma and mental health conditions; however, there remains a necessity for a comprehensive synthesis of the existing literature to inform clinical practice and guide future research.

Given the context, the primary objective of this review is to provide a comprehensive overview that demonstrates the causal relationship between traumatic experiences in childhood and different psychological issues, including, but not restricted to, conditions such as post-traumatic stress disorder (PTSD), depressive disorders, anxiety disorders, dissociative disorders, and borderline personality disorder (BPD), and explores potential interventions and treatments for addressing their consequences.

By integrating a range of perspectives and the latest findings from current literature, this review also aims to

identify the existing limitations in the research methodology while providing valuable insights to inform future investigations in this field.

2 Methodology

This review conducted a comprehensive search in the Google Scholar database utilizing keywords such as "childhood trauma", "mental disorders", "impact of childhood trauma", "interventions and treatments", "limitations" and "future research directions". The reference articles were carefully selected based on their relevance to the objectives of this review, ensuring a comprehensive assessment of the impact, types, and characteristics of individuals affected by childhood trauma, as well as interventions and treatments.

3 Results and discussion

3.1. Understanding childhood trauma

Trauma is defined as an event that triggers feelings of panic, helplessness, and fear, which can be perceived as a potential danger to one's life, physical well-being, or causing injury [1]. A variety of emotionally damaging experiences, such as violence, abuse, neglect, accidents, disasters, and war, could all be considered as traumatic events [1]. Experiencing traumatic events is something

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that can happen to anyone, regardless of their sexual preference, gender, age, race, or ethnicity. These feelings may come from being repeatedly exposed to such experiences over time (chronic exposure) or from a single event (acute exposure) [1].

Childhood trauma refers to the experience of being exposed to situations that involve actual or threatened harm, such as death, severe injury, or sexual violence [1,2]. Common types of childhood trauma include bullying, various forms of abuse (such as emotional, physical and sexual abuse), ignoring, as well as being exposed to household or community violence [3]. This includes traumatic experiences that the child has personally experienced, witnessed, or been informed of happening to a close family member or acquaintance [3]. Childhood trauma, especially chronic exposure to trauma, has consistently been proven to be associated with higher rates of PTSD, post-traumatic stress syndrome (PTSS), substance use disorders, depression and anxiety [3]. In light of this, multiple studies have emphasized childhood trauma as an etiological determinant that contributes to diverse psychological and behavioral disorders.

3.2 Impact of childhood trauma

Numerous research studies have provided compelling evidence that childhood trauma has a profound impact on brain development and can significantly disrupt both physiological and psychological well-being [4,5].

It has been discovered that childhood trauma causes long-term neurobiological alterations during critical phases of brain development, which affect neuronal networks, particularly those controlling emotions and the stress response, and have a significant impact on brain function [5,6]. The brains of children who have experienced trauma exhibit alterations in the hypothalamic-pituitary-adrenal (HPA) axis [6]. Dysregulation of HPA secretion impairs the capacity to regulate behavioral and mental reactions towards forthcoming stress, while also contributing to hormonal imbalance, thereby raising the risk of experiencing depression [6,7]. A comprehensive analysis conducted to reveal that childhood trauma affects multiple regions of the brain, encompassing the brainstem, midbrain, diencephalon, limbic system, and cortex [8]. This is the reason why trauma impacts the stress regulation and metabolism (brainstem); affects sleep and appetite (midbrain and diencephalon); influences mood and pleasure (limbic system); and hampers cognitive abilities (cortex) [8].

Childhood trauma raises the risk that an adult will have physical health concerns [5]. Numerous researches have indicated a correlation between childhood trauma and an increased likelihood of developing chronic conditions such as diabetes, obesity, hypertension, and cardiovascular disease [9-11]. This is primarily because the mental well-being of individuals who have experienced trauma can intensify the adverse impact of stress on their physical health, resulting in unhealthy behaviors and an increased vulnerability to physical ailments. For instance, in the case of obesity, children

who have experienced trauma may be more prone to resorting to overeating as a means of coping with their stresses and alleviating emotional stress. This pattern can persist into adulthood, ultimately contributing to the development of obesity [11].

The impact of childhood trauma on psychological well-being, especially cognitive and emotional well-being, is clearly evident, and these effects often persist over time. Several studies have found that experiencing trauma during childhood can influence the development of cognitive abilities, resulting in difficulties related to focus, memory, acquiring knowledge, and executive functioning and individuals who have been exposed to childhood trauma may display heightened emotional sensitivity, difficulties in managing stress, and struggles with interpersonal relationships, attachment, and trust [5]. Additionally, trauma experienced during early childhood can have a greater impact compared to trauma occurring later in life, as it is influenced by developmental processes that affect both neurological and psychological aspects [12].

