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## In This Issue



This month's issue focuses on the topic of **Childhood Trauma and Psychopathology**. In an editorial, Katherine S. Pier, M.D., emphasizes the importance of screening children of all ages for abuse and neglect to provide optimal pharmacologic and therapeutic interventions. Connie M. Lee, M.D., discusses the effect of adverse childhood experiences on later-life health, including risk behaviors and mechanisms of illness. Stephanie C. Cohen, B.A., provides a review of the effects of war on children, with a focus on play therapy. Hun Millard, M.D., M.A., examines the impact of early deprivation on internationally institutionalized adoptees. In a case report, Kimberly Schreiber, M.D., analyzes the coexistence of resilience and trauma-related psychopathology in an adult survivor of childhood abuse. Karen J. Bos, M.D., M.P.H., examines an approach to posttraumatic stress disorder using DSM-5 in the case of a 12-year-old girl. Lastly, Stacy A. Solheim, D.O., and Matthew J. Baker, D.O., discuss trauma-focused cognitive-behavioral therapy for posttraumatic stress disorder in a case involving a juvenile sexual offender.

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# Identifying Victims of Childhood Trauma Amid Multiple Comorbidities

Katherine S. Pier, M.D.

Approximately three million cases of child abuse are brought to the attention of state agencies each year in the United States (1). This corresponds to approximately 1% of the population under 18 years old and is likely a gross underestimate. For example, in a retrospective cohort study of 17,337 volunteers in California, the Adverse Childhood Experiences (ACE) Study found that 4,514 individuals reported at least one adverse childhood experience (2), which corresponds to 26%. Health care providers only report 8.5% of the three million cases (1) investigated in the United States each year. As a profession, we need to do better.

The human response to trauma and the myriad ways in which experiences and memories influence human behavior are unpredictable. This lies at the heart of the debate surrounding how posttraumatic stress disorder (PTSD) should be defined. The first two iterations of DSM referred to the psychological consequences of trauma as “transient” and “situational,” implying that as soon as an environmental stressor recedes and cortisol levels normalize, individuals should return to their “pretraumatized” states (3). We now know that trauma changes people on hormonal, anatomical, and epigenetic levels (2–5), producing profound behavioral consequences that endure and evolve.

Unlike the PTSD that ensues after a motor vehicle accident or a natural disaster, the outcomes of childhood trauma are more complex. The trauma is frequently insidious, recurrent, and interpersonal. It commonly begins in infancy (1), before the development of episodic memory. Moreover, that external stressor, that “environmental trigger,” is likely a caregiver

*It is ... imperative to screen regularly for childhood abuse and neglect at all ages.*

(1), someone the child depends on for life and does not want to go away.

From this perspective, the concept of a “pretraumatized state” vanishes. As summarized by van der Kolk et al. (4), adults with PTSD resulting from childhood trauma are estimated to have eight to 14 psychiatric comorbidities by middle age. At best, this means that clinicians have, in fact, inquired about trauma. Aggression, dissociation, memory impairment, anxiety, depression, substance use, hallucinations, and trouble negotiating interpersonal relationships are known consequences of childhood trauma (2). The downside then becomes that these symptoms masquerade as other diagnoses, and their common origin may be forgotten. When a patient’s chart becomes littered with diagnoses, it is incumbent on the mental health provider to bear in mind that these comorbidities may stem from a common etiology that dates back to early-life experience.

Victims often present with a plethora of somatic, neurocognitive, and psychiatric symptoms that creates a diagnostic conundrum for the clinician. These patients are also frequently abusive toward providers (5), interfering with the therapeutic alliance they so desperately need. For these reasons and others, patients are at heightened risk of receiving well-inten-

tioned but misguided interventions that carry many risks and unclear benefits.

Unless a patient has sustained an easily identifiable event, the traumatic link to his or her symptoms is missed and diagnoses accumulate. It is therefore imperative to screen regularly for childhood abuse and neglect at all ages in order to provide optimal pharmacologic and therapeutic interventions.

*Dr. Pier is a second-year resident in the Department of Psychiatry, Icahn School of Medicine at Mount Sinai, New York.*

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# The ACE Study: The Impact of Adverse Childhood Experiences on Later-Life Health

Connie M. Lee, M.D.

There is a bidirectional relationship between the rate of mental illness and chronic medical comorbidities. Patients with mental illness have higher rates of chronic medical conditions and vice versa when compared to the general population. This comes at great morbidity and cost. Mental illness is associated with an increased risk of all-cause mortality that translates to an estimated 10–20 years reduction in life expectancy (1). Those diagnosed with any psychiatric condition use twice the medical resources of those who do not (2), with a majority of the expenditure going toward medical rather than psychiatric treatment (3).

The recent Affordable Care Act aims to expand access to high-quality care while reducing costs. By mandating the formation of accountable care organizations to treat the whole person rather than the disease, primary prevention pays, with a system that financially incentivizes health promotion, disease prevention, early identification of illness, and intervention, as well as collaboration between specialties.

This topic is integral to treating and preventing illness in survivors of early childhood trauma. Although trauma has historically been codified according to its long-term psychological sequelae, such as autobiographical memory disturbance, depression, hallucination, and suicidality (4–7), a growing body of evidence suggests that adverse childhood experiences have a profound impact on physical health, thereby contributing to leading causes of illness and death in the United States.

## Adverse Childhood Experiences (ACE) Study

The ACE study is one of the largest investigations to assess the relationship between childhood trauma and adult

health. It represents an ongoing collaboration started in 1995 between the Centers for Disease Control and Prevention and Kaiser Permanente's Health Appraisal clinic in San Diego. The study originated from observations from a failed clinical weight loss program when participants dropped out despite successful results. Incidentally, when investigating the reason for the attrition, researchers discovered that the majority of those who withdrew from the program had been sexually abused as children. To further explore this association, the ACE study examined the effects of adverse childhood experiences on health in a broader primary care population, enrolling over 17,000 patients and yielding more than 50 publications thus far.

