

# Chapter 17

## Early Adversity and Neurodevelopment: Implications for School Counselors

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### ABSTRACT

*This chapter addresses the impact of early childhood adversity on the developing brain and nervous system. The author provides a critical review of the Adverse Childhood Experiences study and expands the concept of early adversity to include systemic and environmental stressors and a focus on resilience in addition to potential pathology. Particular focus is given to reviewing contemporary neuroscience research on the influence of negative early life events, including impacts on brain structure, function, connectivity, epigenetic processes, and inflammation. The author identifies overarching findings while also acknowledging limitations of the current science and the difficulties inherent in practitioners' translating primary brain research into school-based interventions. Some ideas for practical applications of the science are provided.*

### INTRODUCTION

This author once consulted with a school counselor about a 12-year-old female student who was exhibiting problematic externalizing behaviors at school. She reported that the student was stealing items from classmates' backpacks, lying to teachers and parents, and getting into fights on the playground and in the cafeteria. The school counselor reported that the student had been adopted at the age of six after years of witnessing domestic violence that culminated in her father murdering her mother and little brother. The school counselor said that for the last six years, the student had been raised in a stable loving home and had attended counseling to heal from her early negative experiences. The school counselor stressed that the student did not have many memories of her early experiences and that her current "bad behavior" did not make sense. This author empathized with the school counselors' frustration and acknowledged her efforts to create a respectful school environment by establishing clear behavioral expectations and

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consequences. It was evident, however, that this school counselor did not have a full understanding of how early adverse experiences can impact the developing brain and influence behavior long past the end of the event or events themselves. Scientific research related to memory, nervous system functioning, epigenetics, and other areas of brain functioning can help shed light on how experiences of **toxic stress** in early childhood can continue to play a role in learning and behavior throughout the lifespan. Although Adverse Childhood Experiences (ACEs) do not excuse or condone problematic behavior, they can inform counselors' understanding of the potential etiology of the behavior and offer direction for ways in which school counselors effectively respond to and ultimately reduce incidences of such behavior.

School counselors provide services to students who have experienced ACEs every day (ASCA, 2016). According to the most recent data from the National Survey of Children's Health (Child and Adolescent Health Measurement Initiative, 2019), 23.3% of children between the ages of 0-17 have experienced at least one ACE and 18.6% have experienced at least two ACEs. The Center for Disease Control (2019) found that 61% of adults reported experiencing at least one ACE during childhood, suggesting an even higher lifetime prevalence rate. Although prevalence rates vary among the type of adversity experience (e.g., economic hardship and parental divorce are the most common adverse experiences) and demographic factors (e.g., ethnic minorities and individuals living in rural communities experience more adversity), many children are at risk of being exposed to adversity (Crouch et al., 2019). To serve these students effectively, school counselors can greatly benefit from understanding the impact of negative life events on brain development and nervous system functioning (Miller et al., 2018). School counselors must also be able to translate that knowledge into neuroscience-informed principles and practices. Thus, the purpose of this chapter is to review relevant and up-to-date research on the impact of ACEs on brain development and nervous system functioning and link the information to specific implications for school counselors.

## **BACKGROUND**

Felitti and colleagues (1998) conducted the original ACE study in collaboration with the United States (US) Centers for Disease Control and Kaiser Permanente. The complete list of questions can be found in Table 1.

The researchers found strong positive correlations between the number of ACE categories endorsed by participants and long-term negative physical and mental health conditions (e.g., heart disease, autoimmune diseases, substance abuse, depression, and so forth). For participants in the study, the more ACE categories they were exposed to, the greater likelihood of negative health outcomes. For example, individuals with ACE scores of 4 or higher had a 1200 percent increase in suicide attempts. Individuals with an ACE score of 6 or higher died on average 20 years earlier than individuals with zero adverse childhood experiences. The epidemiological findings of this study made their way into mainstream public health efforts with large scale education and community reform efforts, including the creation of a popular documentaries *Paper Tiger* and *Resilience: The Biology of Stress and the Science of Hope*, a now-famous TEDTalk by Nadine Burke Harris entitled *How Childhood Trauma Affects Health Across the Lifetime*, top-selling books (e.g., *Childhood Disrupted: How your Biography Becomes Your Biology and How You Can Heal* by Donna Jackson Nakazawa), and state-wide collaborations between health departments and school districts (See <https://www.cdc.gov/violenceprevention/childabuseandneglect/acestudy/resources.html> for a list of case studies from Washington, Wisconsin, Oklahoma, and Alaska). Many individuals now use the term “**ACE-Aware**” to describe the large-scale campaigns aimed at educat-

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