

CADTH RAPID RESPONSE REPORT: REFERENCE LIST

Adverse Childhood Experience Questionnaire for All Ages: Clinical Effectiveness

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Research Questions

What is the clinical effectiveness of screening for adverse childhood experiences or trauma?

Key Findings

Six non-randomized studies were identified regarding the clinical effectiveness of the adverse childhood experience questionnaire for adult patients.

Methods

This report makes use of a literature search strategy developed for a previous CADTH report. For the current report, a limited literature search was conducted on key resources including PsycInfo, Medline, the Cochrane Library, University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. No filters were applied to limit retrieval by study type. Where possible, retrieval was limited to the human population. The search was limited to English-language documents published between January 1, 2008 and January 11, 2019 to capture any articles published since the previous report.

Selection Criteria

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

Table 1: Selection Criteria

Population	Patients of any age, including pregnant patients
Intervention	History taking regarding Adverse Childhood Experiences (ACEs) or childhood trauma during care (e.g. ACE questionnaire)
Comparators	No screening; No comparator; Any comparator
Outcomes	Clinical Effectiveness (e.g., healthcare utilization, prescription drug use, health outcomes [e.g., chronic disease], harms, benefits)
Study Designs	Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies

Results

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials and non-randomized studies.

Six non-randomized studies were identified regarding the clinical effectiveness of the adverse childhood experience questionnaire for adult patients. No relevant health technology assessments, systematic reviews, meta-analyses, or randomized controlled trials were identified.

Additional references of potential interest are provided in the appendix.

Health Technology Assessments

No literature identified

Systematic Reviews and Meta-analyses

No literature identified

Randomized Controlled Trials

No literature identified

Non-Randomized Studies

Pregnant Patients, Primary Care Setting

1. Hantsoo L, Jasarevic E, Criniti S, et al. Childhood adversity impact on gut microbiota and inflammatory response to stress during pregnancy. *Brain Behav Immun*. 2019 Jan;75:240-250.
[PubMed: PM30399404](#)

BACKGROUND: Adverse childhood Experiences (ACEs), such as abuse or chronic stress, program an exaggerated adult inflammatory response to stress. Emerging rodent research suggests that the gut microbiome may be a key mediator in the association between early life stress and dysregulated glucocorticoid-immune response. However, ACE impact on inflammatory response to stress, or on the gut microbiome, have not been studied in human pregnancy, when inflammation increases risk of poor outcomes. **The aim of this study was to assess the relationships among ACE, the gut microbiome, and cytokine response to stress in pregnant women.** **METHODS:** Physically and psychiatrically healthy adult pregnant women completed the Adverse childhood Experiences Questionnaire (ACE-Q) and gave a single stool sample between 20 and 26 weeks gestation. Stool DNA was isolated and 16S sequencing was performed. Three 24-hour food recalls were administered to assess dietary nutrient intake. A subset of women completed the Trier Social Stress Test

(TSST) at 22-34weeks gestation; plasma interleukin-6 (IL-6), interleukin-1beta (IL-1beta), high sensitivity C-reactive protein (hsCRP), tumor necrosis factor alpha (TNF-alpha), and cortisol were measured at four timepoints pre and post stressor, and area under the curve (AUC) was calculated. **RESULTS: Forty-eight women completed the ACE-Q and provided stool; 19 women completed the TSST. Women reporting 2 or more ACEs (high ACE) had greater differential abundance of gut Prevotella than low ACE participants ($q=5.7 \times 10^{-13}$).** Abundance of several gut taxa were significantly associated with cortisol, IL-6, TNF-alpha and CRP AUCs regardless of ACE status. IL-6 response to stress was buffered among high ACE women with high intake of docosahexaenoic acid (DHA) ($p=0.03$) and eicosapentaenoic acid (EPA) ($p=0.05$). **DISCUSSION: Our findings suggest that multiple childhood adversities are associated with changes in gut microbiota composition during pregnancy, and such changes may contribute to altered inflammatory and glucocorticoid response to stress.** While preliminary, this is the first study to demonstrate an association between gut microbiota and acute glucocorticoid-immune response to stress in a clinical sample. Finally, exploratory analyses suggested that high ACE women with high dietary intake of omega-3 polyunsaturated fatty acids (PUFAs) had a dampened inflammatory response to acute stress, suggesting potentially protective effects of omega-3s in this high-risk population. Given the adverse effects of inflammation on pregnancy and the developing fetus, mechanisms by which childhood adversity influence the gut-brain axis and potential protective factors such as diet should be further explored.