The ACE study queried patients on exposure to a trauma and assigned them an ACE score based on the number of exposures to categories of adverse childhood experiences. This included questions on 10 categories of abuse, including psychological, physical, sexual, physical or emotional neglect, and household dysfunction (i.e., whether a household member used alcohol or drugs, was imprisoned, or had mental illness or if there was marital separation/divorce or domestic violence [8]). For example, if someone was repeatedly verbally abused during his or her childhood but was not exposed to other categories of childhood trauma, this would count as 1 point in the ACE score. On the other hand, if an individual experienced verbal abuse from a parent who was an alcoholic and divorced, then that person would be assigned an ACE score of 3.

### Initial Findings

The prevalence of trauma ranged from 6% of respondents who reported growing up with a criminal household member to 28.2% who reported exposure to substance abuse in the household. A total

of 26.4% reported physical abuse, 24.1% had been exposed to domestic violence, 21% were sexually abused, and 20.3% reported mental illness in the household. Two-thirds of participants reported at least one ACE item. A total of 81%–98% of respondents who had experienced one ACE item reported an additional ACE item, and 52% endorsed at least three additional ACE items. One in six individuals had an ACE score  $\geq 4$ , and one in nine had a score  $\geq 5$ . The study provides strong evidence that all 10 categories of ACE items are interrelated. An adult who reported one adverse childhood experience was likely to have suffered two to four other adverse experiences during childhood (8). This co-occurrence of traumas and adverse exposures has important clinical implications because these studies have repeatedly shown that the negative influence of early-life adversity on behaviors, well-being, and physical health is cumulative.

The retrospective cohort study showed a strong dose-response relationship between the ACE score and the top leading causes of death in adults, including ischemic heart disease, cancer, chronic lung disease, skeletal fractures, and liver disease (9). As the number of childhood adverse exposures increased, so did the prevalence and risk for such health factors as smoking, obesity, physical inactivity, depressed mood, suicide attempts, alcoholism, use or injection of illicit drugs, having  $\geq 50$  sexual partners, and history of sexually transmitted disease. In fact, the greater the number of childhood exposures, the greater the number of health risk factors a patient had (10).

### Health Risk Behaviors

Felitti et al. (9) postulate that common contemporary health risks such as obesity serve as coping mechanisms to alleviate the stress and negative emotions associated with childhood abuse. Each category

of ACE items increased the likelihood of substance use by age 14 two- to four-fold and also increased the likelihood of lifetime use (11). Those with a score >5 were seven- to ten-fold more likely to report substance use of varying severities compared to those with a score of 0. This was demonstrated in a graded and statistically significant manner ( $p < 0.05$ ) as the score increased. Similar findings were demonstrated with respect to smoking behaviors, with higher scores correlating with earlier initiation of smoking, history of ever smoking, current smoking, and heavy smoking (12). Another health risk factor found to have a strong-graded relationship with ACE score was self-reported history of sexually transmitted disease among adults, an increase in the risk of early-onset intercourse, and sexual promiscuity (13, 14). The prevalence of sexually transmitted diseases increased in a stepwise fashion in both men and women as the score increased.

The limitations of the study are readily acknowledged. These include several biases inherent to retrospective cohort studies, including sampling and recall biases (15). Furthermore, the cohort represents a middle-class, insured population from a geographically small region (i.e., San Diego-based), which limits the data's generalizability.

## Mechanism of Illness

The relationship between childhood experiences and later biomedical disease is complicated and multifactorial. For instance, childhood adversity is linked to obesity and smoking, which are known cardiovascular risk factors. Even when these risk factors are corrected for, however, there is a strong positive correlation between adverse experiences in childhood and adult diseases, such as coronary artery disease (16).

There is strong and emerging research indicating that early or chronic stressors lead to lasting deleterious effects on neural development and dysregulated endocrine and autonomic nervous systems (17, 18). This causes disruption in the hypothalamic-pituitary adrenal axis with widespread physiologic effects, includ-

ing increased cortisol and norepinephrine levels. There is evidence for structural and functional changes in brain development as well, including changes to the mid-corpus callosum, left neocortex, hippocampus, and amygdala. Increased electrical irritability in limbic structures is also observed, as well as decreased functional activity of the cerebellar vermis, and EEG changes in the frontal cortex. Early environmental context is even associated with epigenetic modifications and telomere shortening that may contribute to developmental psychopathology and cellular aging (19).

## Conclusions

Given the high prevalence of individuals exposed to maltreatment during childhood and the likelihood for these traumas and health risk factors to cluster in individuals, any given physician might see several patients a day with high ACE scores. The ACE study suggests that childhood adversity and trauma not only contribute to known psychopathology, including posttraumatic stress disorder, autobiographical memory disturbance, affective disorders, anxiety, hallucinations, and increased suicide attempts (5–7, 20), those experiences have an impact on medical illness, well-being, and mortality decades later. However, these findings are based on a retrospective study design, which makes it difficult to establish a causal association. It would be interesting to see whether these findings are replicated in a longitudinal study design. Longitudinal cohorts that are currently under way include the Longitudinal Studies of Childhood Abuse and Neglect, the Avon Longitudinal Study of Parents and Children, the Netherlands Mental Health Survey and Incidence Study, and the Tracking Adolescents' Individual Lives Survey. An understanding of the biological mechanisms, mediators, and moderators of this association will be essential to prevention and early intervention.

*Dr. Lee is a first-year child psychiatry fellow at the University of California, San Francisco.*

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# The Effects of War on Children: A Review of Current Treatments With a Focus on Play Therapy

Stephanie C. Cohen, B.A.

Since March 2011, the Syrian humanitarian crisis has resulted in more than three million refugees, mostly women and children, to countries such as Turkey, Lebanon, and Jordan (1). A total of 10.8 million people remain in need of humanitarian assistance (1).

