



# Screening or Not Screening? Unresolved Debates on the Use of the Adverse Childhood Experiences Questionnaire in Routine Screening

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## Introduction

The Adverse Childhood Experiences (ACE) Study is a landmark study conducted by Kaiser Permanente and the Centers for Disease Control and Prevention. It was the first large scale, non-clinical study to document ten categories of adversity in childhood (covering both child maltreatment experiences and household challenges) and to assess their relationship with health outcomes in adulthood. These categories were sexual, physical, and psychological abuse; physical and emotional neglect; parents' mental illness and substance abuse issues; parent's incarceration; domestic violence; and divorce.

About 17,000 adults took part in the initial study and reported retrospectively their experiences before the age of 18 about these 10 conditions (Felitti, Anda, & Nordenberg, 1998). Key findings were:

- ACEs occur frequently: two-thirds of participants had experienced at least one ACE category and one in eight individuals had experienced four or more ACEs.
- The higher your ACE score, the higher the likelihood of developing long-term mental and physical health problems, as well as social and relational challenges.

These findings have led to the adoption of the Adverse Childhood Experiences questionnaire (ACE questionnaire) as part of routine screening and assessment in various health and mental health settings. While this practice appears well aligned with recommendations put forth by leading mental health organizations (e.g. SAMHSA) on the importance of recognizing trauma, there is an ongoing controversy regarding this practice. Between November 2019 and February 2020, several papers were published commenting on this debate. The objective of this information sheet is to summarize recent findings presenting the benefits and limitations of using the ACE questionnaire as part of routine screening in community and clinical samples.

## Studies highlighting benefits of using the ACE questionnaire in routine screening

**Kia-Keating, Barnett, Liu, Sims and Ruth (2019)** conducted a study that focused on implementation processes, and facilitators and barriers to ACEs screening. More specifically, it examined the feasibility and acceptability of a parent and child screening questionnaire among predominantly low-income, Latinx patients in four community-based health clinics in California. This project was part of a larger initiative that aimed to assess the impact of screening for ACEs in pediatric settings in order for wellness navigators to assist families to connect to resources, when parents reported two or more ACEs for themselves or one ACE exposure to their infant.

Feasibility was assessed based on information gathered from parents of infants 4-12 months old who were visiting the clinics for the first time and completing the ACE questionnaire to report on their own adverse experiences and the ones their infants had been exposed to since birth. In order to examine the acceptability of the tool, service providers participated in semi-structured interviews about their receptivity, experience, and problems or benefits with the addition of the ACE screening in the pediatric clinics.

*Feasibility:* Out of 164 parent-infant dyads that were recruited, 151 completed the parent and child versions of the ACE questionnaire. The mean age of infants was 5.8 months and 50.3% were females. Over three-quarter of this sample (76.8%) identified as Latinx. Parents' age and gender were not presented in the article. A first indicator of feasibility that the authors noted was the high percentage (92.1%) of all patients recruited who agreed to complete the questionnaire. They also noted that 39.1% of parents reported two or more ACEs and 18.6% of infants were exposed to one or more ACEs since birth, according to their parents. In total, 47% of parent-child dyads met the criteria for service referral (2 ACEs for parents and/or 1 ACE for infants) through the wellness navigator service in these pediatric clinics. Of those, the majority (77.4%) consented to receive services. In total, this process allowed 55 families out of 151 to be screened for ACEs and to be referred to services, which according to the authors lend support to using this questionnaire in routine assessment.

*Acceptability:* Nine service providers participated in semi-structured interviews: three pediatricians, three medical assistants, two wellness navigators, and one licensed clinical social worker. Participants' demographics were not presented in the article. Data was analyzed using a 'rapid qualitative analysis approach', which involved the research team in reviewing all interview transcripts and producing a matrix of common themes. Screening benefits identified by the providers included: (1) facilitating a deeper alliance with patients through acknowledging their own path and life challenges; (2) helping to draw connections between health and mental health issues that patients were presenting with; and (3) highlighting the necessity to adopt a holistic, whole-person approach. Some of the challenges identified included: (1) feeling nervous about asking these sensitive questions, (2) having to make it fit in an already long assessment process, (3) recognizing the needs for further training to be offered to staff in order to maintain best practices for introducing and discussing ACEs with patients. The findings also suggested that acceptability improved over time and that practitioners shifted their attitude – which was ambivalent to begin with – towards a stronger acceptance of the process as they observed the positive impact on their relationship with patients.

Overall, this study is suggesting that there are potentials benefits to include the ACE questionnaire as part of routine screening in health care settings – both from a feasibility and acceptability perspectives. Limitations of the study include: small sample sizes, both for parent-infant dyads and for service providers; the limited information on participants’ demographic; the absence of a robust qualitative method used to analyze the interview data; the lack of findings’ generalizability to other social contexts and service settings; and the lack of information on whether the service referral was effective in preventing the sequelae of trauma.

