

Assessing and Responding to the Trauma of Child Maltreatment

Brooks R. Keeshin, M.D., and Eric T. Monson, M.D., Ph.D.

Child maltreatment is a significant risk factor for severe psychiatric outcomes in childhood and contributes to problematic symptoms that direct parents, teachers, or other invested parties to seek psychiatric intervention. With ongoing workforce shortages, much of the pediatric psychiatric care to this population is delivered by generalists. Child maltreatment and trauma can critically alter a child's development trajectory, affecting potential success in school and other important life pursuits. In addition, child maltreatment and resultant traumatic stress can dramatically disrupt child and adolescent development of healthy emotional regulation, distress tolerance, and the ability to form effective interpersonal relationships. Such disruption can lead to presentations within children and adolescents that mimic other symptoms of psychopathology but that typically

respond poorly to traditional psychopharmacology. Ineffective treatment trials can lead to increased risk of polypharmacy and inaccurate expectations for treatment benefits. Such treatment efforts may impede addressing important environmental contributors and delay indicated therapeutic strategies. This article seeks to review child maltreatment—including core features and prevalence, overlap of child maltreatment with adverse childhood experiences, developmental impacts of exposure and resultant traumatic stress, guidance for appropriate assessment, and evidence-based interventions—and provide basic deprescribing guidelines to reduce polypharmacy burden.

Focus 2022; 20:176–183; doi: 10.1176/appi.focus.20210033

Among adults treated by general and specialized psychiatrists, many have a history of child maltreatment. In general, these histories are remote and often not formulated as integral to the chief complaint, assessment, or treatment plan (1, 2). Child maltreatment is similarly overrepresented among children and adolescents evaluated for psychiatric concerns, either by child psychiatrists or often by generalists (3). However, unlike for adults, a history or disclosure of maltreatment often has direct implications for the acute safety, assessment, and treatment considerations for children. Increased temporal proximity to the maltreatment and increased vulnerability as a minor, dependent on familial or state-appointed guardians, are key alterations in risk and protective factors that a trauma-informed approach is intended to address (4). In the following sections, we discuss prevalence and system consideration, toxic versus traumatic stress, the impact of adverse childhood experiences among maltreated youths, and trauma-informed assessment and treatment, including key psychosocial and pharmacological considerations when caring for youths with a recent or remote history of child maltreatment.

CHILD MALTREATMENT AND THE FOSTER CARE SYSTEM

Child abuse and child neglect are the two primary forms of child maltreatment. Child abuse, in which children are harmed by the actions of caregivers, includes physical,

sexual, and emotional abuse. Child neglect occurs when needs are not being met, resulting in harm or significant risk for potential harm, such as educational neglect and medical neglect. According to current estimates from the Centers for Disease Control and Prevention, about one in seven children in the United States, or approximately 10 million children, will experience some form of child abuse or neglect in any given year, with neglect being much more common than abuse (5). American Indian/Alaska Native and African American children experience the highest rates of maltreatment victimization (14.8 and 13.7 per 1,000 children, respectively), yet how bias, racial disparities, and structural racism affect the elevated rates remains unclear (5). In 2019, over 1,800 children were known to have died because of abuse and neglect in the United States. Despite this prevalence, the Administration for Children and Families indicate that fewer than 3.5 million children were investigated by child protective services (CPS) for concerns of abuse or neglect by state child protection agencies in 2019, with fewer than 700,000 children having at least one substantiated case of abuse or neglect, or approximately 7% of all children likely abused or neglected in 2019 (5).

Investigations for possible child abuse result in varied service responses. Approximately one-third of children who are evaluated but not substantiated as victims of child abuse or neglect still receive some access to voluntary services and may be diverted to state-run supportive and risk reduction services for lower risk families (5). Approximately one in five

children with substantiated abuse or neglect will be placed in foster care at some point during the investigation or after the case has been supported. Overall, foster care is often mentioned as a regularly utilized process to ensure the safety of children who are being harmed or at significant risk of harm in their family environment. However, less than 6% of children investigated and between 2% and 3% of all children referred to CPS agencies for concerns of abuse or neglect are placed into foster care during or after the investigation (5).

As there are an estimated 500,000 children in foster care at any time in the United States, it is worth describing this population in greater detail. Children may be placed in foster care because of maltreatment, child behavior challenges that cannot be safely managed by the family, parental incarceration, and parental death. In general, the eventual disposition for children in the foster care system will be reunification with their biological family. However, nearly half of all children in foster care will be adopted or will age out of foster care after parental rights have been terminated, often a lengthy process even in the presence of federal regulations requiring urgency when determining disposition in foster care (6).

PSYCHOSOCIAL FRAMEWORK: DEVELOPING A SHARED UNDERSTANDING OF CHILDHOOD TRAUMA

The National Child Traumatic Stress Initiative, initially founded by the Substance Abuse and Mental Health Services Administration (SAMHSA) in 2001 to develop the National Child Traumatic Stress Network (NCTSN), is directly associated with 2 decades of significant growth in the understanding of childhood trauma by mental health professionals. This initiative has directed the development, evaluation, and dissemination of evidence-based approaches for the assessment and treatment of childhood trauma. Before the advent of the NCTSN, there was limited agreement regarding salient principles and systematic teaching approaches for trainees and mental health providers about childhood trauma.