Adults Patients, Primary Care Setting

2. Holgerson AA, Clark MM, Ames GE, et al. Association of Adverse childhood Experiences and Food Addiction to Bariatric Surgery Completion and Weight Loss Outcome. *Obes Surg*. 2018 Nov;28(11):3386-3392.
[PubMed: PM29982973](#)

INTRODUCTION/PURPOSE: Adverse childhood experiences (ACEs) are known risk factors for obesity and poor outcomes following weight loss interventions. ACEs are also associated with addictive behaviors and, potentially, food addiction (FA). **This study examined the relationship between ACEs and FA, and their association to undergoing bariatric surgery and post-surgical weight loss outcomes.** **MATERIALS AND METHODS:** Between June 2013 and January 2016, 1586 bariatric-surgery-seeking patients completed a psychological evaluation. During their evaluation, the patients were administered measures including the ACE questionnaire and the Yale Food Addiction Scale. **RESULTS:** 19.2% of those seeking bariatric surgery reported being the victim of childhood sexual abuse, and 22.1% reported being the victim of childhood physical abuse. An elevated ACE score corresponded to increased likelihood of screening positive for FA and more severe FA. When the type of ACE was analyzed separately, ACE was not associated with bariatric surgery completion or percent total weight loss (%TWL). Screening positive for FA corresponded to less %TWL 1 year post-surgery as the total number of ACEs increased, yet there was no association with %TWL 2 years post-surgery. **The participants were classified into two groups, those positive for an ACE or FA versus those negative for both. Those who screened positive were significantly less likely to undergo bariatric surgery.** **CONCLUSION:** Screening positive for experiencing ACEs was related to severity of FA, and screening positive for being the victim of either childhood abuse or FA reduced the

likelihood of completing bariatric surgery. More research is needed to determine how these psychosocial factors might influence bariatric surgery outcomes.

3. Selvaraj K, Ruiz MJ, Aschkenasy J, et al. Screening for Toxic Stress Risk Factors at Well-Child Visits: The Addressing Social Key Questions for Health Study. *J Pediatr*. 2018 Oct
[PubMed: PM30297291](#)

OBJECTIVES: To determine the prevalence of and demographic characteristics associated with toxic stress risk factors by universal screening, the impact of screening on referral rates to community resources, and the feasibility and acceptability of screening in a medical home setting. **STUDY DESIGN:** We developed the Addressing Social Key Questions for Health Questionnaire, a 13-question screen of Adverse childhood Experiences (ACEs) and unmet social needs. Parents/guardians of children 0-17 years of age received this questionnaire at well-child visits at 4 academic clinics from August 1, 2016 to February 28, 2017. Providers reviewed the tool and referred to community resources as needed. A subset of families completed demographic and satisfaction surveys. Prevalence of ACEs and unmet social needs, community referral rates at 1 site with available data, and family acceptability data were collected. Analyses included frequency distributions, chi(2) tests, and Poisson regression. **RESULTS:** Of 2569 families completing an Addressing Social Key Questions for Health Questionnaire, 49% reported ≥ 1 stressor; 6% had ≥ 1 ACE; 47% had ≥ 1 unmet social need. At 1 site, community referral rates increased from 2.0% to 13.3% ($P < .0001$) after screening implementation. Risk factors for having a stressor include male sex and African American or Hispanic race. 86% of 446 families want clinics to continue screening. **CONCLUSIONS:** Universal screening for toxic stress risk factors in pediatric primary care improved identification and management of family needs. Screening was feasible and acceptable to families. Prevalence of unmet social needs but not ACEs was comparable with prior studies. Further evaluation and modification of the screening protocol is needed to increase screening and identification.

4. Alcala HE, Valdez-Dadia A, von Ehrenstein OS. Adverse childhood experiences and access and utilization of health care. *J Public Health (Oxf)*. 2017 Nov 22:1-9.
[PubMed: PM29182751](#)

Background: Adverse childhood Experiences (ACEs) have been associated with a variety of negative health outcomes. However, the association between ACEs and access and utilization of health care have been largely ignored. Methods: **This study examined data from the 2011 Behavioral Risk Factor Surveillance System (N = 101 527).** We conducted logistic regression analyses, with nine ACEs as independent variables, in relation to the odds of being insured, having a personal health care provider and receiving a physician checkup in the past year. Unadjusted and adjusted multivariable models were estimated. Results: **After accounting for potential confounders, all ACEs were associated with lower odds of being currently insured and receiving a physician checkup in the past year. Physical abuse, emotional abuse and several measures of household dysfunction were associated with lower odds of having a personal provider.** Conclusions: **Our findings suggest potential pathways by which ACEs may impact health.** Provision

of health insurance and providing care in a trauma-informed manner should be considered for individuals with a history of ACEs.

