



The Adverse Childhood Experiences Study: Lessons Learned and Future Directions

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Children's Trust of South Carolina has produced a series of research briefs on adverse childhood experiences (ACEs). The research brief topics include the data collection process, an overview of ACEs, the prevalence of ACEs in various populations, and the relationship between ACEs and health and social outcomes.

What if our most serious public health problems – cardiovascular disease, smoking, obesity, depression – were attributable to experiences in childhood? The Adverse Childhood Experiences (ACE) Study set out to investigate the link between negative events in childhood and negative health outcomes in adulthood. Children's Trust of South Carolina (herein Children's Trust) has created a series of research briefs to highlight the South Carolina ACE Initiative. The second in the series, this brief focuses on the background and history of the original ACE Study and local and national ACE research activities.

Original ACE Study

The concepts for the ACE Study grew out of Dr. Vincent Felitti's work helping individuals who were obese lose weight through Positive Choice programs in the mid-1980s (Anda & Felitti, 2003). At the time, Felitti was working as a specialist in preventive medicine at Kaiser Permanente in San Diego, CA. Dr. Felitti was surprised to find that the people most likely to drop out of the program were the ones who were successfully losing weight. Upon further investigation, Felitti realized that many of his patients had been abused as children and were using obesity as a shield against unwanted sexual attention or physical attack. Furthermore, Felitti learned that a number of his obese patients had, at some point, used tobacco, alcohol, or street drugs as attempts to cope with past adversity (Anda & Felitti, 2003).

Around the same time that Dr. Felitti was making these initial connections between child abuse and negative health outcomes, Dr. Robert Anda was studying similar medical and public health problems at the Centers for Disease Control and Prevention (Anda & Felitti, 2003). Thus, Drs. Anda and Felitti teamed up to investigate the role of child abuse in medical,

social, and public health problems. The original ACE Study grew out of this research.

Drs. Anda and Felitti designed the ACE Study to determine whether adverse experiences prior to one's 18th birthday could be related to negative health outcomes in adulthood. Anda and Felitti surveyed nearly 17,000 adults who had healthcare coverage through Kaiser Permanente (ACE Interface, 2014). The researchers asked 17 questions across seven categories of negative childhood experiences encompassing abuse (psychological, physical, and sexual) and household dysfunction (substance abuse, mental illness, mother treated violently, and criminal behavior in the household).

Findings

The results of the original ACE Study were surprising – more than half of the participants reported experiencing at least one of the adverse events across the seven domains of abuse and household dysfunction. The most commonly endorsed events were substance abuse in the household (26%), followed by sexual abuse (22%) and mental illness in the household (19%). Felitti and colleagues (1998) also found that ACEs were highly related – for participants reporting any ACEs, the probability of exposure to additional ACEs ranged from 65-93% (median 80%).

Importantly, the groundbreaking study by Felitti et al. (1998) found that, as exposure to ACEs increased, the likelihood for unfavorable outcomes such as disease risk factors and incidence, fair or poor self-rated health, lack of healthcare utilization, and mortality increased. Alarming, compared to participants without exposure to ACEs, those respondents with four or more categories of ACE exposure had an odds ratio of 12.2 for history of suicide attempts. These individuals with more categories of ACE exposure were much more likely to experience a suicide attempt. Furthermore, the prevalence and risk of alcoholism, use of illicit drugs, injection of illicit drugs, report of 50 or more sexual intercourse partners, and history of sexually transmitted disease was found to increase as the number of ACEs increased. Similarly, participants with four or more categories of ACEs were compared to those with none, and there was a clear relationship between childhood ACEs and disease conditions.

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Individuals with four or more ACEs were more likely to have chronic bronchitis or emphysema, stroke, heart disease, hepatitis or jaundice, and skeletal fracture.

