

Stress and post-traumatic stress disorder

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Abstract

There is growing awareness and concern about the high prevalence of traumatic experience and its long-term impact on the physical and mental health of children. Professionals working in the field of child health have a crucial role in identifying children at risk and in providing support for resilience and recovery. This review provides a further update to an earlier article on current research and evidence-based treatment.

Keywords acute stress disorder; disaster; post-traumatic stress disorder (PTSD); stress; trauma

Introduction

Paediatricians have an important role in the early recognition of stress symptoms, which may develop into post-traumatic stress disorder (PTSD). Some of their patients will be victims of stressful events such as life-threatening illnesses, medical interventions, road traffic accidents, natural disasters or terrorist attacks. Others will develop symptoms as a result of chronic trauma resulting from abuse, neglect and witnessing domestic violence. Paediatricians who are alert to the possibility of trauma symptoms can do a great deal in a preventative capacity to ensure that appropriate supportive care is put into place. If unrecognized and untreated, trauma symptoms can persist for many months or years, impairing quality of life and development.

Definition

Following stressful events it is not unusual for survivors, including children, to experience transient symptoms such as difficulty sleeping, troubling memories and thoughts, and some disturbance in everyday functioning. An acute stress disorder may be present if the stressor was highly threatening and the reaction continues for days or weeks. When the disturbance lasts longer than 1 month and causes significant distress or impairment, it may meet criteria for PTSD.

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Diagnostic criteria

Symptoms of PTSD cluster into three broad categories: re-experiencing, avoidance and hyperarousal (See Table 1). These criteria are the same for adults and children, although need some modification for very young children. Developmentally appropriate modifications have been proposed for pre-school children and will be included in DSM-V. These rely less on the child's verbal descriptions and more on what can be observed.

Re-experiencing in young children often takes the form of post-traumatic play, characteristically displaying a re-enactment of part of the trauma. Play may have a compulsive, rather stereotypical quality, and is less elaborated and imaginative than usual play. Verbally competent young children may recall fragments of the experience not necessarily showing any associated distress. There may be nightmares without an obvious trauma-specific content. Emotional numbing can take the form of constricted play patterns, social and emotional withdrawal. Regression, in the form of a loss of previously acquired skills (e.g. language, toilet training) or more immature behaviour can occur. Night terrors, sleep difficulties, general fearfulness and aggression are common.

The cognitive model of trauma places increasing emphasis on the role of negative thoughts and beliefs in maintaining trauma symptoms. This will be incorporated in DSM-V as an additional criterion. Symptoms of hyperarousal will include reckless behaviour, which can be seen in adolescents.

Many clinicians expected DSM-V to include a diagnosis of Developmental Trauma Disorder. This is a proposed diagnosis for individuals presenting with persistent dysregulation across several areas (including affect, physiology, behaviour, attention, self and relationships) as a result of exposure to chronic or severe interpersonal trauma such as abuse. There is ongoing controversy about its diagnostic validity and to date it has not been included in the DSM-V proposed criteria.

Paul had just turned 3 years old when he witnessed his mother's partner fatally stab her. Paul continued to present as a happy little boy who was compliant and well engaged at nursery. However he became increasingly aggressive with his siblings and his play and drawings usually involved killings and 'being dead forever'. He also repeated the details of the killing to other family members who found this difficult and tried to change the subject. In therapy sessions he displayed high levels of controlling behaviour and a somewhat manic, overly busy quality to his play.

Alex was knocked down on a zebra crossing outside school when he was 12 years old. He suffered a broken arm. When Alex was referred for therapy at the age of 16 he had not travelled anywhere outside of the home without his parents, not slept in a room without his mother, or played football since the accident 4 years earlier. Alex was experiencing a repetitive nightmare of the event several times a week.