5. Goldstein E, Athale N, Sciolla AF, Catz SL. Patient Preferences for Discussing Childhood trauma in Primary Care. *Perm.* 2017;21.
[PubMed: PM28333604](https://pubmed.ncbi.nlm.nih.gov/28333604/)

CONTEXT: Exposure to traumatic events is common in primary care patients, yet health care professionals may be hesitant to assess and address the impact of childhood trauma in their patients. OBJECTIVE: **To assess patient preferences for discussing traumatic experiences and posttraumatic stress disorder (PTSD) with clinicians in underserved, predominantly Latino primary care patients.** DESIGN: Cross-sectional study. MAIN OUTCOME MEASURE: We evaluated patients with a questionnaire assessing comfort to discuss trauma exposure and symptoms using the Adverse childhood Experiences (ACE) Study questionnaire and the Primary Care-PTSD screen. The questionnaire also assessed patients' confidence in their clinicians' ability to help with trauma-related issues. Surveys were collected at an integrated medical and behavioral health care clinic. RESULTS: **Of 178 adult patients asked, 152 (83%) agreed to participate. Among participants, 37% screened positive for PTSD, 42% reported 4 or more ACEs, and 26% had elevated scores on both measures. Primary Care-PTSD and ACE scores were strongly positively correlated ($r = 0.57$, $p < 0.001$).** Most patients agreed they were comfortable being asked about trauma directly or through screening questionnaires and did not oppose the inclusion of trauma-related information in their medical record. In addition, most patients perceived their clinician as comfortable asking questions about childhood trauma and able to address trauma-related problems. CONCLUSION: **Screening is acceptable to most primary care patients regardless of trauma exposure or positive PTSD screening. Findings may aid primary care clinicians to consider screening regularly for ACEs and PTSD to better serve the health care needs of trauma-exposed patients.**

Feasibility Studies

6. Glowa, P., Olsen, A, Johnson, D. Screening for adverse childhood experiences in a family medicine setting: a feasibility study. *Journal American Board Fam Med.* 2016;29(3). <https://www.ncbi.nlm.nih.gov/pubmed/27170787>

INTRODUCTION: The role of adverse childhood experiences (ACEs) in predicting later adverse adult health outcomes is being widely recognized by makers of public policy. ACE questionnaires have the potential to identify in clinical practice unaddressed key social issues that can influence current health risks, morbidity, and early mortality. **This study seeks to explore the feasibility of implementing the ACE screening of adults during routine family medicine office visits.** METHODS: **At 3 rural clinical practices, the 10-question ACE screen was used before visits with 111 consecutive patients of 7 clinicians.** Clinician surveys about the use of the results and the effect on the visits were completed immediately after the visits. The presence of any ACE risk and "high-risk" ACE scores (≥ 4) were compared with clinician survey responses. RESULTS: A risk of ACEs was present in 62% of patients; 22% had scores ≥ 4 . **Clinicians were more likely to have discussed ACE issues for high-risk patients (score 0-3, 36.8%; score ≥ 4 , 83.3%; $P = .00$). Clinicians also perceived that they gained new information (score 0-3, 35.6%; score ≥ 4 , 83.3%; $P = .00$). Clinical care changed for a small proportion of high-risk patients, with no change in immediate referrals or plan for follow-up. In 91% of visits where a risk of ACEs**

was present, visit length increased by ≤ 5 minutes. CONCLUSIONS: Incorporation of ACE screening during routine care is feasible and merits further study. ACE screening offers clinicians a more complete picture of important social determinants of health. Primary care-specific interventions that incorporate treatment of early life trauma are needed.