The lack of consensus was challenging, as individuals trained in newly developed trauma-focused treatments often needed additional training in critical aspects of childhood trauma. This conundrum resulted in trauma experts across the country identifying independent clinical indicators of childhood trauma and incorporating these pieces as part of training in trauma-focused and trauma-informed therapeutic models.

Recognizing the variation in content and messaging around childhood trauma, the NCTSN brought together a workgroup of trauma experts, generating the 12 Core Concepts of Childhood Trauma (7) (Box 1). The NCTSN further developed curricula for including childhood trauma within clinical assessment, treatment planning, and delivery of services. Today, thousands of mental health professionals, including trainees and partners in child welfare agencies,

have opportunities to learn about the core concepts of childhood trauma through web-based resources found on <https://www.NCTSN.org>.

The 12 Core Concepts were developed by a multidisciplinary team of trauma experts. As such, these principles are applicable to general childhood trauma experiences but are also highly relevant for consideration specifically within childhood maltreatment. The framework of these concepts has been used to effectively guide the application of various evidence-based and -informed trauma-focused services for youths exposed to maltreatment.

BIOLOGICAL AND DEVELOPMENTAL DIFFERENCES IN CHILDHOOD TRAUMA

Stress is a general term that describes both positive and negative experiences that invoke a state of heightened arousal, mediated by a predictable cascade of physiological responses. This process prepares a “fight-or-flight” response to a given situation through multiple systems, including the hypothalamic-pituitary-adrenal (HPA) axis and the autonomic nervous system (ANS). Signaling molecules, including hormones and neurotransmitters, are rapidly released, which directly and indirectly increase cardiovascular output, pulmonary function, sensory acuity, and mental alertness (8). These responses are typically of short duration with a natural return to physiologic baseline, but prolonged or repeated stress exposures may lead to more chronic alterations to stress response systems in youths (9).

The experience of chronic stress exposure with inadequate return to homeostasis is frequently referred to as “toxic stress.” This term was repurposed from the biological sciences within the past 2 decades as part of a goal to simplify models of chronic psychological stress and highlight potential impacts on childhood development, adult disease, and the absence of mitigating measures in early life. A resultant model of three stress types, “positive stress,” “tolerable stress,” and “toxic stress,” was proposed to better share this information with the public and policy makers (10).

This model is applicable to maltreatment-exposed youths, for whom unaddressed toxic stress coupled with absent or limited caregiver support may exacerbate stress and negative developmental outcomes. Differential methylation of genes that play a role in neurodevelopment, stress tolerance, and HPA axis function may play a role in such outcomes. As an example, there is an increasing consensus that methylation changes affecting the glucocorticoid receptor, *NR3C1*, may mediate dysregulated HPA axis function in childhood maltreatment (11). Although the toxic stress theory is appealing from the standpoint of basic biology, an innumerable number of environmental and innate sources can contribute to the origin and response to toxic stress, making it less directly helpful for directing specific treatment and prevention strategies. Traumatic stress, a more narrowly defined construct within toxic stress, arises from identifiable traumatic events that lead to predictable physiologic changes and mental

BOX 1. Twelve core concepts of childhood trauma (7)

1. Traumatic experiences are **inherently complex**.
2. Trauma **occurs within a broad context** that includes children's personal characteristics, life experiences, and current circumstances.
3. Traumatic events often **generate secondary adversities**, life changes, and distressing reminders in children's daily lives.
4. Children can exhibit a **wide range of reactions** to trauma and loss.
5. **Danger and safety are core concerns** in the lives of traumatized children.
6. Traumatic experiences **affect the family** and broader caregiving systems.
7. **Protective and promotive factors can reduce** the adverse impact of trauma.
8. Trauma and posttrauma adversities can **strongly influence development**.
9. Developmental **neurobiology underlies children's reactions** to traumatic experiences.
10. **Culture is closely interwoven** with traumatic experiences, response, and recovery.
11. Challenges to the **social contract**, including legal and ethical issues, affect trauma response and recovery.
12. **Working with trauma-exposed children can evoke distress** in providers that makes it more difficult for them to provide good care.

health outcomes, such as posttraumatic stress disorder (PTSD). Trauma is defined as a “frightening, dangerous, or violent event that poses a threat to a child’s life or bodily integrity” (<https://www.nctsn.org/what-is-child-trauma/about-child-trauma>).