3.3 Complex relationship between childhood trauma and mental disorders

This review aims to provide a clearer comprehension of the intricate correlation between childhood trauma and psychological disorders by examining three dimensions: biological and neuroscientific mechanisms, psychological and behavioral mechanisms, as well as social and environmental factors.

3.3.1 Biological and neuroscientific mechanisms

A recent study examined the combined neuroimaging results of children who have experienced neglect from their caregivers, as well as individuals across different age groups (children, adolescents, and adults) who have suffered physical, sexual, and emotional abuse [13]. The findings suggest that alterations in brain structure and function are linked to childhood trauma [13]. Taking the hippocampus and amygdala as examples, these two regions are known to be susceptible to stress. The hippocampus, which is a crucial component of the limbic system in the brain, has been observed to display abnormalities in several mental disorders including PTSD, BPD, schizophrenia and bipolar disorder [14]. Childhood maltreatment is also known to have a significant impact on the hippocampus, which is considered the primary region affected by the childhood traumatic experiences [13]. Additionally, compelling evidence suggests that individuals who have experienced maltreatment during their childhood tend to possess smaller hippocampi compared to those who have not undergone similar experiences [13]. In a study involving 357 healthy individuals of Caucasian descent, including 136 males whose mean age is 24.6 years and 221 females whose mean age is recorded as 23.3 years, researchers utilized automatic magnetic resonance imaging (MRI) to compare the subjects' brains by segmenting the hippocampus [15]. The findings revealed

that male subjects who had experienced severe childhood abuse exhibited significant reductions in hippocampal volume [15]. Furthermore, this research also highlighted that childhood trauma has a more pronounced impact on hippocampal volume in males compared to females [15]. The amygdala, another key area of the limbic system, has been found to exhibit structural or functional abnormalities in various mental health concerns such as social and specific phobias, depression (both unipolar and bipolar), drug addiction, and autism [13,16-19]. At the same time, individuals who experienced emotional and/or physical neglect during their early childhood tend to have larger amygdala volumes [13]. Conversely, those who have suffered from maltreatment later in life typically display a more consistent reduction in the size of their amygdala [13]. There are numerous similar morphological or functional alterations in the brain, and it is undeniable that these changes play a crucial role in psychiatric symptoms, emphasizing the necessity to take the patient's childhood trauma into account when analyzing the neurobiological basis of psychopathology [13].

3.3.2 Psychological and behavioral mechanisms

Considering that children who have undergone traumatic events are prone to developing a variety of psychological, emotional, and behavioral difficulties arising from their traumatic encounters, childhood trauma is frequently considered as a significant risk factor for psychopathology through an individual's lifetime [20-22]. A study was conducted on 1453 children who were under the care of British authorities, using the Development and Well-Being Assessment (DAWBA) and the results were compared using Stata 8 and the Statistical Package for the Social Sciences (SPSS) [23]. The results indicated that these children who have experienced childhood trauma exhibit a substantially higher likelihood of meeting the diagnostic criteria for PTSD, with a prevalence rate approximately 12 times greater than their counterparts [23]. Individuals who have been exposed to childhood trauma, particularly abuse, may tend to exhibit abuse-specific self-blame (ASSB), general attributions of self-blame (GASB), guilt, shame, powerlessness, personal vulnerability and other related cognitive process during post-trauma appraisals [20]. Numerous research has provided evidence of a distinct correlation between each individual cognitive process and the development of PTSS subsequent to childhood abuse. For example, in the case of ASSB, it has been found that the presence of ASSB at the time when childhood abuse is discovered does not have a substantial predictive value for determining PTSS levels after one year [20]. However, it has been noted that the improvements or decreases in PTSS have a strong association with ASSB decreases over a year [20]. In terms of coping behaviour, traumatized children often display maladaptive post-trauma coping strategies, such as avoidance, dissociation, depersonalization, and derealization [20]. Take dissociation as an example, multiple studies have found a significant correlation

between elevated PTSS and increased dissociative reactions [24]. In summary, these post-traumatic psychological and behavioral mechanisms collectively contribute to the development and persistence of PTSD.

3.3.3 Social and environmental mechanisms

Socio-economic status (SES) and childhood trauma have a reciprocal influence on each other. On the one hand, individuals who experience childhood trauma often come from disadvantaged socioeconomic backgrounds due to the impact of trauma-related psychopathology may impair their ability to achieve a satisfactory socioeconomic status [25]. Individuals who have been exposed to childhood trauma may have an increased tendency to participate in risky behaviors and encounter difficulties in effectively managing their emotions, which can subsequently impact their socioeconomic status. On the other hand, a number of factors may potentially increase the risk of exposing childhood trauma for individuals from lower socioeconomic backgrounds, which includes living in areas with high crime rates and facing limited access to adequate housing and education [25].