Appendix — Further Information

Previous CADTH Reports

7. Adverse childhood experience questionnaire for adult patients: clinical effectiveness and cost-effectiveness. (CADTH Rapid response report: reference list). Ottawa (ON): CADTH; 2018:
<https://www.cadth.ca/adverse-childhood-experience-questionnaire-adult-patients-clinical-effectiveness-and-cost-0>. Accessed 2019 Jan 17.
8. Engaging with history taking for adverse childhood experiences within typically marginalized populations: qualitative literature. (CADTH Rapid response report: reference list). Ottawa (ON): CADTH; 2018:
<https://www.cadth.ca/engaging-history-taking-adverse-childhood-experiences-within-typically-marginalized-populations>. Accessed 2019 Jan 17.

Systematic Reviews and Meta-Analyses – Alternative Outcome

9. Eklund K, Rossen E, Koriakin T, Chafouleas SM, Resnick C. A systematic review of trauma screening measures for children and adolescents. *Sch Psychol Q*. 2018 Mar;33(1):30-43.
[PubMed: PM29629787](#)

Traumatized youth are at an increased risk of a host of negative academic and psychoeducational outcomes. Screening and identification of students who experience potentially traumatic events may help schools provide support to at-risk students. In light of this, the current study examines the availability and use of trauma screening measures to detect early indicators of risk among youth in schools. A systematic review was conducted to identify measures available to screen children and youth for trauma exposure and/or symptoms, as well as the associated psychometric properties to support each instrument's applied use in schools. Eighteen measures met inclusion criteria, which consisted primarily of student self-report rating scales and clinical interviews. While many instruments measure the symptomology or exposure to trauma among children and youth, very little psychometric evidence was available to support the use of these measures in schools. Additional research is needed to endorse and expand the use of trauma screening measures in schools. (PsycINFO Database Record.

Non-Randomized Studies

Alternative Outcome

10. Mwakanyamale AA, Wande DP, Yizhen Y. Multi-type child maltreatment: prevalence and its relationship with self-esteem among secondary school students in Tanzania. *BMC Psychol*. 2018 Jul 24;6(1):35.
[PubMed: PM30041688](#)

BACKGROUND: Child maltreatment is becoming predominantly multi-type in nature. Studies report that multi-type child maltreatment is associated with low self-esteem in adolescence and adulthood. There is a lack of published studies in Tanzania regarding multi-type child maltreatment and its relationship with self-esteem in adolescence. This study investigates the prevalence of multi-type child maltreatment and its relationship with self-esteem among secondary school students in Tanzania. **METHODS:** A cross-sectional, community-based study of secondary school students was conducted in randomly selected secondary schools in Tanzania. A multistage cluster sampling technique was employed to obtain the required number of study participants. The Rosenberg Self-Esteem Scale and the Adverse childhood Experiences (ACE) questionnaire were used to measure the variables under investigation in the study. A total of 1000 participants (M: F ratio = 1.2:1) were studied. The mean age at presentation was 16.24 +/- 7.36 years. The modal age group was 16-18 years (54.2%). **RESULTS:** The prevalence of multi-type child maltreatment was 97.6%. The prevalence of physical abuse, physical neglect, emotional neglect emotional abuse and sexual abuse was 82.1, 26.2, 51.9, 21.8 and 24.7%, respectively. Females reported a higher prevalence of physical abuse (84.3%), physical neglect (28.0%) and sexual abuse (26.2%) than their male counterparts. Emotional abuse (53.3%) was reported more often by males. In terms of ACE, participants were classified as having zero (2.4%), one (22.4%), two (20.3%), three (18.2%), four (14.7%), five (12.8%) and over five (9.2%) types of maltreatment. With regard to multi-type child maltreatment, emotional abuse ($X^2 = 2.925$, $p = 0.001$), emotional neglect ($X^2 = 2.329$, $p = 0.032$), physical neglect ($X^2 = 22.508$, $p < 0.001$) and physical abuse ($X^2 = 6.722$, $p = 0.036$) were significantly associated with low self-esteem. **CONCLUSION:** The current study demonstrates that multi-type child maltreatment exists in Tanzania and has adversely affected self-esteem among secondary school students. We believe that this study has significantly added to the body of literature on child maltreatment by investigating exposure to 10 types of ACEs as opposed to single types, as the majority of previous studies have investigated.

