Clinical Cases: Illustrations of Trauma Response

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Greater understanding of toxic stress and the trauma response can inform clinical care. Indeed, it is critical that the primary care provider recognize when a child’s signs and symptoms signify exposure to traumatic events or environments. Such understanding allows the primary care practitioner to interpret common complaints in traumatized children with a new lens.

The following two cases demonstrate some presentations of trauma response in children exposed to toxic or traumatic stress.

**ADHD, tantrums, obesity, toileting, and insomnia in a 38-month-old child**

JG is a 38-month-old female who presents to the pediatric office with her mother. The mother reports that she is very concerned about JG’s behavior. She is worried that JG is going to hurt herself because her tantrums are so severe, and when she gets angry she hurts other children in the home and damages the furniture. The mother is worried that if she does not get medication for her ADHD, she may not be able to keep JG in her day care due to concerns about the safety of the other children.

Other concerns include JG’s weight (JG BMI is >95%) and that she wants to eat all the time. Even if JG has just finished a meal, if food is taken out in front of her, or if she sees someone else eating, she wants to eat again. During meals she eats a quantity larger than the adult portions. JG has a limited vocabulary, and the mother reports it is difficult to understand her. She is not toilet trained, though the mother is trying to toilet train her. JG has difficulty with going to sleep, and often it takes about three hours for her to fall asleep at night.

On physical exam, JG is obese. She is noted to have a mild upper-respiratory infection. She has some toe-walking, but is otherwise well.
ADHD, bipolar, aggression, insomnia, and obesity in a 16-year-old youth

EM is a 16-year-old male who presents with his mother. One week ago, he had a fight with his stepfather which resulted in police involvement. EM was diagnosed with ADHD three years ago and with increased aggression 18 months ago. One year ago he was diagnosed with bipolar disorder, and over the past six months he has had increasing trouble with insomnia. The medications he takes are Concerta, Tenex and clonidine. EM has frequent headaches, some of which are severe and associated with nausea and photophobia, and some which are less severe and will resolve with ibuprofen.

On physical exam, EM is obese with resolving ecchymosis of his left upper arm and right wrist. He has mild acne, and his exam was otherwise normal.

Discussion of cases

In the first example, the pediatrician is contacted by DCF who reports that JG has just been removed because both birth parents had substance abuse issues. The father is gang-involved and dealing drugs from the home. The patient was witness to a number of gang-related violent incidents. The birth mother has depression and substance abuse problems. The “mother” in the first example was actually the foster mother.

In the second example, at this visit EM reported that his mother has been in an abusive relationship with EM’s stepfather for four years and that the stepfather and EM do not get along. EM had not reported these issues previously. Most recently, the patient and stepfather have been increasingly aggressive with each other, and police have been called to the home for domestic violence with the stepfather and mother, and with the stepfather and patient.

In each of these cases the children lived in homes with ongoing toxic stressors: neglect, physical abuse, sexual abuse, domestic violence, community violence, substance abuse, and mental illness of the caregiver. Other toxic stressors which affect children are death or illness of a caregiver, natural disasters, bullying, or medical trauma. Without parental or social support to modulate effect, stressors cause repeated or constant stimulation of the hypothalamic-pituitary-adrenal axis and consequent hormonal and neurotransmitter response. With this stimulation of the HPA axis and the repeated release of adrenaline and cortisol, the brain responds at the cellular and synaptic level. Areas called upon at times of stress, such as the amygdala (responsible for vigilance, aggression and alertness) will hypertrophy. Areas such as the hippocampus and prefrontal cortex, (responsible for logical thought, learning, memory and behavioral inhibition) atrophy.

