

## Chapter 2

# The Clinical Adverse Childhood Experiences (ACEs) Questionnaire: Implications for Trauma-Informed Behavioral Healthcare

Anne Murphy, Howard Steele, Miriam Steele, Brooke Allman, Theodore Kastner, and Shanta Rishi Dube

**Abstract** Within primary care pediatrics, there is an optimal and essential opportunity to educate parents on how the pernicious effects of toxic stress have impacted their lives and how they can prevent and/or buffer the effects of stress in their child's life. The recommendation from the 2012 American Academy of Pediatrics policy statement is to infuse a trauma-informed perspective into pediatrics, and this may be accomplished by introducing providers to the Adverse Childhood Experiences (ACEs) Study and the essential role of two-generational ACE screening. The seminal ACEs studies provided a paradigm shift in our understanding of the impact of childhood trauma on both physical and mental health throughout the life span. At the same time, the intergenerational link between childhood experiences and quality of parenting has been well established in attachment research. Integrating these two bodies of work has led to new ways of understanding the links between parental experiences in their own childhood and the quality of the parent-child relationship with their offspring. The link between trauma and attachment research provides a solid rationale for including the ACE measures into comprehensive screening and treatment with vulnerable families, many of whom regularly present to primary care pediatrics.

**Keywords** Adverse Childhood Experiences • Pediatric screening • Behavioral health • Parenting

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A. Murphy, Ph.D. (✉) • B. Allman, L.C.S.W. • T. Kastner, M.D.  
Rose F. Kennedy Children's Evaluation and Rehabilitation Center,  
Montefiore Medical Center, Bronx, NY, USA  
e-mail: amurphy1@montefiore.org; ballman@montefiore.org; tkastner@montefiore.org

H. Steele, Ph.D. • M. Steele, Ph.D.  
New School for Social Research, New York, NY, USA  
e-mail: steeleh@newschool.edu; steelem@newschool.edu

S.R. Dube, Ph.D., M.P.H.  
Georgia State University, Atlanta, GA, USA  
e-mail: sdube2@gsu.edu

## Introduction

In 2012, the American Academy of Pediatrics released a policy statement, which translated evidence from developmental science and created a sound basis for its indisputable recommendations on the need to address toxic stress within primary care pediatrics. This comprehensive mandate suggests that the pediatric community employs an ecobiodevelopmental (EBD) framework to conceptualize the social, behavioral, and economic determinants of lifelong disparities in physical and mental health. The EBD framework should guide pediatric training for current and future physicians, increasing awareness of the growing science that links childhood toxic stress with disruptions of the developing nervous, cardiovascular, immune, and metabolic systems, and the evidence that these disruptions can lead to lifelong impairments in learning, behavior, and physical/mental health. Additionally, the policy statement calls for the pediatric community to advocate for the development and implementation of new, evidence-based interventions that reduce sources of toxic stress and/or mitigate their adverse effects on young children. This might be accomplished by screening for toxic stress, educating parents on how to support children's emerging social-emotional-linguistic skills, and/or encouraging positive parenting techniques. However, the statement also suggests the necessity of developing and securing funding for children at risk beyond the medical home, and identifying and collaborating with local services that address risks of toxic stress.

Within primary care pediatrics, there is an optimal and essential opportunity to educate parents on how the pernicious effects of toxic stress have impacted their lives and how they can prevent and/or buffer the effects of stress in their child's life. Practically speaking, one valuable vehicle to operationalize the policy statement's recommendations is to infuse a trauma-informed perspective into pediatrics by introducing providers to the Adverse Childhood Experiences Study and the essential role of two-generational ACE screening.

The seminal Adverse Childhood Experiences (ACEs) studies (Dube et al., 2003; Felitti et al., 1998) provided a paradigm shift in our understanding of the impact of childhood trauma on both physical and mental health throughout the life span. At the same time, the intergenerational link between childhood experiences and quality of parenting has been well established in the attachment research literature (Bowlby, 1969, 1982, 1988; Main, Hesse, & Goldwyn, 2008; Pederson, Gleason, Moran, & Bento, 1998; van IJzendoorn, 1995; Ward & Carlson, 1995). Integrating these two bodies of work has led to new ways of understanding the links between parental experiences in their own childhood and the quality of the parent-child relationship with their offspring (Murphy et al., 2014). The link between trauma and attachment research provides a solid rationale for including the ACE measures into comprehensive screening and treatment with vulnerable families, many of whom regularly present to primary care pediatrics. This chapter will discuss the implications of high ACEs on parenting, how to integrate ACEs screening into pediatric settings, and the use of ACEs in trauma-informed intervention.

