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Original Research

Adverse childhood experiences, family functioning and adolescent health and emotional well-being

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ABSTRACT

Objectives: Adverse childhood experiences (ACEs) have been consistently linked in a strong and graded fashion to a host of health problems in later adulthood but few studies have examined the more proximate effect of ACEs on health and emotional well-being in adolescence.

Study design: Nationally representative cross-sectional study.

Methods: Using logistic regression on the 2011/12 National Survey of Children's Health, we examined the cumulative effect of total ACE score on the health and emotional well-being of US adolescents aged 12 to 17 years. We investigated the moderating effect of family functioning on the impact of ACE on adolescent health and emotional well-being.

Results: Adolescents with higher ACE scores had worse reported physical and emotional well-being than adolescents with fewer ACEs net of key demographic and socio-economic characteristics. Family functioning moderated the negative impact of cumulative ACE on adolescent health and emotional well-being.

Conclusions: Adolescent well-being has enduring consequences; identifying children with ACE exposure who also have lower-functioning family could also help identify those families at particular risk.

Adverse childhood experiences (ACEs) encompass not only harmful acts of emotional, physical or sexual abuse to a child, but also familial and socio-environmental influences such as parental drug use, poverty, and neighbourhood or domestic violence. Recent evidence suggests that nearly half of all children in the United States are exposed to at least one of these social or family experiences, while nearly a quarter (22%) experience at least two.[1] ACEs have been consistently linked to a host of health problems in adulthood, such as depression and suicide,[2] alcohol and drug abuse,[3] premature all-cause mortality,[4] and chronic health problems.[5] By the time children have been exposed to four or more adverse experiences, the odds of having negative health outcomes in adulthood are up to 12 times that of children without such exposure.[6] While the majority of studies on ACEs and health use retrospective reports from adults of their current health and well-being, recent research on adolescents has found cumulative ACEs to be associated with increased risk of interpersonal and self-directed violence,[7] behavioural problems,[8] substance abuse and depression.[9]

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Because ACEs can lead to such negative health and social consequences, it is important to identify factors that might serve to protect children in the face of adverse experiences. As demonstrated in prior research, a child's response to adverse events is heavily influenced by family context,[10,11] such that the impact of cumulative adversity on adolescent health and well-being may vary depending on the level of family functioning. A growing body of research has suggested that high levels of family functioning—often measured as positive parent-child communication and low levels of parental stress—are associated with better adolescent mental health,[12] higher levels of school engagement and lower levels of alcohol and substance use.[13] Positive family functioning has also been found to serve as a form of protection in the face of economic hardship,[14] and to moderate the negative relationship between adverse characteristics such as neighbourhood violence[15] poverty or parental divorce and adolescent mental health.[16]

Extensive prior research has examined the relationship between individual ACEs such as parental violence, family disruption, poverty or neighbourhood violence and negative health outcomes among adolescents.[17] However, contextual risk factors such as these do not occur in isolation and tend to be highly interrelated.[18] Research examining the relationship between ACE and various adolescent outcomes has drawn largely from the cumulative risk perspective, which suggests that it is the accumulation of risk—the number of adversities experienced by children—that leads to developmental and behavioural problems.[19] This cumulative risk approach offers a method for investigating how risk factors operate in the context of one another to influence adolescent outcomes. Further, the use of a cumulative ACE measure allows for the inclusion of relatively uncommon events (i.e., death of a parent) and does not make assumptions about the strength of each adverse experience.[20] Prior research supports this approach, finding evidence of a dose-response relationship between childhood stressors and adult behavioural, health and mental health problems.[21,22]

The primary goal of this study was to understand the cumulative impact of ACEs on adolescent health and emotional well-being using a population-based sample, and to examine how family functioning may mitigate this relationship. We tested several hypotheses. First, that adolescents who had experienced adversities would have worse reported physical and emotional well-being compared to adolescents who did not have such experiences. Second, that there would be a cumulative effect of ACEs such that adolescents with more ACEs would report worse physical and emotional well-being than adolescents with fewer ACEs, net of key demographic and socio-economic characteristics. Finally, that positive family functioning would serve as a form of protection in the face of increasing exposure to ACEs.

Methods

Data source

We used data from the 2011/2012 National Survey of Children's Health (NSCH), a large, nationally representative survey sponsored by the US Maternal and Child Health Bureau in collaboration with the National Center for Health Statistics.[23] Participants in the NSCH were selected from US households with children under 18 years old in each of the 50 states and the District of Columbia. In each identified household, one child was randomly selected to be the subject of the interview. Interviewers asked a parent or guardian who lived in the household about the health and well-being of the child, including questions about the child's health status, family functioning and adverse childhood events. The 2011/12 NSCH is the first national child-level data source on ACEs. The data were weighted to represent the population on non-institutionalized children aged 0–17 years. The 2011/2012 dataset includes 34,601 adolescents aged 12–17 years. For the multivariate analyses, we removed 854 cases that were missing information on the dependent and key independent variables, resulting in an analytic sample of 33,747 cases.

Measures

Dependent variables

We used two dependent variables for this study. First, we used a global measure of adolescent health assessed through the question, 'In general, how would you describe [name] health?' measured on a Likert-type scale with 5 possible responses (excellent, very good, good, fair or poor). This measure was dichotomized into poor (good, fair or poor) versus good (very good or excellent) health, comparable to published reports and previous studies using the NSCH.[24,25] The second dependent variable captured adolescent internalizing or emotional problems by combining parent or caregiver reports that a physician or other healthcare provider told them the child had depression or anxiety, with caregivers' reports of the child's unhappiness. Adolescents were coded as having emotional problems if the respondent indicated a physician or other health care provide told them the adolescent had depression, or anxiety, or if they were reported by their parent/caregiver to be usually or always unhappy, sad or depressed.

Independent variables

Adverse childhood experiences. The 2011/12 NSCH included questions on adverse childhood experiences to capture psychosocial risk factors that affect children. Questions were derived from a modified version of the Centers for Disease Control (CDC) and Kaiser Permanente Adverse Childhood Experiences Study, in which researchers surveyed adults on a range of events occurring when they were aged 17 years and younger, including abuse, neglect and exposure to violence.[7] For the NSCH, a parent/guardian responded to questions about their adolescent child, including five original items from the CDC adult ACE survey indicating whether the adolescent has (1) experienced the divorce/separation of a parent; (2) experienced a parent's incarceration; (3) witnessed domestic violence; (4) lived with someone who was mentally ill or suicidal; or (5) lived with someone with alcohol or drug problem. An NSCH Technical Expert Panel, which included a representative group of experts in the field of survey methodology, children's health, community organizations and family leaders,[29] also suggested four more items indicating whether the adolescent: (6) experienced socio-economic hardship

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