11. Racine N, Madigan S, Plamondon A, Hetherington E, McDonald S, Tough S. Maternal Adverse childhood Experiences and antepartum risks: the moderating role of social support. *Arch Womens Ment Health*. 2018 Mar 28.
[PubMed: PM29594369](https://pubmed.ncbi.nlm.nih.gov/29594369/)

The aims of the current study were to examine the association between maternal Adverse childhood Experiences (ACEs) and antepartum health risks, and to investigate whether social support moderated this association. It was hypothesized that ACEs would be associated with antepartum health risks; however, social support in the prenatal period would buffer mothers from the deleterious consequences of ACEs. Data from 1994 women (mean age = 31 years) and their infants were collected from a longitudinal cohort recruited in health care offices in Alberta, Canada. Pregnant women completed questionnaires related to ACEs prior to the age of 18 and prenatal social support, and a health care professional assessed the mother's antepartum health risk. ACEs included physical, emotional, and sexual abuse, exposure to domestic violence, as well as exposure to household dysfunction such as parental substance use, mental illness, or incarceration. Regression analyses demonstrated a positive association between ACEs and antepartum health risks. However, a significant interaction between maternal ACEs and social support was also observed. Specifically, women exposed to high ACEs and low social support in pregnancy had high antepartum health risks.

However, among mothers who had high ACEs but also high levels of social support, there was no association between ACEs and antepartum health risk. A history of ACEs can place mothers at risk of antepartum health complications. However, a resiliency effect was observed: women with a history of ACEs were buffered from experiencing antepartum health risks if they reported high levels of social support in pregnancy.

Mixed Intervention

12. McLennan JD, MacMillan HL. Routine primary care screening for intimate partner violence and other adverse psychosocial exposures: what's the evidence? *BMC Fam Pract.* 2016 Aug 3;17:103.
[PubMed: PM27488658](#)

BACKGROUND: Family physicians and other primary care practitioners are encouraged or expected to screen for an expanding array of concerns and problems including intimate partner violence (IPV). While there is no debate about the deleterious impact of violence and other adverse psychosocial exposures on health status, the key question raised here is about the value of routine screening in primary care for such exposures. **DISCUSSION:** Several characteristics of IPV have led to consideration for routine IPV screening in primary care and during other healthcare encounters (e.g., emergency room visits) including: its high prevalence, concern that it may not be raised spontaneously if not prompted, and the burden of suffering associated with this exposure. Despite these factors, there are now three randomized controlled trials showing that screening does not reduce IPV or improve health outcomes. Yet, recommendations to routinely screen for IPV persist. Similarly, Adverse childhood Experiences (ACEs) have several characteristics (e.g., high frequency, predictive power of such experiences for subsequent health problems, and concerns that they might not be identified without screening) suggesting they too should be considered for routine primary care screening. However, demonstration of strong associations with health outcomes, and even causality, do not necessarily translate into the benefits of routine screening for such experiences. To date, there have been no controlled trials examining the impact and outcomes - either beneficial or harmful - of routine ACEs screening. Even so, there is an expansion of calls for routine screening for ACEs. While we must prioritize how best to support and intervene with patients who have experienced IPV and other adverse psychosocial exposures, we should not be lulled into a false sense of security that our routine use of "screeners" results in better health outcomes or less violence without evidence for such. Decisions about implementation of routine screening for psychosocial concerns need similar rigorous debate and scrutiny of empirical evidence as that recommended for proposed physical health screening (e.g., for prostate and breast cancer).

Reviews Articles

13. Dube SR. Continuing conversations about Adverse childhood Experiences (ACEs) screening: A public health perspective. *Child Abuse Negl.* 2018 Mar 16.
[PubMed: PM29555095](#)

Currently, in the U.S. and worldwide, childhood trauma is a public health crisis. Childhood adversities, such as abuse, neglect, and related household stressors, are common, interrelated and contribute to multiple adverse social, behavioral and health outcomes throughout the lifespan. The present article provides further discussion

regarding Adverse childhood Experiences (ACEs) screening in healthcare utilizing the etic and emic perspectives. Screening in the healthcare system leans toward the etic view: objective observations of symptoms, which may then lead to intervention delivery. Whereas the emic view provides the subjective perspective as experienced by participants of a system, culture, or common group. Finkelhor's argument about cautions regarding widespread screening is relevant in the current allopathic healthcare system, which utilizes an etic perspective and where evidence-based ACEs interventions within a biomedical-centric model are lacking. Therefore, in healthcare settings, universal ACEs screening may serve the clinicians with a surveillance tool to inform and guide medical practice and policy as they relate to delivering trauma-informed care. The Public Health Code of Ethics and Basis for Action reminds us about the values approach for collecting and using data ethically to protect population health. Practitioners and researchers across the globe are beginning to take community-engaged action, with an emic view of all community members involved.

