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Screening for Adverse Childhood Experiences: A Critical Appraisal

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Abstract

Adverse childhood experiences (ACEs) are common and can impact health across the life course. Thus, it is essential for professionals in child- and family-serving roles, including pediatric and adult primary care clinicians, to understand the health implications of childhood adversity and trauma and respond appropriately. Screening for ACEs in health care settings has received attention as a potential approach to ACEs identification and response. Careful examination of the existing evidence on ACEs screening and consideration, from a clinical and ethical perspective, of the potential benefits, challenges, and harms is critical to ensuring evidence-informed practice. In this critical appraisal, we synthesize existing systematic and scoping reviews on ACEs screening, summarize recent studies on the ability of ACEs to predict health outcomes at the individual level, and provide a comprehensive overview of potential benefits, challenges, and harms of ACEs screening. We identify gaps in the existing evidence base and specify directions for future research. We also describe trauma-informed, relational care as an orientation and perspective that can help pediatric and primary care clinicians to sensitively assess for and respond to ACEs and other potentially traumatic experiences. Overall, we do not yet have sufficient evidence regarding the potential benefits, challenges, and harms of ACEs screening in health care and other settings. In the absence of this evidence, we cannot assume that screening will not cause harm and that potential benefits outweigh potential harms.

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Adverse childhood experiences (ACEs) are largely preventable, potentially traumatic experiences that occur before age 18 years.^{1,2} ACEs include multiple aspects of a child's environment that can undermine their sense of safety, stability, and bonding, such as experiencing abuse or neglect, witnessing violence, having a family member attempt or die by suicide, or being negatively affected by a parent or caregiver's substance use or mental health.^{1,2} Recent data show that 64% of US adults were exposed to at least 1 ACE and 41% were exposed to multiple ACEs before age 18 years.³ Previous research indicates that, at the population level, ACEs are associated with an increased risk of poor health outcomes across the life course, such as anxiety, depression, asthma, and arthritis,⁴ resulting in an annual economic burden of >\$14 trillion in ACEs-related adult health conditions.⁵ This research also indicates that, at the population level, as the total number of ACEs increases (eg, 2 ACEs versus 1 ACE), the risk for poor health outcomes also increases.⁴ Specific populations, including American Indian or Alaska Native, Black, and Hispanic individuals, as well as lesbian, gay, bisexual, transgender, and queer/questioning (LGBTQ1) individuals, experience an inequitable burden of ACEs and associated poor health outcomes^{3,6} because of historical, social, and structural factors including systemic racism, discrimination, and oppression.^{7,8}

Given the magnitude and potential health impacts of ACEs, it is imperative that professionals in child- and family-serving roles, including clinicians in pediatric and adult primary care settings, understand the health implications of childhood adversity and trauma and respond appropriately. Screening for ACEs in health care settings (ie, asking patients to complete a questionnaire on current or previous ACEs) has received a great deal of attention as a potential approach to ACEs identification and response, and this had led to a robust debate on the potential benefits, challenges, and harms of ACEs screening. Although the original ACEs questionnaire² was not intended to be a tool for screening and clinical decision-making at the individual level, additional tools have been developed for the explicit purpose of ACEs screening in health care settings.^{9–11} Even so, questions remain about interpretation and application of results from these tools and whether and how results can inform care and referrals.^{12–14} Careful examination of existing evidence on ACEs screening and consideration, from a clinical and ethical perspective, of the potential benefits, challenges, and harms of ACEs screening is critical to informing practice and ensuring practice aligns with the best available science. Although the following discussion focuses on ACEs screening in health care settings, many of these insights are relevant to ACEs screening in other settings, including social service, educational, and criminal–legal settings.

