

# Adverse Childhood Experiences

## A Public Health Perspective

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The United States began the century with infectious diseases dominating the top ten causes of death, with life expectancy under 50 years of age and with infant mortality rates between 100 and 150 deaths per 1,000 live births. We end the century with infant mortality rates of less than 10 in every state, life expectancy 50% higher, and causes of death dominated by our own behavior. Forty percent of deaths are due to 3 factors alone: tobacco, diet, and alcohol.

It has not been easy to change health risk behaviors, to understand what motivates such behaviors, to establish the generic roots of the behavior, or to implement effective prevention. The public interest in change is obvious. People want to change and try every new diet proposed. Smokers want to quit but a small percentage succeed for even a year. The science has not matched the interest.

There are many reasons for bad decisions by individuals, by government, or by society. One is the lack of understanding of mechanisms describing how the world works. Bleeding as a therapeutic device may have developed because it appeared to reduce fever. But lack of knowledge about mechanisms caused widespread use and untold harm. Before an understanding of unseen germs, it was common for women to die of infections acquired during childbirth, simply because basic sanitation was not part of the medical culture. The understanding of causation was basic to better medical practice.

Scientists believe in a cause-and-effect world. They are obsessed with describing those causes, and then measuring and predicting the consequent effects. Public health professionals seek to understand causes and effects, measure the strength of the associations, and determine which causes are deleterious to health. If those causes are amenable to change, the logical action is to devise interventions that reduce adverse health effects.

But establishing causality is more difficult than expected. The scientific world now understands the strength of cigarette smoking as a cause of lung cancer.

Yet establishing the proof took time. Early studies were unaware of the broad spectrum of adverse effects of tobacco and, therefore, control groups of patients with heart disease or other cancers had high rates of smoking, masking the role of tobacco as a cause of lung cancer.

Public health surveillance has evolved as behavioral factors have become more prominent as causes of death. Surveillance techniques have expanded from measuring morbidity and mortality outcomes to including a measurement of the risk factors (such as smoking rates, alcohol use, obesity, lack of exercise) associated with those outcomes. But public health surveillance has lacked a method of measuring the generic events that are, in turn, associated with such risk factors.

The Vietnam war heightened our understanding of how situations of stress could lead to long-term adverse health effects in adults. A half century after D-Day, it is now clear that many survivors of earlier wars also lived uncomfortable and unhealthy lives as the result of post-traumatic stress disorders. Are there parallels with early childhood stress?

Establishing the role of early childhood stress on adverse health outcomes has been difficult. Psychological, physical, and sexual abuse in childhood are abhorrent even if there were no adverse health effects in the long term. But now Felitti et al.<sup>1</sup> are giving us the first indications of prolonged, even lifelong health problems associated with such early trauma. In one of the most significant studies since C. Henry Kempe surprised the medical world with descriptions of the "battered child syndrome,"<sup>2</sup> Felitti et al. begin a process of describing some indicators of childhood abuse and a resulting "battered adult syndrome."

The study is disquieting in its description of the frequency of abuse against children and how often families appear to be dysfunctional. It is not what we want to believe about our culture, our neighbors, or ourselves. And yet as troubling as the data seem to be, we need to confront the problems described and find an appropriate public health response.

We also need to be honest about how little we know. There is no weighing, in this study, of the relative impact of different types of adverse events and yet there must be significant differences. There is little informa-

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tion on the relationship of frequency of early trauma and the strength of the association. We lack a clear understanding of the impact of age at the time of first abuse, ameliorating factors in responding to the abuse, or secondary prevention. What factors neutralize the adverse effects later in life? How do adults attempt to self-treat the pain of a troubled childhood?

The many questions don't detract from the repetitious strength of the association across many adverse outcomes. And while each category is given the same weight, it is significant that the dose-response observations are so consistent.

We can't allow the questions to obscure the need for a public health response while additional studies are instituted. What should be done in the way of primary prevention, such as identifying persons of high risk who could receive help before they become parents or hurt other children? How could children be identified early when primary prevention has failed and what should be done to minimize adverse effects? How could children and adults bearing such scars be helped in combating alcohol, tobacco, and sexual problems that may not be amenable to the usual public health approaches. For example, are smokers and drinkers who bear the scars of childhood abuse different from other smokers or alcoholics, not only addicted to nicotine or alcohol but also addicted to an imprinted memory of how such substances were used to counter psychological injuries?

Lack of information is not the only barrier to good decision making in public health. Time between causes

and their effects is important in changing behavior. Touching a hot stove causes rapid behavioral change while the effects of poor diet, lack of exercise, or even smoking are sufficiently delayed to make behavioral change difficult. Distance between time and effect also affects the difficulty of making good decisions. Behavior in one person causing a delayed response in another person poses special challenges. It has always been important to decrease child abuse. This study describes many additional compelling reasons why, as hard as it may be, it must receive our attention.

Public health has had remarkable success with interventions to reduce early death. It has succeeded in removing many morbidity risks, such as measles, pertussis, *Hemophilis influenza* infections, bicycle-related head trauma, and even the risk of spina bifida. Now we must accept the challenge of reducing the risks that compromise quality of life. As Einstein reminded us, the freedom to acquire knowledge comes with the responsibility to use that knowledge.

## Reference

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2. Kempe CH, Silverman FN, Steele BF, Droegemueller W, Silver HK. The battered child syndrome. *JAMA* 1962;181:17-24.