



Adverse Effects/Economic Impact of Child Maltreatment

A Bibliography

December 2024

**Championing and Strengthening the
Global Response to Child Abuse**

nationalcac.org | 256-533-KIDS(5437) | 210 Pratt Avenue NE, Huntsville, AL 35801

©2024 National Children's Advocacy Center. All rights reserved.

© 2011, 2013, 2014, 2015, 2017, 2019, 2024. National Children's Advocacy Center. All rights reserved.

Preferred citation: National Children's Advocacy Center. (2024). Adverse Effects/Economic Impact of Child Maltreatment: A Bibliography. Huntsville, AL: Author.

This project was supported by a grant awarded by the Office of Juvenile Justice and Delinquency Prevention, Office of Justice Programs, U.S. Department of Justice. Points of view or opinions in this document are those of the author and do not necessarily represent the official position or policies of the U.S. Department of Justice.

Scope

This bibliography provides research literature covering a wide variety of topics related to the economic impact and adverse effects-related economic impact of child maltreatment.

Organization

Publications include articles, book chapters, reports, and research briefs and are listed in date descending order, organized by the categories listed below. Links are provided to full text publications. However, this collection may not be complete. More information can be obtained in the Child Abuse Library Online.

Health.....5

Mental Health.....25

Crime.....36

Risk-Taking Behaviors.....45

Multiple Adverse Effects.....56

General Economic67

Outside U.S.82

Disclaimer

This bibliography was prepared by the Digital Information Librarians of the National Children's Advocacy Center (NCAC) for the purpose of research and education, and for the convenience of our readers. The NCAC is not responsible for the availability or content of cited resources. The NCAC does not endorse, warrant or guarantee the information, products, or services described or offered by the authors or organizations whose publications are cited in this bibliography. The NCAC does not warrant or assume any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed in documents cited here. Points of view presented in cited resources are those of the authors, and do not necessarily coincide with those of the NCAC.

Adverse Effects/Economic Impact of Child Maltreatment

A Bibliography

Health

Dubowitz, H., Finkelhor, D., Zolotor, A., Kleven, J., & Davis, N. (2022). [Addressing adverse childhood experiences in primary care: Challenges and considerations](#). *Pediatrics*, 149(4), e2021052641. DOI:10.1542/peds.2021-052641

This article draws attention to the overlapping literature on social determinants of health and adverse childhood experiences, and the growing clinical interest in addressing them to promote children's and parents' health and well-being. We address important considerations and suggest solutions for leaders and practitioners in primary care to address social determinants of health/adverse childhood experiences. Priorities include: begin with a few prevalent conditions for which there are helpful resources; focus on conditions that are current or recent and where parents may be more apt to engage in services; focus initially on families with children aged <6 given the frequency of well-child visits and the especially strong relationships between primary care professionals and parents during this period; ensure training of primary care professionals and staff to help them play this role competently and comfortably; and have good referral processes to facilitate additional evaluation or help.

Baldwin, J. R., Caspi, A., Meehan, A. J., Ambler, A., Arseneault, L., Fisher, H. L., Harrington, H., Matthews, T., Odgers, C. L., Poulton, R., Ramrakha, S., Moffitt, T. E., & Danese, A. (2021). [Population vs individual prediction of poor health from results of adverse childhood experiences screening](#). *JAMA Pediatrics*, 175(4), 385-393. DOI:10.1001/jamapediatrics.2020.5602

Importance: Adverse childhood experiences (ACEs) are well-established risk factors for health problems in a population. However, it is not known whether screening for ACEs can

accurately identify individuals who develop later health problems. Objective: To test the predictive accuracy of ACE screening for later health problems. Design, Setting, and Participants: This study comprised 2 birth cohorts: the Environmental Risk (E-Risk) Longitudinal Twin Study observed 2232 participants born during the period from 1994 to 1995 until they were aged 18 years (2012–2014); the Dunedin Multidisciplinary Health and Development Study observed 1037 participants born during the period from 1972 to 1973 until they were aged 45 years (2017–2019). Statistical analysis was performed from May 28, 2018, to July 29, 2020. Exposures: ACEs were measured prospectively in childhood through repeated interviews and observations in both cohorts. ACEs were also measured retrospectively in the Dunedin cohort through interviews at 38 years. Main Outcomes and Measures: Health outcomes were assessed at 18 years in E-Risk and at 45 years in the Dunedin cohort. Mental health problems were assessed through clinical interviews using the Diagnostic Interview Schedule. Physical health problems were assessed through interviews, anthropometric measurements, and blood collection. Results: Of 2232 E-Risk participants, 2009 (1051 girls [52%]) were included in the analysis. Of 1037 Dunedin cohort participants, 918 (460 boys [50%]) were included in the analysis. In E-Risk, children with higher ACE scores had greater risk of later health problems (any mental health problem: relative risk, 1.14 [95% CI, 1.10–1.18] per each additional ACE; any physical health problem: relative risk, 1.09 [95% CI, 1.07–1.12] per each additional ACE). ACE scores were associated with health problems independent of other information typically available to clinicians (ie, sex, socioeconomic disadvantage, and history of health problems). However, ACE scores had poor accuracy in predicting an individual's risk of later health problems (any mental health problem: area under the receiver operating characteristic curve, 0.58 [95% CI, 0.56–0.61]; any physical health problem: area under the receiver operating characteristic curve, 0.60 [95% CI, 0.58–0.63]; chance prediction: area under the receiver operating characteristic curve, 0.50). Findings were consistent in the Dunedin cohort using both prospective and retrospective ACE measures. Conclusions and Relevance: This study suggests that, although ACE scores can forecast mean group differences in

health, they have poor accuracy in predicting an individual's risk of later health problems. Therefore, targeting interventions based on ACE screening is likely to be ineffective in preventing poor health outcomes.

Downing, N. R., Akinlotan, M., & Thornhill, C. W. (2021). [The impact of childhood sexual abuse and adverse childhood experiences on adult health related quality of life](#). *Child Abuse & Neglect*, 120, 105181. DOI:10.1016/j.chiabu.2021.105181

Adverse childhood experiences (ACEs) have been shown to be associated with adult physical, psychological, and socioeconomic well-being, indicative of poor health-related quality of life (HRQoL). However, the association between child sexual abuse (CSA) and adult HRQoL, independent of other ACEs, has been less well examined. Objectives: To examine associations between self-reported CSA, including the nature of CSA, and adult HRQoL. Participants: Data are from 10,624 respondents to CSA and HRQoL questions on the 2015 Texas Behavioral Risk Factor Surveillance System survey. Methods: Analyses included chi square and *t*-tests to compare sociodemographic and HRQoL differences among those with and without history of CSA. Multivariable logistic regressions were used to evaluate associations between nature of CSA and HRQoL, controlling for covariates. Results: The prevalence of self-reported CSA in the sample was 10.3%. Compared to the non-exposed group, individuals exposed to CSA were more likely to report their general health as poor (AOR, 1.51; 95% CI, 1.09–2.09), report 14 or more physical unhealthy days (AOR, 1.46; 95% CI, 1.06–2.02), 14 or more mental unhealthy days (AOR, 1.86; 95% CI, 1.30–2.64), and 14 or more activity limitation days (AOR, 2.22; 95% CI, 1.58–3.10) in a month. HRQoL outcomes were worse for respondents who reported being forced to have sex as a child compared with those who reported being touched or forced to touch someone. Conclusions: Self-reported CSA is associated with lower HRQoL. The association varies by the nature of reported sexual abuse. Understanding the long-term impacts of CSA can inform adult treatment options and policies to prevent and treat CSA.

Crandall, A., Broadbent, E., Stanfill, M., Magnusson, B. M., Novilla, M. L. B., Hanson, C. L., & Barnes, M. D. (2020). The influence of adverse and advantageous childhood experiences during adolescence on young adult health. *Child Abuse & Neglect*, 108, 104644. DOI:10.1016/j.chiabu.2020.104644

Research indicates that adverse childhood experiences (ACEs) can lead to poorer adult health, but less is known how advantageous childhood experiences (counter-ACEs) may neutralize the negative effects of ACEs, particularly in young adulthood. We examined the independent contributions of Adverse Childhood Experiences (ACEs) and Advantageous Childhood Experiences (counter-ACEs) that occur during adolescence on five young adult health indicators: depression, anxiety, risky sexual behaviors, substance abuse, and positive body image. The sample included 489 adolescents from a large northwestern city in the United States who were 10–13 years at baseline (51 % female). Flourishing Families Project survey data were used for this secondary analysis using structural equation modeling. Adolescents and their parents completed an annual survey. ACEs and counter-ACEs were measured over the first five years of the study. The five health indicators were measured in wave 10 when participants were 20–23 years old. Participants had on average 2.7 ACEs and 8.2 counter-ACEs. When both ACEs and counter-ACEs were included in the model, ACEs were not predictive of any of the health indicators and counter-ACEs were predictive of less risky sex ($-.12, p < .05$), substance abuse ($-.12, p < .05$), depression ($-.11, p < .05$), and a more positive body image ($.15, p < .01$). Higher ratios of counter-ACEs to ACEs had a particularly strong effect on improved young adult health. Counter-ACEs that occur in adolescence may diminish the negative effects of ACEs on young adult health and independently contribute to better health.

Chanlongbutra, A., Singh, G. K., & Mueller, C. D. (2018). [Adverse childhood experiences, health-related quality of life, and chronic disease risks in rural areas of the United States](#). *Journal of Environmental and Public Health*, 2018(1), 7151297.
DOI:10.1155/2018/7151297

Exposure to adverse childhood experiences (ACEs) is associated with increased odds of high-risk behaviors and adverse health outcomes. This study examined whether ACE exposure among individuals living in rural areas of the United States is associated with adult activity limitations, self-reported general poor health status, chronic diseases, and poor mental health. Data from the 2011 and 2012 Behavioral Risk Factor Surveillance System (BRFSS) (N=79,810) from nine states were used to calculate the prevalence of ACEs in rural and urban areas. ACE scores were determined by summing 11 survey items. Multiple logistic regression was used to examine the association between ACE scores and health outcomes, including self-reported general health status, chronic diseases, and health-related quality of life. Approximately 55.4% of rural respondents aged ≥ 18 years reported at least one ACE and 14.7% reported experiencing ≥ 4 ACEs in their childhood, compared to 59.5% of urban residents who reported at least one ACE and 15.5% reporting ≥ 4 ACEs. After adjusting for sociodemographic covariates, compared to rural respondents who never reported an ACE, rural respondents who experienced ≥ 1 ACEs had increased odds of reporting fair/poor general health, activity limitations, and heart disease, which is consistent with previous studies. The odds of experiencing a heart attack were higher for rural residents reporting 2 and ≥ 4 ACEs; the odds of diabetes were higher for those with 3 ACEs; and the odds of ever having asthma or poor mental health was higher for those with ≥ 3 ACEs. Although individuals in rural areas are less likely to experience ACEs, over half of rural respondents reported experiencing an ACE in childhood. Programs aimed at preventing ACEs, including child maltreatment, can benefit rural areas by reducing adult morbidity and increasing quality of life.