These brain effects have results on basic bodily functions. Stimulation of the reticular activating system by exposure to toxic stress leads to difficulty falling asleep, staying asleep, and increased nightmares. With ongoing stress the satiety center is inhibited and hyperphagia can result. Children in foster care are at times thought to have had food insecurity as a cause for overeating and food hoarding. While this is the case for some children, trauma itself leads to voracious eating. Toileting issues are also impacted by trauma, with the trauma response affecting the ability to relax to void and stool.
Also affected is behavior and response to stimuli. In settings where a child or his/her loved ones are in danger or where his/her needs are not being met by a caregiver, the ability to remain alert to threat and the ability to respond quickly and aggressively is, in fact, protective to the body. Children in homes where they are experiencing neglect, domestic violence, or abuse respond appropriately to these threatening situations with increased aggression, hypervigilance, and exaggerated response to small stimuli. Unfortunately, because the stress response in these children is chronically stimulated, the body loses the ability to distinguish threatening situations from non-threatening ones. Thus, when these children repeatedly demonstrate their hypervigilance and aggression in school or foster placements in response to minor stimuli, they can be misidentified as having ADHD, ODD or conduct disorder.

Exposure to trauma limits the development of executive function. Working memory, inhibitory control and cognitive flexibility are required to learn, function in social settings and stay focused. They allow us to display self-control, stay on task despite distractions, and hold one idea in our minds as we learn the next step in a process. These skills develop through practice and are strengthened by experiences. The areas responsible for executive function are the prefrontal cortex and hypothalamus, the very areas inhibited by the stress hormones released when children experience ongoing or severe stress. In the toddler, this impacts the ability to develop language skills, motor skills, social skills, and impulse control. In the older children, this inhibition of executive function presents as learning problems, behavioral difficulties in the school setting, and organizational deficits.

The diagnosis of trauma can be hindered when families hide their social stressors away from view. Families may not disclose the domestic violence, mental illness, or substance abuse which impacts the safety and wellbeing of their children. Parents may be unaware of how profoundly children can be impacted by the military deployment of a parent, the death of a caretaking grandparent, or fallout from a contentious divorce. Armed with an understanding of how trauma presents, it is incumbent upon the primary care physician to recognize the symptoms when present, but this should be considered when a patient presents with the trauma symptoms which can mimic ADHD or learning problems.

Armed with the understanding of how trauma can impact behavior and the brain, the physician can probe for information about toxic stressors in a non-threatening, but trauma informed manner.

One way to get at trauma is to ask an open ended question of the child or parent such as, “Since the last time I saw you (your child) has anything really scary or upsetting happened to you (your child) or anyone in your family?” This type of question may help to get at stressors that the family may have not thought to tell the physician about, such as military deployments, deaths of family members, or disruptions which impact the household such as loss of a home or job.

When trying to identify domestic violence, substance abuse, bullying, or child abuse, one may have to be more direct. Using what we know about how the body responds, you can lay out your concerns. “You have told me that your child is having difficulty with aggression, attention and sleep. Just as fever is an indication the body is dealing with an infection, when these symptoms are present, they indicate that
the brain and body are responding to a stress or threat. Do you have any concerns that your child is being exposed to threat? Sometimes children respond this way if they are being harmed, or if they are witnessing others they care about being harmed. Do you know of violence exposure at school, with friends or at home?

MCPAP-enrolled primary care clinicians should feel free to contact their local MCPAP team for help with sorting through patient issues that might involve trauma. MCPAP can also help with care coordination for trauma-related issues.

If you have feedback on this article please email Irene.

Toxic Stress and Trauma-Informed Pediatric Care

By Elaine Gottlieb

Recent research has established that serious childhood adversity not only robs children of a happy childhood but can also lead to lifelong negative socioeconomic, physical and psychological outcomes, such as school failure, cardiovascular disease and diabetes, depression, substance abuse, and PTSD.¹ Childhood “toxic stress” disrupts normal brain development and adversely affects the development of other organ systems and regulatory functions.² Given the high prevalence of child maltreatment and neglect – which a 2006 National Incidence Study (NIS) found affects three million children annually – many Massachusetts pediatric patients, including the 75,000 children with suspected abuse reported annually to the Massachusetts Department of Children and Families (DCF), experience more stress than a child is equipped to handle.