The Adverse Child Experiences (ACEs) scale is a 10-item list of adversities that includes, but is not limited to, maltreatment experiences (12, 13). Additionally, some ACEs may or may not result in child maltreatment. For example, parental substance use disorder is considered an ACE, and although substance use is a clear risk factor for child maltreatment—and, in some states, perinatal exposure will prompt an automatic CPS referral—federal legislation does not dictate that either perinatal or postnatal exposure to parental substance abuse, in and of itself, constitutes maltreatment without co-occurring harm in the form of abuse or neglect (5). The ACEs scale is frequently utilized within studies attempting to evaluate long-term outcomes to adversity and trauma. However, it has distinct limitations, as is it does not measure the magnitude, severity, chronicity, or impact of identified events. The ACEs scale also does not assess all potential sources of adversity; nor does it define when an adversity becomes a trauma (<https://www.nctsn.org/sites/default/files/resources/special-resource/beyond-the-ace-score-perspectives-from-the-nctsn-on-child-trauma-and-adversity-screening-and-impact.pdf>). These limitations are important when working with at-risk youths, as the prevalence of any given event assessed by the ACEs scale is generally quite high in the general population, noted to be 61.6% for any ACE in a recent evaluation (14), and rates can vary considerably depending on the population surveyed.

Despite these limitations, ACEs, and subsets of adverse events focused specifically on child maltreatment, have been used to identify numerous developmental and health outcomes in recent studies. These outcomes result from the understanding that ACEs, particularly when chronic and unmitigated, are significant sources of toxic stress. Within childhood and adolescence, recent reviews and evaluations of ACE exposure have demonstrated correlation with the development of conduct problems, attention difficulties,

anxiety and depression, suicide attempt, self-harm, substance use, and utilization of additional resources in school, including increased incidence of repeating grades (15–21). In addition, recent cohort-derived evidence of adults who were exposed to childhood maltreatment demonstrated persistent difficulties, including greater reliance on government assistance, ongoing challenges with internalizing and externalizing disorders, increased likelihood to engage in criminal activity, and generally diminished physical health compared with that of their peers (16). Finally, it has been observed that more serious pathology tends to arise with multiple ACE exposures and frequently involves childhood maltreatment (22).

ADDRESSING TRAUMATIC STRESS

Over the past 20 years, there have been significant strides in improving the medical and mental health response to children who have experienced maltreatment-specific trauma. The advent of a child abuse subspecialty in pediatrics in 2009 and the existence of specialty foster care clinics allow for more trauma-focused and specialized care for maltreated children. In addition, there has been a dramatic increase in the development of trauma-specific treatments, shown through rigorous evidence to decrease traumatic stress and associated symptoms and functional impairment. Models such as trauma-focused cognitive-behavioral therapy (TF-CBT, discussed in greater detail later) have been disseminated across the country. Finally, many trauma-informed mental health providers can be identified through web-based registries, and evidence-based trauma therapy techniques are available through web-based resources (<https://www.nctsn.org>).

However, as mental health care for children has become more trauma informed, less effort has been placed on developing evidence-based approaches for systematic detection and response to traumatic stress in non-mental health settings. Many tools used in mental health settings for the detection of traumatic stress are too long to be used in busy outpatient pediatric settings. However, algorithms and workflows have been developed to efficiently identify and

appropriately respond to children at risk for traumatic stress. For example, the Intermountain Healthcare Care Process Model for Pediatric Traumatic Stress was recently developed with funding from SAMHSA and demonstrated the feasibility and utility of a brief experience and symptom report measure (23). Such approaches can lead to earlier and more proactive detection of children who have experienced trauma. Clinicians can then engage in shared decisions with families when determining appropriate mental health responses based on objective measures of traumatic stress. Improving the capacity for primary care clinicians to detect and reliably respond to youths who experience maltreatment and associated traumatic stress is a clear advocacy and educational role that psychiatrists can support in their local communities and within their health systems.

ASSESSMENT

Thorough assessment is critical for understanding the nature, breadth, and impact of child maltreatment experiences and other trauma exposures. There is clear evidence that different forms of trauma result in similar outcomes (24, 25), particularly as trauma-exposed children and adolescents are frequently subjected to multiple traumas. The initial assessment of maltreated youths begins with a thorough social history, particularly including the current living environment, care providers, safety concerns, and ongoing child welfare and legal status concerns. The assessment should evaluate current and previous traumatic exposures with an upfront discussion of expectations for privacy because of the potential for identifying previously unreported legitimate safety concerns, possibly necessitating an updated report to child protection as part of state-mandated reporting requirements. If possible and appropriate, current safety concerns should be evaluated with the child or adolescent alone in an open-ended fashion that is appropriate to the patient's level of development (26). All current or past exposures should also be documented, with disclosures of maltreatment being acknowledged and validated. Standardized tools for the assessment of childhood maltreatment have been generated and are available through the NCTSN (<https://www.nctsn.org>) and the Child Welfare Information Gateway (<https://www.childwelfare.gov>).