Implications

The participants in the sample were predominately white (84%), educated (43% were college educated) adults (average age of 56 years) with good healthcare coverage. The nature of the sample in the Felitti et al. (1998) study is important, as it may be easily (but incorrectly) assumed that ACEs are limited to those with low socioeconomic status, or individuals who have had a “rough” life. This research shows that ACEs are common, ACEs are interrelated, and that there is a clear dose-response relationship between ACEs and negative health outcomes in adulthood. The information from this research is also important for the development and implementation of prevention efforts.

Continuing the Research

Because the results of the original ACE Study (Felitti et al., 1998) had such strong implications for medical and public health research, the CDC continues to follow the original participants to track incidence of risk factors, health outcomes, and mortality in the sample (CDC, 2014). Results of the original ACE study suggest that ACEs are common, interrelated and associated with negative health outcomes. As such, medical and public health practitioners would benefit from assessing and acknowledging these experiences. The idea of trauma-informed approaches to healthcare is beginning to take hold in many clinics (see Machtiner, Cuca, Khanna, Rose, & Kimberg, 2015; Muskett, 2014), and interest in replications of the original ACE Study is growing. Currently, efforts to replicate the ACE Study or use the ACE questions are underway in Canada, China, Jordan, Norway, the Philippines, and the United Kingdom (CDC, 2014). Similarly, many U.S. states are beginning to research the impact of ACEs.

Data collection across the nation

In 2010, five states collected ACE data through the CDC’s national Behavioral Risk Factor Surveillance System (BRFSS; CDC, 2014), and as of 2015, the number of states that have collected ACE data jumped to 31 plus the District of Columbia (K. Ports, personal communication, December 8, 2015). For a more detailed review of the BRFSS, see Morse and Stropolis, 2016.

A sampling of states that have created initiatives to better understand ACEs includes, but is not limited to the following: South Carolina (Children’s Trust, 2015a), Alaska (Alaska Department of Health and Social Services, 2015), California, Illinois, Iowa (ACEs 360 Iowa, n.d.), Maine, Minnesota (Minnesota Department of Health, 2013), Nebraska, New York, Pennsylvania, Tennessee (Tennessee Department of Health,

2015), Vermont, Washington (Washington State Department of Health, n.d.), and Wisconsin (Wisconsin Children’s Trust Fund, 2014).

South Carolina ACE Initiative

Children’s Trust of South Carolina’s ACE Initiative includes four major components: ACE data collection and dissemination, ACE Interface Master Training, South Carolina Prevention Framework, and ACE legislative policy (Children’s Trust, 2015a). Currently, South Carolina has over 50 certified ACE Interface Master Trainers who conduct ACE prevention-focused trainings throughout the state. In September 2015, Children’s Trust hosted the biennial Prevention Conference, which featured a track of sessions related to ACEs (Children’s Trust, 2015b). A year later, Children’s Trust hosted the state’s first ACE summit, in which participants learned best practices from ACE national experts, received training on 2014-2015 BRFSS ACE Data, learned about the prevention framework, and convened regional workgroups to develop strategies to address ACEs through their work.

The increased interest in ACEs and subsequent research findings across the United States has driven an increased interest in prevention. Children’s Trust has partnered with the University of South Carolina and the Department of Mental Health on a three-year project, funded by the Blue Cross Blue Shield Foundation of South Carolina, which addresses ACEs in the Pee Dee region through the development of resilience and support for students in schools. Components of the prevention framework have been integrated into the project for implementation.

Finally, the ACE data collected the past three years has informed advocacy and policy priorities within Children’s Trust and has been used to encourage data-driven decision making.

Summary and Conclusions

Results of the original ACE Study demonstrate a link between ACEs and a number of negative public health outcomes and risk factors. Increasingly, the conversation has shifted to exploring how someone’s childhood experiences may be contributing to current health and social problems. Continuing to develop ACE initiatives at the state and, when appropriate, local levels will help to inform current human-services practices and prevention efforts. As such practices and prevention efforts continue to change with the advent of new information related to ACEs, it is also important to use information from the ACE research to target health- and social-related legislation. Furthermore, as we better understand the rippling effect of ACEs, it will be important to target educational and economic outcomes that may be related to ACEs.



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