In other areas of the world, such as Northern Uganda, the Democratic Republic of Congo, Central African Republic, and South Sudan, the Lord's Resistance Army killed, tortured, raped, mutilated, and abducted thousands of adults and children. More than 25,000 children have been abducted by the Lord's Resistance Army since the beginning of the conflict in the late 1980s (2).

The traumatic effects of these and other crises are impossible to quantify. The clinician's role in repairing the psychological trauma is therefore paramount and requires providers to understand the context and personal story of children affected. With the occurrence of ongoing conflicts worldwide, there is a need for research on the effects of war on children and for the field of psychiatry to improve the evidence base for existing and novel therapeutic interventions.

## Effects of War on Children

As in the adult population, posttraumatic stress disorder (PTSD) is a common diagnosis for those who have experienced war. Importantly, children are even more vulnerable to the psychological sequelae of war, demonstrating more symptomatology than adults (3). A systematic review of 7,920 children affected by armed conflict found a higher prevalence of mental disorders, such as PTSD, anxiety, depression, and psychosis, compared to children in the general population (4). Feelings of anxiety, depression, anger, violence, psy-

chic numbing, paranoia, insomnia, and a heightened awareness of death are commonly experienced by war-affected refugee children (5). Once resettled, the psychological burden remains (5). High numbers of experienced and witnessed event types, loss of first-degree relatives, and the number of event types involving forced perpetration were identified as risk factors for PTSD symptoms in former child soldiers (6).

## Types of Psychotherapy for Children Who Experience War

The evidence for effective psychotherapy for children in areas of armed conflict is weak. A systematic review of evidence and treatment approaches of mental health care for children in war, published in 2009, analyzed a total of 66 publications between the years 1991 and 2008, including data from 18 countries, with a skewed focus on former Yugoslavia (7). The authors found a lack of rigorous studies evaluating psychosocial care for children affected by war, especially in low- and middle-income countries (7). Although some evaluations were promising, effect sizes of controlled studies were at best moderate. For example, based on Cohen's *d* effect sizes, the two randomized controlled trials included produced effect sizes of 0.33–0.54. Limitations of other studies included lack of a control group, blinding, and reliance on anecdotal information (7).

The data on effective psychotherapeutic interventions for juvenile refugees are limited as well (8). What is known is that interventions for refugee children should promote optimal emotional, social, and cognitive adaptations. Services should be collaborative and culturally and linguistically appropriate (8).

## Trauma-Focused Cognitive-Behavioral Therapy (CBT)

Trauma-focused CBT is considered the first-line intervention for the treatment of PTSD in children and adolescents (8). Trauma-focused CBT involves both the trained therapist and parent/guardian and incorporates psychoeducational and parenting skills, relaxation, and affect expression and regulation. Creating a narrative of the trauma using cognitive restructuring and in vivo exposure is also at the clinician's disposal, all with the hope of bolstering a child's sense of safety and optimizing future development (9). Trauma-focused CBT usually takes place over the course of 12–16 individual and parent-child sessions.

## Narrative Exposure Therapy

Narrative exposure therapy, in particular a version adapted for children called KidNET, has been used to treat juvenile refugees suffering from symptoms of PTSD (8, 10). Narrative exposure therapy was originally developed for victims of multiple traumas of organized violence in resource-poor settings, since people in the community can be trained to deliver this form of therapy. It is a short-term manual-based exposure therapy, which involves creating a detailed autobiographical narrative with a focus on the traumatic event (10).

## Guidelines for Psychotherapy

In 2010, the World Health Organization recommended either individual or group trauma-focused CBT or eye movement desensitization and reprocessing in adolescents and children with PTSD in community health settings in low- and middle-income countries (11). However, Canadian guidelines from 2012 indicate that the evidence base for eye movement desensitization and reprocessing, narrative exposure therapy, and trauma-focused CBT is unconvincing, with

concern that traumatic re-experiencing and/or withdrawal from active treatment may outweigh any potential benefits from these interventions (8).

## Pharmacological Intervention

Pharmacologic interventions are often used in children that survive other traumas. However, it is notable that in children with trauma-based pathology that results from war, pharmacotherapy is not recommended (11–12).

## Play/Art Therapy

In children who have survived any trauma, including war, there is promise for nonverbal therapies such as art, relaxation, and movement, which can be used both recreationally and therapeutically (13).

Play, “the child’s natural medium of communication,” provides an avenue for patients to explore feelings, thoughts, experiences, and behavior to optimize growth and development (14). Play therapy is defined as a dynamic relationship between a person (usually a child) and a therapist, who provides “selected play materials and facilitates the development of a safe relationship” for the patient (14). Some say the purpose of the therapeutic intervention is to recapture the worst moment of the trauma and give the child the possibility to recreate the event as he or she would have liked it to end (15).

The success of play therapy is illustrated in a case report of a young boy who witnessed violent traumatic events while crossing the border from Mexico into the United States (16). In this case, the therapist gave the child toys to reenact the trauma he sustained in order to normalize the emotions of anger and fear that he associated with the event, in addition to allowing him to recreate the scene with a more favorable ending. The author comments that by displacing his fear and humiliation about the experience through play, he “began to share what he thought was his alone to endure. The play reenactment helped him turn passivity into activity and provided an outlet for his frustration and anger” (16).

The author commented on the utility of art therapy in helping a person “place the events in the perspective of the past,” expediting adaptation to life after trauma (16). In a way, this type of play therapy is similar to narrative exposure therapy, which uses verbal exposure of traumatic events to modify memories in a way that eases the sense of constant threat. However, large-scale studies that demonstrate the efficacy of play therapy are needed.