Because maltreatment can present with a wide array of symptoms, children can vary considerably in presentation with a broad differential diagnosis. Differentials frequently include behavioral disorders such as attention-deficit hyperactivity disorder (ADHD), oppositional defiant disorder, disruptive mood dysregulation disorder, and conduct disorder; affective disorders such as major depressive disorder and bipolar disorder; PTSD; and anxiety disorders. It is not unusual to see prominent features of more than one disorder, which should be an important clue that trauma or traumatic stress may be driving the clinical presentation. It is also important to consider the relative rarity of severe psychiatric diagnoses arising in a young child, let alone multiple

comorbid significant diagnoses. For example, the mean age of onset of bipolar I disorder was observed to be 24 years old in one study, with less than 10% of patients having onset at age 15 or younger (27) and, similarly, a mean age of 26 years old at the onset of major depressive disorder, with less than 25% of patients being diagnosed by age 12 (28). Because of syndromic overlap, general screening tools for other diagnoses may be misleading if not considered in the context of a trauma-informed evaluation that objectively measures trauma exposures and traumatic stress symptoms.

If safety concerns are identified during evaluation, the priority is working toward a safe and secure environment for the child, as any treatment approach is much less likely to be effective in the setting of ongoing safety risk (29). Brief interventions can also be utilized at the time of assessment, including psychoeducation for caregivers and patients on how traumatic experiences can affect emotional regulation and distress tolerance, and instruction in appropriate relaxation and mindfulness techniques such as breathing exercises, meditation, guided imagery, and stretching and yoga exercises (30). Following these basic interventions, evidence-based, trauma-focused and -informed therapies should be the mainstay of treatment.

Beyond these general considerations, there are unique considerations for the mental health evaluation and treatment of children in foster care. At least one-third of children in foster care have been diagnosed or identified as experiencing severe emotional, behavioral, or developmental problems (4). Youths in foster care also receive significantly more psychiatric treatment, including the use of second-generation antipsychotics, than their Medicaid-matched peers (31). Laws regarding parental rights and medical decision making vary from state to state for children in foster care, and identifying the appropriate individual to discuss treatment options and provide informed consent can be quite challenging. Furthermore, many providers do not have access to comprehensive and accurate past histories, family history, or current collateral symptom reports for the foster child, leaving much of the evaluation focused on self-reported emotions and behaviors, making a complete trauma-informed evaluation difficult or impossible (4).

Such limitations are problematic, because children in foster care are routinely evaluated for significant externalizing and aggressive and/or suicidal and self-harm behaviors (32). In a sense, mental health clinicians may feel that they are confronting some of the youths at highest risk but that they have limited information to make informed and evidence-based treatment recommendations compared with those for children who are not in foster care. In response to some of the systemic and chronic challenges in providing appropriate mental health treatment to youths in foster care, federal legislation mandates that state agencies afford children in foster care routine mental health evaluations. Most states have developed statewide oversight agencies regarding the psychiatric treatment of youths in foster care (33). Of note, the American Academy of Child and Adolescent

Psychiatry and the American Academy of Pediatrics have numerous resources for psychiatric treatment of children in foster care. State child welfare agencies can provide information regarding state-specific resources.

TREATMENT

Psychosocial Interventions

Trauma-focused therapies result in improved outcomes for children with traumatic stress when compared with both waitlist and active controls (34). Evidence-based, trauma-focused therapies have several components that are similar across interventions. These components include psychoeducation on how children and adolescents may continue to be bothered by the traumatic event(s), including the core components of PTSD, even when they are safe; the use of coping skills or other techniques to empower the child or adolescent to decrease symptoms when distressed or traumatic memories are triggered; the opportunity for either gradual exposure and/or cognitive processing to decrease the frequency and intensity of future trauma-associated reactions; and guidance around improved safety both during and after therapy.

One of the most well-studied and widely available of the evidence-based, trauma-focused treatments is TF-CBT (35). Originally designed for treating survivors of sexual abuse, TF-CBT has over 20 randomized controlled trials (RCTs) demonstrating efficacy among populations who have experienced a wide variety of traumatic events (29). Furthermore, although individual in-person outpatient therapy is the most studied and widely available form of TF-CBT, adaptations have been developed for school, group, and virtual settings. Furthermore, TF-CBT developers have created approaches within TF-CBT to address unique populations who have experienced loss as well as youths who identify as LGBTQ+ (lesbian, gay, bisexual, transgender, and queer or questioning, plus other identities). TF-CBT is a manualized approach with significant interaction and involvement with caregivers throughout treatment. TF-CBT can generally be delivered over 16–24 weeks in the outpatient setting, with complex trauma cases potentially requiring additional sessions. In TF-CBT, the approach for exposure and cognitive processing of the trauma is the trauma narrative, a developmentally sensitive method for allowing the child or adolescent to write his or her own story, including the use of dictation or drawings for children who are too young to write. It is important to note that the trauma narrative includes key aspects of the child that are not limited to or defined by the trauma itself, including chapters that are future and growth focused.

Licensed mental health professionals, including but not limited to psychiatrists, psychologists and social workers, may be trained in TF-CBT. Training generally consists of web-based modules, 2 or more full days of in-person or virtual training, and 12 months of ongoing consultation calls. Certification in TF-CBT is now also an option and can make

it easier to identify community providers who have received training and worked to implement TF-CBT within their practice at a high level of fidelity to the model.