Banyard, V., Hamby, S., & Grych, J. (2017). [Health effects of adverse childhood events: Identifying promising protective factors at the intersection of mental and physical well-being](#). *Child Abuse & Neglect*, 65, 88–98.
DOI:10.1016/j.chiabu.2017.01.011

Research documents how exposure to adversity in childhood leads to negative health outcomes across the lifespan. Less is known about protective factors – aspects of the individual, family, and community that promote good health despite exposure to adversity. Guided by the Resilience Portfolio Model, this study examined protective factors associated with physical health in a sample of adolescents and adults exposed to high levels of adversity including child abuse. A rural community sample of 2565 individuals with average age of 30 participated in surveys via computer assisted software. Participants completed self-report measures of physical health, adversity, and a range of protective factors drawn from research on resilience. Participants reporting a greater burden of childhood victimization and current financial strain (but not other adverse life events) had poorer physical health, but those with strengths in emotion regulation, meaning making, community support, social support, and practicing forgiveness reported better health. As hypothesized, strengths across resilience portfolio domains (regulatory, meaning making, and interpersonal) had independent, positive associations with health related quality of life after accounting for participants' exposure to adversity. Prevention and intervention efforts for child maltreatment should focus on bolstering a portfolio of strengths. The foundation of the work needs to begin with families early in the lifespan. © 2017 Published by Elsevier Ltd

Berens, A. E., Jensen, S. K., & Nelson, C. A. (2017). [Biological embedding of childhood adversity: From physiological mechanisms to clinical implications](#). *BMC Medicine*, 15, 1–12. DOI:10.1186/s12916-017-0895-4

Adverse psychosocial exposures in early life, namely experiences such as child maltreatment, caregiver stress or depression, and domestic or community violence, have

been associated in epidemiological studies with increased lifetime risk of adverse outcomes, including diabetes, heart disease, cancers, and psychiatric illnesses. Additional work has shed light on the potential molecular mechanisms by which early adversity becomes “biologically embedded” in altered physiology across body systems. This review surveys evidence on such mechanisms and calls on researchers, clinicians, policymakers, and other practitioners to act upon evidence. Childhood psychosocial adversity has wide-ranging effects on neural, endocrine, immune, and metabolic physiology. Molecular mechanisms broadly implicate disruption of central neural networks, neuroendocrine stress dysregulation, and chronic inflammation, among other changes. Physiological disruption predisposes individuals to common diseases across the life course. Reviewed evidence has important implications for clinical practice, biomedical research, and work across other sectors relevant to public health and child wellbeing. Warranted changes include increased clinical screening for exposures among children and adults, scale-up of effective interventions, policy advocacy, and ongoing research to develop new evidence-based response strategies.

Hughes, K., Bellis, M. A., Hardcastle, K. A., Sethi, D., Butchart, A., Mikton, C., Jones, L., & Dunne, M. P. (2017). [The effect of multiple adverse childhood experiences on health: A systematic review and meta-analysis](#). *The Lancet Public Health*, 2(8), e356–e366. DOI:10.1016/S2468-2667(17)30118-4

A growing body of research identifies the harmful effects that adverse childhood experiences (ACEs; occurring during childhood or adolescence; eg, child maltreatment or exposure to domestic violence) have on health throughout life. Studies have quantified such effects for individual ACEs. However, ACEs frequently co-occur and no synthesis of findings from studies measuring the effect of multiple ACE types has been done. In this systematic review and meta-analysis, we searched five electronic databases for cross-sectional, case-control, or cohort studies published up to May 6, 2016, reporting risks of health outcomes, consisting of substance use, sexual health, mental health, weight and

physical exercise, violence, and physical health status and conditions, associated with multiple ACEs. We selected articles that presented risk estimates for individuals with at least four ACEs compared with those with none for outcomes with sufficient data for meta-analysis (at least four populations). Included studies also focused on adults aged at least 18 years with a sample size of at least 100. We excluded studies based on high-risk or clinical populations. We extracted data from published reports. We calculated pooled odds ratios (ORs) using a random-effects model. Of 11 621 references identified by the search, 37 included studies provided risk estimates for 23 outcomes, with a total of 253 719 participants. Individuals with at least four ACEs were at increased risk of all health outcomes compared with individuals with no ACEs. Associations were weak or modest for physical inactivity, overweight or obesity, and diabetes (ORs of less than two); moderate for smoking, heavy alcohol use, poor self-rated health, cancer, heart disease, and respiratory disease (ORs of two to three), strong for sexual risk taking, mental ill health, and problematic alcohol use (ORs of more than three to six), and strongest for problematic drug use and interpersonal and self-directed violence (ORs of more than seven). We identified considerable heterogeneity (I^2 of >75%) between estimates for almost half of the outcomes. To have multiple ACEs is a major risk factor for many health conditions. The outcomes most strongly associated with multiple ACEs represent ACE risks for the next generation (eg, violence, mental illness, and substance use). To sustain improvements in public health requires a shift in focus to include prevention of ACEs, resilience building, and ACE-informed service provision. The Sustainable Development Goals provide a global platform to reduce ACEs and their life-course effect on health.

Campbell, K. A., Telford, S. R., Cook, L. J., Waitzman, N. J., & Keenan, H. T. (2016). [Medicaid expenditures for children remaining at home after a first finding of child maltreatment](#). *Pediatrics*, 138(3), e20160439. DOI:10.1542/peds.2016-0439

Child maltreatment is associated with physical and mental health problems. The objective of this study was to compare Medicaid expenditures based on a first-time finding of child maltreatment by Child Protective Services (CPS). This retrospective cohort study included children aged 0 to 14 years enrolled in Utah Medicaid between January 2007 and December 2009. The exposed group included children enrolled in Medicaid during the month of a first-time CPS finding of maltreatment not resulting in out-of-home placement. The unexposed group included children enrolled in Medicaid in the same months without CPS involvement. Quantile regression was used to describe differences in average nonpharmacy Medicaid expenditures per child-year associated with a first-time CPS finding of maltreatment. A total of 6593 exposed children and 39 181 unexposed children contributed 20 670 and 105 982 child-years to this analysis, respectively. In adjusted quantile regression, exposed children at the 50th percentile of health care spending had annual expenditures \$78 (95% confidence interval [CI], 65 to 90) higher than unexposed children. This difference increased to \$336 (95% CI, 283 to 389) and \$1038 (95% CI, 812 to 1264) at the 75th and 90th percentiles of health care spending. Differences were higher among older children, children with mental health diagnoses, and children with repeated episodes of CPS involvement; differences were lower among children with severe chronic health conditions. Maltreatment is associated with increased health care expenditures, but these costs are not evenly distributed. Better understanding of the reasons for and outcomes associated with differences in health care costs for children with a history of maltreatment is needed.

Mouton, C. P., Hargreaves, M. K., Liu, J., Fadeyi, S., & Blot, W. J. (2016). [Adult cancer risk behaviors associated with adverse childhood experiences in a low income population in the southeastern United States](#). *Journal of Health Care for the Poor and Underserved*, 27(1), 68–83. DOI:10.1353/hpu.2016.0027

Adverse childhood experiences (ACE) can affect health in adulthood. We investigate the relationship between childhood experiences and adult cancer risk and screening behaviors in a racially diverse, low income population. Nearly 22,000 adults 40 years and older in the Southern Community Cohort Study were administered the ACE questionnaire. We estimated odds ratios (OR) for the prevalence of smoking, alcohol consumption, BMI and five cancer screening methods in relation to the ACE score. Over half reported at least one ACE, with percentages higher for women (61%) than men (53%). Higher ACE scores were related to increased prevalence of smoking (ORs 1.25 (1.05–1.50) to 2.33 (1.96–2.77)). Little association was seen between rising ACE score and alcohol consumption or BMI, except for a modest trend in morbid obesity (BMI \geq 40 kg/m²). Mammography and cervical cancer screening decreased with rising ACE scores, but no trends were seen with prostate or colorectal cancer screening. Adverse childhood experiences are strong predictors of adult cancer risk behaviors, particularly increased likelihood of smoking, and among women, lower mammography and Pap screening rates.

Reuben, A., Moffitt, T. E., Caspi, A., Belsky, D. W., Harrington, H., Schroeder, F., Hogan, S., Ramrakha, S., Poulton, R., & Danese, A. (2016). [Lest we forget: Comparing retrospective and prospective assessments of adverse childhood experiences in the prediction of adult health](#). *Journal of Child Psychology and Psychiatry*, 57(10), 1103–1112. DOI:10.1111/jcpp.12621

Adverse childhood experiences (ACEs; e.g. abuse, neglect, and parental loss) have been associated with increased risk for later-life disease and dysfunction using adults' retrospective self-reports of ACEs. Research should test whether associations between ACEs and health outcomes are the same for prospective and retrospective ACE measures. We estimated agreement between ACEs prospectively recorded throughout

childhood (by Study staff at Study member ages 3, 5, 7, 9, 11, 13, and 15) and retrospectively recalled in adulthood (by Study members when they reached age 38), in the population-representative Dunedin cohort (N = 1,037). We related both retrospective and prospective ACE measures to physical, mental, cognitive, and social health at midlife measured through both objective (e.g. biomarkers and neuropsychological tests) and subjective (e.g. self-reported) means. Dunedin and U.S. Centers for Disease Control ACE distributions were similar. Retrospective and prospective measures of adversity showed moderate agreement ($r = .47$, $p < .001$; weighted Kappa = .31, 95% CI: .27–.35). Both associated with all midlife outcomes. As compared to prospective ACEs, retrospective ACEs showed stronger associations with life outcomes that were subjectively assessed, and weaker associations with life outcomes that were objectively assessed. Recalled ACEs and poor subjective outcomes were correlated regardless of whether prospectively recorded ACEs were evident. Individuals who recalled more ACEs than had been prospectively recorded were more neurotic than average, and individuals who recalled fewer ACEs than recorded were more agreeable. Prospective ACE records confirm associations between childhood adversity and negative life outcomes found previously using retrospective ACE reports. However, more agreeable and neurotic dispositions may, respectively, bias retrospective ACE measures toward underestimating the impact of adversity on objectively measured life outcomes and overestimating the impact of adversity on self-reported outcomes. Associations between personality factors and the propensity to recall adversity were extremely modest and warrant further investigation. Risk predictions based on retrospective ACE reports should utilize objective outcome measures. Where objective outcome measurements are difficult to obtain, correction factors may be warranted.

Su, S., Jimenez, M. P., Roberts, C. T., & Loucks, E. B. (2015). [The role of adverse childhood experiences in cardiovascular disease risk: A review with emphasis on plausible mechanisms](#). *Current Cardiology Reports*, 17(10), 88.
DOI:10.1007/s11886-015-0645-1

Childhood adversity, characterized by abuse, neglect, and household dysfunction, is a problem that exerts a significant impact on individuals, families, and society. Growing evidence suggests that adverse childhood experiences (ACEs) are associated with health decline in adulthood, including cardiovascular disease (CVD). In the current review, we first provide an overview of the association between ACEs and CVD risk, with updates on the latest epidemiological evidence. Second, we briefly review plausible pathways by which ACEs could influence CVD risk, including traditional risk factors and novel mechanisms. Finally, we highlight the potential implications of ACEs in clinical and public health. Information gleaned from this review should help physicians and researchers in better understanding potential long-term consequences of ACEs and considering adapting current strategies in treatment or intervention for patients with ACEs.

