Psychopharmacology for Trauma-Exposed Youth

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KEYWORDS

• Trauma • PTSD • Children • Psychopharmacology • Resilience
• Adverse childhood experiences (ACEs)

KEY POINTS

- Sixty percent of youth experience trauma. While it significantly impairs mental health and functioning, not all exposed individuals develop PTSD or other formal clinical diagnoses.
- Treatment success depends on individual resiliency, the nature of adverse childhood experiences, and whether the patient meets specific diagnostic criteria for PTSD or non-PTSD conditions.
- Psychopharmacology can target specific symptom clusters but remains a supportive, not primary, intervention. Without trauma-informed framing, medication risks pathologizing children and obscuring underlying environmental causes.
- Using multiple medications is common in trauma-exposed youth but lacks strong evidence of benefit. This practice carries significant risks, especially when treating overlapping comorbid symptoms.
- Clinicians should prioritize individualized plans integrating trauma-focused therapies and resilience-building. Medication should only be used appropriately alongside these comprehensive, supportive, and therapeutic interventions.

UNDERSTANDING TRAUMA IN CHILDREN AND ADOLESCENTS

Trauma in children and adolescents is a critical area of concern due to its profound and often long-lasting impact on mental health and development. Trauma is defined as an emotional response to an event or series of events that are perceived as physically or emotionally harmful or life-threatening.[1] These events can include, but are not limited to, physical abuse, sexual abuse, emotional abuse, neglect, witnessing domestic violence, and experiencing natural disasters. Trauma exposure refers to the direct or indirect experience of these traumatic events.[1] Complex trauma is broadly defined as prolonged or repeated exposure to multiple adverse events, often

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Abbreviations	
ACEs	adverse childhood experiences
ADHD	attention-deficit hyperactivity disorder
CBT	cognitive behavioral therapy
CDC	Centers for Disease Control and Prevention
FDA	Food and Drug Administration
PTSD	posttraumatic stress disorder
RCTs	randomized clinical trials
SGAs	second-generation antipsychotics
SSRIs	selective serotonin reuptake inhibitors
TADS	Treatment for Adolescents with Depression Study

interpersonal or relational, occurring during critical developmental periods. Research indicates that complex trauma manifests as a diverse set of symptoms that disrupt normal developmental trajectories, increasing the risk of further trauma exposure and compounding its harmful impact on functioning throughout a child's lifespan. These effects extend across various domains, impacting a child's attachment, emotional and behavioral regulation, cognitive functioning, self-concept, worldview, and perceptions of others.[2]

Exposure to trauma within childhood and adolescence varies in presentation but often co-occurs with the presence of anxiety, depression, behavioral changes, difficulties with attention, concentration and executive functioning, and somatic symptoms such as headaches or stomachaches.[3] Outcomes such as these have been shown to significantly impair an individual's ability to function within daily life, within children and adolescents' differences can be seen as it relates to their academic performance, social relationships, and overall well-being and mental health.[4]

There is an alarmingly high prevalence of trauma exposure among children and adolescents. Research has indicated that a significant proportion of young people will experience at least 1 traumatic event before reaching adulthood. The National Survey of Children's Exposure to Violence found that more than 60% of children in the United States have been exposed to violence, crime, or abuse in their homes, schools, or communities.[5] Such a high prevalence reinforces the need for effective interventions and support systems to address the mental health needs of trauma-exposed youth.

DIFFERENTIATING POSTTRAUMATIC STRESS DISORDER DIAGNOSIS VERSUS TRAUMA EXPOSURE

Despite the prevalence of traumatic exposure, not all children and adolescents who experience these events will develop or meet diagnostic criteria for posttraumatic stress disorder (PTSD). PTSD is a specific psychiatric diagnosis characterized by a constellation of symptoms that persist for more than a month following exposure to a traumatic event. PTSD manifests in individuals who re-experience the trauma through intrusive memories or flashbacks, exhibit avoidance of reminders of the trauma, negative changes in thoughts and mood, and heightened arousal and reactivity. Many children and adolescents may exhibit some symptoms of distress following trauma but do not develop to meet full diagnostic criteria of PTSD. Therefore, it is important to differentiate between trauma exposure and PTSD to ensure that appropriate treatment is given.