A randomized controlled trial of 314 adolescents in two camps for internally displaced persons, with a mean age of 15 years, in Northern Uganda found that compared to control interventions, creative play showed no effect on either depression or anxiety severity (17). Fifty-seven percent of the cohort was female. Only girls treated with interpersonal psychotherapy showed a statistically significant reduction in depression based on the Acholi Psychosocial Assessment Instrument, in which depression is measured on a scale of 32–105 (12.61 points; 95% confidence interval=2.09–23.14). The limitations on data pertaining to creative play include how broadly this intervention was defined. Verbal and nonverbal forms of expression were included, such as songs, art, role plays, music, sports, games, and debates (17). The study is further limited in that it is unclear whether play directly addressed traumatic experiences, as was done in the case report described above. Almost all of these children were abducted, further limiting the study’s generalizability. The general finding was reduction in anxiety, depression, and disruptive behavior among this cohort. Although these data were at large not statistically significant, this general finding may show promise for play therapy. Additionally, there were no adverse effects of this intervention.

## Conclusions

It is clear that war affects children in a serious and long-lasting way. Thus far, there is no evidence for the use of pharmacotherapy in this setting. While trauma-focused CBT, narrative exposure therapy, and eye movement

desensitization and reprocessing appear to hold some promise in the treatment of children with trauma-related psychopathology, it is imperative that more research is done to explore how to mitigate the harm of war on displaced and resettling refugees. Although the evidence is limited, art and play therapy hold promise.

*Stephanie Cohen is a fourth-year medical student at Yale University School of Medicine, New Haven, Conn.*

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*\*Please direct all inquiries to Rajiv Radhakrishnan, M.B.B.S., M.D., Senior Deputy Editor ([rajiv.radhakrishnan@yale.edu](mailto:rajiv.radhakrishnan@yale.edu)).*



# Impact of Early Deprivation on Internationally Institutionalized Adoptees

Hun Millard, M.D., M.A.

Approximately 23,000 international adoptions take place in the United States each year, and a disproportionate number of these children are referred to mental health services (1). Internalizing and externalizing psychopathology is over-represented in this population (1, 2). Infants and young children raised in institutionalized settings, such as international orphanages, fare worse on measurements of physical growth, as well as cognitive, linguistic, motor, and social development, when compared to children never institutionalized and raised at home (3). International orphanages are often characterized by psychosocial deficiencies involving frequent staff turnover, limited stimulation, and low levels of caregiver affection and emotional support (2, 3). The St. Petersburg-USA Orphanage Research Team (3) estimated that a child may be exposed to 50–100 caregivers in the first 2 years of life. Providers must consider the impact of social deprivation when evaluating, diagnosing, and treating postinstitutionalized international adoptees.

Even when children are adopted into nurturing homes, the consequences of early neglect can persist and become more pronounced in later childhood. Adolescence is a period of increased behavioral problems that may be related to changes in brain structure and hormone levels, decreased supervision, complicated social interactions, and an increased emphasis on peer relationships. The impact of social deprivation has significant implications in multiple areas of functioning, including mood, cognition, socialization, and emotional self-regulation, which may be exacerbated by the biological and psychosocial climate of adolescence (4, 5). Verhulst and Versluis-den (4) found

that during adolescence, international adoptees showed a significant increase in behavioral issues in the form of withdrawal and delinquency and less social competence as measured by the Child Behavior Checklist.

Institutionalized cultures are associated with self-stimulating behaviors, more parallel versus cooperative play, and indiscriminate friendliness toward strangers (3), indicative of poor early attachment. Rutter et al. (5) found that in a group of Romanian institutionalized adoptees, who were followed longitudinally to age 15, 45.5% (N=27) of those who spent more than 6 months at the orphanage displayed maladaptive behaviors compared with 1.3% of the comparison group. The comparison group included children adopted prior to 6 months of age, domestic United Kingdom adoptees, and children socially deprived in the home setting. This study controlled for subnutrition and excluded children with medical conditions. The maladaptive behaviors were characterized by disinhibited attachment, inattention, overactivity, and intellectual impairment, as well as “quasi-autism,” which refers to autistic-like features with greater social interest and cognitive flexibility (5).

In American society, these symptoms render adoptees vulnerable to bullying and estrangement within peer groups. Early behaviors that result from deprivation may also lead to parental and provider bias, whereby children are further pathologized and underestimated, perpetuating and intensifying existing psychopathology and strained family dynamics. It is important to note that most international adoptees are well adjusted (1), emphasizing the importance of early intervention. Given that

parenting quality may help moderate the effects of early deprivation (2), ongoing psychoeducation and support should be extended to parents of adopted children. This small intervention would not only ameliorate some of the damage these children have endured but also be immensely beneficial to society at large.

*Dr. Millard is a fourth-year child and adolescent psychiatry fellow at Yale School of Medicine, Yale Child Study Center, New Haven, Conn.*

*The author thanks Andrés Martin, M.D., M.P.H., for his editorial support and mentorship.*

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# The Coexistence of Resilience and Trauma-Related Psychopathology

Kimberly Schreiber, M.D.

Resilience is a term used to describe mental and physical health following varying levels of adversity. Despite decades of research on the topic, a cohesive definition remains elusive. The American Psychological Association defines resilience as “the process of adapting well in the face of adversity, trauma, tragedy, threats or even significant sources of stress” (1). The term has also been described as “healthy, adaptive, or integrated positive functioning over the passage of time in the aftermath of adversity” (2). Others define resilience as more simply, “the ability to bounce back from hardship and trauma” (3). But how is resilience measured? Who is resilient? Can trauma-related psychopathology and resilience coexist?

The purpose of the present case report is to review factors associated with resilience and discuss targets of potential pharmacologic and behavioral interventions. The likelihood of trauma exposure has been estimated to be as high as 50%–60% in an individual’s lifetime (4). The trauma may be interpersonal and ongoing during the course of relationships spanning childhood or adulthood, or it might be isolated as in the case of natural disasters, serious accidents, or death of loved ones. The trauma related to terrorism, war, or cultural practices falls somewhere in between (2).

Trauma is significantly correlated with depression, anxiety, posttraumatic stress disorder (PTSD), and substance abuse (3). Ongoing stress can contribute to various chronic illnesses, including hypertension, osteoporosis, immunosuppression, and insulin resistance (5). The present case focuses on a patient who suffered interpersonal trauma during childhood. The hope is that current and future treatments will be generalizable to those who are the victims of various types of trauma.