## The Adverse Childhood Experiences Study

In 1995, Kaiser Permanente in Southern California and the Centers for Disease Control and Prevention (CDC) collaborated on a large-scale epidemiologic investigation, the Adverse Childhood Experiences (ACE) Study. The ACE Study included a cohort of over 17,000 adult health maintenance organization (HMO) members and retrospectively assessed exposures to childhood stressors, such as physical, emotional and sexual abuse, emotional and physical neglect, household substance abuse and mental illness, parental discord, witnessing domestic violence, and criminality in the home. The assessment of these ten ACEs was a significant departure from existing research in the field, which tended to examine the contribution of *single* forms of abuse with health outcomes. In taking this novel approach, the ACE Study was one of the first epidemiologic studies to not only demonstrate that exposures to each of the ten categories of childhood abuse, neglect, and family dysfunction are common, but that they are highly interrelated (Dube et al., 2003; Dube, Anda, Felitti, Edwards, & Croft, 2002; Felitti et al., 1998). Using the total number of reported ACEs, or ACE score, research from the ACE Study has documented that close to two-thirds of the adult cohort reported experiencing at least one ACE, and 40% reported two or more.

The ACE study also demonstrated that abuse, neglect, and serious forms of household dysfunction are associated with multiple social, physical, behavioral, and mental health problems that emerge in adolescence and persist into adulthood. For example, each childhood exposure was associated with an elevated risk of smoking, illicit drug use, alcohol abuse, suicidality, and depression (Anda et al., 1999; Chapman et al., 2004; Dube et al., 2003, 2006, 2009; Dube, Cook, & Edwards, 2010; Felitti et al., 1998). Exposure to abuse, neglect, and serious household dysfunction were found to be associated with specific medical and physical health outcomes, including autoimmune disorders, cardiovascular disease, and liver disease (Dube et al., 2009; Felitti et al., 1998). Most importantly, the ACE study has documented that the childhood adversities studied tend to co-occur, and there was a strong graded dose-response relationship between the ACE score and all of the aforementioned behavioral, social, and health outcomes (Dube et al., 2001, 2002, 2003; Felitti et al., 1998; Harris, Putman, & Fairbank, 2004).

The ACE study findings have shown that exposure to childhood abuse and other forms of trauma likely activates the stress response, potentially disrupting the developing nervous, immune, and metabolic systems of children, and thereby providing biological plausibility for epidemiological findings (De Bellis et al., 1999; Hair, Hanson, Wolfe, & Pollak, 2015; Lehman, Taylor, Kiefe, & Seeman, 2009; Stein, Koverola, Hanna, Torchia, & McClarty, 1997; Teicher et al., 1997). These insights into childhood determinants of adverse health outcomes throughout the life span, provided in the ACE study and other similar studies, suggest the need for two generation behavioral health interventions, delivered in a prevention context, beginning as early as possible and focused on the parent-child dyad.

## **ACEs and Parenting: The Intergenerational Transmission of Risk**

While previous research from the ACE study has demonstrated the long-term health impact of numerous stressful and traumatic childhood exposures, as summarized above, there is less appreciation of the pernicious impact of exposure to ACEs (in the first 18 years of life) and adult functioning in the parental role. Some of the outcomes demonstrated to be associated with ACEs most certainly tax a parent's ability to provide sensitive and responsive care to the next generation, and detract from one's ability to successfully embrace the parental role. These include depression (Chapman et al., 2004), suicidality (Dube et al., 2001), risk of illicit drug use, HIV, sexual risk behavior (Dube et al., 2003; Meade, Kershaw, Hansen, & Sikkema, 2009), and alcohol abuse (Dube, Anda, et al., 2001; Dube et al., 2002, 2005). Additionally, high levels of ACEs are associated with parenting stress (Steele et al., 2016) and the absence of secure adult attachment classifications (Murphy, et al., 2014) on the Adult Attachment Interview (AAI) (Main, Goldwyn, & Hesse, 2003). This is important, as the AAI is the gold standard measure of attachment patterns (Main et al., 2003, 2008; Main, Kaplan, & Cassidy, 1985) in adults and a robust predictor of attachment in the next generation of parent-child attachment relationships, thus indicating the significant potential for pronounced difficulties in parenting and parent-child relationship difficulties based on parental ACEs.