**Choi, Wang and Jackson (2019)**, examined whether exposure to adverse childhood experiences (ACEs) by the age of three among children living in poverty resulted in behavioural problems at ages three, five, nine and fifteen; after controlling for mothers’ socioeconomic status and their children’s characteristics. The long-term effects of ACEs when poverty and ACEs co-occur is less known. The sample of children consisted of 2750 children and their parents from the Fragile Families and Child Wellbeing study. The study was limited to low-income families that had experienced poverty at any time during the first three years of a child’s life. Logistic regression modelling was used to obtain odds ratios of ACE categories predicting behavioural problems after accounting for family socioeconomic position.

The findings indicated that experiencing ACEs in early childhood was significantly associated with later behavioural outcomes from children to adolescence. Exposure to multiple ACEs before the age of three was significantly associated with the top-risk behaviour group at age five and at both ages nine and fifteen, children experiencing two or more ACEs had 1.9 to 3.2 times higher odds to be placed in the top 10<sup>th</sup> percentile of behaviour problems. Among covariates, mothers’ education, race and children’s gender and temperament were identified as significant factors to determine behaviour problems. The researchers noted that their findings support policies and programs for families with children who have experienced economic disadvantages and early childhood adversity, and government responses that aim to mitigate child poverty are critical and should be encouraged.

There are several limitations noted by the authors. Sexual abuse was not included because of low frequency. Cumulative risk scores may not reflect distinctive experiences. Family processes such as supportive co-parenting, parenting efficacy, and the quality of care were not included in this study. These protective factors may mitigate the negative effects of ACEs on child behaviour problems. Sibling and peer victimization, property crimes, parental death were also not assessed.

## **Studies pointing to limitations of the ACE questionnaire in practice and research**

**McLennan, MacMillan and Afifi (2020)**’s commentary offers insights regarding four psychometric flaws of the 10-item ACE questionnaire. The first problem they highlight pertains to the tool’s item coverage. Although the ACE questionnaire covers 10 types of adverse childhood experiences that are widely accepted as potentially detrimental to the well-being of children and youth, it fails to include other types of victimization that have garnered much attention in the past decade, including peer and community violence, that have been shown to predict poor adolescent health (Finkelhor, Shattuck, Turner, & Hamby, 2015). The ACE tool does not capture the impact of exposure to poverty, which is an important marker of child and youth well-being. McLennan and

colleagues question the use of single items to measure each of the 10 adverse childhood experiences that are complex and multifaceted.

The second problem they discuss relates to the item construction. The authors question the use of a dichotomized ‘yes-no’ response options that do not allow for severity ranges. In addition, several of the 10 items include double-barrelled questions, that make the ‘yes-no’ response options difficult to interpret. For example, ‘did a parent or other adult in the household often or very often ... Swear at you, insult you, put you down, or humiliate you? or Acting a way that made you afraid that you might be physically hurt?’ An additional concern is the lack of contextual information that the authors argue should precede the asking of sensitive, potentially triggering questions. The preamble that has been added to the children and youth version of the ACE questionnaire comments on the link between stressful events and physical and mental health. These critiques lead the authors to have concerns about the validity, reliability and response interpretation of the tool.

The third concern relates to item scoring. McLennan and colleagues highlight that summing responses by giving equal weight to each item may be erroneous. They advocate for a more sophisticated approach for the interpretation of the ACE item score that is applicable at the epidemiological level and an individual level. Indeed, although it is well established that higher scores on the ACE questionnaire leads to poorer outcomes, it is yet to be determined whether any combination of the 10 items produce the same negative impact.

The authors conclude with their concerns about the lack of rigour in the instrument development. They highlight that other tools developed in recent years have gone through rigorous evaluations of their psychometric properties and could be considered for screening. They conclude that the ACE questionnaire continues to be used due to its simplicity despite lacking some of the most basic quality criteria that are expected in psychosocial measures and should not be used in clinical practice and research.

Using an interview grid rather than the original ACE questionnaire, **Negriff (2020)** examined more closely the relative contribution of the household dysfunction items versus the childhood maltreatment items for predicting adolescent mental health outcomes, and the utility of a cut-off score for ACEs in predicting mental health. Data were from the fourth assessment in a longitudinal study examining the effects of maltreatment on adolescent development. The maltreatment group (n = 219) was recruited from active cases in the Children and Family Services agency of a large American city. The comparison group (n = 128) was recruited from school lists of children’s names in the same 10 zip codes as the maltreated sample. At Time 4, the participants (n = 347) were a mean age of 18.49 years (SD = 1.41), approximately evenly split between males and females, and primarily African American (43%) or Latino (34%).