## Case

“Mr. V” is a 36-year-old single man, domiciled alone in a rented room and employed as a retail clerk. He has a significant history of abuse from primary caregivers, including his mother, father, and stepmother. The patient’s biological mother sexually abused him as young as 3 years of age, abuse that was ongoing until his parents’ divorce at the age of 7. Throughout that time, the patient was also neglected (diapers were not changed; he was locked out of the house in the cold) and physically abused. The patient’s mother had an untreated psychotic disorder, and he often felt that his life and safety were threatened. His mother chased him around the house with a knife more than once in an attempt to “cut out the demons.” He described his father as absent during this time. In therapeutic sessions, he often asked, “Why would he leave me with a monster?” His father later remarried, and his stepmother proceeded to physically and verbally abuse him, withhold nutrition, and steal from him. “Why would he leave me with another monster,” he often asked.

The patient eventually enrolled in college. He describes college as an escape but did not complete his degree due to depression and PTSD. He had intermittent suicidal ideation, with one aborted suicide attempt. He has never been hospitalized. The patient has exhibited symptoms characteristic of PTSD, including nightmares, vivid flashbacks, hypervigilance, and hyperarousal. He also has intermittent depressive episodes with associated insomnia, anhedonia, hopelessness, and suicidal ideation. He has difficulty forming secure attachments and struggles with intimacy and trust.

The patient is actively invested in therapy, attending weekly sessions, and integrates what he has learned from pre-

vious providers. He has been engaged in treatment for many years and has undergone a broad range of previous psychotherapeutic interventions, including eye movement desensitization and reprocessing, cognitive-behavioral therapy, psychodynamic therapy, and exposure therapy. Despite changing therapists only 6 months ago, he discloses details of his history openly, seemingly unaware that this is a testament to the amount of healing that has already taken place. He has also pursued two relationships within the past 6 months and completed the steps necessary to enroll in college next term.

Despite active PTSD and social anxiety, the patient works in a highly populated urban area. Although he has severed contact with immediate family, he has maintained stable friendships over time. In regard to those who perpetrated the abuse, he has made significant strides toward absolving himself of blame. He denies shame over the events of his past but is forthcoming about the amount of time and energy spent on relinquishing this blame. He is able to reality test during depressive episodes and challenges his thoughts of suicide. He does this through self-talk, repeatedly stating, “But I’ve made it this far. These thoughts will pass.”

## Discussion

The patient in the above case simultaneously suffers from trauma-related psychopathology while exhibiting resilience. His resilience is likely the result of a complex interplay of neurobiology, physiology, psychotherapy, and inherent personality traits. Domhardt et al. (6) performed a systematic literature review of childhood sexual abuse survivors and identified individual and environmental factors that seem to enhance resilience. These include optimism, internal locus

of control, active coping, externalizing blame, education, social attachment, self-esteem, spirituality, law abiding behavior, employment, and perception of health. Examples of family factors thought to promote resilience are family stability, relationship satisfaction, and positive parenting, as well as community support and school safety (6).

The literature focuses on factors that may promote or enhance resilience and thereby intercept the hazardous health consequences before they fully manifest. On the biochemical level, this requires interrupting pathogenic processes in response to extreme stress. Although the immediate responses to stress can be life-saving, chronic trauma that interferes with the ability to return to a baseline can be detrimental (3). Current resilience literature highlights genetic, epigenetic, developmental, psychological, and neurochemical factors that may account for human variability in response to trauma (4).

Neurochemical, genetic, and epigenetic considerations cannot be ascertained in relation to the patient in the above case but are promising future targets of prevention and treatment in the field of resilience. For example, the hypothalamic-pituitary-adrenal axis, including dehydroepiandrosterone, neuropeptide Y, and serotonin, as well as the reactivity of the sympathetic nervous system,

seem to play a role in resilience (4). Similarly, there are dopamine, norepinephrine, and serotonin polymorphisms that can increase susceptibility to PTSD. Epigenetics refers to functional modifications to the genome without change in DNA sequence. Through methylation, acetylation, and phosphorylation, environmental factors may change the genome on an epigenetic level, another potential target for treatment of trauma-related disorders (4). Fear circuitry and reward pathways are also implicated in resilience. A conditioned fear response can be beneficial in acute circumstances, but manifesting the conditioned response throughout the lifespan contributes to the symptoms of PTSD (5).

The patient in the above case possesses a number of character traits that contribute to his resilience. He maintains hope and optimism, actively copes with his symptoms, attributes blame to his perpetrators, and currently endorses a sense of control over his future and his happiness. Notably, enhancing social support from the family and community are predictors of future resilience (6). Resilience training programs focused on attention control, cognitive reappraisal, and enhancing self-efficacy already exist and show promise in enhancing resilience (3). The neuropeptides, neurotransmitters, and anatomical regions discussed above are also potential future targets of treatment (3). The hope

is that in promoting resilience in response to trauma, psychological and physical sequelae can ultimately be prevented.

*Dr. Schreiber is a third-year resident in the Department of Psychiatry, Icahn School of Medicine, Mount Sinai, New York.*

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# Approach to Posttraumatic Stress Disorder in Children Using DSM-5

Karen J. Bos, M.D., M.P.H.

Most children exposed to trauma fortunately will not develop significant long-lasting sequelae or psychopathology. However, outcomes vary, and a minority of exposed children will exhibit symptoms of posttraumatic stress disorder (PTSD) (1). The present report begins with a case discussion of a child with a history of significant trauma. The discussion highlights some of the unique characteristics of PTSD in children, with a focus on relevant changes made to the diagnostic criteria for PTSD in DSM-5.

## Case

“Sara” is a 12-year-old girl who was recently admitted to a long-term residential facility. She was removed from custody of her biological mother several months prior to presentation. Over the past several months, she had been placed at multiple group homes but required a higher level of care because of unsafe behaviors, including running away and threatening self-harm. She has a history of neglect and extensive sexual abuse by her mother’s boyfriend prior to her removal. She also witnessed domestic violence between her mother and her mother’s boyfriend. On one occasion, for example, she witnessed her mother being stabbed.