Additionally, childhood trauma has the potential to disrupt the formation of healthy and secure attachments, impede the development of social skills, and contribute to dysfunctional interpersonal relationships. Numerous research findings have indicated that children who have experienced caregiver neglect or abuse are at a higher risk of developing a trauma-related relationship pattern called "attachment to the perpetrator" (also known as "Stockholm Syndrome") [25]. This attachment pattern can significantly affect an individual's mental health and potentially play a role in the emergence of different psychological conditions.

It is likely that childhood trauma plays a crucial role in moderating the relationship between socioeconomic status and psychological disorders, thus highlighting the importance of addressing and preventing childhood trauma in vulnerable populations.

3.4 Bidirectional causal relationship

Childhood trauma and adult mental disorders are intricately connected through a bidirectional causal relationship.

On the one hand, the correlation between childhood trauma and psychological issues has been extensively examined in numerous prospective studies as well as population-based research. The research results suggest that children who have been subjected to physical abuse, mental abuse, and neglect are twice as prone to encountering negative effects on their mental well-being compared to those who have not experienced such traumatic incidents during childhood [26]. These studies also revealed a dose-response relationship between adverse mental health consequences and childhood trauma, meaning that: 1) children who have experienced more intense traumatic incidents are more likely to develop mental disorders compared to those who have

experienced less severe forms of maltreatment; 2) the risk of developing mental disorders is also increased for individuals who have encountered various traumatic experiences [26].

On the other hand, childhood trauma can also occur as a result of psychotic symptoms. There is limited research in this area, a longitudinal study conducted in 2007 found no significant association between the initial assessment of psychotic experiences and subsequent traumatic experiences among the group of adolescent participants [27,28]. However, the study did suggest that this group would encounter more unpleasant life events during follow-ups [28]. The reason behind this relationship is that children who have shown psychotic symptoms may be more prone to facing hostility or bullying from peers [27]. Or alternatively, children with psychiatric experiences may interpret negative social interactions in a more suspicious manner and are more likely to perceive them as instances of bullying compared to their counterparts without such experiences [27].

Although there is a significant amount of current research examining the impact of childhood traumatic events on the emergence of mental disorders during adulthood, limited studies specifically examine the connection between early-life manifestation of psychotic symptoms and traumatic experiences. Understanding this relationship is crucial as it can provide valuable insights into the potential causal mechanisms underlying psychosis and inform targeted interventions for individuals at risk.

3.5 Potential interventions and treatments

Dialectical behavior therapy (DBT), eye movement desensitization and reprocessing (EMDR), and cognitive-behavioral therapy (CBT), particularly trauma-focused CBT (TF-CBT), are currently common treatments for the symptoms of childhood trauma [4].

CBT aims to help patients effectively manage their emotions by teaching them how to modify their thoughts and behaviors, ultimately addressing and alleviating detrimental thinking patterns, actions, and emotional responses [4]. TF-CBT is a psychosocial intervention that includes but not limits to educating individuals about trauma and facilitating the development of narratives related to traumatic experiences [4].

A study was conducted on children aged 8-14 who had experienced sexual abuse, along with their primary caregivers [29]. They were randomly assigned to receive either trauma-focused CBT or child-centered therapy. The findings revealed a significant decrease in the number of children meeting diagnostic criteria for PTSD within the TF-CBT group [29]. In contrast, more than twice as many children receiving child-centered therapy still displayed all symptoms necessary for a PTSD diagnosis based on DSM-IV guidelines after completing their treatment [30]. Additionally, the TF-CBT group also demonstrated evident improvements in symptoms related to depression, shame, and attributions associated with abuse [29].

In comparison to CBT, EMDR emerges as a more contemporary therapeutic approach. The EMDR approach aims to address the impact of traumatic memories by targeting the brain's information processing system through the use of bilateral stimulation (BLS) and brief imagined exposure [31]. Experimental evidence demonstrates that EMDR could be an effective therapeutic strategy for reducing symptoms of PTSD, specifically anxiety and depression, in children who have experienced hurricane trauma, especially in cases where traditional CBT interventions have failed to achieve the intended effects [32]. These noticeable changes were observed post-treatment and remained evident throughout the six-month follow-up duration [32].

DBT is a cognitive behavioral therapy specifically developed to help individuals who are diagnosed with BPD [4,33]. DBT consists of four key skill sets: emotion management, mindfulness practice, effective interpersonal communication, and dealing with distress [33]. There are a number of experimental findings that support the effectiveness of DBT in relieving symptoms resulting from exposure to complex childhood trauma [4,34]. Individuals who have been exposed to complex trauma may face difficulties in emotional regulation, engage in self-injury, experience thoughts of suicide, struggle with relationships, and develop mood disorders, and DBT can effectively help individuals improve their emotional regulation skills, reduce self-harm and suicidal tendencies, and address trauma-related issues through the provision of supportive training in valuable skills [34].

