

Early trauma, lasting damage

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Once scientists learned that smoking changes the brain, making it very difficult to quit, we were able to devise treatments to help smokers change their behavior.

Today we are witnessing another health revolution that is just as far-reaching. It concerns the effects of mistreatment on the brains of young children. It will force us to rethink the way we deliver services - health care, education, and more - to our most vulnerable. And it has particular urgency in Philadelphia.

In the 1980s, Rob Anda, an epidemiologist with the Centers for Disease Control, noticed that people with a history of depression were more likely to be smokers. Then he met Vincent Felitti, a Kaiser Permanente researcher who had discovered that obese adults often had a history of sexual abuse.

Anda and Felitti wondered what other diseases might be traced back to traumatic childhood events. They surveyed 17,000 Kaiser members about negative childhood experiences - abuse, neglect, family dysfunction - and explored the correlations with their health later in life. The patterns that emerged were stronger than either researcher had ever imagined.

Their adverse childhood experiences (ACE) study found that children exposed to traumatic events were more likely to develop mental and behavioral health problems like depression and addiction. They were also more likely to have physical illnesses like heart disease and diabetes.

Anda and Felitti had discovered a cause of some of America's biggest and most costly health and social epidemics. They created an ACE scoring system to measure childhood adversity. As the score rises, so does the risk of serious adult health problems.

Toxic stress

Their research was initially met with great skepticism. None of the major scientific journals would publish it. But new insights from the rapidly expanding field of brain science turned the tide.

Neuroscientists have found that traumatic childhood events like abuse and neglect can create dangerous levels of stress and derail healthy brain development, putting young brains in permanent "fight or flight" mode. What scientists often refer to as "toxic stress" has damaging long-term effects on learning, behavior, and health. Very young children are especially vulnerable.

Last year, the Institute for Safe Families, with support from the Robert Wood Johnson Foundation and others, formed the Philadelphia Adverse Childhood Experiences Task Force to help local doctors and nurses, mental health counselors, and advocates recognize the symptoms of toxic stress and develop ways to protect children from its

damaging effects. As a first step, the Task Force conducted a citywide survey of more than 1,700 residents to understand the prevalence of the problem.

The results are tragic. One in three of the Philadelphia adults surveyed had experienced physical abuse at the hands of a parent or other caregiver. One in three grew up in a household with someone who abused alcohol or drugs. More than one in three had seen or heard someone being beaten, stabbed, or shot while growing up. And 37 percent reported four or more such adverse childhood experiences.

How might these experiences affect the community? People with high ACE scores would, for example, be much more likely to drop out of school or spend time in prison. So it's not surprising that one in three Philadelphia ninth graders fails to earn a high school diploma, or that the city has one of the highest incarceration rates in the country.

National summit

Fortunately, social workers, police departments, educators, doctors, and nurses are starting to apply this knowledge to their work nationwide. Last month, the Institute for Safe Families and the Robert Wood Johnson Foundation hosted the first national summit of professionals who are using the biology of stress and the research on adverse childhood experiences in their fields and communities.

Before the science on addiction was developed, we blamed smoking on bad choices. Before the research on adverse childhood experiences, it was just as common to blame bad choices for many other health and social problems.

Now we know that these health problems are caused by early life experiences that affect the development of brains and therefore bodies. Spreading that knowledge is the first step toward improving health and saving lives.

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