Flaherty, E. G., Thompson, R., Dubowitz, H., Harvey, E. M., English, D. J., Proctor, L. J., & Runyan, D. K. (2013). [Adverse childhood experiences and child health in early adolescence](#). *JAMA Pediatrics*, 167(7), 622–629.
DOI:10.1001/jamapediatrics.2013.22

Child maltreatment and other adverse childhood experiences, especially when recent and ongoing, affect adolescent health. Efforts to intervene and prevent adverse childhood exposures should begin early in life but continue throughout childhood and adolescence. To examine the relationship between previous adverse childhood experiences and somatic concerns and health problems in early adolescence, as well as the role of the timing of adverse exposures. Prospective analysis of the Longitudinal Studies of Child Abuse and Neglect interview and questionnaire data when target

children were 4, 6, 8, 12, and 14 years old. Children with reported or at risk for maltreatment in the South, East, Midwest, Northwest, and Southwest United States Longitudinal Studies of Child Abuse and Neglect sites. A total of 933 children who completed an interview at age 14 years, including health outcomes. Eight categories of adversity (psychological maltreatment, physical abuse, sexual abuse, neglect, caregiver's substance use/alcohol abuse, caregiver's depressive symptoms, caregiver treated violently, and criminal behavior in the household) experienced during the first 6 years of life, the second 6 years of life, the most recent 2 years, and overall adversity. Child health problems including poor health, illness requiring a doctor, somatic concerns, and any health problem at age 14 years. More than 90% of the youth had experienced an adverse childhood event by age 14 years. There was a graded relationship between adverse childhood exposures and any health problem, while 2 and 3 or more adverse exposures were associated with somatic concerns. Recent adversity appeared to uniquely predict poor health, somatic concerns, and any health problem. Childhood adversities, particularly recent adversities, already show an impact on health outcomes by early adolescence. Increased efforts to prevent and mitigate these experiences may improve the health outcome for adolescents and adults.

Florence, C., Brown, D. S., Fang, X., & Thompson, H. F. (2013). [Health care costs associated with child maltreatment: Impact on Medicaid](#). *Pediatrics*, 132(2), 312–318.
DOI:10.1542/peds.2012-2212

To estimate the increased Medicaid expenditures associated with child maltreatment. Data on child maltreatment were collected from the National Survey of Child and Adolescent Well Being, a nationally representative sample of cases investigated or assessed by local Child Protective Services agencies between October 1999 and December 2000. Medicaid claims data for 2000 to 2003 were obtained from the Medicaid Analytic Extract (MAX). Children from the National survey of Child and Adolescent Well-

Being who had Medicaid were matched to the MAX data by Social Security number or birthdate, gender, and zip code. Propensity score matching was used to select a comparison group from the MAX data. Two-part regression models were used to estimate the impact of child maltreatment on expenditures. Data with individual identifiers were obtained under confidentiality agreements with the collecting agencies. Children who were identified as maltreated or as being at risk of maltreatment incurred, on average, Medicaid expenditures that were >\$2600 higher per year compared with children not so identified. This finding accounted for ~9% of all Medicaid expenditures for children. Child maltreatment imposes a substantial financial burden on the Medicaid system. These expenses could be partially offset by increased investment in child maltreatment prevention.

Min, M. O., Minnes, S., Kim, H., & Singer, L. T. (2013). [Pathways linking childhood maltreatment and adult physical health](#). *Child Abuse & Neglect*, 37(6), 361-373. DOI:10.1016/j.chiabu.2012.09.008

This study examined whether a self-reported history of childhood maltreatment (physical, emotional, and sexual abuse and physical and emotional neglect) is related to poor adult physical health through health risk behaviors (obesity, substance dependence, and smoking), adverse life events, and psychological distress. Methods: Two hundred and seventy nine (279) women aged 31–54, primarily poor, urban, and African American with a history of substance use during pregnancy, were assessed for perceived physical health status using the Health Status Questionnaire (SF-36) and any reported chronic medical condition. Hierarchical multiple and logistic regression were used to test mediation, as well as to assess relative contributions of multiple mediators on physical health. Results: More than two-thirds ($n = 195$, 70%) of the sample reported at least 1 form of childhood maltreatment, with 42% ($n = 110$) having a lifetime history of substance dependence and 59% ($n = 162$) having a chronic medical condition. Controlling for age,

education, and race, childhood maltreatment was related to increased likelihood of lifetime history of substance dependence (OR = 1.19, 95% CI = 1.01–1.39), more adverse life events ($\beta = .14$), and greater psychological distress ($\beta = .21$). Psychological distress and adverse life events partially mediated the relationship between childhood maltreatment and perceived physical health, accounting for 42% of the association between childhood maltreatment and perceived physical health. Adverse life events accounted for 25% of the association between childhood maltreatment and chronic medical condition. Conclusions: Our findings provide additional evidence that the ill health effects associated with childhood maltreatment persist into adulthood. Adverse life events and psychological distress were key mechanisms shaping later physical health consequences associated with childhood maltreatment among relatively young urban women with a history of substance use. Practice implications: Health care providers should be aware that childhood maltreatment contributes to adult health problems. Interventions aimed at preventing child maltreatment and addressing life stress and psychological distress will improve long-term physical health among abused children, adults with such histories, as well as children who are likely to be affected by maternal history of childhood maltreatment.

Norman, R. E., Byambaa, M., De, R., Butchart, A., Scott, J., & Vos, T. (2012). [The long-term health consequences of child physical abuse, emotional abuse, and neglect: A systematic review and meta-analysis](#). *PLoS Medicine*, 9(11), e1001349. DOI:10.1371/journal.pmed.1001349

Child sexual abuse is considered a modifiable risk factor for mental disorders across the life course. However the long-term consequences of other forms of child maltreatment have not yet been systematically examined. The aim of this study was to summarise the evidence relating to the possible relationship between child physical abuse, emotional abuse, and neglect, and subsequent mental and physical health outcome.

Pretty, C., D O'Leary, D., Cairney, J., & Wade, T. J. (2013). [Adverse childhood experiences and the cardiovascular health of children: A cross-sectional study.](#) *BMC Pediatrics*, 13(1), 208–215. DOI:10.1186/1471-2431-13-208

Adverse childhood experiences (ACEs), such as abuse, household dysfunction, and neglect, have been shown to increase adults' risk of developing chronic conditions and risk factors for chronic conditions, including cardiovascular disease (CVD). Much less work has investigated the effect of ACEs on children's physical health status that may lead to adult chronic health conditions. Therefore, the present study examined the relationship between ACEs and early childhood risk factors for adult cardiovascular disease. Methods: 1 234 grade six to eight students participated in school-based data collection, which included resting measures of blood pressure (BP), heart rate (HR), body mass index (BMI) and waist circumference (WC). Parents of these children completed an inventory of ACEs taken from the Childhood Trust Events Survey. Linear regression models were used to assess the relationship between experiencing more than 4 ACEs experienced, systolic BP, HR, BMI and WC. In additional analysis, ACEs were assessed ordinally in their relationship with systolic BP, HR, and BMI as well as clinical obesity and hypertension status. Results: After adjustment for family education, income, age, sex, physical activity, and parental history of hypertension, and WC for HR models, four or more ACEs had a significant effect on HR ($b = 1.8$ bpm, 95% CI (0.1–3.6)) BMI ($b = 1.1$ kg/m², 95% CI (0.5–1.8)), and WC ($b = 3.6$ cm, 95% CI (1.8–5.3)). A dose–response relationship between ACE accumulation and both BMI and WC was also found to be significant. Furthermore, accumulation of 4 or more ACEs was significantly associated with clinical obesity (95th percentile), after controlling for the aforementioned covariates. Conclusions: In a community sample of grade six to eight children, accumulation of 4 or more ACEs significantly increased BMI, WC and resting HR. Therefore, risk factors related to reported associations between ACEs and cardiovascular outcomes among adults are identifiable in childhood suggesting earlier interventions to reduce CVD risk are required.

Shonkoff, J. P., Garner, A. S., & The Committee on Psychosocial Aspects of Child and Family Health, Committee on Early Childhood, Adoption, and Dependent Care, and Section on Developmental and Behavioral Pediatrics. (2012). [The lifelong effects of early childhood adversity and toxic stress](#). *Pediatrics*, 129(1), e232–e246. DOI:10.1542/peds.2011-2663

Advances in fields of inquiry as diverse as neuroscience, molecular biology, genomics, developmental psychology, epidemiology, sociology, and economics are catalyzing an important paradigm shift in our understanding of health and disease across the lifespan. This converging, multidisciplinary science of human development has profound implications for our ability to enhance the life prospects of children and to strengthen the social and economic fabric of society. Drawing on these multiple streams of investigation, this report presents an ecobiodevelopmental framework that illustrates how early experiences and environmental influences can leave a lasting signature on the genetic predispositions that affect emerging brain architecture and long-term health. The report also examines extensive evidence of the disruptive impacts of toxic stress, offering intriguing insights into causal mechanisms that link early adversity to later impairments in learning, behavior, and both physical and mental well-being. The implications of this framework for the practice of medicine, in general, and pediatrics, specifically, are potentially transformational. They suggest that many adult diseases should be viewed as developmental disorders that begin early in life and that persistent health disparities associated with poverty, discrimination, or maltreatment could be reduced by the alleviation of toxic stress in childhood. An ecobiodevelopmental framework also underscores the need for new thinking about the focus and boundaries of pediatric practice. It calls for pediatricians to serve as both front-line guardians of healthy child development and strategically positioned, community leaders to inform new science-based strategies that build strong foundations for educational achievement, economic productivity, responsible citizenship, and lifelong health.

Nicolaidis, C., McFarland, B., Curry, M., & Gerrity, M. (2009). Differences in physical and mental health symptoms and mental health utilization associated with intimate partner violence versus childhood abuse. *Psychosomatics*, 50(4), 340-346.
DOI:10.1176/appi.psy.50.4.340

There is ample evidence that both intimate-partner violence (IPV) and childhood abuse adversely affect the physical and mental health of adult women over the long term. In this study the authors assessed the associations between abuse, symptoms, and mental health utilization by performing a cross-sectional survey of 380 adult internal-medicine patients. They found that while both IPV and childhood abuse were associated with depressive and physical symptoms, IPV was independently associated with physical symptoms, and childhood abuse was independently associated with depression. Women with a history of childhood abuse had higher odds, whereas women with IPV had lower odds, of receiving care from mental health providers. They concluded that IPV and childhood abuse may have different effects on women's symptoms and mental health utilization.

Middlebrooks, J. S., & Audage, N. C. (2008). [The effects of childhood stress on health across the lifespan](https://stacks.cdc.gov/view/cdc/6978). Centers for Disease Control and Prevention.
<https://stacks.cdc.gov/view/cdc/6978>

This publication summarizes the research on childhood stress and its implications for adult health and well-being. Of particular interest is the stress caused by child abuse, neglect, and repeated exposure to intimate partner violence (IPV). This publication provides practitioners, especially those working in violence prevention, with ideas about how to incorporate this information into their work.

Bonomi, A. E, Anderson, M. L., Rivara, F. P., Cannon, E. A., Fishman, P. A., Carrell, D., Reid, R. J., & Thompson, R. S. (2008). [Health care utilization and costs associated with childhood abuse](#). *Journal of General Internal Medicine*, 23(3), 294–299.
DOI:10.1007/s11606-008-0516-1

Physical and sexual childhood abuse is associated with poor health across the lifespan. However, the association between these types of abuse and actual health care use and costs over the long run has not been documented. This study examined long-term health care utilization and costs associated with physical, sexual, or both physical and sexual childhood abuse. Three thousand three hundred thirty-three women (mean age, 47 years) were randomly selected from the membership files of a large integrated health care delivery system. Automated annual health care utilization and costs were assembled over an average of 7.4 years for women with physical only, sexual only, or both physical and sexual childhood abuse (as reported in a telephone survey), and for women without these abuse histories (reference group). Significantly higher annual health care use and costs were observed for women with a child abuse history compared to women without comparable abuse histories. The most pronounced use and costs were observed for women with a history of both physical and sexual child abuse. Total adjusted annual health care costs were 36% higher for women with both abuse types, 22% higher for women with physical abuse only, and 16% higher for women with sexual abuse only. Child abuse is associated with long-term elevated health care use and costs, particularly for women who suffer both physical and sexual abuse.