Adverse childhood experiences (ACEs) are a specific subset of traumatic events that occur during childhood and have been extensively studied for their long-term impact on health and well-being. The concept of ACEs was first introduced by the landmark ACE

Study conducted by the Centers for Disease Control and Prevention (CDC) and Kaiser Permanente in the 1990s. This study identified 10 categories of ACEs, which can be grouped into 3 broad categories: abuse (physical, sexual, or emotional), neglect (physical or emotional), and household dysfunction (including domestic violence, parental substance use or mental illness, separation or divorce, or parental incarceration).

The ACE study revealed a dose–response relationship between the number of ACEs and the risk of adverse outcomes. This means that as the number of ACEs increases, so does the risk for a range of negative health and social outcomes. These outcomes include mental health disorders such as depression, anxiety, and PTSD; substance abuse; chronic physical health conditions such as heart disease, diabetes, and obesity; and behavioral issues such as aggression and delinquency. The findings from the ACE study have been replicated in numerous subsequent studies, confirming the pervasive and detrimental impact of ACEs on individuals' lives. For instance, a study by Hughes and colleagues[6] found that individuals with 4 or more ACEs were at significantly higher risk for mental health issues, substance abuse, and chronic diseases compared to those with no ACEs.

Research has shown that ACEs are strongly associated with a range of negative outcomes in adulthood, including mental health disorders, substance abuse, chronic physical health conditions, and reduced life expectancy. The ACEs study, conducted by the CDC and Kaiser Permanente, revealed a dose–response relationship between the number of ACEs and the risk of adverse outcomes, highlighting the cumulative impact of multiple traumatic experiences.

Several risk factors can increase the likelihood of developing trauma-related symptoms or PTSD following exposure to a traumatic event. These risk factors can be categorized into individual, familial, and environmental factors. Individual factors include younger age, female gender, pre-existing psychiatric conditions such as anxiety or depression, and genetic and biological factors. Familial factors include parental mental health, inconsistent or harsh parenting styles, and family history of trauma. Environmental factors include low socioeconomic status, presence of community violence, and limited access to mental health services and supports. Understanding these risk factors is crucial for identifying children and adolescents who may be at higher risk for developing trauma-related symptoms. Early identification and intervention can help mitigate the impact of trauma and promote resilience.

RESILIENCY WITHIN THE TREATMENT OF TRAUMA-EXPOSED CHILDREN AND ADOLESCENTS

Resiliency in the context of trauma refers to the ability of individuals, particularly children and adolescents, to adapt and recover from adverse experiences. It is a dynamic process that involves positive adaptation within the context of significant adversity. Resiliency is not an inherent trait but rather a set of skills and attributes that can be developed and strengthened over time. Satapathy and colleagues[7] defines how resiliency encompasses a range of factors, including emotional regulation, problem-solving skills, and the ability to form and maintain positive relationships. These factors collectively enable individuals to navigate the challenges posed by traumatic experiences and emerge with a sense of competence and well-being.

The development of resiliency is influenced by a combination of individual, familial, and environmental factors. Individual characteristics such as a positive self-concept, optimism, and a sense of purpose can enhance resiliency. Children who possess these traits are more likely to view challenges as opportunities for growth rather than insurmountable obstacles. Familial factors also play a crucial role in fostering

resiliency. Supportive relationships with caregivers, characterized by warmth, consistency, and responsiveness, provide a secure base from which children can explore and learn. Additionally, families that encourage open communication and problem-solving can help children develop the skills needed to cope with stress and adversity.

Environmental factors, including community resources and social support networks, further contribute to the development of resiliency. Access to mental health services, educational opportunities, and extracurricular activities can provide children with the tools and experiences necessary to build resilience. Communities that promote social cohesion and provide safe, supportive environments can buffer the impact of trauma and facilitate recovery. Moreover, positive relationships with peers and mentors can offer additional sources of support and guidance, reinforcing the development of resiliency.

Interventions aimed at enhancing resiliency in trauma-exposed children and adolescents often focus on strengthening protective factors and providing opportunities for skill-building. Programs that teach coping strategies, emotional regulation, and problem-solving skills can empower children to manage stress and adversity more effectively. Additionally, interventions that involve caregivers and families can enhance the overall support system for the child, promoting a more resilient family unit. By fostering resiliency, these interventions can help mitigate the long-term impact of trauma and support the mental health and well-being of children and adolescents, enabling them to thrive despite their adverse experiences.