Although TF-CBT is well equipped to address trauma-associated symptoms in a diverse array of children and adolescents, predominant externalizing or unsafe behaviors may indicate the application of other treatment strategies. For example, oppositional, hyperactive, or increased-reactivity behaviors may arise in younger children, whereas risk-taking, oppositional, suicidal, and nonsuicidal self-injurious behavior may be present in teenagers. In general, when the behaviors are not severe, TF-CBT may adequately address the behaviors, improving the caregiver's capacity to manage the behaviors at home. However, in treating children for whom these behaviors are the predominant and impairing feature, particularly where trauma reminders or other distress trigger significant and potentially unsafe episodes, alternative treatments, such as parent-child interaction therapy (PCIT) and dialectical behavioral therapy (DBT), may be considered.

PCIT is a well-disseminated, trauma-informed, evidence-based approach to improve oppositional and other problematic externalizing behaviors among young children (36). It is primarily studied among children 3–6 years old; the therapist works with the parent to improve the parent's capacity to follow the child's lead during play (child-directed interaction) and improve the parent's ability to give and follow through with effective commands (parent-directed interaction). During most sessions, the therapist is on the other side of a one-way mirror while the parent and child interact. As the parent wears an earpiece, the therapist provides direct “bug-in-ear” coaching and immediate feedback to the parent while the parent and child interact. Not only have numerous studies shown PCIT to be effective in improving externalizing behaviors, but positive studies that specifically include maltreated children have also shown both improved behaviors and decreased risk of recidivism in the child welfare system (37, 38).

DBT, adapted for adolescents from the initially derived model for adults, is a trauma-informed therapy with evidence for efficacy within externalizing and behavioral symptoms within maltreated and otherwise trauma-exposed individuals (39). DBT, which includes both individual sessions and group sessions, has been demonstrated to be effective in reducing unsafe behaviors in adults and adolescents with risk-taking, self-injurious behaviors, and PTSD. In the adolescent adaptation, group sessions often include parent-adolescent dyads in which parents learn, along with their adolescents, core DBT skills and are also coached on how to help support their adolescents' safety and improve communication.

Pharmacologic Approaches

It is challenging to apply an evidence-based pharmacologic approach to children with a history of maltreatment whose main symptoms and functional challenges are related to traumatic stress, even if they meet full criteria for PTSD. The

adult literature, primarily in depression, demonstrates that adults with a history of childhood traumas, including maltreatment, do not respond to traditional antidepressant treatment as well as adults without such a history (40, 41). Within the child literature, most studies on common childhood mental health conditions such as anxiety, depression, and ADHD rarely include details on the impact of maltreatment experiences on medication efficacy. From an epidemiologic standpoint, the populations with the highest (and likely least efficacious) pharmacotherapy burden include youths in foster care. Furthermore, there are limited studies on the treatment of PTSD in children, with only two RCTs of sertraline, both negative (42, 43). Therefore, it is relatively common practice for providers, when aware of a child or adolescent's history of trauma-associated maltreatment, to acknowledge the trauma, as well as any possible traumatic stress, and then move forward with diagnosing a concurrent (and presumed to be unrelated) comorbid psychiatric disorder amenable to pharmacotherapy, even when the observed symptoms might be better explained by syndromic overlap with traumatic stress rather than true comorbidity (4).

In the past several years, the American Academy of Pediatrics and the American Academy of Child and Adolescent Psychiatry have begun to advocate for a trauma-informed approach to the pharmacologic treatment of children with a history of child maltreatment. Recent clinical reports highlight that a staged approach may be beneficial for children with a history of child maltreatment-associated trauma and current traumatic stress (4, 44). In the first phase of a staged approach, recommendations include ensuring that the patient receives evidence-based trauma therapy. Additionally, when sleep difficulties are present, a trauma-informed approach to sleep should be considered. This would include trauma-informed psychoeducation with specific strategies for identifying and addressing trauma reminders at night, improved overall sleep hygiene and routine, and consideration of a short-term trial of a medication (45). In children with PTSD, clinical guidelines recommend trials of melatonin as well as adrenergic modulating agents such as prazosin and clonidine (45).

In a second phase of treatment, with consistent and improved sleep and an adequate number of sessions of evidence-based trauma treatment, reevaluation of common childhood disorders such as depression, anxiety, and ADHD are more readily separated from traumatic stress or chronic insomnia. However, for many youths with histories of child maltreatment, even challenges that are identified as existing before the index maltreatment are often related to previous traumas or adversities that can only be uncovered with careful questioning.

Regardless, it is helpful to remember that individuals with a history of trauma are at increased risk of not responding to pharmacologic medication, even when indicated by the presence of a comorbid condition that is typically amenable to treatment. In addition, these individuals are at increased

risk of adverse effects of medication and are more likely to be treated with complex pharmacotherapy (44). Therefore, pharmacologic approaches that are conservative, intentionally limit complexity, and discontinue rather than augment when initial approaches are unsuccessful are consistent with trauma-informed practice. There is no evidence to strongly support the use of second-generation antipsychotics, other mood stabilizers, benzodiazepines, or the concurrent use of multiple adrenergic modulating agents among maltreated children whose impairment is primarily driven by traumatic stress (44).