Individual ACE items were assessed using the Comprehensive Trauma Interview (CTI; Noll et al., 2003). Items from the CTI were mapped onto the original ACEs items, parental mental health was dropped as there was no approximate item on the CTI. This resulted in a total of nine items on two subscales. The Household dysfunction subscale included: divorce, household member incarceration, witnessing domestic violence, and household member substance use (range 0–4). The maltreatment subscale included: sexual abuse, physical abuse, physical neglect, emotional abuse, and emotional neglect (range 0–5). Four mental health symptom types were measured: 1. Depressive symptoms, using the 27-item Children's Depression Inventory about their feelings in the past two weeks (Kovacs, 1981, 1992); 2. Post-traumatic stress disorder symptoms, using the Youth Symptom Survey Checklist (Margolin, 2000); 3. Anxiety, using the 39-item

Multidimensional Anxiety Scale for Children (March et al., 1997); 4. Externalizing problems, using the Youth Self Report (Achenbach and Rescorla, 2001).

MANCOVA and Sidek were used to account for correlations between the four outcomes in mental health symptoms for those endorsing versus not endorsing each ACEs item, controlling for age, sex, race/ethnicity, household income, and maltreatment group status (maltreated versus comparison). Independent main effects of household dysfunction, child maltreatment, and ACEs total score on the four mental health outcomes were then estimated using linear regression. Interaction effects were tested using the nested  $\chi^2$  difference test comparing each parameter set to equality versus freely estimated across groups. Lastly, to examine the support for an ACEs cut-off score, four different categorical groupings were created based on prior research with ACEs scores and MANCOVA was used to examine the group differences.

Maltreatment items and witnessing domestic violence were found to be the best predictors of the mental health outcomes they measured. They also found the more expansive definition of emotional neglect used by the CTI to be a better predictor of mental health than the original ACE item. Their results did not support the use of a cut-off score for clinical decision-making or referral to mental health treatment. Based on their findings they advocated for *witnessing domestic violence* to be adopted as a maltreatment factor and noted the importance of further work to gather more complete evidence on the impacts of each ACE on diverse outcomes (e.g., physical health, substance abuse, sexual risk-taking). The absence of a parental mental illness item, the use of the CTI rather than the original ACE questionnaire, the measures being self-report, and the limited scope of symptoms addressed are the acknowledged limitations of this study.

## Opinion papers making specific recommendations

**Racine, Killiam and Madigan (2020)**'s opinion paper highlights 'screening for ACEs is only appropriate if a TIC approach to patient care is implemented (p.6)'. They suggest that filling out an ACE questionnaire or a similar tool without organizational and systemic structures to prevent and intervene on ACEs is not recommended.

**Lacey and Minnis (2020)** echo this recommendation and suggest areas for improvement for the future of ACEs research and its application to practice and policy. They can be summarized as follow:

- To be clear and specific on the definitions of ACEs that are used in research rather than to refer to this broad term without specifying which ACEs are considered or not.
- To consider including other ACEs, such as poverty.
- To use alternative approaches that go beyond summing up items: clustering, weighing, recording severity and developmental period when the adversity occurred.
- To favor longitudinal studies to assess impacts of ACEs over the life course.
- To assess cost-effectiveness and safety impacts of routine screenings for ACEs.

These authors also recommend practitioners remain cautious when generalizing population-based research data to individual risk—although research has shown that more ACEs lead to poorer outcomes, this may not translate directly to one client's risk and individual challenges. They also urge practitioners to consider larger systemic and structural causes of ACEs and determinants of health, such as poverty, when developing practice and policy initiatives.

## Conclusion

Twenty years of research using the ACE questionnaire has allowed the field of childhood trauma to gain significant momentum and social recognition. Studies using this questionnaire have confirmed the high prevalence of childhood adversities in various populations, and their short and long-term impacts on people's physical and mental health. This is an important legacy to celebrate and acknowledge.

However, there have been growing concerns expressed by researchers, practitioners, and policy-makers regarding the use of the original ACEs questionnaire for routine screening. The aim of this paper was to review recent papers that studied and discussed the benefits and drawbacks of its use in clinical and community settings. On the one hand, Kia-Keating and colleagues (2019)'s study suggests that routine screening of adversity leads to service referral and that these needs could have gone undetected. Choi et al. (2019) also showed that screening before the age of three could facilitate detection of high-risk children and early service provision to support effective policies and programs to prevent negative outcomes across the lifespan. On the other hand, McLennan et al. (2020)'s commentary offers insights regarding four psychometric flaws in the ACE questionnaire: the lack of full coverage of potential childhood adversity; weaknesses in item construction; lack of sophistication regarding item scoring; and lack of rigour in the instrument development. Negriff (2020)'s study also points to issues regarding item scoring, even when using instruments other than the original ACE study, and suggests that maltreatment items, including exposure to domestic violence, have unique and more detrimental impacts on individual well-being than household dysfunction items, including substance abuse, parent's incarceration, and divorce.

Racine and colleagues (2020)' and Lacey and Minnis (2020)' opinion papers both emphasize the importance of considering the use of the ACE questionnaire in routine screening alongside a broader societal discussion on structural factors that influence childhood adversity's exposure and its impact on individuals over their lifecourse. There is a clear call to refine our use of the ACE questionnaire and other childhood adversity detection tools to go beyond simply documenting the hardships children encounter, and preferably to use this information as a leverage to create a true societal TIC movement whereby childhood adversity will be fully addressed and, hopefully, prevented in the first place.

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