On presentation, the patient appeared younger than her age. She endorsed some depressed and irritable mood but denied current suicidal ideation. Her affect was constricted. She confirmed a history of witnessing domestic violence but stated, “I don’t want to talk about that.” She denied hypervigilance but endorsed symptoms of depersonalization and re-experiencing.

A staff member reported that while working with Sara, she stood up abruptly in the middle of an interactive game, ap-

peared confused, and walked out of the room. When the staff member called out to the patient, she appeared startled and stated, “I didn’t know you were there.” She has frequent episodes of aggressive and impulsive behavior, including acting out violently toward staff and peers. On at least one occasion during an aggressive episode, she appeared confused and was observed to be yelling out “stop!” along with the name of her abuser.

## Discussion

Trauma exposure in children can result in a presentation both similar to and different from adults. The above case provides a starting point to review the epidemiology, diagnosis, and treatment of PTSD in children, with a particular focus on changes to the diagnostic criteria for PTSD made in DSM-5.

A recent meta-analysis reviewed 72 articles reporting PTSD assessments for 3,563 children and adolescents between the ages of 2 and 18 (2). Overall, approximately one in six children and adolescents (15.9%) were found to develop PTSD after experiencing an event that met DSM-IV or DSM-5 definitions for trauma. However, this rate varied based on type of trauma and gender. Boys exposed to noninterpersonal trauma were least at risk (8.4%), while girls exposed to interpersonal trauma, like the patient in the above case, developed the highest rates of PTSD (32.9%).

Several important changes in the diagnostic criteria for PTSD were made with the release of DSM-5. Overall, a broad definition of the disorder was retained, with a 20-symptom criterion set (compared with 17 in DSM-IV). The criterion for the traumatic event was changed in DSM-5, eliminating events such as the unexpected death of family or close friend due to natural causes

(3). Notably, the requirement for the individual to have reacted with an intense emotional response at the time of the trauma was also eliminated. The removal of this requirement in some ways acknowledges that emotional and behavioral responses to trauma are variable and that responses may span from intense emotional reactivity to total numbness.

Interestingly, the symptom category for avoidance and numbing was expanded and separated into two separate clusters of symptoms: avoidance and negative alterations in cognitions and mood. Because of this change, a diagnosis of PTSD now requires the presence of at least one “avoidance symptom” (3). These changes exemplify how DSM-5 is expanding the conception of PTSD beyond an anxiety subtype. The new criteria provide insight into how PTSD may account for an affect akin to depression, which may have been overlooked or misdiagnosed using prior iterations of DSM.

DSM-5 also introduced two new PTSD subtypes. One subtype applies to children 6 years old and younger. This preschool subtype originated due to recognition that young children may display symptoms of PTSD differently than older children or adults and that the criteria needed to be more developmentally sensitive. The identified symptoms for this age group are more behaviorally based and focus on observable symptoms that take into account limitations in verbal and abstract cognitive capabilities characteristic of young children (3).

The second subtype introduced in DSM-5 is a dissociative subtype of PTSD. To be diagnosed with this subtype, an individual must meet criteria for PTSD and also experience additional symptoms of depersonalization (persistent or recurrent experiences of feeling detached from, and as if one were an out-

side observer of, one's thoughts or body) and derealization (persistent or recurrent experiences of unreality of surroundings) (4). This distinct subtype stemmed from studies summarized by Friedman (3), which together showed that neuroimaging consistent with dissociation as well as the severity and functional impairment secondary to trauma had not been encapsulated by the former criteria. This subtype should be considered in a case such as the one described above, in which the patient is noted to experience high levels of dissociative symptoms.

Psychotherapy is the mainstay of treatment for PTSD in the pediatric population, particularly trauma-focused psychotherapies (5). A recent Cochrane review concluded that psychological therapies, particularly cognitive-behavioral therapy, are efficacious in treating PTSD in children and adolescents; however, the relative effectiveness of different psychotherapies and differential responsiveness to psychotherapy based on trauma type awaits further research (6). Pharmacotherapy can be used adjunctively, particularly in cases with prolonged and severe symptoms or comorbid conditions (5).

Children exposed to trauma have elevated risks for negative physical and

mental health outcomes later in life. The Adverse Childhood Experiences study found that as the number of adverse experiences increases, so too does the risk for developing health complications (7). This underscores the importance of early diagnosis and treatment.

## Conclusions

PTSD in the pediatric population is a serious disorder that requires awareness and screening by psychiatrists. It is imperative that clinicians are aware that children with PTSD may present differently than adults and that in the context of changes in mood and behaviors, including decreased play, distractibility, or hyperarousal, PTSD should be suspected. Mental health providers must be acquainted with the preschool and dissociative subtypes of PTSD, in which clues of trauma may be hidden in a patient's behavior and not elicited by taking a history.

*Dr. Bos is a first-year fellow in the Child and Adolescent Psychiatry Program at the University of California, San Francisco.*

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# Trauma-Focused Cognitive-Behavioral Therapy for Posttraumatic Stress Disorder in the Juvenile Sexual Offender

Stacy A. Solheim, D.O.  
Matthew J. Baker, D.O.

The present case report discusses the treatment of a juvenile sexual offender with an extensive trauma history. The prevalence of trauma in the juvenile justice population, the role of trauma-focused cognitive-behavioral therapy (CBT) as a treatment intervention, and the concerns surrounding reoffending are discussed.