Deprescribing

As discussed earlier, the diversity and severity of symptoms in maltreated youths may push care providers to trial treatment strategies that lead to considerable polypharmacy. A recent retrospective evaluation of 1,700 children on Medicaid or in foster care in the State of Kentucky found that 16%–34% had “high-level psychotropic polypharmacy,” defined as taking at least four psychotropic medications for a duration of at least 30 days (46). This study also found that 92%–99% of children with high-level polypharmacy were diagnosed with “disruptive behavior disorders,” among other comorbid diagnoses. This diagnostic category was composed of ADHD, oppositional defiant disorder, and conduct disorder diagnoses—which have each been associated, or hypothesized to be misdiagnosed for, traumatic stress (47–49)—and was associated with a longer duration of polypharmacy treatment (46). Although these data represent only a single state's situation, it is not a singular experience, with general patterns being appreciated of elevated prescribing within groups known to have been exposed to childhood maltreatment or who are at high risk for traumatic stress (4).

Such prescribing practices have been increasingly discussed in the literature, with a desire to better understand the underlying pressures directing these practices and the development of strategies to effectively and safely discontinue, when possible. A recent evaluation of physician perspectives (50), direction from a 2009 guideline published by the American Academy of Child and Adolescent Psychiatry (51), and other recent evaluations of problematic prescribing practices (4, 52) provide important insights and direction on implementing an effective deprescribing strategy. In evaluating these guidelines, it is important to focus on the needs of each individual and understand that the goal is not, necessarily, to discontinue all medications but to thoughtfully prioritize and reduce dosing or discontinue medications of limited efficacy or particularly high risk to the patient. It is also critical to consider the context of the currently prescribed regimen, barriers to access of alternative treatment strategies, and the perspective of the patient along with all other invested parties. For a summary of existing guidelines and these other considerations, see Box 2.

For children and adolescents who have experienced maltreatment and other co-occurring traumas, each patient

BOX 2. Summarized guidelines for deprescribing (4, 50–52)**Identifying Context of Polypharmacy**

- Pressure to practice outside of guidelines or off label because of unrealistic expectations or a need for rapid solutions from stakeholders (parents, schools, etc.)
- Insufficient access to alternative, evidence-based treatments or inadequate mental health resources

Forming a Deprescribing Plan

- Collect a comprehensive history of current and previous medications, including reasons for discontinuation.
- Prioritize medications with a high risk for adverse effects, those at supratherapeutic doses, subtherapeutic medications, and those that do not have a clear rationale for the patient's current and past presentation.
- Develop and implement a specific plan for the reduction or discontinuation of identified medications, preferentially adjusting one medication at a time.

- Use a stepwise approach with sufficient time between steps to observe adverse effects or reemergence of symptoms.
- Provide regular reassessment.

Enhancing Facilitators to Deprescription

- Provide effective psychoeducation to the patient and family.
- Communicate with the original provider to better understand context.
- Capitalize on the patient's or parents' wishes to reduce medications or adverse effect.
- Use existing printed or online resources to support the plan.

Identifying Barriers to Deprescription

- Discomfort or unfamiliarity with the medications to be deprescribed
- Lack of available or affordable alternatives to treatment, including appropriate therapy
- Insufficient capacity or access for follow-ups to carry out the plan

and social situation is unique and must be factored into plans for deprescribing. In addition, careful consideration must be given regarding when to refer to a child and adolescent psychiatrist, particularly when treatment regimens or requests from stakeholders fall outside the bounds of safe practice for the given provider. Unfortunately, access to child and adolescent psychiatry providers is extremely limited in many areas and is not always a feasible option, requiring careful consideration of appropriate practices.

CONCLUSIONS

Child psychiatry resources are limited, and as a result, much of the psychiatric care for children and adolescents is delivered by pediatricians and general psychiatrists. Maltreated youths, with or without ongoing child welfare system involvement, often have significant psychiatric needs and limited access to child-specific psychiatric services. For the foreseeable future, as much of the psychiatric care for maltreated youths will continue to be delivered by generalists, understanding and applying the principles of childhood trauma and advocating for evidence-based trauma treatments and other trauma-informed approaches will be critical for all who share in the psychiatric care of maltreated youths.

AUTHOR AND ARTICLE INFORMATION

Department of Pediatrics (Keeshin) and Department of Psychiatry (Monson), Huntsman Mental Health Institute, University of Utah, Salt Lake City. Send correspondence to Dr. Keeshin (brooks.keeshin@hsc.utah.edu).

The authors report no financial relationships with commercial interests.