OVERVIEW OF ACEs SCREENING

In health care settings, ACEs screening typically involves asking patients, including children and their caregivers, adolescents, and adults, to respond to a series of yes/no questions about current or previous ACEs.^{9–11} Depending on the tool used and the policies and procedures of the health care practice, the types of ACEs assessed vary, and screening may yield a total ACEs score (ie, total number of ACEs reported) or provide information on the specific types of ACEs reported. Some clinicians and practices screen only for the ACEs score because some research suggests that patients are more likely to disclose ACEs when asked only to

report the total number of ACEs and not information on specific types of ACEs.^{15–17} In addition, screening only for the ACEs score among child and adolescent populations can prevent the need for mandated reporting to child protective services (CPS), which would be required if some types of ACEs were identified (eg, child abuse and neglect, children witnessing intimate partner violence in the home). Some clinicians and practices use a threshold or cutoff ACEs score (eg, ≥ 4 vs 0–3 ACEs) to identify patients they consider to be at “high risk” for poor health outcomes.¹⁸ Importantly, ACEs screening and the ACEs score do not typically provide information on the developmental timing, severity, duration, or frequency of ACEs. In addition, ACEs screening and the ACEs score do not yield a clinical diagnosis, identify specific physical or behavioral health symptoms, or imply causal risk for poor health outcomes. Rather, ACEs screening and the ACEs score identify previous or current experiences that have the potential to contribute to an increased risk of poor health outcomes.¹³

Importantly, ACEs screening (ie, screening to identify exposure to potentially traumatic experiences that occurred during childhood) is distinct from screening for symptoms of behavioral health conditions with clinical diagnoses and that have established evidence-based treatments. This includes screening for depression, anxiety, and substance use disorder symptoms as recommended by the United States Preventive Services Task Force (USPSTF).¹⁹ If evidence-based behavioral health treatments are available and accessible, symptom screening, followed by a referral or warm handoff to treatment, can help connect children, adolescents, and adults to needed care. Further, some ACEs screening tools ask about experiences that have been traditionally conceptualized as ACEs (eg, witnessing violence) and about household circumstances that are often conceptualized as social determinants of health (eg, housing instability, food insecurity).^{20,21} There are services and resources that can help mitigate social determinants of health, such as rental assistance programs and housing vouchers,^{22,23} food and nutrition assistance programs (eg, the Supplemental Nutrition Assistance Program), and food banks and pantries.²⁴ If resources to help mitigate social determinants of health are available and accessible, screening and referral to these resources, which are often outside of the health care system, can help connect children, adolescents, and adults to appropriate supports.²⁵ Importantly, if screening for symptoms of behavioral health conditions or for social determinants of health is conducted, treatment and resources must be available and accessible to ensure action can be taken on the basis of screening results, or such screening is unlikely to have meaningful benefits.

Enhanced Screening, Assessment, and Referral Processes

In some example demonstration projects of ACEs screening, screening is accompanied by an enhanced assessment and referral processes in which professionals further assess for physical and behavioral health symptoms and for social needs after ACEs screening and then facilitate warm handoffs to health and social services as needed. In one such demonstration project, the full ACEs screening, assessment, and referral process involved:

1. pediatricians in an integrated child and adolescent health care system conducting ACEs screening for all children ages <18 years using the Pediatric ACEs and Related Life-Events Screener (PEARLS) tool¹⁰;

2. pediatricians referring children with a positive ACEs screen (ie, report of ≥ 1 ACEs) to a medical social worker for a psychosocial assessment; and
3. a warm handoff from the social worker to behavioral health services if needed.²⁶

After implementation of this enhanced process, children and adolescents were more likely to have a behavioral health visit within 90 days of screening as compared to a previous screening process that did not include the psychosocial assessment and warm handoff.²⁶ However, service need and outcomes for children and adolescents after the initial behavioral health visit were not assessed. Thus, we do not have information on the effectiveness of the behavioral health visit, including whether it resulted in receipt of appropriate evidence-based treatments for any physical or behavioral health symptoms or conditions, whether there were improvements in child and adolescent health outcomes, or whether there were reductions in their exposure to ACEs. The enhanced process was also reported as time and resource intensive, and it is unknown whether this process interfered with other recommended screening¹⁹ and clinical care practices.