Epidemiology

Community samples suggest a lifetime prevalence of PTSD of 4–12% and a point prevalence of 1%. Refugees and children exposed to the trauma and losses of war will have much higher rates of PTSD, around 30–40%. It is estimated that one-third of children will develop PTSD after road traffic accidents. 69% of children diagnosed with PTSD after an RTA still met criteria 6 months later. After a natural disaster very

Screening for PTSD

Exposure and response

Has the individual witnessed or experience or heard of someone close to them experiencing an event involving actual or threatened death, serious injury or sexual violation

Re-experiencing

Has the traumatic event been persistently re-experienced in one (or more) of the following ways:

- Intrusive thoughts or memories or repetitive play
- Recurrent distressing dreams of the event. Note: in children, there may be frightening dreams without recognizable content
- Dissociative reactions (flashbacks) a sense of re-living the experience
- Intense psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event
- Physiological reactivity on exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event

Avoidance

Is there persistent avoidance of stimuli associated with the trauma including:

- Efforts to avoid thoughts, feelings or conversations associated with the trauma
- Efforts to avoid activities, places or people that arouse recollections of the trauma

Negative Alterations in Cognitions and Mood associated with the traumatic event as indicated by two or more of the following:

- Inability to recall an important aspect of the trauma
- Markedly diminished interest or participation in significant activities
- Feeling of detachment or estrangement from others
- Restricted range of affect, e.g. unable to have loving feelings
- Sense of a foreshortened future, e.g. does not expect to have a career, marriage, children or a normal lifespan
- Persistent and exaggerated negative views about self and the world
- Persistent, distorted blame of self or others about the cause of the event
- Persistent negative emotional state
- Persistent inability to experience positive emotions

Hyperarousal

Persistent symptoms of increased arousal (not present before the trauma), as indicated by two or more of the following:

- Difficulty falling or staying asleep
- Irritability or outbursts of anger
- Difficulty concentrating
- Hypervigilance
- Exaggerated startle response
- Recklessness

Duration of symptoms is more than 1 month, causes significant distress or impairment.

Table 1

high rates (40–50%) of PTSD can be expected initially. Approximately one-third if untreated will continue to exhibit PTSD at 1 year, and as many as one-third will still have PTSD 5–8 years later.

A particularly important vulnerable group for paediatricians to be aware of is children who have had traumatic medical experiences. High rates of PTSD (up to 21%) have been found in children who have been in a paediatric intensive care unit (PICU), as well as in their parents. Children who are sub-threshold for a diagnosis of PTSD (34% post-PICU in one study) may nevertheless have significant impairment.

Pathogenesis

In situations of acute stress and danger there is an automatic psychophysiological response mediated by the autonomic nervous system, which enables us to respond (fight, flight or freeze). As part of this response, the hypothalamic–pituitary–adrenal (HPA) axis releases noradrenaline (norepinephrine) and cortisol into the bloodstream, prolonging the body's capacity to cope with stress. Symptoms of post-traumatic stress occur when the emergency response system has been conditioned, as a result of the experience, to respond to stimuli which trigger memories of the event. However, the trauma memories that are recalled are very different from normal memory. Normal event memory is stored in the brain as information which is experienced as having occurred in the past; it includes contextual information and can be retrieved at will, in narrative form, e.g. 'I remember going to my sister's wedding last week...' Memories of this kind have been termed verbally accessible memory (VAM). In contrast, trauma memories are stored in the form of the original sensations, are experienced as 'it is happening again, now....' (i.e. re-living the event) and lack a narrative form. They are retrieved involuntarily, being triggered by environmental cues, and have therefore been termed situationally accessible memories (SAM). Normally, event information entering the amygdala and the thalamus is converted to VAMs by means of processing in the hippocampus. However, in conditions of stress, cortisol and noradrenaline (norepinephrine) inhibit the hippocampus from processing the event information in the normal way, so that storage occurs without the addition of the contextual information characteristic of VAMs.

Chronic or repeated traumatization can lead to ongoing HPA axis dysregulation, contributing to long-term adverse effects on mental and physical health. In chronic early trauma such as severe abuse there can be structural changes to the brain including smaller brain size and corpus callosum.

Natural history

Not all acute stress reactions will develop into PTSD and, of those that do, 10–15% will be of delayed onset, developing 6 months or more after the event. However, quite often symptoms will resolve after a few days or weeks. Clinical and empirical studies have identified a number of factors that are associated with a heightened risk of developing PTSD after a traumatic event including: previous mental health difficulties in the child or parent, poor family functioning and inadequate social support, perceived life threat and the degree of fear that was associated with the event, active avoidance of any thought about the event and being female.

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