Gustafson, T. B., & Sarwer, D. B. (2004). [Childhood sexual abuse and obesity](#). *Obesity Reviews*, 5(3), 129–135. DOI:10.1111/j.1467-789X.2004.00145.x

The causes of the current obesity epidemic are multifactorial and include genetic, environmental, and individual factors. One potential risk factor may be the experience of childhood sexual abuse, which is remarkably common and is thought to affect up to one-third of women and one-eighth of men. A history of childhood sexual abuse is associated

with numerous psychological sequelae including depression, anxiety, substance abuse, somatization, and eating disorders. Relatively few studies have examined the relationship between childhood sexual abuse and adult obesity. These studies suggest at least a modest relationship between the two. Potential explanations for the relationship have focused on the role of disordered eating, particularly binge eating, as well as the possible 'adaptive function' of obesity in childhood sexual abuse survivors. Nevertheless, additional research on the relationship between childhood sexual abuse and obesity is clearly needed, not only to address the outstanding empirical issues but also to guide clinical care.

Kendall-Tackett, K. (2002). [The health effects of childhood abuse: Four pathways by which abuse can influence health](#). *Child Abuse & Neglect*, 26(6-7), 715-729.
DOI:10.1016/S0145-2134(02)00343-5

This paper describes four possible pathways by which childhood abuse relates to health problems in adults. Literature on the long-term effects of childhood abuse is organized in a health psychology framework describing behavioral, social, cognitive and emotional pathways. Key studies from the health psychology and behavioral medicine literature are included to demonstrate how these pathways relate to health. Childhood abuse puts people at risk of depression and PTSD, participating in harmful activities, having difficulties in relationships, and having negative beliefs and attitudes towards others. Each of these increases the likelihood of health problems, and they are highly related to each other. Childhood abuse is related to health via a complex matrix of behavioral, emotional, social and cognitive factors. Health outcomes for adult survivors are unlikely to improve until each of these factors is addressed.

Mental Health

Alligood, B., Fletcher, A., Vrshek-Schallhorn, S., & Jensen, M. (2024). [Rumination as a moderator of the relation between childhood adversity exposure and college students' psychological distress](#). *Journal of Trauma Studies in Education*, 3(2), 45–68. DOI:10.70085/jtse.v3i2.6073

American college students ($N = 598$) completed self-report questionnaires assessing rumination, psychological distress while attending college (general distress, anhedonic depression, anxious arousal), and exposure to specific types of childhood adversity (i.e., emotional abuse, sexual abuse, physical abuse, emotional neglect, and physical neglect). Latent Moderated Structural Equation Modeling indicated that 1) rumination was associated with all three indicators of psychological distress and 2) rumination moderated associations between childhood adversity exposure and college students' reports of general distress and anxious arousal such that associations were strongest at higher levels of rumination and weaker at lower levels of rumination. Implications regarding higher education professionals' efforts to support college student well-being are discussed.

Hutson, L. M., Dan, R., Brown, A. R., Esfand, S. M., Ruberto, V., Johns, E., Null, K. E., Ohashi, K., Khan, A., & Pizzagalli, D. A. (2024). [Childhood sexual abuse and lifetime depressive symptoms: The importance of type and timing of childhood emotional maltreatment](#). *Psychological Medicine*, 1–11. DOI:10.1017/S003329172400268X

Childhood sexual abuse (CSA) and emotional maltreatment are salient risk factors for the development of major depressive disorder (MDD) in women. However, the type- and timing-specific effects of emotional maltreatment experienced during adolescence on future depressive symptomatology in women with CSA have not been explored. The goal of this study was to fill this gap. In total, 203 women (ages 20–32) with current depressive symptoms and CSA (MDD/CSA), remitted depressive symptoms and CSA (rMDD/CSA), and current depressive symptoms without CSA (MDD/no CSA) were recruited from the

community and completed self-report measures. Depressive symptoms were assessed using the Beck Depression Inventory (BDI-II) and a detailed maltreatment history was collected using the Maltreatment and Abuse Chronology of Exposure (MACE). Differences in maltreatment exposure characteristics, including multiplicity and severity of maltreatment, as well as the chronologies of emotional maltreatment subtypes were compared among groups. A random forest machine-learning algorithm was utilized to assess the impact of exposure to emotional maltreatment subtypes at specific ages on current depressive symptoms. MDD/CSA women reported greater prevalence and severity of emotional maltreatment relative to rMDD/CSA and MDD/no CSA women [$F_{(2,196)} = 9.33, p < 0.001$], specifically from ages 12 to 18. The strongest predictor of current depressive symptoms was parental verbal abuse at age 18 for both MDD/CSA women (variable importance [VI] = 1.08, $p = 0.006$) and MDD/no CSA women (VI = 0.68, $p = 0.004$). Targeting emotional maltreatment during late adolescence might prove beneficial for future intervention efforts for MDD following CSA.

Ochi, S., & Dwivedi, Y. (2023). [Dissecting early life stress-induced adolescent depression through epigenomic approach](#). *Molecular Psychiatry*, 28, 141–153.

DOI:10.1038/s41380-022-01907-x

Early life stress (ELS), such as abuse and neglect during childhood, can lead to psychiatric disorders in later life. Previous studies have suggested that ELS can cause profound changes in gene expression through epigenetic mechanisms, which can lead to psychiatric disorders in adulthood; however, studies on epigenetic modifications associated with ELS and psychiatric disorders in adolescents are limited. Moreover, how these epigenetic modifications can lead to psychiatric disorders in adolescents is not fully understood. Commonly, DNA methylation, histone modification, and the regulation of noncoding RNAs have been attributed to the reprogramming of epigenetic profiling associated with ELS. Although only a few studies have attempted to examine epigenetic

modifications in adolescents with ELS, existing evidence suggests that there are commonalities and differences in epigenetic profiling between adolescents and adults. In addition, epigenetic modifications are sex-dependent and are influenced by the type of ELS. In this review, we have critically evaluated the current evidence on epigenetic modifications in adolescents with ELS, particularly DNA methylation and the expression of microRNAs in both preclinical models and humans. We have also clarified the impact of ELS on psychiatric disorders in adolescents to predict the development of neuropsychiatric disorders and to prevent and recover these disorders through personalized medicine.

Negriff S. (2021). [Childhood adversities and mental health outcomes: Does the perception or age of the event matter?](#) *Development and Psychopathology*, 33(3), 778–791. DOI:10.1017/S0954579420000048

The current study extends knowledge regarding the individual contribution of different adverse experiences to mental health symptoms in late adolescence by including the perception of how upsetting each experience was to the adolescent and the age at the first occurrence. We also sought to move beyond sum scores of adverse experiences by using a person-centered approach to classifying individuals with similar co-occurrence of adversities. Data came from a longitudinal study of maltreatment on adolescent development (N=454). Self-reported childhood adversities were assessed at Wave 4 (average of 7 years post-baseline) and examined in relation to current mental health symptoms (depression, PTSD, anxiety, and externalizing). The results indicate that the use of an adversity sum score obscures information about the importance of individual adversities, though was a potent predictor of all mental health outcomes. Additionally, the impact of age of occurrence varied based on the adversity and outcome while the perception of the event did not add much unique variance. Finally, the latent class analyses provided unique information about the patterns of co-occurring adversity in this

sample, and that membership in either of the multiple adversity classes was associated with more mental health symptoms.

Radell, M. L., Abo Hamza, E. G., Daghustani, W. H., Perveen, A., & Moustafa, A. A. (2021). [The impact of different types of abuse on depression](#). *Depression Research and Treatment*, 2021(1), 6654503. DOI:10.1155/2021/6654503

Despite a large amount of research on depression and abuse, there is still a controversy on how abuse is measured and on childhood trauma's effect on the physiological function of adults. Here, we attempt to clarify the relationship between different types of abuse and depression while focusing on childhood abuse. This article, unlike prior research, provides an overview that addresses physical, psychological, and sexual abuse and their psychological impact on the victims. Results show that abuse is a vulnerability factor for a variety of mental and physical health problems and that psychological abuse is strongly associated with depression. More research is needed to understand (a) the role of abuse in the development and maintenance of depression and, in particular, longitudinal studies that also account for the large number of risk and protective factors that influence this relationship and (b) how different types of abuse can influence response to treatment among survivors with depression, in order to provide effective trauma-focused approaches to manage depressive symptoms.

Merrick, M. T., Ports, K. A., Ford, D. C., Afifi, T. O., Gershoff, E. T., & Grogan-Kaylor, A. (2017). [Unpacking the impact of adverse childhood experiences on adult mental health](#). *Child Abuse & Neglect*, 69, 10–19. DOI:10.1016/j.chiabu.2017.03.016

Exposure to childhood adversity has an impact on adult mental health, increasing the risk for depression and suicide. Associations between Adverse Childhood Experiences (ACEs) and several adult mental and behavioral health outcomes are well documented in the literature, establishing the need for prevention. The current study analyzes the

relationship between an expanded ACE score that includes being spanked as a child and adult mental health outcomes by examining each ACE separately to determine the contribution of each ACE. Data were drawn from Wave II of the CDC-Kaiser ACE Study, consisting of 7465 adult members of Kaiser Permanente in southern California. Dichotomous variables corresponding to each of the 11 ACE categories were created, with ACE score ranging from 0 to 11 corresponding to the total number of ACEs experienced. Multiple logistic regression modeling was used to examine the relationship between ACEs and adult mental health outcomes adjusting for sociodemographic covariates. Results indicated a graded dose-response relationship between the expanded ACE score and the likelihood of moderate to heavy drinking, drug use, depressed affect, and suicide attempts in adulthood. In the adjusted models, being spanked as a child was significantly associated with all self-reported mental health outcomes. Over 80% of the sample reported exposure to at least one ACE, signifying the potential to capture experiences not previously considered by traditional ACE indices. The findings highlight the importance of examining both cumulative ACE scores and individual ACEs on adult health outcomes to better understand key risk and protective factors for future prevention efforts.

Cristóbal-Narváez, P., Sheinbaum, T., Ballespí, S., Mitjavila, M., Myin-Germeys, I., Kwapil, T. R., & Barrantes-Vidal, N. (2016). [Impact of adverse childhood experiences on psychotic-like symptoms and stress reactivity in daily life in nonclinical young adults](https://doi.org/10.1371/journal.pone.0153557). *PloS One*, 11(4), e0153557. DOI:10.1371/journal.pone.0153557

There is increasing interest in elucidating the association of different childhood adversities with psychosis-spectrum symptoms as well as the mechanistic processes involved. This study used experience sampling methodology to examine (i) associations of a range of childhood adversities with psychosis symptom domains in daily life; (ii) whether associations of abuse and neglect with symptoms are consistent across self-report and interview methods of trauma assessment; and (iii) the role of different adversities in moderating affective, psychotic-like, and paranoid reactivity to situational

and social stressors. A total of 206 nonclinical young adults were administered self-report and interview measures to assess childhood abuse, neglect, bullying, losses, and general traumatic events. Participants received personal digital assistants that signaled them randomly eight times daily for one week to complete questionnaires about current experiences, including symptoms, affect, and stress. Self-reported and interview-based abuse and neglect were associated with psychotic-like and paranoid symptoms, whereas only self-reported neglect was associated with negative-like symptoms. Bullying was associated with psychotic-like symptoms. Losses and general traumatic events were not directly associated with any of the symptom domains. All the childhood adversities were associated with stress reactivity in daily life. Interpersonal adversities (abuse, neglect, bullying, and losses) moderated psychotic-like and/or paranoid reactivity to situational and social stressors, whereas general traumatic events moderated psychotic-like reactivity to situational stress. Also, different interpersonal adversities exacerbated psychotic-like and/or paranoid symptoms in response to distinct social stressors. The present study provides a unique examination of how childhood adversities impact the expression of spectrum symptoms in the real world and lends support to the notion that stress reactivity is a mechanism implicated in the experience of reality distortion in individuals exposed to childhood trauma. Investigating the interplay between childhood experience and current context is relevant for uncovering potential pathways to the extended psychosis phenotype.