The Safe Environment for Every Kid (SEEK) model is a specific screening, assessment, and referral process that can be implemented in pediatric primary care. Two studies of the SEEK model show reductions in parent self-report of physical and psychological aggression toward their children among families who received care under the SEEK model as compared with families who received standard care.^{27,28} The SEEK model involves training child primary care clinicians to screen for specific family challenges, including some ACEs and social determinants of health, using the SEEK Parent Questionnaire.^{27,28} To address challenges identified, clinicians can then use the Reflect-Empathize-Assess-Plan approach.^{27,28} In these studies, and in ideal SEEK model implementation, a social worker was available to address identified challenges and facilitate connections to appropriate and accessible resources and services (eg, substance use disorder treatment).^{27,28} Thus, the SEEK model can be conceptualized as an enhanced ACEs screening, assessment, and referral process rather than as ACEs screening alone.

RESEARCH EVIDENCE

Below, we synthesize findings from several recent systematic and scoping reviews of empirical evidence on the implementation and outcomes of ACEs screening, primarily in health care settings, and from recent studies that assessed the ability of ACEs and the ACEs score to predict health outcomes at the individual level. Of note, this critical appraisal is not a systematic synthesis of all existing evidence on ACEs screening. Rather, it provides a comprehensive overview of recent evidence and additional clinical and ethical considerations regarding the potential benefits, challenges, and harms of ACEs screening.

Systematic and Scoping Reviews

Recent systematic and scoping reviews have summarized existing evidence on the acceptability, feasibility, implementation, and outcomes of ACEs screening in child, adolescent, and adult health care settings.^{14,29–35} These reviews revealed that, to date, few studies have assessed ACEs screening for adults, with most studies focused on screening to identify ACEs among children and adolescents.^{31,35} The reviews found that, across multiple

studies, ACEs screening was largely considered by patients and clinicians to be feasible and acceptable.^{29–31,34,35} However, some reviews noted that patient support for screening was contingent on level of rapport with the clinician and clinicians' readiness to respond empathetically to a positive screen with helpful resources. These reviews also noted that clinicians' perceptions of ACEs screening were often dependent on adequate training and education and access to resources for referrals and follow-up.³⁰ Several reviews highlighted that training and trauma-informed education for clinicians and support staff were essential before screening implementation.^{29–31,35}

These reviews also revealed gaps in the evidence base. First, several reviews found that the purpose of ACEs screening in health care settings was not always clearly defined.^{29,30} Second, these reviews indicated that, to date, few studies have examined how clinicians respond when patients screen positive for ACEs and whether ACEs screening results in changes in the care provided or in additional referrals and follow-up.^{31,33–35} A few reviews noted that some studies have documented increases in referrals to health and social services after ACEs screening.^{31–33} However, no studies have examined whether the referrals were needed or appropriate, resulted in timely access to appropriate services or evidence-based treatments, or provided meaningful benefits to patients.^{31,33–35} Third, several reviews emphasized that there is a critical lack of evidence regarding whether ACEs screening ultimately contributes to improvements in patient health and well-being.^{14,31,33–35} Last, these reviews highlighted that few studies have explicitly assessed potential harms of ACEs screening for patients and clinicians,³³ meaning there is little information available to consider potential benefits in the context of potential harms.

Individual-Level Prediction of ACEs and the ACEs Score

As previously mentioned, some clinicians and practices only screen for the total ACEs score (ie, total number of ACEs reported).^{29,30,32,34,35} The concept of the ACEs score was developed in a seminal study on ACEs and adult health outcomes conducted by the Centers for Disease Control and Prevention (CDC) and Kaiser Permanente in the mid-1990s.² The ACEs score, and the questionnaire it was derived from in this study, was not intended to be a tool for screening and clinical decision-making at the individual level but was designed to be used as a research tool to examine the prevalence and potential life course implications of ACEs at the population level.¹² As such, recent studies have empirically examined the ability of the ACEs score to predict health outcomes at the individual level.