Murphy et al.'s (2014) study on the impact of ACEs and attachment provides a better understanding of the mechanisms through which problematic parenting may occur. This research found that mothers who reported four or more ACEs demonstrated significantly higher rates of unresolved loss or trauma in response to the AAI. Interviews classified as Unresolved with regard to loss and/or trauma predict the most troubling infant-parent relationships, in which fear and disorganization predominate (Lyons-Ruth & Jacobvitz, 2008; Steele, Steele, & Fonagy, 1996; van IJzendoorn, 1995). Parents who are unable to make sense of their own traumatic childhood experiences are at increased risk of bringing these unresolved problems into their relationships with their own children, resulting in Disorganized attachment, the most concerning parent-child attachment classification. Children who are classified as Disorganized are more likely to exhibit internalizing (Groh et al., 2014) and externalizing behavior problems (Belsky & Fearon, 2002; Lyons-Ruth & Jacobvitz, 2008) later in childhood, and to suffer from dissociation and personality disorders in late adolescence and young adulthood (Lyons-Ruth & Jacobvitz, 2008). These findings suggest the need for bringing the discussion of the implications of high ACEs on parenting (Murphy et al., 2014) into primary pediatric and clinical settings (Dube et al., 2003).

## **Adverse Childhood Experiences and Healthcare Reform**

As the USA works to achieve high value healthcare, we must pursue a broad range of linked goals. These goals are referred to as the "Triple Aim," and include improving the individual experience of care, improving the health of populations, and reducing the per

capita costs of care for populations (Berwick, Nolan, & Whittington, 2008). Trauma-informed care includes attention to preventing ACEs in addition to treating ACEs in parents and in their children. To describe the impact of trauma, and especially multiple traumas, Bessel Van der Kolk (1994) coined the phrase, “the body keeps score.”

### **On the Ground Example**

For example, New York State Medicaid redesign efforts to develop Children’s Health Homes (CHH) incorporate the use of trauma-informed assessments, often including ACE scores, to help determine acuity levels [https://www.health.ny.gov/health\\_care/medicaid/program/medicaid:health\\_homes/docs/cans\\_0\\_5.pdf](https://www.health.ny.gov/health_care/medicaid/program/medicaid:health_homes/docs/cans_0_5.pdf). Children with histories of ACEs will be identified as experiencing a qualifying factor, as it is well documented that these children are often medically complex, and are thus often high users of medical services.

In addition to the physical costs of ACEs throughout the life span, there are also financial costs in terms of the immediate and long-term cumulative price of maltreatment, which has been well documented by economists (Heckman, 2006). The economic burden of ACEs includes not only the immediate health and social welfare costs for children exposed to abuse, neglect, and serious family dysfunction, but also the long-term health and social costs for the survivors of abuse and neglect. The relevance of the economic costs of ACEs further underscores the need to reduce or prevent the occurrence of ACEs, and the universally accessed pediatric primary care environment may be the best venue in which to do so.

By screening for ACEs as early as possible, we can potentially prevent the physical, psychological, and economic cost of ACEs in children, which if left untreated will fuel another generation of high ACEs.

## **The Clinical and Child ACE Questionnaires**

The ACE Clinical Questionnaire (Murphy, Dube, Steele, & Steele, 2007) was adapted from the ten categories of childhood adversity (Dube et al., 2003; Dube, Felitti, Croft, Edwards, & Giles, 2001) and developed for use in our clinical setting (A. Murphy, personal communication with S. Dube, 2007). We have established convergent validity between this questionnaire and the AAI (Murphy et al., 2014). As with the original ACE survey (Dube et al., 2001), questions about emotional and physical abuse, and household dysfunction were derived from the Conflict Tactics Scale (Straus, 1979); sexual abuse was determined based on four questions from Wyatt (1985); parental substance abuse was assessed with questions from Schoenborn (1991); and physical and emotional neglect variables were based on the Childhood Trauma Questionnaire (CTQ; Bernstein et al., 1994).

The Clinical ACE Questionnaire (Murphy et al., 2007) assesses the ten categories of adversity (Dube et al., 2002; Felitti et al., 1998). These include exposure to psychological, physical and sexual abuse, emotional and physical neglect, and what has been termed household dysfunction, specifically parental divorce or separation, untreated parental mental illness, parental alcohol or substance abuse, parental incarceration, and exposure to mother treated violently. An innovation in the Clinical ACE Questionnaire is the explicit reversal of the question regarding emotional neglect “During your first 18 years of life, there was no one who made you feel special, loved, or important,” to instead ask “During your first 18 years of life, was there a parent who made you feel special, loved, or important?” Clinically, we believe this holds value as it opens up an avenue for identifying “angels in the nursery” who provided support that might buffer the effects of early adversity (Lieberman, Padrón, Van Horn, & Harris, 2005).

