



Childhood Trauma Exposure and Toxic Stress: What the PNP Needs to Know **CE**

Gail Hornor, DNP, CPNP

ABSTRACT

Trauma exposure in childhood is a major public health problem that can result in lifelong mental and physical health consequences. Pediatric nurse practitioners must improve their skills in the identification of trauma exposure in children and their interventions with these children. This continuing education article will describe childhood trauma exposure (adverse childhood experiences) and toxic stress and their effects on the developing brain and body. Adverse childhood experiences include a unique set of trauma exposures. The adverse childhood experiences or trauma discussed in this continuing education offering will include childhood exposure to emotional abuse, physical abuse, sexual abuse, emotional neglect, physical neglect, domestic violence, household substance abuse, household mental illness, parental separation or divorce, and a criminal household member. Thorough and efficient methods of screening for trauma exposure will be discussed. Appropriate intervention after identification of trauma exposure will be explored. *J Pediatr Health Care.* (2015) 29, 191-198.

KEY WORDS

Toxic stress, childhood trauma exposure

Gail Hornor, Pediatric Nurse Practitioner, Nationwide Children's Hospital, Center for Family Safety and Healing, Columbus, OH.

Conflicts of interest: None to report.

Correspondence: Gail Hornor, DNP, CPNP, Nationwide Children's Hospital, Center for Family Safety and Healing, 655 E Livingston Ave, Columbus, OH 43205; e-mail: gail.hornor@nationwidechildrens.org.

0891-5245/\$36.00

Copyright © 2015 by the National Association of Pediatric Nurse Practitioners. Published by Elsevier Inc. All rights reserved.

<http://dx.doi.org/10.1016/j.pedhc.2014.09.006>

OBJECTIVES

1. Describe the physiology of toxic stress.
2. Explore the concept of resilience and factors promoting resilience.
3. State when and how to identify trauma exposure in children.
4. Describe appropriate interventions when trauma exposure has been revealed.

It is an unfortunate reality that many American children live lives filled with trauma. It is estimated that up to 90% of children experience some form of traumatic experience in their lives (Heinzelmann & Gill, 2013). Trauma can include a wide variety of experiences from accidental injury to severe illness to child maltreatment. For the purposes of our discussion, childhood trauma will be limited to those defined in the adverse childhood experiences (ACE) study (Felitti et al., 1998). These traumatic experiences can include but are not limited to child maltreatment, exposure to domestic violence, living with an impaired parent who is unable to meet their needs because of mental health or substance abuse concerns, and extreme poverty. Nearly 700,000 (678,810) children were maltreated in 2012, with 78% experiencing neglect; 18%, physical abuse; 9%, sexual abuse; and 11%, other forms of maltreatment (U.S. Department of Health & Human Services [USDHHS], 2013). Up to 10 million children witness domestic violence each year (USDHHS, 2013). One in five children younger than 18 years or 21.3% of American children live in poverty (U.S. Census Bureau, 2012).

One in five American children will sustain more than half of the medical and psychiatric morbidities within the population and will be responsible for the majority

of health/dental care use within the population (Boyce, 2014). The distribution of childhood disease within the population is not random and is most closely linked with low socioeconomic status, which increases the exposure of children to a variety of traumatic experiences (Boyce, 2014). Exposure to adverse childhood experiences (trauma) has been linked to multiple short- and long-term physical and psychological consequences (Felitti & Anda, 2010; Felitti & Williams, 1998; Felitti et al., 1998). Children exposed to these traumatic experiences are at high risk for a number of negative health outcomes in adulthood, including cardiovascular disease, obstructive pulmonary disease, cancer, asthma, autoimmune disease, and depression (Garner et al., 2012). Given the scope and severity of the problem, it is crucial that all pediatric nurse practitioners (PNPs) understand trauma exposure and its potential effects on the developing child. This continuing educational offering will define the concepts of adverse childhood experiences (trauma), toxic stress, and resilience. Identification of trauma exposure and appropriate intervention will be explored.