An analysis of 2 longitudinal birth cohorts found that, although the ACEs score predicted average differences in later physical and mental health outcomes at the population level, it performed poorly in predicting later physical and mental health outcomes at the individual level.³⁶ These results were consistent regardless of whether ACEs scores were measured prospectively (ie, assessed during childhood before health outcomes) or retrospectively (ie, assessed during adulthood concurrently with health outcomes).³⁶ Similarly, using data from the seminal CDC and Kaiser Permanent study, another analysis showed that both the continuous ACEs score and a high-risk ACEs score cutoff (≥ 4 vs 0–3 ACEs) did not accurately identify individuals with poor health outcomes.³⁷ Most adults in the high-risk category (≥ 4 ACEs) did not have any poor health outcomes, and most adults with poor

health outcomes were in the “lower-risk” category (0–3 ACEs), further demonstrating that the ACEs score alone did not accurately discriminate between those who did and did not develop poor health outcomes later in life.^{12,37}

Recent research also assessed the performance of the ACEs score in predicting adolescent mental health outcomes at the individual level by gender and race/ethnicity.³⁸ This study found that the ACEs score was less accurate in predicting mental health outcomes among Black male and Hispanic female adolescents than among white female adolescents.³⁸ Specifically, the results suggested that using the ACEs score to predict adolescent mental health outcomes might produce a high number of false positives (ie, indicate the presence of a mental health condition when there is none) among Black male adolescents and a high number of false negatives (ie, indicate there is no mental health condition when there is one) among Hispanic female adolescents.³⁸ Differences in the predictive ability of the ACEs score for specific populations has the potential to contribute to inequities in follow-up and referrals and to bias resource allocation and policy and practice decisions in ways that exacerbate existing inequities.

Although the above-referenced studies examined the predictive ability of the ACEs score for health outcomes at the individual level, there are similar concerns regarding whether knowledge of exposure to specific ACEs can be used to predict health outcomes at the individual level. There is wide variability in individual responses to and outcomes after exposure to adversity and trauma, including ACEs.^{39–41} Although some develop poor health outcomes after exposure to a specific ACE, many do not. For example, in a nationally representative sample of adults, 30% of men and 40% of women with a history of childhood sexual abuse met criteria for a diagnosis of depression.⁴² Although the prevalence of depression was substantially higher among those with a history of childhood sexual abuse than among those without, more than half of adults who reported this ACE did not develop depression.⁴² Further, a recent analysis of a longitudinal birth cohort found that, although childhood exposure to parental intimate partner violence and maternal depression were associated with an increased risk of depression during adolescence at the population level, these ACEs performed poorly in predicting adolescent depression at the individual level.⁴³ Individual responses to and outcomes after childhood adversity and trauma depend on a variety of factors including, but not limited to, the characteristics of the adversity or trauma itself (eg, the developmental timing and severity),^{44–46} previous or concurrent experiences of adversity or trauma, and the presence of safe, stable, and nurturing relationships and environments that can help to mitigate potential negative impacts.^{47,48}

CLINICAL CONSIDERATIONS: POTENTIAL BENEFITS, CHALLENGES, AND HARMS OF ACEs SCREENING

There are additional clinical and ethical considerations regarding the potential benefits, challenges, and harms of ACEs screening in health care settings that should be weighed in the context of the existing research evidence. These considerations also highlight gaps in the current evidence base and underscore areas for further investigation.

Potential Benefits

ACEs screening can increase awareness of ACEs and their potential to impact health outcomes at the population level.²⁹ ACEs screening may help promote supportive and empathetic relationships between clinicians and patients.¹⁶ ACEs screening also has the potential to facilitate earlier detection of children and adolescents exposed to ACEs, perhaps offering an opportunity to prevent additional ACEs. Last, results from ACEs screening can potentially be used to inform care, referrals, and follow-up for children, adolescents, and adults exposed to ACEs to mitigate potential negative impacts on health and well-being and to treat current health challenges possibly resulting from ACEs. For this potential benefit to be realized, there must be a clear path to effective and appropriate referrals and follow-up based on ACEs screening results. Importantly, future research evidence is needed to demonstrate each of these potential benefits.