REFERENCES

1. Edwards VJ, Holden GW, Felitti VJ, et al: Relationship between multiple forms of childhood maltreatment and adult mental health in community respondents: results from the adverse childhood experiences study. *Am J Psychiatry* 2003; 160:1453–1460
2. Kessler RC, McLaughlin KA, Green JG, et al: Childhood adversities and adult psychopathology in the WHO World Mental Health Surveys. *Br J Psychiatry* 2010; 197:378–385
3. Sege RD, Amaya-Jackson L, American Academy of Pediatrics Committee on Child Abuse and Neglect, et al: Clinical considerations related to the behavioral manifestations of child maltreatment. *Pediatrics* 2017; 139:e20170100
4. Keeshin B, Forkey HC, Fouras G, et al: Children exposed to maltreatment: assessment and the role of psychotropic medication. *Pediatrics* 2020; 145:e20193751
5. Child Maltreatment 2019. Washington, DC, U.S. Department of Health & Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau, 2021. <https://www.acf.hhs.gov/sites/default/files/documents/cb/cm2019.pdf>
6. Alavi Z, Calleja NG: Understanding the use of psychotropic medications in the child welfare system: causes, consequences, and proposed solutions. *Child Welfare* 2012; 91:77–94
7. National Child Traumatic Stress Network Core Curriculum on Childhood Trauma Task Force: The 12 core concepts: concepts for understanding traumatic stress responses in children and families. Los Angeles, CA, and Durham, NC, UCLA-Duke University National Center for Child Traumatic Stress, 2012
8. Tsigos C, Chrousos GP: Hypothalamic-pituitary-adrenal axis, neuroendocrine factors and stress. *J Psychosom Res* 2002; 53:865–871
9. Pervanidou P: Biology of post-traumatic stress disorder in childhood and adolescence. *J Neuroendocrinol* 2008; 20:632–638
10. Shonkoff JP, Boyce WT, McEwen BS: Neuroscience, molecular biology, and the childhood roots of health disparities: building a new framework for health promotion and disease prevention. *JAMA* 2009; 301:2252–2259
11. Wadji DL, Tandon T, Ketcha Wanda GJM, et al: Child maltreatment and NR3C1 exon 1F methylation, link with deregulated hypothalamus-pituitary-adrenal axis and psychopathology: a systematic review. *Child Abuse Negl* 2021; 122:105304
12. Felitti VJ, Anda RF, Nordenberg D, et al: Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. The Adverse Childhood Experiences (ACE) Study. *Am J Prev Med* 1998; 14:245–258