## Case

“Charles” is a 16-year-old multiracial male with a past psychiatric history of posttraumatic stress disorder (PTSD), conduct disorder, attention deficit hyperactivity disorder, reactive attachment disorder, encopresis, enuresis, and fetal alcohol syndrome. He has an extensive history of physical and sexual abuse at the hands of multiple foster and adoptive parents, having transferred between numerous placements for the majority of his life. A year and a half prior to his presentation, the patient had been placed into an emergency therapeutic foster care setting after being adjudicated on a charge of rape toward a younger foster sibling. He was subsequently removed from this setting and several other therapeutic settings due to disruptive behaviors and aggression, ultimately being detained in a juvenile detention facility with charges of disorderly conduct. Upon arrival to the detention facility, he continued his negative behaviors, externalizing much of his blame onto others. Because of continued behavioral problems despite court-ordered interventions, the judge ruled that if the patient’s behavior did not improve, he would be sent to a juvenile prison for further detention. In order to avert this, the judge ordered him to undergo therapy to work through his anger and behavioral issues. It was decided that the patient would benefit

most from a trauma-focused CBT approach to work through his extensive abuse history, since it was hypothesized that much of his acting out was due to anger associated with past abuse.

On examination, the patient was appropriately dressed in detention garb but appeared and interacted significantly younger than his age, with his facial features consistent with fetal alcohol syndrome. His speech was occasionally mumbled but mostly clear and of appropriate volume, except when discussing past abuse, at which times he would drop his head, avert his eyes, and lower his voice. Trauma-focused CBT was started per the protocol seen in Figure 1. At the beginning, he had significant difficulty discussing and taking ownership of his prior behaviors, which was consistent with his pattern of deflecting blame.

Answering questions in an indirect manner, he gave frequent examples of how others were at fault for his behaviors. He described that at his most recent foster home, prior to his detention, he sexually molested his foster mother’s young grandson “because [he] wanted her to feel as bad as she was making me feel.” He justified his actions by stating that he was again being physically abused but felt that no one would believe him, “and [he] knew [he] would get an emergency removal if [he] did that.” As “punishment” for the abuse, he was then physically and sexually molested by the victim’s mother, who was later criminally charged for this abuse.

As treatment progressed, he was instructed to compose a narrative of his trauma experience. He later added emotions by highlighting sections with colors that coordinated with the emotions he experienced while reading over the narrative. While processing these

emotions, he noted, “Wow, I have a lot of red.” The red corresponded with feelings of anger. This encouraged him to discuss his anger over having been hurt by the majority of his past caregivers. He also endorsed confusion and sadness that his birth mother had exposed him to drugs and was not around to take care of him. As the therapy progressed, he developed insight into instances in which he was victimized and learned to take responsibility for his offenses. Appearing genuinely concerned and regretful, he said of the boy who he offended, “I can’t believe I hurt him like that. Everyone has hurt me, and now I hurt him. I wish I wouldn’t have done that.” He also took responsibility for his other negative behaviors, stating, “I was angry and wanted everyone else to be angry too.”

During 4 months of therapy, he received only two disciplinary actions; instead of acting out, he processed stressors with staff and requested quiet time in his room when needed. Proud of these newly acquired abilities and holding his head higher, he made better eye contact. Showing greater pride and being more future-oriented, he set goals to complete high school credits and obtain a job, along with other plans for his future.

Once therapy was complete, the judge ruled that the patient was appropriate for reentry into the community. The patient returned to his prior group home and was scheduled to enroll into a partial hospitalization program. Ten months later, there is no evidence of recidivism.

## Discussion

Community samples estimate that 60%–68% of youths will be exposed to

**FIGURE 1. Components of Trauma-Focused Cognitive-Behavioral Therapy**

1. Psychoeducation	Teach about types of trauma, why trauma happens, and how it can make children feel.
2. Parenting Skills	Provided to help parents optimize their child's improvements.
3. Relaxation and Stress Management	Teach techniques for managing stress.
4. Affect Expression and Modulation	Identify emotions and strategies to express the emotions.
5. Cognitive Coping and Processing	Discuss the connection between thoughts, feelings, and behaviors.
6. Trauma Narrative	Write narrative; add in emotions. Repeated readings decrease emotional response.
7. In Vivo Mastery of Trauma Reminders	Learn to work through, instead of avoid, nonthreatening reminders of trauma.
8. Conjoint Child-Parent Sessions	Teach parents and children to talk together about the trauma.
9. Final Phase	Tie up loose end and ready child and parents to end treatment.

trauma during their lifetime, with approximately 24.7% exposed to violence and 11% exposed to sexual trauma (1, 2). The prevalence of juveniles meeting full DSM-IV criteria for PTSD ranges from <1% to 9.2% (1, 3, 4). Additionally, 13.4% of traumatized children who do not meet full criteria show signs of sub-clinical PTSD, which is associated with increased psychiatric comorbidities, most commonly anxiety and depression (2). Youths exposed to trauma also tend to display externalizing problems, such as aggression, oppositional behavior, and conduct disorder (5).

Exposure to trauma with subsequent PTSD appears more often in the juvenile justice population, with over 90% of detained and probated youths having been exposed to trauma and greater than 11% meeting criteria for PTSD (6, 7). Traumatic experiences and associated feelings have been proposed to serve as triggers

for offending behavior (8). Studies show that enduring childhood sexual abuse may increase risk of committing future molestation, whereas experiencing childhood physical abuse and violence may increase risk of perpetrating future rape (9). It is estimated that up to 50% of reported child abuse and 20% of rapes are inflicted by juvenile sexual offenders (8). Therefore, regular trauma screening, assessment of its impact, and referral to treatment are necessary in the juvenile justice population.

Trauma-focused psychotherapies, such as trauma-focused CBT, are considered first-line treatments for juvenile PTSD. The components of trauma-focused CBT are explained further in Figure 1. Stress management skills and exposure-based interventions included in trauma-focused CBT appear to be superior in addressing PTSD symptoms when compared to therapies that

do not directly address traumatic experiences (1).

Although juvenile sexual offenders recidivate at a rate of up to 40% for sexual offenses and 89% for nonsexual offenses, there are limited clinical trials aimed at preventing juvenile sexual recidivism (8). The Relapse Prevention model, which focuses on recognizing triggers that precipitate offending behaviors, is most commonly used (10). However, it is unclear whether this model is effective in juvenile offenders with PTSD. Given the high comorbidity of PTSD and juvenile sexual offending, treatments that combine trauma-focused CBT and relapse prevention strategies should be considered for future research aimed at reducing recidivism.