Potential Challenges and Harms

There is concern that ACEs screening could retraumatize patients, particularly if clinicians and support staff have not received sufficient education and training in trauma-informed approaches. Clinicians have also noted difficulty determining appropriate referrals and follow-up for a positive ACEs screen,^{49–51} particularly if screening is conducted only for the total ACEs score or if the patient does not have any physical, behavioral, or mental health symptoms.¹³ There is currently a lack of evidence regarding a threshold or cutoff for the ACEs score (eg, ≥ 4 ACEs) that would indicate a need for additional assessment, referrals, and follow-up.³⁷ There is also a lack of evidence regarding what the appropriate referrals and follow-up would be for ACEs scores of varying levels or even for specific ACEs.¹³ Importantly, there is potential to harm patients, erode patient–clinician trust, and demoralize clinicians if referrals and follow-up based on ACEs screening results are unclear. There is also potential to harm patients and clinicians if effective and appropriate referrals and follow-up are clear but are not available or accessible in the community.^{50–52} Last, there is potential for harm to patients and their ability to access needed services if the health care system is overwhelmed with nonspecific referrals to behavioral and mental health treatment after a positive ACEs screen or if ACEs screening interferes with or displaces other evidence-based screening¹⁹ and clinical care practices.

Additional potential challenges and harms include the potential for ACEs screening to contribute to experiences of stigma among individuals and families with ACEs or a high ACEs score documented in their health care record.^{53,54} This could disproportionately impact populations that are more likely to have exposure to ACEs, including American Indian/Alaska Native, Black, and Hispanic individuals, LGBTQ+ individuals, and those experiencing poverty.³ Moreover, ACEs screening has the potential to demoralize populations that are more likely to be exposed to ACEs. In the absence of a recognition of family strengths and potential protective factors, including positive childhood experiences, focusing solely on ACEs and the risk for poor health outcomes has the potential to contribute to fatalistic framing that assumes poor health outcomes are guaranteed after exposure to ACEs. There is also potential to minimize traumatic experiences that are not always included on ACEs screeners and are more likely to be experienced among specific

populations, such as experiences of racism and experiences of bullying among LGBTQ1 children and adolescents.

A final consideration for conducting ACEs screening in child and adolescent health care settings is that a positive screen for some types of ACEs (eg, child abuse and neglect, children witnessing intimate partner violence in the home) has implications for mandated reporting to CPS. Clinicians need to be aware that ACEs screening alone will not necessarily provide all the information required to assess acute safety risks, including information on the timing, severity, duration, or frequency of the identified ACEs or the household members involved (eg, alleged perpetrator of child abuse). Ensuring that clinicians have sufficient training, time, and resources to communicate with families, discuss the context surrounding identified ACEs, and report to CPS as needed is critical,⁵⁵ particularly to prevent inequitable reporting of specific populations, including American Indian/Alaska Native, Black, and Hispanic families and families experiencing poverty.^{56–58}

NEEDED EVIDENCE AND FUTURE RESEARCH DIRECTIONS

Additional evidence demonstrating that ACEs screening can improve patient outcomes while minimizing potential challenges and harms to both patients and clinicians is needed before ACEs screening is more widely implemented. Some federal agencies, including the Health Resources and Services Administration (HRSA), are funding scientific investigations to advance our understanding of whether to implement ACEs screening in health care settings. From such investigations, needed evidence includes an improved understanding of the types of ACEs to screen for among various child, adolescent, and adult populations. Evidence is also needed to understand whether screening should be conducted only for ACEs as events (eg, any experiences of childhood physical abuse) or whether it should include screening for symptoms (eg, trouble concentrating)⁵⁹ that could potentially result from ACEs. Further, additional evidence is needed to understand whether screening only for the ACEs score is useful for informing clinical decision-making or whether screening should gather information on specific types of ACEs and the developmental timing, frequency, and severity of these ACEs.

Most importantly, future research is needed to determine whether and how ACEs screening can be used to appropriately guide clinical response. As emphasized by the Substance Abuse and Mental Health Services Administration (SAMHSA) and the USPSTF, screening is only as useful as the processes and procedures developed to respond to positive screening results.^{60,61} Additional research is needed to inform interpretation of results from ACEs screening, including how results can be supplemented with additional information to meaningfully inform patient care, assessment, and follow-up, and how results can be effectively translated into appropriate referrals to evidence-based services and interventions. From this research, knowledge of the specific care approaches, services, and interventions after ACEs screening that can positively impact individual patient health and well-being is critically needed. It will also be important for future investigations to determine whether to scale and sustain ACEs screening, assessment, and referral processes as part of comprehensive, patient-centered care. In real-world implementation, it will be essential for clinicians and health care practices to ensure that appropriate, evidence-based services