Additional References

14. Selvaraj K. Screening for adverse childhood experiences in the pediatric primary care setting: practical considerations and lessons learned. (Webinar). Chicago (IL): Illinois ACEs Response Collaborative; 2018.
<http://hmpg.org/assets/root/ACEs/Screening%20for%20ACEs%20Slides3.30.18.pdf>. Accessed 2019 Jan 17.

15. Finkelhor D. Screening for Adverse childhood Experiences (ACEs): Cautions and suggestions. *Child Abuse Negl.* 2017 Aug 4.
[PubMed: PM28784309](#)

This article argues that it is still premature to start widespread screening for Adverse childhood Experiences (ACE) in health care settings until we have answers to several important questions: 1) what are the effective interventions and responses we need to have in place to offer to those with positive ACE screening, 2) what are the potential negative outcomes and costs to screening that need to be buffered in any effective screening regime, and 3) what exactly should we be screening for? The article makes suggestions for needed research activities.

16. Pachter LM, Lieberman L, Bloom SL, Fein JA. Developing a Community-Wide Initiative to Address Childhood Adversity and Toxic Stress: A Case Study of The Philadelphia ACE Task Force. *Acad Pediatr.* 2017 Sep - Oct;17(7S):S130-S135.
[PubMed: PM28865645](#)

The Philadelphia ACE Task Force is a community based collaborative of health care providers, researchers, community-based organizations, funders, and public sector representatives. The mission of the task force is to provide a venue to address childhood adversity and its consequences in the Philadelphia metropolitan region. In this article we describe the origins and metamorphosis of the Philadelphia ACE Task Force, which initially was narrowly focused on screening for Adverse childhood Experiences (ACEs) in health care settings but expanded its focus to better represent a true community-based approach to sharing experiences with addressing childhood adversity in multiple sectors of the city and region. The task force has been successful in developing a research agenda and conducting research on ACEs in the urban context, and has identified foci of local activity in the areas of professional training and

workforce development, community education, and local practical interventions around adversity, trauma, and resiliency. In this article we also address the lessons learned over the first 5 years of the task force's existence and offers recommendations for future efforts to build a local community-based ACEs collaborative.

17. Ashton K, Bellis MA, Davies AR, Hardcastle K, Hughes K. Adverse childhood experiences and their association with chronic disease and health service use in the Welsh adult population. Cardiff (GB): Public Health Wales NHS Trust; 2016. <http://www.wales.nhs.uk/sitesplus/documents/888/ACE%20Chronic%20Disease%20report%20%289%29%20%282%29.pdf>. Accessed 2019 Jan 17.
18. McGavock L, Spratt T. Prevalence of adverse childhood experiences in a university population: Associations with use of social services. *British Journal of Social Work*. 2014 Apr;44(3):657-674.

This paper is part of a series published by the Multiple Adverse childhood Experiences research group based at Queen's University Belfast. First-year undergraduates took part in an online survey, self-reporting on Adverse childhood Experiences (ACE) and measures of social service contact. The ten-item ACE questionnaire measures abuse, neglect and household dysfunction (current sample alpha = 0.711). The study achieved a response rate of 18.6 per cent (N = 765; 552 (72.7 per cent) females and 212 (27.2 per cent) males, 21.8 per cent reporting having been educated at a 'Protestant' school, 42 per cent reporting having been educated at a 'Catholic' school and 20.4 per cent reporting previous school religious affiliation as 'other'). Despite obvious non-response bias, ACE scores for this student population are comparable with college-educated populations in the USA. Current respondents with previous social service contact are over twenty-three times more likely than peers to have experienced multiple adversities. Findings support the hypothesis that social service contact, alone, acts as a proxy indicator for the presence of multiple adverse childhood experiences, with no significant elevation in ACE scores for those going through court proceedings or subject to child protection registration. This study supports current concerns by policy makers to target those children experiencing multiple adversities. (PsycINFO Database Record (c) 2016 APA, all rights reserved)

19. American Academy of Pediatrics. Addressing adverse childhood experiences and other types of trauma in the primary care setting. Itasca (IL): American Academy of Pediatrics; 2015. https://www.aap.org/en-us/Documents/ttb_addressing_aces.pdf. Accessed 2019 Jan 1