Building upon the original ACE study with an eye towards prevention, we developed the Child Clinical ACE Questionnaire (Murphy et al., 2007), with the same categories of questions, prefaced by, “Since your child was born, how often has he/she ...” This measure was created in an attempt to awaken in parents the idea that their children have the potential to have a different set of childhood experiences than they endured. This is particularly poignant for parents with high levels of ACEs. We have found that simply asking the parent the Clinical ACE Questionnaire and the Child Clinical ACE Questionnaire in succession has therapeutic value, as it can ignite the parent’s capacity to reflect upon their children’s current experiences in contrast to their own childhood experiences. A parent with an ACEs score of 7, learning that her child only has a 1, may be particularly motivated to engage with an integrated early childhood behavioral health specialist to prevent the intergenerational transmission and repetition of trauma.

## **Integrating Screening for Adverse Childhood Experiences in Primary Care Settings**

As the inclusion of ACEs becomes part of trauma-informed screening, pediatricians, psychologists, social workers, and other mental health professionals often ask how to introduce questions about parent adverse childhood experiences within a pediatric primary care setting. Some providers have expressed fear that parents will be reluctant to consider why their own childhood has anything to do with their child’s health, behavior, or development. Providers may express reluctance to query such private issues, because they question where to refer families should screening reveal high ACE scores.

## **Common Concerns with Asking About ACEs**

The concerns we have heard expressed by providers regarding discussing ACEs with families can be divided into four themes. Comments include:

1. *Parents are coming in due to concerns about their child or just for a well-child visit. They do not expect to be asked about ACEs. They are a well-functioning middle class family.*

In our experience of administering several hundred Clinical ACE and Child Clinical ACE Questionnaires (Murphy et al., 2007), parents rarely refuse to answer the questions, though we have had parents deny the presence of any ACEs. We suspect they are either dismissing their past experiences and/or are fearful that they will be reported to child protection agencies. It has been helpful to ask about ACEs particularly when there are concerns about behavior (i.e., ADHD, sleep problems, and speech delays). We remind providers that the original ACE study (Dube et al., 2003; Felitti et al., 1998) consisted of a middle class sample where close to 20 % of respondents reported more than four adverse childhood experiences, thus normalizing the prevalence and potential link between ACEs and behavioral concerns.

2. *I understand asking about parent ACEs, but what about child ACEs-aren't we mandated reporters?*

By asking these questions we are creating an opportunity to better define and explain to parents that ACEs can make people physically and mentally ill. We have found it useful to instruct providers and parents on what constitutes abuse and neglect and how the components of household dysfunction are part of this body of research which has shown these behaviors to be harmful, contributing to physical and mental health problems throughout the life span.

3. *We can screen, but where do we send families when ACE scores are high?*

The need for trauma-informed interventions cannot be overstated. There are several evidence-based interventions (Child Parent Psychotherapy; Lieberman, Ippen, & Van Horn, 2006; Attachment and Biobehavioral Catch-up; Bernard et al., 2012; Circle of Security, Hoffman; Marvin, Cooper, & Powell, 2006; Child First; Lowell, Carter, Godoy, Paulicin, & Briggs-Gowan, 2011) and evidence-informed treatment modalities (Group Attachment Based Intervention; GABI; Murphy et al., 2015), that specifically target parent-child relationship disturbances related to trauma. Perinatal and pediatric settings, indeed any health facility serving parents and children, should be familiar with the local opportunities for families to benefit from these evidence-informed and evidence-based treatments.

4. *Discussing findings from the ACE Questionnaire poses potential discomfort for providers.*

We know that in the original ACE Study (Dube et al., 2003; Felitti et al., 1998), comprised of a community sample, close to 20 % of respondents reported more than four adverse childhood experiences, so we can surmise that for some clinicians the topic areas being discussed are particularly sensitive or even act as trauma triggers for them. Identifying one's own adverse childhood experiences may be a necessary step towards resolution so that they may provide support to patients. Education regarding the role of ACEs in mental and physical health should become prevalent in all trauma-informed behavioral healthcare training programs.



## Summary and Recommendations

After two decades of findings from the ACE Study, the evidence is clear: early childhood adversity is common and contributes to negative health outcomes throughout the life span. After all we have learned from the ACE Study, our challenge now (as suggested by the AAP policy statement on toxic stress) is to find effective ways to prevent the intergenerational transmission of abuse, neglect, and dysfunction from occurring in the lives of future generations. While we realize that preventing ACEs cannot take a single pronged approach, our experiences as clinicians have helped us to understand what works and what does not work. Given our observations in assessing childhood adversity among high-risk families in a clinical setting, it was our intention to share all we have learned and explain the *how and why* of asking about ACEs, with an eye toward doing so in the pediatric setting. It is our hope that through this work, we can provide all practitioners a tool to better understand unresolved trauma in their patient population and make progress to end the intergenerational transmission of childhood adversity.

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