TRAUMA AND TOXIC STRESS

The now famous ACE study was first published in 1998 (Felitti et al., 1998), but the findings of that groundbreaking study are perhaps even more significant today. More than 18,000 adult members of the Kaiser Health Plan were surveyed regarding childhood exposure to maltreatment, household dysfunction, and adult health behaviors (i.e., diet, exercise, tobacco, alcohol, and substance use). Specifically, the ACE queried participants regarding their childhood exposure to emotional abuse, physical abuse, sexual abuse, emotional neglect, physical neglect, domestic violence, household substance abuse, household mental illness, parental separation or divorce, and a criminal household member (Dong et al., 2004). Adverse childhood experiences include a unique set of trauma exposures. Kalmakis & Chandler (2014) define adverse childhood experiences as childhood events, varying in severity and often chronic, occurring in a child's family or social environment that cause harm or distress, thereby disrupting the child's physical or psychological health and development. More than two thirds (67.3%) of ACE study participants reported exposure to at least one ACE (Dong et al., 2004). The interrelatedness of adverse childhood experiences (trauma exposure) was supported by the study. If an individual reported having one ACE, the likelihood of them having another was 2 to 18 times higher than those reporting no ACEs (Dong et al., 2004). Of the persons reporting one ACE, 86.5% reported at least one additional ACE and 52% reported at least three additional ACEs (Dong et al., 2004). Exposure to multiple traumas was very common within the ACE study population.

Exposure to trauma can result in stress. Although we know that nearly every child experiences some form of trauma exposure and that the majority of children experience at least one trauma listed in the ACE study, not all traumatic events are equal in the stress resulting from that exposure (Lancaster, Melka, Rodriguez, & Bryant, 2014). Also keep in mind that stress is not always unhealthy. Stress can actually encourage healthy growth. However, exposure to childhood traumas included in the ACE study can result in stress that becomes chronic and/or unpredictable, and changes can occur in the developing brain and body (Kalmakis & Chandler, 2014). These traumatic exposures that are abusive, neglectful, or unpredictable can result in toxic stress (Letourneau, 2012). Toxic stress is defined as the extreme, frequent, or extended activation of the stress response that causes distress for the child and may lead to negative psychological and physical health outcomes (Johnson, Riley, Granger, & Riis, 2013). Children, by nature of age and development, are not independent creatures; they must rely upon the adults in their lives to provide safety, security, and sustenance. Children are not in positions of power and control. When traumatic experiences occur in childhood (ACEs), feelings of powerlessness and loss of control are generated, along with a greater amount of stress, resulting in toxic stress.

The body reacts physiologically to both physical and emotional stress. The mammalian stress response consists of two primary systems: the hypothalamic-pituitary-adrenal axis (HPA) and the sympathetic nervous system (Bernstein, Measelle, Laurent, Musser, & Ablow, 2013). The HPA axis regulates the body's slower responses to stress. The sympathetic nervous system, also known as the fight or flight response, regulates acute stress response. An understanding of the body's chronic or slower response to stress, the HPA axis, is most important in describing the potential effect of toxic stress on the developing child.

The brain is not mature at birth, and complete brain development is not thought to occur until age 25 (Grabe et al., 2012). Although the production of new neurons is essentially complete at birth, there does continue to be neuronal production in the hippocampal dentate gyrus and the prefrontal cortex (areas responsible for planning, intellectual insight, and judgment; Grogan & Murphy, 2011). Myelination of these structures occurs over decades. The brain triples in size from birth to age 5 years, in large part as a result of myelination. In the first few years of life the brain is sculpted to its environment by refinement of its neural network, greatly increasing the number of synapses and the pruning of redundant neurons, excitatory synapses, and receptor sites.

When children and their developing brains are exposed to toxic stress, changes can occur. If the stress or trauma that the child is exposed to does not go away and becomes toxic, the HPA axis remains activated,

Download English Version:

<https://daneshyari.com/en/article/2661789>

Download Persian Version:

<https://daneshyari.com/article/2661789>

[Daneshyari.com](https://daneshyari.com)