St Clair, M. C., Croudace, T., Dunn, V. J., Jones, P. B., Herbert, J., & Goodyer, I. M. (2014). [Childhood adversity subtypes and depressive symptoms in early and late adolescence](#). *Development and Psychopathology*, 27(3), 885–899.
DOI:10.1017/S0954579414000625

Within a longitudinal study of 1,005 adolescents, we investigated how exposure to childhood psychosocial adversities was associated with the emergence of depressive symptoms between 14 and 17 years of age. The cohort was classified into four empirically

determined adversity subtypes for two age periods in childhood (0–5 and 6–11 years). One subtype reflects normative/optimal family environments (n = 692, 69%), while the other three subtypes reflect differential suboptimal family environments (aberrant parenting: n = 71, 7%; discordant: n = 185, 18%; and hazardous: n = 57, 6%). Parent-rated child temperament at 14 years and adolescent self-reported recent negative life events in early and late adolescence were included in models implementing path analysis. There were gender-differentiated associations between childhood adversity subtypes and adolescent depressive symptoms. The discordant and hazardous subtypes were associated with elevated depressive symptoms in both genders but the aberrant parenting subtype only so in girls. Across adolescence the associations between early childhood adversity and depressive symptoms diminished for boys but remained for girls. Emotional temperament was also associated with depressive symptoms in both genders, while proximal negative life events related to depressive symptoms in girls only. There may be neurodevelopmental factors that emerge in adolescence that reduce depressogenic symptoms in boys but increase such formation in girls.

Sugaya, L., Hasin, D. S., Olfson, M., Lin, K. H., Grant, B. F., & Blanco, C. (2012). [Child physical abuse and adult mental health: A national study](#). *Journal of Traumatic Stress*, 25(4), 384–392. DOI:10.1002/jts.21719

This study characterizes adults who report being physically abused during childhood, and examines associations of reported type and frequency of abuse with adult mental health. Data were derived from the 2000–2001 and 2004–2005 National Epidemiologic Survey on Alcohol and Related Conditions, a large cross-sectional survey of a representative sample (N = 43,093) of the U.S. population. Weighted means, frequencies, and odds ratios of sociodemographic correlates and prevalence of psychiatric disorders were computed. Logistic regression models were used to examine the strength of associations between child physical abuse and adult psychiatric disorders adjusted for sociodemographic

characteristics, other childhood adversities, and comorbid psychiatric disorders. Child physical abuse was reported by 8% of the sample and was frequently accompanied by other childhood adversities. Child physical abuse was associated with significantly increased adjusted odds ratios (AORs) of a broad range of DSM-IV psychiatric disorders (AOR = 1.16–2.28), especially attention-deficit hyperactivity disorder, posttraumatic stress disorder, and bipolar disorder. A dose-response relationship was observed between frequency of abuse and several adult psychiatric disorder groups; higher frequencies of assault were significantly associated with increasing adjusted odds. The long-lasting deleterious effects of child physical abuse underscore the urgency of developing public health policies aimed at early recognition and prevention.

Mills, R., Alati, R., O'Callaghan, M., Najman, J. M., Williams, G. M., Bor, W., & Strathearn, L. (2011). [Child abuse and neglect and cognitive function at 14 years of age: Findings from a birth cohort](#). *Pediatrics*, 127(1), 4–10. DOI:10.1542/peds.2009–3479

Objective—Evidence is steadily accumulating that a preventable environmental hazard, child maltreatment, exerts causal influences on the development of long-standing patterns of antisocial behavior in humans. The relationship between child maltreatment and antisocial outcome, however, has never previously been tested in a large-scale study in which official-reports (rather than family member reports) of child abuse and neglect were incorporated, and genetic influences comprehensively controlled for. Method—We cross-referenced official-report data on child maltreatment from the Missouri Division of Social Services (DSS) with behavioral data from 4,432 epidemiologically-ascertained Missouri twins from the Missouri Twin Registry (MOTWIN). We performed a similar procedure for a clinically-ascertained sample of singleton children ascertained from families affected by alcohol dependence participating in the Collaborative Study on the Genetics of Alcoholism (COGA, n=428) in order to determine whether associations observed in the general population held true in an “enriched” sample at combined

inherited and environmental risk for antisocial development. Results—For both the twin and clinical samples, *additive* effects (not interactive effects) of maltreatment and inherited liability on antisocial development were confirmed, and were highly statistically significant. Conclusions—Child maltreatment exhibited causal influence on antisocial outcome when controlling for inherited liability in both the general population and in a clinically-ascertained sample. Official-report maltreatment data represents a critical resource for resolving competing hypotheses on genetic and environmental causation of child psychopathology, and for assessing intervention outcomes in efforts to prevent antisocial development.

Chen, L. P., Murad, M. H., Paras, M. L., Colbenson, K. M., Sattler, A. L., Goranson, E. N., Elamin, M. B., Seime, R. J., Shinozaki, G., Prokop, L. J., Zirakzadeh, A. (2010). [Sexual abuse and lifetime diagnosis of psychiatric disorders: Systematic review and meta-analysis](#). *Mayo Clinic Proceedings*, 85(7), 618–629. DOI:10.4065/mcp.2009.0583

The objective of this study was to assess the evidence for an association between sexual abuse and a lifetime diagnosis of psychiatric disorders. The authors performed a comprehensive search of nine databases from 1980–2008, limited to epidemiological studies. The search yielded 37 eligible studies, with 3,162,318 participants. There was a statistically significant association between sexual abuse and a lifetime diagnosis of anxiety disorder, depression, eating disorders, posttraumatic stress disorder, sleep disorders, and suicide attempts. Associations persisted regardless of the victim's sex or the age at which abuse occurred. There was no statistically significant association between sexual abuse and a diagnosis of schizophrenia or somatoform disorders. No longitudinal studies that assessed bipolar disorder or obsessive-compulsive disorder were found. Associations between sexual abuse and depression, eating disorders, and posttraumatic stress disorder were strengthened by a history of rape. Based on their review and meta-analysis, the authors concluded that a history of sexual abuse is associated with an increased risk of a lifetime diagnosis of multiple psychiatric disorders.

Spataro, J., Mullen, P. E., Burgess, P. M., Wells, D. L., & Moss, S. A. (2004). [Impact of child sexual abuse on mental health: Prospective study in males and females](#). *British Journal of Psychiatry*, 184(5), 416–421. DOI:10.1192/bjp.184.5.416

The authors of this study were concerned with the lack of prospective studies and data on male victims of child sexual abuse. They examined the association between child sexual abuse in both boys and girls and subsequent treatment for mental disorder using a prospective cohort design. Children ($n=1612$; 1327 female) ascertained as sexually abused at the time had their histories of mental health treatment established by data linkage and compared with the general population of the same age over a specified period. The authors found that both male and female victims of abuse had significantly higher rates of psychiatric treatment during the study period than general population controls (12.4% v. 3.6%). Rates were higher for childhood mental disorders, personality disorders, anxiety disorders and major affective disorders, but not for schizophrenia. Male victims were significantly more likely to have had treatment than females (22.8% v.10.2%). The authors conclude that there is an association between child sexual abuse validated at the time and a subsequent increase in rates of childhood and adult mental disorders.

Molnar, B. E., Buka, S. L., & Kessler, R. C. (2001). [Child sexual abuse and subsequent psychopathology: Results from the national comorbidity survey](#). *American Journal of Public Health*, 91(5), 753–760. DOI:10.2105/ajph.91.5.753

This study examined the relationship between child sexual abuse (CSA) and subsequent onset of psychiatric disorders, accounting for other childhood adversities, CSA type, and chronicity of the abuse. Retrospective reports of CSA, other adversities, and psychiatric disorders were obtained by the National Comorbidity Survey, a nationally representative survey of the United States ($n = 5877$). CSA was reported by 13.5% of women and 2.5% of men. When other childhood adversities were controlled for, significant associations were found between CSA and subsequent onset of 14 mood, anxiety, and substance use disorders among women and 5 among men. In a subsample of respondents reporting no

other adversities, odds of depression and substance problems associated with CSA were higher. Among women, rape (vs molestation), knowing the perpetrator (vs strangers), and chronicity of CSA (vs isolated incidents) were associated with higher odds of some disorders. The authors concluded that CSA usually occurs as part of a larger syndrome of childhood adversities. Nonetheless, CSA, whether alone or in a larger adversity cluster, is associated with substantial increased risk of subsequent psychopathology.

Crime

Barnert, E. S., Schlichte, L. M., Tolliver, D. G., La Charite, J., Biely, C., Dudovitz, R., Leifheit, K., Russ, R., Sastry, N., Yama, C., Slavich, G. M., & Schickedanz, A. (2023). [Parents' adverse and positive childhood experiences and offspring involvement with the criminal legal system](https://doi.org/10.1001/jamanetworkopen.2023.39648). *JAMA Network Open*, 6(10), e2339648–e2339648. DOI:10.1001/jamanetworkopen.2023.39648

Intergenerational cycles of adversity likely increase one's risk of criminal legal system involvement, yet associations with potential contributors, such as parents' adverse childhood experiences (ACEs) and positive childhood experiences (PCEs), have not been explored. The study team analyzed data from the Panel Study of Income Dynamics (PSID), a nationally representative cohort study of families in the US. PSID-2013 survey data were merged with the 2014 PSID Childhood Retrospective Circumstances Study (CRCS), collected May 2014 to January 2015, which asked adults aged 18 to 97 years to retrospectively report on their childhood experiences. Parents and their adult children were linked in the data set. Data were analyzed from October 2022 to September 2023.

The child arrest outcome was regressed on parents' ACE and PCE scores using logistic regression models. In addition, multinomial logistic regression models were used to assess the associations of parents' ACE and PCE scores with the number of times their child was arrested and convicted. Of 12 985 eligible individuals, 8072 completed the CRCS. Among CRCS participants, there were 1854 eligible parent-child dyads (ie, parents and their adult children) that formed the analytic sample. The mean (SD) age of offspring at the time of CRCS completion was 38.5 (10.9) years, and 1076 offspring (51.3%) were female. Having 4 or more parental ACEs was associated with 1.91-fold (95% CI, 1.14–3.22) higher adjusted odds of arrest before age 26 and 3.22-fold (95% CI, 1.62–6.40) higher adjusted odds of conviction before age 26 years, compared with children of parents without ACEs. These associations persisted after controlling for parental PCEs. In this nationally representative study, children of parents with higher ACEs were at greater risk of arrest during adolescence and young adulthood, even after controlling for parents' PCEs.

Addressing and preventing childhood adversity through multigenerational life course approaches may help disrupt intergenerational pathways to the criminal legal system.