Psychotherapy is regarded as the most effective model for treating trauma and complex trauma in children and adolescents, primarily due to its comprehensive approach to addressing the multifaceted nature of these conditions. Psychotherapy offers a structured and supportive environment where children and adolescents can process their experiences, develop coping mechanisms, and foster a positive mental health outcome. Several specialized trauma therapies, as discussed elsewhere in this volume, have proven efficacy in reducing symptoms of PTSD and other trauma-related conditions in young populations. Timely referral and access to these psychotherapies, however, require accurate diagnosis of trauma as a core part of a child's symptoms. Unfortunately, many children and adolescents exposed to trauma, particularly to chronic or complex trauma, can be misdiagnosed or receive incomplete diagnoses, leading to treatment plans that address co-occurring psychiatric symptoms without recognizing the underlying trauma. As a result, interventions may be ineffective, failing to target the root cause of their distress.[8] Children who have experienced chronic trauma are highly vulnerable to negative outcomes, due to their young age, limited cognitive capacities, and dependence on caregivers,[8] making accurate diagnosis and appropriate intervention of utmost importance. Psychiatric providers assessing children and adolescents exposed to trauma should be thoughtful in re-examining prior diagnoses and in ensuring that youth are connected to trauma-focused psychotherapy if appropriate.

PSYCHOPHARMACOLOGICAL TREATMENT OF POSTTRAUMATIC STRESS DISORDER IN CHILDREN AND ADOLESCENTS

While psychotherapy remains the cornerstone of trauma treatment of children and adolescents, families may seek psychopharmacologic treatment of PTSD and other trauma-related conditions. The efficacy of pharmacologic interventions for trauma-related conditions in this population, however, is relatively minimal.[9] Currently, no medications have been specifically approved for treating PTSD in children and adolescents. Although selective serotonin reuptake inhibitors (SSRIs) and alpha-1 antagonists are

frequently used to address PTSD symptoms, these medications are only approved by the US Food and Drug Administration (FDA) for adult patients.[10] Research on psychotropic medications for pediatric PTSD primarily consists of open-label trials and anecdotal case reports, which lack empirical reliability and validity compared to randomized, double-blind, placebo-controlled studies. This paucity of robust clinical evidence has contributed to the absence of standardized pharmacologic treatment guidelines for pediatric PTSD. To contribute to the limited literature, this section provides a review of the most studied psychotropic medications for pediatric PTSD, examines the challenges associated with treating PTSD in youth, and explores the potential benefits and limitations of using pharmacologic interventions in this population.

Selective Serotonin Reuptake Inhibitors

SSRIs are commonly considered as the first-line medication for treating trauma in children and adolescents.[11,12] Their frequent use in pediatric PTSD treatment is largely based on evidence from randomized clinical trials (RCTs) conducted in adults demonstrating their efficacy in targeting mood-related symptoms, tolerability, and relatively minimal side effect profile. Common SSRIs, including sertraline, fluoxetine, and citalopram, are widely prescribed in clinical practice due to the high prevalence of comorbid anxiety and depression in youths with PTSD. These medications are also used to target PTSD symptom clusters related to re-experiencing, avoidance, hyperarousal, and emotional numbing.[12] For youths struggling to engage in evidence-based therapy, SSRIs may serve as an adjunctive treatment, alleviating distressing symptoms and enhancing therapy participation.[11]

However, despite their widespread use in clinical practice, research on the efficacy of SSRIs for pediatric PTSD remains inconclusive and outdated.[10,12] A recent meta-analysis found that so far, only 2 RCTs have been conducted to examine the efficacy of sertraline for treating PTSD in children and adolescents.[13] One double-blind, placebo-controlled trial found that sertraline at doses of 50 to 200 mg was minimally or no more effective than placebo in reducing PTSD symptoms in youth when used alone, while another study demonstrated that sertraline was only significantly more effective than placebo when combined with cognitive behavioral therapy (CBT).[9,14] Aside from sertraline, research on the effectiveness of other SSRIs for treating pediatric PTSD is sparse—the only other SSRI that has been evaluated in a placebo-controlled RCT is fluoxetine. Robert and colleagues[15] examined fluoxetine and imipramine compared to placebo in a sample of children treated for acute stress disorders and found no significant difference between the treatment groups. Other SSRIs, such as citalopram and escitalopram, have only been studied using open-label trials and case reports, which have shown some promise in reducing mood-related PTSD symptoms in pediatric populations.[16] However, the limitations in study design and small effect sizes reduce the robustness of the evidence provided by these studies, making it difficult to establish generalizable efficacy data for these medications. SSRIs are FDA-approved for treating PTSD in adults and have shown significant benefits over placebo in open-label trials.[17] While it might seem appropriate to extrapolate these results to the pediatric population based on the effectiveness shown in adult studies, the lack of empirical evidence for children warrants caution. Clinicians should therefore exercise caution when prescribing SSRIs to children and proceed with careful consideration.[11]