13. Anda RF, Felitti VJ, Bremner JD, et al: The enduring effects of abuse and related adverse experiences in childhood. A convergence of evidence from neurobiology and epidemiology. *Eur Arch Psychiatry Clin Neurosci* 2006; 256:174–186
14. Merrick MT, Ford DC, Ports KA, et al: Prevalence of adverse childhood experiences from the 2011–2014 behavioral risk factor surveillance system in 23 states. *JAMA Pediatr* 2018; 172: 1038–1044
15. Bauer A, Hammerton G, Fraser A, et al: Associations between developmental timing of child abuse and conduct problem trajectories in a UK birth cohort. *BMC Psychiatry* 2021; 21:89
16. Lansford JE, Godwin J, McMahon RJ, et al: Early physical abuse and adult outcomes. *Pediatrics* 2021; 147:e20200873
17. Crouch E, Radcliff E, Bennett KJ, et al: Examining the relationship between adverse childhood experiences and ADHD diagnosis and severity. *Acad Pediatr* 2021; 21:1388–1394
18. Elmore AL, Crouch E: The association of adverse childhood experiences with anxiety and depression for children and youth, 8–17 years of age. *Acad Pediatr* 2020; 20:600–608
19. Angelakis I, Austin JL, Gooding P: Association of childhood maltreatment with suicide behaviors among young people: a systematic review and meta-analysis. *JAMA Netw Open* 2020; 3:e2012563
20. Liu RT, Scopelliti KM, Pittman SK, et al: Childhood maltreatment and non-suicidal self-injury: a systematic review and meta-analysis. *Lancet Psychiatry* 2018; 5:51–64
21. Tian X, Lu J, Che Y, et al: Childhood maltreatment and self-harm in Chinese adolescents: moderation and mediation via resilience. *BMC Public Health* 2021; 21:1561
22. Hughes K, Bellis MA, Hardcastle KA, et al: The effect of multiple adverse childhood experiences on health: a systematic review and meta-analysis. *Lancet Public Health* 2017; 2:e356–e366
23. Keeshin B, Byrne K, Thorn B, et al: Screening for trauma in pediatric primary care. *Curr Psychiatry Rep* 2020; 22:60
24. Macmillan HL, Wathen CN, Barlow J, et al: Interventions to prevent child maltreatment and associated impairment. *Lancet* 2009; 373:250–266
25. Finkelhor D, Turner HA, Shattuck A, et al: Prevalence of childhood exposure to violence, crime, and abuse: results from the national survey of children's exposure to violence. *JAMA Pediatr* 2015; 169:746–754
26. Christian CW, Committee on Child Abuse and Neglect, American Academy of Pediatrics: The evaluation of suspected child physical abuse. *Pediatrics* 2015; 135:e1337–e1354
27. Baldessarini RJ, Bolzani L, Cruz N, et al: Onset-age of bipolar disorders at six international sites. *J Affect Disord* 2010; 121: 143–146
28. Zisook S, Lesser I, Stewart JW, et al: Effect of age at onset on the course of major depressive disorder. *Am J Psychiatry*. 2007; 164: 1539–1546
29. Keeshin BR, Strawn JR: Psychological and pharmacologic treatment of youth with posttraumatic stress disorder: an evidence-based review. *Child Adolesc Psychiatr Clin N Am* 2014; 23:399–411
30. Cohen JA, Bukstein O, Walter H, et al: Practice parameter for the assessment and treatment of children and adolescents with post-traumatic stress disorder. *J Am Acad Child Adolesc Psychiatry* 2010; 49:414–430
31. Raghavan R, Lama G, Kohl P, et al: Interstate variations in psychotropic medication use among a national sample of children in the child welfare system. *Child Maltreat* 2010; 15:121–131
32. Liu X, Shah V, Kubilis P, et al: Psychotropic treatment pattern in medicaid pediatric patients with concomitant ADHD and ODD/CD. *J Atten Disord* 2019; 23:140–148
33. Mackie TI, Hyde J, Palinkas LA, et al: Fostering psychotropic medication oversight for children in foster care: a national examination of states' monitoring mechanisms. *Adm Policy Ment Health* 2017; 44:243–257
34. Morina N, Koerssen R, Pollet TV: Interventions for children and adolescents with posttraumatic stress disorder: a meta-analysis of comparative outcome studies. *Clin Psychol Rev* 2016; 47:41–54
35. Cohen JA, Deblinger E, Mannarino AP: Trauma-focused cognitive behavioral therapy for children and families. *Psychother Res* 2018; 28:47–57
36. Eyberg SM, Boggs SR, Algina J: Parent-child interaction therapy: a psychosocial model for the treatment of young children with conduct problem behavior and their families. *Psychopharmacol Bull* 1995; 31:83–91
37. Chaffin M, Silovsky JF, Funderburk B, et al: Parent-child interaction therapy with physically abusive parents: efficacy for reducing future abuse reports. *J Consult Clin Psychol* 2004; 72: 500–510
38. Timmer SG, Urquiza AJ, Herschell AD, et al: Parent-child interaction therapy: application of an empirically supported treatment to maltreated children in foster care. *Child Welfare* 2006; 85: 919–939
39. Fleischhaker C, Böhme R, Sixt B, et al: Dialectical behavioral therapy for adolescents (DBT-A): a clinical trial for patients with suicidal and self-injurious behavior and borderline symptoms with a one-year follow-up. *Child Adolesc Psychiatry Ment Health* 2011; 5:3
40. Nemeroff CB, Heim CM, Thase ME, et al: Differential responses to psychotherapy versus pharmacotherapy in patients with chronic forms of major depression and childhood trauma. *Proc Natl Acad Sci USA* 2003; 100:14293–14296
41. Klein DN, Arnow BA, Barkin JL, et al: Early adversity in chronic depression: clinical correlates and response to pharmacotherapy. *Depress Anxiety* 2009; 26:701–710
42. Cohen JA, Mannarino AP, Perel JM, et al: A pilot randomized controlled trial of combined trauma-focused CBT and sertraline for childhood PTSD symptoms. *J Am Acad Child Adolesc Psychiatry* 2007; 46:811–819
43. Robb AS, Cueva JE, Sporn J, et al: Sertraline treatment of children and adolescents with posttraumatic stress disorder: a double-blind, placebo-controlled trial. *J Child Adolesc Psychopharmacol* 2010; 20:463–471
44. Keeshin BR, Bryant BJ, Gargaro ER: Emotional dysregulation: a trauma-informed approach. *Child Adolesc Psychiatr Clin N Am* 2021; 30:375–387
45. Keeshin BR, Berkowitz SJ, Pynoos RS: Pediatrician's practical approach to sleep disturbances in children who have experienced trauma. *Pediatr Ann* 2019; 48:e280–e285
46. Davis DW, Lohr WD, Feygin Y, et al: High-level psychotropic polypharmacy: a retrospective comparison of children in foster care to their peers on Medicaid. *BMC Psychiatry* 2021; 21:303
47. Ford JD, Racusin R, Ellis CG, et al: Child maltreatment, other trauma exposure, and posttraumatic symptomatology among children with oppositional defiant and attention deficit hyperactivity disorders. *Child Maltreat* 2000; 5:205–217
48. Maniglio R: Significance, nature, and direction of the association between child sexual abuse and conduct disorder: a systematic review. *Trauma Violence Abuse* 2015; 16:241–257
49. Brown NM, Brown SN, Briggs RD, et al: Associations between adverse childhood experiences and ADHD diagnosis and severity. *Acad Pediatr* 2017; 17:349–355
50. Barnett ER, Trepman AZ, Fuson HA, et al: Deprescribing psychotropic medications in children: results of a national qualitative study. *BMJ Qual Saf* 2020; 29:655–663
51. Walkup J, Work Group on Quality Issues: Practice parameter on the use of psychotropic medication in children and adolescents. *J Am Acad Child Adolesc Psychiatry* 2009; 48:961–973
52. Bellonci C, Baker M, Huefner JC, et al: Deprescribing and its application to child psychiatry. *Child Adolesc Psychopharmacol News* 2016; 21:1–9