Kaufman-Parks, A. M., Longmore, M. A., Manning, W. D., & Giordano, P. C. (2023). [Understanding the effect of adverse childhood experiences on the risk of engaging in physical violence toward an intimate partner: The influence of relationship, social psychological, and sociodemographic contextual risk factors](#). *Child Abuse & Neglect*, 144, 106381. DOI:10.1016/j.chiabu.2023.106381

Adverse childhood experiences (ACEs) increase the risk of engaging in intimate partner violence (IPV) in later life. This study investigates the association between ACEs and engaging in physical violence toward a romantic partner in emerging adulthood while also accounting for proximal life experiences, including social psychological, intimate relationship, and sociodemographic characteristics. Participants and setting: This study draws on two waves of data from the Toledo Adolescent Relationships Study, a 19-year population-based longitudinal cohort study of adolescents transitioning to adulthood from Lucas County, Ohio (United States). This investigation includes 878 (399 men and 479 women) emerging adults. Methods: To evaluate the association between ACEs and IPV perpetration, two waves of survey data were used, collected in 2001 and 2011–2012. Results: ACEs had a cumulative effect on IPV, where each additional ACE increased the odds of engaging in IPV by 51.0% ($p < 0.001$). However, current drug use ($OR = 1.131, p < 0.05$), arguments between partners ($OR = 1.517, p < 0.01$), partner mistrust ($OR = 1.663, p < 0.001$), and jealousy and control ($OR = 1.412, p < 0.001$) were also significant correlates of IPV reports. Conclusions: ACEs are a significant predictor of IPV perpetration among emerging adults, even when accounting for more proximal risk factors. These findings suggest that individuals working with clients who engage in IPV would do well to address the long-term trauma impacts of early life adversity in addition to more proximal risk factors to reduce the risk of continued violence.

Yohros, A. (2023). Examining the relationship between adverse childhood experiences and juvenile recidivism: A systematic review and meta-analysis. *Trauma, Violence, & Abuse*, 24(3), 1640–1655. DOI:10.1177/15248380211073846

While the impact of trauma on delinquency and offending has been studied in great depth, less is known about the cumulative effects of adverse childhood experiences and how these experiences impact recidivism or reoffending outcomes of youth who already have justice system involvement. The main aim of this paper is to report on the results of a systematic review and meta-analysis on the relationship between Adverse Childhood Experiences and juvenile recidivism. Of particular interest, the paper examines to what extent, if any, ACEs can be used to predict youth reoffending outcomes, as well as investigates the nature of this relationship. The study utilizes quantitative metanalytical techniques to estimate the overall impact of Adverse Childhood Experiences on youth reoffending. Sixteen studies were selected after a comprehensive search of electronic databases covering the fields of social science, criminology, psychology, or related fields. Key findings demonstrate that Adverse Childhood Experiences increase the risk of youth recidivism, with effects varying amongst sample sizes. Narrative synthesis also shows key gender, racial, and ethnic differences as well as potential mechanisms in the cumulative trauma-reoffending relationship. These findings can further guide research and policy in the areas of trauma, juvenile justice, and crime prevention.

Modrowski, C. A., Chaplo, S. D., & Kerig, P. K. (2022). [Advancing our understanding of the risk factors associated with crossover youth in the child welfare and juvenile justice systems: A trauma-informed research agenda](#). *Clinical Child and Family Psychology Review*, 25(2), 283–299. DOI:10.1007/s10567-021-00370-4

Previous research has provided robust evidence demonstrating that a notable proportion of youth become involved in both the child welfare (CW) system and the juvenile justice (JJ) system, a population often referred to as crossover youth. Prior work has identified a number of risk factors associated with crossing over between these systems. However,

there are limitations to the extant literature, key among which is a lack of systematic attention to the influence of trauma exposure and posttraumatic sequelae on the crossover trajectory. In contrast, viewing this research through a trauma-informed lens promises to enhance our ability to integrate findings across studies and to derive theoretically derived hypotheses about underlying mechanisms which will better inform future research and the development of effective prevention and intervention efforts. Accordingly, the purpose of this article is to present a trauma-informed research agenda that would strengthen future research in the field. After providing a brief critique of the existing studies that has documented known risk factors associated with the crossover population, we outline ways in which future research could apply relevant theoretical trauma-informed approaches, including developmental traumatology, to further advance our knowledge of risk factors and mechanisms associated with the crossover trajectory. We conclude by discussing policy and system-wide implications related to the proposed research agenda.

Pierce, H., & Jones, M. S. (2022). Gender differences in the accumulation, timing, and duration of childhood adverse experiences and youth delinquency in fragile families. *Journal of Research in Crime and Delinquency*, 59(1), 3-43.
DOI:10.1177/00224278211003227

The purposes of this study are twofold. First, we explore how the accumulation, timing, and duration of ACEs influences youth delinquency. Second, because few studies to date have examined how the effect of ACEs may vary among different groups, we explore how these patterns may vary by gender. Analyses were based on data from the Fragile Families and Child Wellbeing Study (FFCW), which employs a national sample of urban-born, at-risk youth. The results showed that as the number of early ACEs experienced incrementally increases, the likelihood of youth reporting delinquent behavior also increases, even after adjusting for recent adversity. Moreover, exposure to early ACEs that are high but late, intermittent, or chronically high significantly increase the risk of youth

participating in delinquency. Our results also indicate that ACEs are significantly related to delinquency for girls, but not for boys. Prevention and intervention efforts should screen for ACEs—especially in early childhood. Given that the accumulation, timing, and duration of ACE exposure is linked to youth delinquency, interventions that target ACEs early may have greater success at reducing delinquency. Moreover, prevention programs need to consider gender-specific responses to ACEs and gender-specific intervention strategies.

Wolff, K. T., Cuevas, C., Intravia, J., Baglivio, M. T., & Epps, N. (2018). The effects of neighborhood context on exposure to adverse childhood experiences (ACE) among adolescents involved in the juvenile justice system: Latent classes and contextual effects. *Journal of Youth and Adolescence*, 47(11), 2279–2300.
DOI:10.1007/s10964-018-0887-5

Adverse childhood experiences (ACEs) have been identified as a key risk factor associated with a wide range of negative life outcomes, including juvenile delinquency. Much less work has explored whether certain combinations of ACEs, or typologies of trauma, exist, and whether or not these subgroups are differentially associated with certain youth-level and/or community-level characteristics. The current study uses latent class analysis to examine ACE typologies among a sample of over 92,000 juvenile offenders between the ages of 10 and 18 in the state of Florida (52% male, 37.3% White, 46.8% Black, 15.9% Hispanic). Multilevel multinomial logistic regression is used to assess the relationship between both individual- and community-level factors and class membership. The findings suggest that a total of five distinct ACE typologies exist among the sample of juvenile offenders, and age, race, and sex were significantly associated with class membership. Additionally, controlling for individual-level characteristics, community-level measures of immigrant concentration, residential instability, and two separate measures of concentrated disadvantage and affluence were significantly related to class membership. This study contributes to the understanding of adverse childhood experiences, and adds to existing knowledge regarding the relationship

between contextual factors and childhood abuse, maltreatment, and trauma. The identification of ACE subgroups with distinct characteristics may help guide prevention strategies and tailor treatment provided by the juvenile justice system.

Morrissey, M. B., Courtney, D., & Maschi, T. (2012). [Sexual abuse histories among incarcerated older adult offenders: A descriptive study](#). In E. A. Kalfoğlu & R. Faikoğlu (Eds.), *Sexual abuse: Breaking the silence* (pp. 21-30). InTech

Cashmore, J. (2011). [The link between child maltreatment and adolescent offending: Systems neglect of adolescents](#). *Family Matters*, (89), 31-41.

This paper is concerned with the nexus between abuse and neglect and adolescent offending in the lives of some children and young people, and the lack of a coordinated response to these by both the child protection and juvenile justice systems.

Gold, J., Sullivan, M. W., & Lewis, M. (2011). [The relation between abuse and violent delinquency: The conversion of shame to blame in juvenile offenders](#). *Child Abuse & Neglect*, 35(7), 459-467. DOI:10.1016/j.chiabu.2011.02.007

While the relationship between abusive parenting and violent delinquency has been well established, the cognitive and emotional processes by which this occurs remain relatively unidentified. The objective of this work is to apply a conceptual model linking abusive parenting © 2011. National Children's Advocacy Center. All rights reserved. Page 16 of 40 Adverse Effects/Economic Impact of Child Maltreatment: November 2015 Bibliography of Open-Source Publications to the conversion of shame into blaming others and therefore to violent delinquency. A retrospective study of 112 adolescents (90 male; 22 female; ages 12-19 years; M = 15.6; SD = 1.4) who were incarcerated in a juvenile detention facility pending criminal charges, completed measures of exposure to abusive and nonabusive

discipline, expressed and converted shame, and violent delinquency. Findings tend to confirm the conceptual model. Subjects who converted shame (i.e., low expressed shame, high blaming others) tended to have more exposure to abusive parenting and showed more violent delinquent behavior than their peers who showed expressed shame. Subjects who showed expressed shame (i.e., high expressed shame, low blaming others) showed less violent delinquency than those who showed converted shame. Abusive parenting impacts delinquency directly and indirectly through the effects of shame that is converted. Abusive parenting leads to the conversion of shame to blaming others, which in turn leads to violent delinquent behavior. For juvenile offenders, the conversion of shame into blaming others appears to contribute to pathological outcomes in relation to trauma. Translation of this work into clinical practice is recommended.

Ford, J. D., Elhai, J. D., Connor, D. F., & Frueh, B. C. (2010). [Poly-victimization and risk of posttraumatic, depressive, and substance use disorders and involvement in delinquency in a national sample of adolescents](#). *Journal of Adolescent Health*, 46(6), 545–552. DOI:10.1016/j.jadohealth.2009.11.212

Adolescents exposed to multiple forms of psychological trauma (“poly-victimization,” Finkelhor et al. *Child Abuse Negl* 2007;31:7–26) may be at high risk for psychiatric and behavioral problems. This study empirically identifies trauma profiles in a national sample of adolescents to ascertain correlates of poly-victimization. Latent Class analyses and logistic regression analyses were used with data from the National Survey of Adolescents to identify trauma profiles and each profile's risk of posttraumatic stress disorder, major depressive disorder, substance use disorders, and delinquency involvement and deviant peer group relationships. Poly-victimization classes were also compared to classes with trauma exposure of lesser complexity. Six mutually exclusive trauma profiles (latent classes) were identified. Four classes were characterized by high likelihood of poly-victimization, including abuse victims (8%), physical assault victims (9%), and community violence victims (15.5%). Poly-victimization class members,

especially abuse and assault victims, were more likely than do youth traumatized by witnessing violence or exposure to disaster/accident trauma to have psychiatric diagnosis and (independent of psychiatric diagnoses demographics) to be involved in delinquency with delinquent peers. Poly-victimization is prevalent among adolescents and places youth at high risk for psychiatric impairment and for delinquency. Moreover, poly-victimized youths' risk of delinquency cannot be fully accounted for by posttraumatic stress disorder, depression, or substance use problems, suggesting that adolescent healthcare providers should consider poly-victimization as a risk for behavioral and legal problems even when PTSD, depression, or addiction symptoms are not clinically significant.

Williams, J. H., Van Dorn, R. A., Bright, C. L., Jonson-Reid, M., & Nebbitt, V. E. (2010). [Child maltreatment and delinquency onset among African American adolescent males](#). *Research on Social Work Practice*, 20(3), 253-259.
DOI:10.1177/1049731509347865

Child welfare and criminology research have increasingly sought to better understand factors that increase the likelihood that abused and neglected children will become involved in the juvenile justice system. However, few studies have addressed this relationship among African American male adolescents. The current study examines the relationship between child maltreatment (i.e., neglect, physical abuse, sexual abuse, and other/mixed abuse) and the likelihood of a delinquency petition using a sample of African American males (N = 2,335) born before 1990. Multivariable logistic regression models compared those with a delinquency-based juvenile justice petition to those without. Results indicate that African American males with a history of neglect, physical abuse, or other/mixed abuse were more likely to be involved in the juvenile justice system than those without any child maltreatment. Additionally, multiple maltreatment reports, a prior history of mental health treatment, victimization, and having a parent who did not

complete high school also increased the likelihood of a delinquency petition. Implications for intervention and prevention are discussed.