Antiadrenergic Agents

Antiadrenergic agents are frequently used to target noradrenergic hyperactivity and address hyperarousal symptoms in patients diagnosed with PTSD. The most prescribed

antiadrenergic medications for treating pediatric PTSD include alpha-1 antagonists and alpha-2 agonists, such as prazosin, guanfacine, and clonidine. Among these, alpha-1 antagonists like prazosin are specifically utilized to alleviate nightmares and intrusive thoughts associated with PTSD.[12] A systematic review of 9 randomized controlled trials (RCTs) and case reports found that prazosin significantly improves nightmares in children and adolescents with PTSD while exhibiting limited side effects.[18] In clinical practice, prazosin is commonly prescribed to address sleep disturbances, a prevalent symptom in pediatric PTSD. By improving sleep quality, prazosin may contribute to reductions in broader PTSD symptoms and enhance overall well-being.[11]

Alpha-2 agonists, such as clonidine and guanfacine, are also used to treat nightmares, but are primarily used to manage emotional dysregulation and hyperarousal symptoms, including hypervigilance, exaggerated startle response, insomnia, and aggression. A recent systematic review on the use of alpha-2 agonists for pediatric PTSD treatment found these medications to be effective in reducing overactivity-related symptoms, including nightmares, intrusive thoughts, avoidance, and irritability.[10] Clinicians have also reported that some patients benefit from the sedative effects of alpha-2 agonists, as symptom relief may facilitate engagement in therapy.[11] However, studies indicate that PTSD symptoms may resurface following the discontinuation of alpha-2 agonists, suggesting that their benefits may not be sustained without ongoing treatment.[10] Case reports on alpha-2 agonists have highlighted both potential benefits and adverse effects. Anderson and colleagues[19] documented increased suicidal ideation in female adolescents with PTSD after discontinuing guanfacine, whereas Ye and colleagues[20] reported that clonidine improved mood disturbances and attention-deficit hyperactivity disorder (ADHD) symptoms in a patient with PTSD and comorbid ADHD. These findings underscore the need for further investigation into the risks and benefits of these medications.

Overall, there is a paucity of placebo-controlled trials evaluating the efficacy of alpha-1 antagonists and alpha-2 agonists for pediatric PTSD treatment. Regarding alpha-1 antagonists, a review of case reports and retrospective chart reviews provides only weak recommendations, supported by low-quality evidence, for the use of prazosin in pediatric PTSD.[11] Similarly, research on alpha-2 agonists remains limited to case reports and open-label trials. Without placebo-controlled studies, it is difficult to isolate the true efficacy of these medications from potential confounding factors. Future high-quality, RCTs are needed to establish evidence-based guidelines for the use of antiadrenergic agents in pediatric PTSD treatment.

Other Pharmacologic Treatments

Adrenergic dysfunction is frequently implicated in the pathophysiology of PTSD. Propranolol, a beta-blocker, has been explored as a potential treatment of PTSD due to its ability to reduce physiologic reactivity and potentially prevent PTSD onset. Its antiadrenergic effects disrupt fear conditioning, emotional arousal, and memory consolidation, which are key mechanisms in PTSD development.[11,21] Although small open-label trials suggest that propranolol may reduce acute PTSD symptom severity in children after burn injury, no studies have demonstrated its efficacy in preventing or treating symptoms of PTSD after acute exposure.