An AAP policy statement, "Early Childhood Adversity, Toxic Stress, and the Role of the Pediatrician: Translating Developmental Science Into Lifelong Health," states that "the reduction of toxic stress in young children ought to be a high priority for medicine as a whole and for pediatrics in particular" and asserts that the pediatrician-led medical home should serve as a focal point addressing toxic stress. "In this time of financial difficulty and unemployment, pediatricians need to be especially vigilant about trauma," says Sigalit Hoffman, MD, medical director at the Tufts-Children’s Hospital MCPAP hub. Read entire article.


Post-Traumatic Stress Disorder in Children and Adolescence

By Smita Srivastava, MD

Identifying Post-Traumatic Stress Disorder (PTSD) in children and adolescents is challenging given its variable presentation in this age...
group. Adding to the difficulty is the fact that the child is often reluctant or unable to discuss traumatic exposures. However, early detection and initiation of treatment is key to recovery. Pediatricians are in a unique position, in treating children and their families, to recognize the presence of PTSD. Click here to learn more about PTSD in the pediatric population.

Editor's Note: This article has been posted on our MCPAP PTSD webpage since August 2011, but we thought that this information might be helpful as we discuss the issue of trauma and trauma-informed care.

**Brief Bibliography: Trauma-Informed Care in the Pediatric Setting**


Many thanks to Dr. Robert Reece, a pediatrician specializing in child abuse, who helped us with our selection of resources.

**Brief Bibliography: Childhood Stress and Adult Physical Illness**


The Adverse Childhood Experiences (ACE) Study, the largest scientific research study of its kind, analyzes the relationship between multiple categories of childhood trauma and health and behavioral outcomes later in life. [http://www.acestudy.org/](http://www.acestudy.org/)

**Trauma Resources and Links**
**National**
Early Childhood Trauma Resource Link from SAMSHA:

Web-based learning course for trauma-focused cognitive behavioral therapy:
http://tfcbt.musc.edu/

NCTSN – National Child Traumatic Stress Network:
http://nctsn.org/

The NCTSN’s Empirically Supported Treatments and Promising Practices webpage - http://www.nctsn.org/resources/topics/treatments-that-work/promising-practices

**Massachusetts**
MCPAP-enrolled primary care clinicians may call MCPAP about questions regarding patients who may have experienced trauma. Find our contact information at the following link:
http://www.mcpap.com/aboutContact.asp

The Children’s Trust Fund prevents child abuse by strengthening families, educating parents and training professionals. Learn more at http://www.mctf.org/Pages/welcome.aspx

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**Review: Fostering Mental Health Wellness during the Transition to Parenthood**

Our May 2012 newsletter discussed ways primary care clinicians can foster mental health wellness by assisting families in their transitions to parenthood.

Our article suggested that during this crucial transition time, primary care clinicians might consider providing guidance to the families, pay special attention to the family members’ behavior and affect, address problems, and pay careful attention to possible concerns regarding postpartum depression. [Download entire article](#).

The article offered the following advice for new parents:

- Establish a stable routine and structure, including an organized physical environment
- Create a strong relationship by playing with the child and having pleasurable, positive interactions
- Reward positive behavior and establishing clear consequences for inappropriate behavior

Primary care clinicians might consider recommending parenting education programs such as Triple P ([www.triplep.net](http://www.triplep.net)), The Incredible Years ([www.incredibleyears.com](http://www.incredibleyears.com)), and 1-2-3 Magic ([www.parentmagic.com](http://www.parentmagic.com)). Children’s Emotional Health Link
(www.cehl.org) and parent support and education programs in your community (if available) may also serve as resources.

For resources for postpartum depression, please visit our MCPAP PPD web page at http://www.mcpap.com/diagnoses_PPD.asp.

(Editor's note: In our May newsletter, we inadvertently omitted the www.motherwoman.org website which is an important resource for families in Western Massachusetts. We apologize for this omission.)

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