Lansford, J. E., Miller-Johnson, S., Berlin, L. J., Dodge, K. A., Bates, J. E., & Pettit, G. S. (2007). [Early physical abuse and later violent delinquency: A prospective longitudinal study](#). *Child Maltreatment*, 12(3), 233–245. DOI:10.1177/1077559507301841

In this prospective longitudinal study of 574 children followed from age 5 to age 21, the authors examined the links between early physical abuse and violent delinquency and other socially relevant outcomes during late adolescence or early adulthood and the extent to which the child's race and gender moderate these links. Analyses of covariance indicated that individuals who had been physically abused in the first 5 years of life were at greater risk for being arrested as juveniles for violent, nonviolent, and status offenses. Moreover, physically abused youth were less likely to have graduated from high school and more likely to have been fired in the past year, to have been a teen parent, and to have been pregnant or impregnated someone in the past year while not married. These effects were more pronounced for African American than for European American youth and somewhat more pronounced for females than for males.

Widom, C. S. (1995). [Victims of childhood sexual abuse—later criminal consequences](#). *Research in Brief*, 1–8.

This Research in Brief reports the findings from an analysis of a specific type of maltreatment—childhood sexual abuse— and its possible association with criminal behavior later in life.

Risk-Taking Behaviors

Yoon, S., Yang, J., Wang, J., Boettner, B., & Browning, C. (2024). Child maltreatment and youth exposure to risky environments: Latent class analysis of youth activity spaces. *Child Abuse & Neglect*, 154, 106952. DOI:10.1016/j.chiabu.2024.106952

Child maltreatment may alter the way that adolescents engage in and interact within the places they visit in their daily routines, namely youth activity spaces. Thus, it is important to understand how maltreatment experiences are linked to adolescents' exposure to environmental and contextual risks within their activity spaces. The aim of the study was to explore the associations between child maltreatment and patterns of risk exposures within youth activity spaces among adolescents. Study participants were 1364 adolescents between the ages of 11 and 17, living in a Midwest state in the United States. We linked data from the Adolescent Health and Development in Context (AHDC) study and the Statewide Automated Child Welfare Information System (SACWIS). A three-step latent class analysis (LCA) was employed. Three contextual risk exposure classes were identified: 1) The *aggression/violence* class (7.7 %); 2) The *smoking and drinking* class (12.3 %); and 3) The *non-risk* class (80.0 %). Adolescents with more maltreatment reports were more likely to be in the *aggression/violence* class compared to the *non-risk* class. Capitalizing on the novel linkage between administrative child welfare records and ecological momentary assessment (EMA)-based youth spatial/environmental exposure data, we found a positive link between the number of maltreatment reports made to child protective services and membership in the *aggression/violence* class. Intervention efforts should be directed toward youths with a history of child maltreatment, ensuring that they have access to safe, structured, and non-violent environments during their daily routines.

Asutay, E., & Västfjäll, D. (2022). [The continuous and changing impact of affect on risky decision-making](#). *Scientific Reports*, 12(1), 10613. DOI:10.1038/s41598-022-14810-w

Affective experience has an important role in decision-making with recent theories suggesting a modulatory role of affect in ongoing subjective value computations. However, it is unclear how varying expectations and uncertainty dynamically influence affective experience and how dynamic representation of affect modulates risky choices. Using hierarchical Bayesian modeling on data from a risky choice task ($N = 101$), we find that the temporal integration of recently encountered choice parameters (expected value, uncertainty, and prediction errors) shapes affective experience and impacts subsequent choice behavior. Specifically, self-reported arousal prior to choice was associated with increased loss aversion, risk aversion, and choice consistency. Taken together, these findings provide clear behavioral evidence for continuous affective modulation of subjective value computations during risky decision-making.

Wade, M., Carroll, D., Fox, N. A., Zeanah, C. H., & Nelson, C. A. (2022). [Associations between early psychosocial deprivation, cognitive and psychiatric morbidity, and risk-taking behavior in adolescence](#). *Journal of Clinical Child and Adolescent Psychology*, 51(6), 850–863. DOI:10.1080/15374416.2020.1864737

Early psychosocial deprivation increases the risk of later cognitive and psychiatric problems, but not all deprived children show these difficulties. Here, we examine the extent to which psychosocial deprivation increases the risk of later cognitive and psychiatric difficulties and the downstream consequences of this for risk-taking behavior in adolescence. Children abandoned to institutions early in life were randomly assigned to care-as-usual or a foster care intervention during infancy. A separate group of never-institutionalized children was recruited as a comparison sample. The current follow-up study included 165 children (51% female), 113 with a history of institutionalization and 52 with no such history. At age 12, caregivers reported on children's psychiatric difficulties, and their IQ was assessed by standardized testing. At 16 years, risk-taking behavior was

assessed from youth self-reports. Latent profile analysis revealed three subgroups of children with varying levels of cognitive and psychiatric difficulties: Low-Morbidity ($n = 104, 62.7\%$), Medium-Morbidity ($n = 46, 27.9\%$), and High-Morbidity ($n = 15, 9.4\%$). Nearly half of the institutionalized children belonged to the High- or Medium-Morbidity subgroups; and institutionally-reared children were significantly more likely to belong to one of these profiles than never-institutionalized children. Compared to the Low-Morbidity subgroup, membership in the Medium-Morbidity profile was associated with higher levels of risk-taking behavior at age 16 years. Children who experience psychosocial deprivation are considerably more likely to present with elevated cognitive and psychiatric difficulties in early adolescence and, for some children, this elevation is linked to heightened risk-taking behavior in adolescence.

Warmingham, J. M., Handley, E. D., Russotti, J., Rogosch, F. A., & Cicchetti, D. (2021). Childhood attention problems mediate effects of child maltreatment on decision-making performance in emerging adulthood. *Developmental Psychology*, 57(3), 443–456. DOI:10.1037/dev0001154

Decision-making impairments during emerging adulthood confer risk for challenges in social and occupational roles and may increase the odds of developing health problems. Childhood maltreatment is related to maladaptation in cognitive and affective domains (e.g., executive functioning, emotion regulation) implicated in the development of decision-making capacities. This study investigates childhood maltreatment and subsequent childhood attention problems as developmental antecedents of decision making performance in emerging adulthood. At Wave 1, equal numbers of maltreated and non-maltreated children ($M_{age} = 11.28$, $SD = .97$; 51.5% female; mean family income: \$22,530/year) were recruited to take part in a research summer camp. The current study includes a subset of participants ($n = 379$) from Wave 1 who completed the Cambridge Gambling Task (CGT) at Wave 2 ($M_{age} = 19.68$, $SD = 1.12$; 77.3% Black/African American, 11.1% White, 7.7% Hispanic, 4.0% Other race). The CGT measured decision-making

performance by assessing betting behavior across trials that differed in probability of winning. ANOVA results showed that emerging adults who experienced maltreatment in childhood placed higher bets and less sensitively adjusted bets across trials varying in level of risk. Longitudinal structural equation modeling results indicated significant relationships between number of maltreatment subtypes and greater childhood inattention, controlling for IQ. In turn, greater attention problems in childhood predicted worse risk adjustment, or ability to modify betting based on the probability of winning on CGT trials. This mediated path shows one process by which maltreatment negatively affects decision making and risk taking processes in emerging adulthood.

Diaz, A., Shankar, V., Nucci-Sack, A., Linares, L. O., Salandy, A., Strickler, H. D., Burk, R. D., & Schlecht, N. F. (2020). [Effect of child abuse and neglect on risk behaviors in inner city minority female adolescents and young adults](#). *Child Abuse & Neglect*, 101, 104347. DOI:10.1016/j.chiabu.2019.104347

Over six million children each year are referred to child protective services for child abuse (sexual, physical and emotional) and neglect (physical and emotional). While the relationship between child sexual abuse and sexually transmitted infections has been documented, there has been little research regarding the effects of other forms of maltreatment. 882 inner-city females aged 12–20 years of age seen at a large adolescent and young adult (AYA) health center in New York City between 2012–2017. History of maltreatment was assessed using the Childhood Trauma Questionnaire. Associations with depressive symptoms, antisocial behavior, peer deviancy, drug/alcohol use, and risky sexual behaviors were assessed. History of maltreatment was common in our cohort of inner-city AYA females, with 59.6 % reporting any type of maltreatment, including sexual abuse (17.5 %), physical abuse (19.5 %) or neglect (26.2 %), and emotional abuse (30.7 %) or neglect (40.4 %). We observed significant associations between all forms of maltreatment and risk of depression, drug/alcohol use, antisocial behaviors, peer deviancy, and risky sexual risk behaviors (including having a higher number of sexual

partners, having a sexual partner 5+ years older, and anal sex). Physical and emotional abuse were associated with having unprotected sex while under the influence of drugs/alcohol. Reporting a history of maltreatment was associated with an increased likelihood of engaging in risky sexual and antisocial behaviors, as well as depression in inner-city female youth. These data highlight the broad, lingering repercussions of all types of child maltreatment.

Wang, Z. Y., Hu, M., Yu, T. L., & Yang, J. (2019). [The relationship between childhood maltreatment and risky sexual behaviors: A meta-analysis](#). *International Journal of Environmental Research and Public Health*, 16(19), 3666.
DOI:10.3390/ijerph16193666

Childhood maltreatment is associated with risky sexual behaviors (RSBs). Previous systematic reviews and meta-analysis focused only on the relationship between childhood sexual abuse and RSBs, thus the association between childhood maltreatment and RSBs has yet to be systematically and quantitatively reviewed. We aimed to provide a systematic meta-analysis exploring the effect of childhood maltreatment and its subtypes on subsequent RSBs in adolescence and adulthood. PubMed, Google Scholar, EMBASE, Medline were searched for qualified articles up to April 2019. We calculated the pooled risk estimates using either the random-effect model or fixed-effect model. The potential heterogeneity moderators were identified by subgroup and sensitivity analysis. Overall, childhood maltreatment was significantly associated with an early sexual debut (odds ratio (OR) = 2.22; 95% confidence interval (CI): 1.64–3.00), multiple sexual partners (OR = 2.22; 95% CI: 1.78–2.76), transactional sex (OR = 3.05; 95% CI: 1.92–4.86) and unprotected sex (OR = 1.59; 95% CI: 1.22–2.09). Additionally, different types of childhood maltreatment were also significantly associated with higher risk of RSBs. Relevant heterogeneity moderators have been identified by subgroup analysis. Sensitivity analysis yielded consistent results. Childhood maltreatment is significantly associated with risky sexual behaviors. The current meta-analysis indicates it is vital to protect children from

any types of maltreatment and provide health education and support for maltreated individuals.