Mood stabilizers modify the gamma-aminobutyric-acid (GABA)ergic and glutamatergic neurotransmission within the brain, targeting the symptoms of aggression, anger, and impulsivity associated with PTSD.[22] In the pediatric population, mood stabilizers such as carbamazepine and divalproex sodium are sometimes used to target treatment-refractory PTSD symptoms that comorbid with mood and disruptive behavior or conduct disorder. Small to medium-sized open label and placebo-controlled RCTs

indicate that mood stabilizers may be efficacious in decreasing aggression, general PTSD symptoms, and improving self-restraint in youth with PTSD.[11] However, current research and clinical evidence for mood stabilizers are insufficient to assess their efficacy for treating pediatric PTSD. Given their unfavorable side effects such as fatigue, weight gain, and stomach issues, these medications are typically not recommended for treating pediatric PTSD.[23]

Finally, given the absence of placebo-controlled trials supporting the efficacy of second generation antipsychotics (SGAs) for pediatric PTSD and the unfavorable side effect profile of these medications, the use of SGAs is not recommended except in particular circumstances. If the patient fails to respond to SSRIs and antiadrenergic agents, demonstrates high levels of aggression or self-harm, or is diagnosed with a comorbid psychiatric condition such as bipolar disorder and schizophrenia that warrant SGA use,[11] then SGAs might be utilized, prioritizing short-term treatment and careful monitoring of adverse effects. This recommendation is based on the evidence from case reports and retrospective chart reviews suggesting that SGA such as risperidone, clozapine, quetiapine, and aripiprazole may be effective in targeting acute stress disorder in young children, specifically treating disruptive behaviors, nightmares, sleep disturbances, intrusive symptoms, and symptom refractory to therapy.[11] However further research is needed to better understand the psychopathology of these symptoms and the relative effectiveness of SGAs versus placebo and other medication classes in addressing these symptoms.

Treatments for Nonposttraumatic Stress Disorder Trauma Exposed Youth

The Treatment for Adolescents with Depression Study (TADS) provides valuable understanding and insight as to how childhood trauma influences depression treatment outcomes, in turn demonstrating broader implications for other non-PTSD psychiatric disorders. Children that are exposed to trauma can have significantly altered responses to psychopharmacologic treatments, such as antidepressants as a result of altered brain chemistry.[24–27]

For good clinical practice of psychopharmacology, clinicians should factor in the individualized and varied responses of one's trauma history as they develop personalized medication plans. TADS findings indicate that the efficacy of SSRIs and serotonin-epinepherine reuptake inhibitor (SNRIs) may vary,[24] underscoring the importance of utilizing a tailored treatment approach to enhance therapeutic benefit. Non-PTSD disorders are most effectively treated with a combination of medication and therapeutic interventions such as CBT.[24] Due to this, further research is needed into the nuance of psychopharmacological strategies to improve upon treatment outcomes across varied psychiatric conditions.

WHAT PSYCHOPHARMACOLOGICAL TREATMENT CAN AND CANNOT DO FOR TRAUMATIZED YOUTH

The evidence supporting pharmacologic treatment of pediatric PTSD remains limited, often leaving clinicians to make prescribing decisions without sufficient, up-to-date clinical data. Due to the absence of standardized clinical guidelines for psychopharmacological interventions, the use of evidence-based trauma-focused therapy remains the most well-supported first-line treatment of pediatric PTSD and should be prioritized before considering medication.[11] In clinical practice, pharmacologic treatments are generally reserved for cases in which children and adolescents continue to experience persistent PTSD symptoms and/or experience comorbid psychiatric conditions that are not targeted by trauma therapy, such as depression or ADHD.

Current research recommends considering medication under the following circumstances:

- The patient exhibits severe agitation or engages in self-injurious behaviors.
- The patient continues to experience significant impairment despite completing an adequate course of behavioral therapy.
- The patient has poorly controlled comorbid psychiatric conditions.
- The patient experiences insomnia that is refractory to nonmedication interventions.
- The patient lacks access to evidence-based psychotherapy.[11]

Medications can serve as a supportive tool to help children and adolescents engage more effectively in psychotherapy. Current evidence suggests that SSRIs and adrenergic agents may help manage key PTSD symptom clusters, including anxiety, depression, hyperarousal, intrusive thoughts, and nightmares. By alleviating these distressing symptoms and improving overall functioning, pharmacologic interventions may enhance psychotherapy outcomes, allowing for greater treatment engagement.[10–12] Additionally, psychotropic medications such as alpha-2 agonist, mood stabilizing agents, and atypical antipsychotics can provide critical stabilization in cases of acute-onset or severe psychiatric disturbances, such as self-harm, agitation, and aggression.[10,28] For patients with comorbid neurodevelopmental or other psychiatric disorders, medications may also improve attention, emotional regulation, and daily functioning, addressing distracting symptoms that are unrelated to the primary PTSD diagnosis to help patients better engage in trauma-focused therapy.