and interventions that are aligned with patient needs are available and accessible in their community so that ACEs screening is not conducted in the absence of tangible supports. This aligns with guidance from the USPSTF, which recommends screening for depression, a clinical condition with an associated diagnosis and established evidence-based treatments, only if there are adequate systems in place to ensure accurate diagnosis, effective treatment, and appropriate follow-up.⁶² Given that ACEs screening does not identify symptoms associated with a specific clinical condition that has existing evidence-based treatments, such as depression, anxiety, or substance use disorders, the need for adequate systems and clear decision-rules to ensure appropriate referrals and follow-up is even more pronounced.

TRAUMA-INFORMED, RELATIONAL CARE: AN ORIENTATION TO CLINICAL CARE

As an alternative to formal ACEs screening (ie, responding to a series of yes/no questions about current or previous ACEs), clinicians can implement a trauma-informed, relational care^{14,63–65} orientation and approach as the standard for all patients. The National Child Traumatic Stress Network defines trauma-informed care as care in which all involved assess, recognize, and respond to the potential effects of traumatic stress, including traumatic stress that can result from ACEs, on children, adolescents, and adults.⁶⁶ Broadly speaking, trauma-informed care is an orientation and perspective, rather than a specific intervention, that can assist clinicians in improving their awareness of the range of symptoms and outcomes that can result from exposure to adversity and trauma, including ACEs, and help them respond to potential trauma-related symptoms and outcomes empathetically.⁶⁴ Relational health, as described by the American Academy of Pediatrics, is the capacity for children, adolescents, and adults to establish and maintain safe, stable, nurturing relationships that can help buffer against the potential negative impacts of adversity and trauma and that can help them thrive.^{65,67} Paired with a trauma-informed approach, relational care can assist clinicians in creating a safe and trusting health care environment in which their patients are comfortable and empowered to share challenges and concerns, including adversity and trauma such as current or previous ACEs.^{65–68}

Opting to not conduct ACEs screening does not mean that clinicians should not sensitively assess for and respond to ACEs and other potentially traumatic experiences. As part of a trauma-informed, relational approach to child and adolescent health care, Bright Futures, led by the American Academy of Pediatrics and supported by the Maternal and Child Health Bureau (MCHB), recommends informal, interactional assessment for family strengths, including positive childhood experiences, and challenges, including ACEs, at health care encounters.⁶⁹ Rather than implementing a new process or formal ACEs screening, this type of assessment involves integrating an awareness of ACEs and the potential impacts of ACEs on health outcomes into all health care encounters, while focusing on promoting and supporting safe, stable, nurturing relationships and environments for children, adolescents, and their caregivers as a way to mitigate the potential impacts of ACEs and proactively promote future resilience.⁶⁹ Notably, many health care providers already engage in informal, interactional assessment for ACEs,^{14,70} as well as additional family challenges and strengths, through taking a patient's social history, conducting a Home, Education/

employment, peer group Activities, Drugs, Sexuality, and Suicide/depression (HEADSS) assessment,⁷¹ or asking broad, open-ended questions that allow for dialog and create a safe, trusting, and transparent space. Asking about family strengths and positive childhood experiences in addition to challenges can help foster family engagement and allow clinicians to identify opportunities to enhance strengths and positive experiences^{72–74} while concurrently responding to challenges, including ACEs. As with all health care encounters, any concerns for safety and well-being that arise should be followed up with further assessment to inform appropriate intervention and referral.

CONCLUSIONS

We do not yet have sufficient evidence regarding the potential benefits, challenges, and harms of ACEs screening in health care and other settings. In the absence of this evidence, we cannot assume that screening will not cause harm and that potential benefits outweigh potential harms.

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ABBREVIATIONS

ACEs	adverse childhood experiences
CPS	child protective services
LGBTQ+	lesbian, gay, bisexual, transgender, and queer/questioning
SEEK	Safe Environment for Every Kid
USPSTF	United States Preventive Services Task Force

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