3.6 Limitations of current research

There are several commonly encountered limitations in assessing the correlation between childhood trauma and mental disorders.

Firstly, most of research studies rely on individuals recalling their own experiences to assess childhood trauma. However, these memories may be susceptible to bias or unintentional omissions [35]. This issue is difficult to avoid in the actual research due to the difficulty of conducting reality tests on psychological patients [36]. Moreover, it is ethically unfeasible to conduct prospective studies on childhood trauma. Therefore, many studies have opted for retrospective self-assessment as their primary research method due to the practical and ethical restrictions [35]. Researchers acknowledge that relying solely on data provided by individuals has its limitations, but they still consider it a valuable source of information. To ensure the reliability of collected data and reduce potential biases, they employ rigorous methods such as using standardized questionnaires and conducting structured interviews.

Secondly, in the determination of trauma occurrence and/or its severity, current research utilizes various approaches for judgment and assessment, which limits comparability across studies [35]. In the research process, researchers commonly employ standardized questionnaires such as the Childhood Trauma Questionnaire or the Life Experiences Questionnaire to

assess trauma [37,38]. Additionally, numerous researchers utilize their own unique methodologies to identify trauma. For example, some rely on self-report measures or participant interviews to evaluate traumatic experiences, while others utilize physiological indicators or behavioral observations. This further complicates the interpretation of experimental data for research studies [35].

Finally, in recent research, the cross-sectional design has been widely utilized as the primary methodology in a majority of studies; nevertheless, this approach tends to neglect the potential bidirectional causal relationship between childhood trauma and mental disorders [35]. However, extensive longitudinal studies have provided clear evidence that childhood trauma plays a role in the development of mental disorders [35]. Similarly, children with pre-existing mental disorders may be more vulnerable to experiencing childhood trauma due to their psychological or behavioral issues [35].

3.7 Future research directions

Given the aforementioned research limitations, there are numerous promising areas for future exploration.

Firstly, in order to obtain objective evidence regarding the existence and severity of childhood trauma, future research on the connection between trauma and mental disorders should first concentrate on using validated trauma measures, examples of which include the Childhood Trauma Questionnaire (CTQ), that asks specific questions about the physical, sexual, and emotional abuse and neglect experienced by children [35].

Secondly, conducting longitudinal studies that track individuals over an extended period of time would be highly advantageous for future research. This approach would allow researchers to observe changes in mental health and behavior as individuals age, thereby revealing more precise correlations and causal relationships between childhood trauma and mental disorders. Ultimately, this would offer considerably more compelling evidence to bolster the advancement of interventions that are even more effective.

Finally, future research could also explore and examine additional variables that might impact the correlation between childhood trauma and mental problems, such as the genetic factor and degree of education [35]. Many of the current findings fail to consider the potential impact of genetic factors on vulnerability to mental disorders [26]. While certain studies indicate that children with parents who experience depression may face an increased risk of developing depression due to a combination of parental abuse and genetic predisposition [39].

4 Conclusion

In conclusion, the intricate connection between childhood trauma and mental disorders in adulthood is a complex topic that requires further exploration. The current research findings suggest a bidirectional causal

relationship between adult psychological issues and childhood trauma. It is crucial to consider both the influence of childhood trauma on the emergence of mental illnesses and the potential for individuals with mental disorders to have experienced trauma during their formative years.

Drawing from the existing knowledge on childhood trauma and its correlation with mental well-being, it is recommended to enhance early identification and intervention for children who have experienced traumatic events as well as those exhibiting initial signs of psychosis, which may involve providing additional training for clinical professionals to better recognize the signs of trauma and/or psychosis in children, as well as offering appropriate support. Moreover, enhancing the availability of psychological wellness support for individuals who have encountered childhood trauma or exhibited psychological irregularities is of utmost importance. Early intervention and treatment can significantly help alleviate the long-term effects, making it essential to prioritize these measures.

It is evident that there is still much to be discovered regarding the connection between mental illnesses and childhood trauma. Future research should prioritize the utilization of experimentally validated research methods, the integration of cross-sectional and longitudinal studies, and exploring additional variables that could potentially influence the association between early-life adversity and psychiatric conditions. As a consequence, researchers and educators can enhance their comprehension of the association and identify effective interventions and treatments to improve the overall mental well-being for individuals who have encountered adverse experiences during their childhood or exhibit signs of psychological illness in early stages.

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