Despite their potential benefits, there is insufficient evidence to support the use of medication as a stand-alone treatment of pediatric PTSD in the absence of psychiatric comorbidities. While medications can help manage trauma-related symptoms, they do not facilitate the processing or resolution of traumatic experiences. For example, trauma-focused psychotherapy not only improves posttraumatic symptomatology, but also addresses the deficits in patient's interpersonal functioning, self-esteem, and fear mastery.[22] The psychological meaning of psychiatric medication in trauma-exposed youth warrants careful consideration, particularly when medications are introduced without trauma-informed framing or in the absence of trauma-focused therapy. When pharmacologic treatment is presented as the primary intervention, it risks pathologizing the child's distress and shifting focus away from the traumatic or triggering environments that underlie their symptoms. Thus, pharmacologic interventions should never replace essential components of PTSD treatment, such as psychotherapy, family interventions, and environmental modifications.

Furthermore, although medications may provide short-term symptom relief, symptom recurrence and treatment resistance remain common among children and adolescents. This underscores the need for a comprehensive, multimodal approach to care, integrating evidence-based therapy, psychosocial support, and, when necessary, adjunctive pharmacologic treatment. Given that trauma affects multiple domains of a child's life, the treatment of pediatric PTSD requires more than just psychotherapy and pharmacologic interventions, necessitating the involvement of various levels of the child's ecological system. For instance, children who have been exposed to trauma may benefit from strong social support networks, positive relationships with caregivers and peers, the development of effective coping strategies, a sense of self-efficacy, and access to mental health services. Interventions that foster these protective factors can enhance resilience and improve a child's ability to cope with and recover from traumatic experiences. Thus, pharmacologic treatments alone are insufficient, as they do not address the complex social, emotional, and

developmental needs that are crucial for trauma treatment. Additionally, the use and logic of pharmacologic treatment must be carefully framed for youth and families for 2 main reasons. First, youth and families must understand the purpose of medication, the target symptoms and potential benefit, the risks, and the time-course of therapy. Second, youth and families must understand that while medication works within the child's body to ameliorate the negative effects of trauma on the brain and body, the source of symptoms is the effect of trauma on the child, not the child's inherent biology. When traumatized children are medicated in the absence of this framing, it can risk implicitly transmitting the message that the problem is "inside" the child, not in the traumatic experiences and triggering environments to which the child has been exposed.

POLYPHARMACY AND PEDIATRIC POSTTRAUMATIC STRESS DISORDER TREATMENT

Trauma affects children and adolescents across multiple domains of functioning, often resulting in a broad range of physical, emotional, and behavioral health challenges. A child exposed to traumatic events may present as primarily depressed, with mood instability that resembles other psychiatric disorders such as psychosis or bipolar disorder. They may also exhibit inattentiveness, executive functioning difficulties, aggression, sleep disturbances, or a combination of these symptom clusters due to intrusive memories and the re-experiencing of traumatic events.[23] Consequently, they frequently meet diagnostic criteria for comorbid psychiatric conditions, such as depressive disorders, ADHD, substance use disorders, and various anxiety disorders.[9] The American Academy of Child and Adolescent Psychiatry, in its *Practice Parameter for the Assessment and Treatment of PTSD*, recommends that comorbid conditions be addressed in an integrated and comprehensive manner.[9]

Following this standard of practice, clinicians often prescribe multiple medications to target the diverse symptom clusters or comorbidities associated with pediatric PTSD. For instance, as disorders like PTSD affect various areas of functioning and are associated with a broad spectrum of symptoms, monotherapy may offer only partial relief. Existing research on psychotropic medications for pediatric PTSD indicates that children and adolescents frequently demonstrate low response rates to commonly prescribed treatments.[28] When symptoms remain unresolved, providers may introduce additional medications to address both primary and secondary symptoms, with the goal of achieving more comprehensive symptom management.[29,30] However, this common approach also exposes children and adolescents to the risks associated with polypharmacy. These risks include adverse drug reactions, harmful drug interactions, increased hospitalization rates, medication nonadherence, elevated health care costs, and, in some cases, heightened mortality.[23,28]