## Conclusions

Trauma and PTSD are significantly more prevalent in juvenile offenders than the general population. Trauma-focused CBT is an effective treatment for reducing PTSD symptoms but needs to be further researched to determine its role in reducing recidivism in juvenile sexual offenders with PTSD.

*Drs. Solheim and Baker are second-year child and adolescent psychiatry fellows in the Department of Psychiatry, Wright State University, Dayton, Ohio.*

*The authors thank Dr. William Klykylo and Steve Woodford, M.Div., L.M.S.W., for their mentorship and support.*

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# Residents' Resources

To contribute to the Residents' Resources feature, contact Tobias Wasser, M.D., Deputy Editor ([tobias.wasser@yale.edu](mailto:tobias.wasser@yale.edu)).

Look for These Events at the Annual Meeting  
in Toronto (May 16th–20th, 2015)!

Visit the Resident Resource Center in Room 809, Level 800,  
South Building of the Toronto Convention Centre

## Saturday, May 16th

10:00 a.m.–noon

**Resident Poster Competition, I**  
*Exhibit Hall D-E, Level 800, South Building, Toronto Convention Centre*

2:00 p.m.–4:00 p.m.

**Resident Poster Competition, II**  
*Exhibit Hall D-E, Level 800, South Building, Toronto Convention Centre*

## Sunday, May 17th

8:30 a.m.–5:00 p.m.

**Chief Resident Leadership Conference** (requires separate registration, contact [education@psych.org](mailto:education@psych.org))  
*Fairmont Royal York Hotel*

\*12:30 p.m.–2:00 p.m.

**The American Journal of Psychiatry Residents' Journal: How to Get Involved**  
*Toronto Convention Centre, North Level 200, Rooms 202 C/D*

## Monday, May 18th

1:30 p.m. to 3:00 p.m.

**A Resident's Guide to Borderline Personality Disorder: From the Experts (Part 1 of 2)**  
*Room 202 C-D, Level 200, North Building, Toronto Convention Centre*

3:30 p.m. to 5:00 p.m.

**A Resident's Guide to Borderline Personality Disorder: From the Experts (Part 2 of 2)**  
*Room 202 C-D, Level 200, North Building, Toronto Convention Centre*

## Tuesday, May 19th

11:00 a.m.–12:30 p.m.

**High Anxiety in the Resident Clinic: Challenges for Therapists in Training**  
*Room 204 (Summit), Level 200, North Building, Toronto Convention Centre*

11:00 a.m.–12:30 p.m.

**I Wish I Learned That in Residency: Preparing Future Psychiatrists for the Future of Psychiatry**  
*Room 802 A-B, Level 800, South Building, Toronto Convention Centre*

5:15 p.m.–6:15 p.m.

**MindGames** (APA's national residency team competition)  
*Toronto Convention Centre*

## Wednesday, May 20th

9:00 a.m.–10:30 a.m.

**Interactive Session: A Conversation With Resident Fellow Members and Paul Summergrad, M.D., APA President**  
*Room 802 A-B, Level 800, South Building, Toronto Convention Centre*

3:00 p.m.–5:00 p.m.

**Resident Wellness Today: Current Challenges, Programs, and Recommendations for Tomorrow's Trainees**  
*Room 204 (Summit), Level 200, North Building, Toronto Convention Centre*

# Author Information for *The Residents' Journal* Submissions

## Editor-in-Chief

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***The Residents' Journal*** accepts manuscripts authored by medical students, resident physicians, and fellows; manuscripts authored by members of faculty cannot be accepted. To submit a manuscript, please visit <http://mc.manuscriptcentral.com/appi-ajp>, and select "Residents" in the manuscript type field.

- 1. Commentary:** Generally includes descriptions of recent events, opinion pieces, or narratives. Limited to 500 words and five references.
- 2. Treatment in Psychiatry:** This article type begins with a brief, common clinical vignette and involves a description of the evaluation and management of a clinical scenario that house officers frequently encounter. This article type should also include 2-4 multiple choice questions based on the article's content. Limited to 1,500 words, 15 references, and one figure.
- 3. Clinical Case Conference:** A presentation and discussion of an unusual clinical event. Limited to 1,250 words, 10 references, and one figure.
- 4. Original Research:** Reports of novel observations and research. Limited to 1,250 words, 10 references, and two figures.
- 5. Review Article:** A clinically relevant review focused on educating the resident physician. Limited to 1,500 words, 20 references, and one figure.
- 6. Letters to the Editor:** Limited to 250 words (including 3 references) and three authors. Comments on articles published in *The Residents' Journal* will be considered for publication if received within 1 month of publication of the original article.
- 7. Book Review:** Limited to 500 words and 3 references.

Abstracts: Articles should not include an abstract.

## Upcoming Themes

*Please note that we will consider articles outside of the theme.*

### Personality Disorders

If you have a submission related to this theme, contact the Section Editors,  
Miguel Alampay, M.D., J.D.  
([magsaysayalampay@gmail.com](mailto:magsaysayalampay@gmail.com))  
Robert Johnson, M.D., J.D., L.L.M.  
([rsjohnso@bcm.edu](mailto:rsjohnso@bcm.edu))

### Biological Psychiatry

If you have a submission related to this theme, contact the Section Editor,  
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([redhya@psychiatry.wustl.edu](mailto:redhya@psychiatry.wustl.edu))

### Pediatric Neuropsychiatry

If you have a submission related to this theme, contact the Section Editor,  
Aaron J. Hauptman, M.D.  
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\*If you are interested in serving as a **Guest Section Editor** for the *Residents' Journal*, please send your CV, and include your ideas for topics, to Misty Richards, M.D., M.S., Editor-in-Chief ([mcrichards@mednet.ucla.edu](mailto:mcrichards@mednet.ucla.edu)).