ArnotHealth
Graduate Medical Education

ADHD versus PTSD: Signs and Symptoms that Make the Difference in Children and Adolescents

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Introduction:

In recent years, a growing body of research has developed to examine the relationship between exposure to traumatic events in childhood and attention deficit hyperactivity disorder. After exposure to trauma, a person may eventually meet the criteria for ADHD, even though ADHD was not present in his or her early development (1). Because PTSD rewires and affects the development of a growing brain, exposure to trauma early in life, whether acute or chronic in nature, can stunt the growth of areas that deal with emotional regulation, impulse control, and self-awareness (2,6). This is also how ADHD develops, but with a different etiology (3). In PTSD, environment changes the brain. ADHD presents with neurological and developmental differences from birth. The result is the same, however, with both PTSD and ADHD manifesting as inattention, poor impulse control, lack of focus, sleeplessness, distractibility, impulsivity, irritability, poor memory and concentration, anxiety, sensitivity, sensory stimuli, mood disorder, decreased self-esteem (4,5). Teasing out the differences and overlap of these conditions can be challenging, especially in children and adolescents. This poster presents an overview of the key differences and overlap of PTSD and ADHD signs and symptoms that can often present a diagnostic challenge, especially in children and adolescents.

Methods: A critical review of the literature was conducted on the NCBI database (PubMed) to identify original studies and review articles that explored the pathophysiology of PTSD and ADHD in children and adolescents, and the overlap of the two diagnoses.

Results:

Pathophysiological similarities:

Deficits in attention and prefrontal cortical function resembling those in ADHD brains have been identified in people with PTSD as well. In rodents, prenatal nicotine exposure leads to both an ADHD-like phenotype as well as fear circuitry abnormalities like those seen in PTSD. In addition, both conditions are characterized by irregularities in dopaminergic neurotransmission.

PTSD symptoms can include:

- memory issues
- nightmares
- flashbacks
- irritability
- difficulty concentrating
- sudden bursts of anger
- difficulty with emotional regulation
- increased stress response
- reduced interest in activities
- sleep disturbances
- feelings of shame or guilt

Some of these can present within people with ADHD. Because of this, PTSD can contribute to and worsen underlying symptoms of ADHD.

PTSD and ADHD have the following symptoms in common:

•agitation and irritability
•heightened impulsivity and risk-taking
•disorganization
•poor self-esteem
•inattention
•distractions
•problems concentrating
•difficulty with work, school, sleep, chores, and so forth.

Children who present with PTSD-related symptoms often have persistent thoughts and feelings related to fear, safety, and loss.

Children with ADHD often have thoughts and feelings related to motivation, such as feeling overwhelmed by tasks and thus not wanting even to get started.

Symptoms generally unique to ADHD include:

•hyperactivity
•impulsivity
•Forgetfulness

Symptoms generally unique to PTSD are:

•dissociation
•nightmares
•flashbacks
•sudden burst of anger

Symptoms of PTSD that look like ADHD include:

•Hyperarousal and agitation (can look like the hyperactivity and impulsivity of ADHD)
•Re-experiencing symptoms, dissociation, intrusive memories (spacey and distracted, can look like inattentive type)
•Negative cognitions (impulsivity, oppositional behavior)
•Executive function impairments (difficulty with planning, staying focused, managing emotions)

Conclusion:

While their etiologies are different, ADHD and PTSD have significant clinical overlap owing to similar neurobiological aberrations. It is important to discern PTSD and ADHD in children and adolescents in order to make accurate clinical assessments and formulate effective long-term treatment plans. Poor attention and concentration are both hyperarousal criteria of PTSD, and part of the diagnostic criteria for ADHD, for example. This is important because problems with attention and hyperactivity may be secondary to trauma or reflect ADHD, in which case these children require a different clinical approach than non-traumatized children with ADHD. If a child with PTSD takes stimulant medication for ADHD, side effects of medication (insomnia, irritability, headaches, nausea) may exacerbate symptoms of PTSD. If behavioral problems are targeted instead of recognizing them as symptoms of PTSD, the child's self esteem may suffer, and appropriate treatment delayed.

Areas for further study:

Given the impaired fear circuitry common to psychiatric disorders, is there a way to prevent the development of PTSD in at-risk children and adolescents with ADHD medications or other treatments?

References:

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5. Antshel K, et al. Posttraumatic stress disorder in adult attention-deficit/hyperactivity disorder: Clinical features and familial transmission. J Clin Psychiatry. 2013.
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Abstract:

A 12-year-old Caucasian female with a history of ADHD, GAD, depression, and seasonal allergies presented for admission to the inpatient unit after endorsing suicidal ideation with a plan to jump off the roof of her home. As per her foster mother, the patient had begun endorsing suicidal ideation since her biological mother died a year and a half earlier. The patient had experienced additional losses since then such as the death of her dog. Her mother reported increased irritability, rages, self-harm behaviors such as cutting and throwing herself on the ground, decreased sleep, and weight loss in the patient. As documented in CPS records, the patient had also endured physical and sexual abuse at home perpetrated by her biological father. She was taking fluoxetine 20mg daily, Concerta ER 18mg daily, and clonidine 0.1mg qHS as prescribed by her pediatrician. She had no prior hospitalizations and was not engaged in outpatient mental health services. She had no significant birth history and her developmental trajectory had been within normal limits. She was in a 12:1:1 classroom at school and had an IEP in place. Per school records, she had been diagnosed with a learning disability. Further diagnostic evaluation of this patient led us to consider PTSD as part of the differential, and it became clear that PTSD more accurately and completely described her constellation of symptoms.

ADHD and PTSD both present with similar signs and symptoms but have different etiologies. Therefore, distinguishing the two can be difficult, especially in children and adolescents. Pediatricians and other primary care providers on the front lines of mental health treatment for children often see what looks like an ADHD picture and prescribe amphetamines, when the patient may instead be suffering from PTSD sequalae. Prescribing methamphetamines for presumed ADHD in these instances can worsen anxiety and contribute side effects such as weight loss. Determining if a child has ADHD alone, PTSD alone, or ADHD with PTSD is important in order to engage in an appropriate treatment plan. In this poster, we will discuss relevant considerations for primary care providers when evaluating children and adolescents for ADHD; this will include the overlap of ADHD and PTSD symptoms and defining differences. We will also discuss current treatment options and areas for further study.