Unfortunately, despite these risks, psychotropic polypharmacy is common, particularly in lower income youth, youth in residential care, youth involved in the foster care and juvenile justice systems, and those with complex psychiatric presentations and high service utilization.[23] Given the high rates of trauma exposure in youth in such care systems, there is concern that polypharmacy is being utilized to address either unrecognized or misdiagnosed trauma symptoms. While polypharmacy is widely acknowledged as a major concern among adults and the elderly, it is less frequently addressed in pediatric care, despite growing evidence of its prevalence in children and adolescents,[28] and the clinical risks are little studied. The use of polypharmacy is generally based on assumption of additive benefit and not supported by published literatures and randomized pediatric clinical trials with strong design.[2]

Given that research on psychotropic monotherapy for treating pediatric PTSD is limited, outdated, and failed to show superiority compared to trauma-focused psychotherapy, the risks and benefits of prescribing multiple and concurrent medications for children with severe PTSD remains unknown. Thus, clinicians should be cautious and mindful of ways to reduce and avoid polypharmacy in practice. To address this, several evidence-informed considerations should guide prescribing practices aimed at reducing or preventing unnecessary polypharmacy[11,23]:

- Reassess medication regimes at every visit with the goal of avoiding continuation of medications without observed efficacy.
- Using monotherapy first whenever possible and maximize the use of evidence-based nonpharmacological therapies.
- Replace rather than add when medication has low response rate.
- Clearly explain to patients, families, and/or other medical providers when a diagnosis such as PTSD is known for having poor or nonlinear response to medications. Clearly explain the concept of polypharmacy to patients and families when prescribing multiple and concurrent medications to target comorbidity.
- Be cautious about nontraditional or experimental treatments that lack evidence-based research.
- Clearly discuss potential risks and benefits of each medication to patients, parents, and collaterals.

In conclusion, understanding trauma in children and adolescents is crucial due to its profound and enduring impact on their mental health and developmental trajectories.[2] Trauma, whether stemming from abuse, neglect, or exposure to violence, can significantly disrupt a child's emotional, cognitive, and social functioning. The high prevalence of trauma exposure among youth underscores the urgent need for effective interventions and support systems.[5] Differentiating between trauma exposure and PTSD is imperative to ensure appropriate treatment, as not all trauma-exposed children develop PTSD.[31] The long-term consequences of early trauma and ACEs reveal a dose–response relationship between the number of ACEs and the risk of adverse outcomes.[32] Psychotherapy, particularly evidence-based approaches like trauma focused-CBT, remains the cornerstone of trauma treatment of youth.[31] These therapeutic modalities address the multifaceted nature of trauma, helping children and adolescents build emotional resilience, improve self-awareness, and foster healthier relationships.[33,34] However, treating traumatized youth, especially those with chronic or complex trauma, is often challenging and requires additional review.

While some evidence from clinical and open-label trials suggests that pharmacologic interventions as described earlier may be effective in targeting specific PTSD symptom clusters and can serve a supportive role for children and adolescents experiencing acute, severe, or persistent symptoms of PTSD and comorbid conditions that impede therapeutic progress, evidence supporting their use in the pediatric population is still lacking.[11] Robust, well-designed clinical trials are needed to inform treatment guidelines and policy development in pediatric psychopharmacology. In the meantime, as research continues to evolve, child psychiatrists are tasked to develop and implement comprehensive, individualized treatment plans that recognize the unique needs of each child or adolescent, the ways in which medication can and cannot address these needs, and additional treatments and supports that are indicated. When provided with resilience-supporting, evidence-based interventions as described here, trauma-exposed youth can navigate their challenges and thrive despite their experiences of adversity.

CLINICS CARE POINTS

- Gain understanding of trauma in children and adolescents to better inform the assessment of trauma exposure.
- How to keep in mind the challenges related to polypharmacy in the treatment of trauma in children and adolescents.
- Inform best practices for the treatment of children and adolescents who have a history of trauma exposure that meet PTSD criteria.
- Analyze the varied psychopharmacologic treatment approaches for trauma exposure.

DISCLOSURE

The authors have no disclosures to report.

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