Campbell, J. A., Walker, R. J., & Egede, L. E. (2016). [Associations between adverse childhood experiences, high-risk behaviors, and morbidity in adulthood.](#) *American Journal of Preventive Medicine*, 50(3), 344-352.
DOI:10.1016/j.amepre.2015.07.022

Adverse childhood experiences (ACEs) are associated with early mortality and morbidity. This study evaluated the association among ACEs, high-risk health behaviors, and comorbid conditions, as well as the independent effect of ACE components. Data were analyzed on 48,526 U.S. adults from five states in the 2011 Behavioral Risk Factor Surveillance System survey. Exposures included psychological, physical, and sexual forms of abuse as well as household dysfunction such as substance abuse, mental illness, violence, and incarceration. Main outcome measures included risky behaviors and morbidity measures, including binge drinking, heavy drinking, current smoking, high-risk HIV behavior, obesity, diabetes, myocardial infarction, coronary heart disease, stroke, depression, disability caused by poor health, and use of special equipment because of disability. Multiple logistic regression assessed the independent relationship between ACE score categories and risky behaviors/comorbidities in adulthood, and assessed the independent relationship between individual ACE components and risky behaviors/comorbid conditions in adulthood controlling for covariates. A total of 55.4% of respondents reported at least one ACE and 13.7% reported four or more ACEs. An ACE score ≥4 was associated with increased odds for binge drinking, heavy drinking, smoking, risky HIV behavior, diabetes, myocardial infarction, coronary heart disease, stroke, depression, disability caused by health, and use of special equipment because of disability. In addition, the individual components had different effects on risky behavior and comorbidities. In addition to having a cumulative effect, individual ACE components have

differential relationships with risky behaviors, morbidity, and disability in adulthood after controlling for important confounders.

Fowler, P. J., Motley, D., Zhang, J., Rolls-Reutz, J., & Landsverk, J. (2015). Adolescent maltreatment in the child welfare system and developmental patterns of sexual risk behaviors. *Child Maltreatment*, 20(1), 50–60. DOI:10.1177/1077559514548701

In this longitudinal study, we tested whether adolescent maltreatment and out-of-home placement as a response to maltreatment altered developmental patterns of sexual risk behaviors in a nationally representative sample of youth involved in the child welfare system. Participants included adolescents aged 13 to 17 ($M = 15.5$, $SD = 1.49$) at baseline ($n = 714$), followed over 18 months. Computer-assisted interviews were used to collect self-reported sexual practices and experiences of physical and psychological abuse at both time points. Latent transition analyses were used to identify three patterns of sexual risk behaviors: abstainers, safe sex with multiple partners, and unsafe sex with multiple partners. Most adolescents transitioned to safer sexual behavior patterns over time. Adolescents exhibiting the riskiest sexual practices at baseline were most likely to report subsequent abuse and less likely to be placed into out-of-home care. Findings provide a more nuanced understanding of sexual risk among child welfare-involved adolescents and inform practices to promote positive transitions within the system.

Jones, D. J., Lewis, T., Litrownik, A., Thompson, R., Proctor, L. J., Isbell, P., Dubowitz, H., English, D., Jones, B., Nagin, D., & Runyan, D. (2013). [Linking childhood sexual abuse and early adolescent risk behavior: The intervening role of internalizing and externalizing problems](#). *Journal of Abnormal Child Psychology*, 41(1), 139–150. DOI:10.1007/s10802-012-9656-1

A robust literature links childhood sexual abuse (CSA) to later substance use and sexual risk behavior; yet, relatively little empirical attention has been devoted to identifying the

mechanisms linking CSA to risky behavior among youth, with even less work examining such processes in boys. With the aim of addressing this gap in the literature, the current study examined the indirect effect of childhood sexual abuse (CSA; from age 2 to 12) trajectory group on risky behavior at age 14 (alcohol use & sexual intercourse) via the intervening role of caregiver-reported internalizing and externalizing problems at age 12. Analyses were conducted with a subsample of youth ($n = 657$ sexual intercourse; $n = 667$ alcohol use) from the Longitudinal Studies of Child Abuse and Neglect (LONGSCAN), a multisite prospective study of youth at risk for maltreatment. For boys and girls, there was an indirect effect from CSA to sexual intercourse through externalizing problems. The same pattern emerged for alcohol use, but only for girls. Findings did not support an indirect path through internalizing problems for either boys or girls for either outcome. Findings suggest more focal targets for prevention efforts aimed at maintaining the health and safety of maltreated boys and girls during the adolescent transition.

Noll, J. G., Shenk, C. E., Barnes, J. E., & Haralson, K. J. (2013). [Association of maltreatment with high-risk internet behaviors and offline encounters](#). *Pediatrics*, 131(2), e510–e517. DOI:10.1542/peds.2012-1281

High-risk Internet behaviors, including viewing sexually explicit content, provocative social networking profiles, and entertaining online sexual solicitations, were examined in a sample of maltreated and nonmaltreated adolescent girls aged 14 to 17 years. The impact of Internet behaviors on subsequent offline meetings was observed over 12 to 16 months. This study tested 2 main hypotheses: (1) maltreatment would be a unique contributor to high-risk Internet behaviors and (2) high-quality parenting would dampen adolescents' propensity to engage in high-risk Internet behaviors and to participate in offline meetings. Online and offline behaviors and parenting quality were gleaned from 251 adolescent girls, 130 of whom experienced substantiated maltreatment and 121 of whom were demographically matched comparison girls. Parents reported on adolescent

behaviors and on the level of Internet monitoring in the home. Social networking profiles were objectively coded for provocative self-presentations. Offline meetings with persons first met online were assessed 12 to 16 months later. Thirty percent of adolescents reported having offline meetings. Maltreatment, adolescent behavioral problems, and low cognitive ability were uniquely associated with high-risk Internet behaviors. Exposure to sexual content, creating highrisk social networking profiles, and receiving online sexual solicitations were independent predictors of subsequent offline meetings. High-quality parenting and parental monitoring moderated the associations between adolescent risk factors and Internet behaviors, whereas use of parental control software did not. Treatment modalities for maltreated adolescents should be enhanced to include Internet safety literacy. Adolescents and parents should be aware of how online self-presentations and other Internet behaviors can increase vulnerability for Internetinitiated victimization.

Danielson, C. K., Macdonald, A., Amstadter, A. B., Hanson, R., de Arellano, M. A., Saunders, B. E., & Kilpatrick, D. G. (2010). [Risky behaviors and depression in conjunction with or in the absence of—lifetime history of PTSD among sexually abused adolescents](#). *Child Maltreatment*, 15(1), 101–107. DOI:10.1177/1077559509350075

While posttraumatic stress disorder (PTSD) is often considered the primary problematic outcome of child sexual abuse (CSA), a number of other, relatively understudied negative sequelae appear to be prevalent as well. The authors studied data from 269 adolescents with a CSA history from the National Survey of Adolescents–Replication Study to examine the prevalence of risky behaviors (i.e., problematic alcohol and drug use, delinquent behavior) and depression in this sample. The frequencies of these problems in youth with and without a history of PTSD also were examined. Results indicated that risky behaviors and depression were reported as or more frequently than PTSD. Among youth with a history of PTSD, depression and delinquent behavior were more common than among those without a history of PTSD. However, there were no differences between adolescents

with and without a history of PTSD in reported problematic substance use. Findings highlight the need for comprehensive trauma-informed interventions for CSA-exposed adolescents.

Hillis, S. D., Anda, R. F., Felitti V. J., & Marchbanks, P. A. (2001). [Adverse childhood experiences and sexual risk behaviors in women: A retrospective cohort study.](#) *Family Planning Perspectives*, 33(5), 206–211.

Adverse childhood experiences such as physical abuse and sexual abuse have been shown to be related to subsequent unintended pregnancies and infection with sexually transmitted diseases. However, the extent to which sexual risk behaviors in women are associated with exposure to adverse experiences during childhood is not well-understood. A total of 5,060 female members of a managed care organization provided information about seven categories of adverse childhood experiences: having experienced emotional, physical or sexual abuse; or having had a battered mother or substance-abusing, mentally ill or criminal household members. Logistic regression was used to model the association between cumulative categories of up to seven adverse childhood experiences and such sexual risk behaviors as early onset of intercourse, 30 or more sexual partners and self-perception as being at risk for AIDS. Each category of adverse childhood experiences was associated with an increased risk of intercourse by age 15 with perceiving oneself as being at risk of AIDS and with having had 30 or more partners. After adjustment for the effects of age at interview and race, women who experienced rising numbers of types of adverse childhood experiences were increasingly likely to see themselves as being at risk of AIDS: Those with one such experience had a slightly elevated likelihood, while those with 4–5 or 6–7 such experiences had substantially elevated odds. Similarly, the number of types of adverse experiences was tied to the likelihood of having had 30 or more sexual partners, rising from odds of 1.6 for those with one type of adverse experience and 1.9 for those with two to odds of 8.2 among

those with 6–7. Finally, the chances that a woman first had sex by age 15 also rose progressively with increasing numbers of such experiences, from odds of 1.8 among those with one type of adverse childhood experience to 7.0 among those with 6–7. Among individuals with a history of adverse childhood experiences, risky sexual behavior may represent their attempts to achieve intimate interpersonal connections. Having grown up in families unable to provide needed protection, such individuals may be unprepared to protect themselves and may underestimate the risks they take in their attempts to achieve intimacy. If so, coping with such problems represents a serious public health challenge.

Multiple Adverse Effects

Guiney, H., Caspi, A., Ambler, A., Belsky, J., Kokaua, J., Broadbent, J., Cheyne, K., Dickson, N., Hancox, R. J., & Poulton, R. (2024). [Childhood sexual abuse and pervasive problems across multiple life domains: Findings from a five-decade study](#). *Development and Psychopathology*, 36(1), 219–235.
DOI:10.1017/S0954579422001146

The aim of this study was to use longitudinal population-based data to examine the associations between childhood sexual abuse (CSA) and risk for adverse outcomes in multiple life domains across adulthood. In 937 individuals followed from birth to age 45y, we assessed associations between CSA (retrospectively reported at age 26y) and the experience of 22 adverse outcomes in seven domains (physical, mental, sexual, interpersonal, economic, antisocial, multi-domain) from young adulthood to midlife (26 to 45y). Analyses controlled for sex, socioeconomic status, prospectively reported child harm and household dysfunction adverse childhood experiences, and adult sexual assault, and considered different definitions of CSA. After adjusting for confounders, CSA survivors were more likely than their peers to experience internalizing, externalizing, and thought disorders, suicide attempts, health risk behaviors, systemic inflammation, poor oral health, sexually transmitted diseases, high-conflict relationships, benefit use, financial difficulties, antisocial behavior, and cumulative problems across multiple domains in adulthood. In sum, CSA was associated with multiple persistent problems across adulthood, even after adjusting for confounding life stressors, and the risk for particular problems incremented with CSA severity. The higher risk for most specific problems was small to moderate, but the cumulative long-term effects across multiple domains reflect considerable individual and societal burden.

Hales, G. K., Saribaz, Z. E., Debowska, A., & Rowe, R. (2023). [Links of adversity in childhood with mental and physical health outcomes: A systematic review of longitudinal mediating and moderating mechanisms](#). *Trauma, Violence & Abuse*, 24(3), 1465–1482. DOI:10.1177/15248380221075087

Adverse childhood experiences (ACEs) have been associated with causes of early death, addiction, mental illness, and poor health. However, studies investigating underlying mechanisms often rely on cross-sectional data or inappropriate study designs. To prevent the negative sequelae associated with ACEs, it is imperative to understand the mechanisms underlying the prospective relationship. The aim of this present review was to provide a synthesis and critical evaluation of the literature regarding the mechanisms underlying this relationship. A search in SCOPUS, MedLine via Ovid, PsycINFO via Ovid, and Web of Science was performed. Studies that utilised a prospective design assessing ACEs in childhood or adolescence, outcomes in adulthood, and analysed either a mediating or moderating relationship were included, unless the study relied on informant report or official records to assess childhood maltreatment types of ACEs. Twenty-two studies examining a longitudinal mediation or moderation were included in a systematic review. A review of the studies found links to psychopathology, delinquent and problem behaviours, poor physical health, and poor socioeconomic outcomes. A clear image of underlying mechanisms is not forthcoming due to (a) poor study design in relation to assessing longitudinal mechanisms, and (b) heterogeneity in the adversities, mechanisms, and outcomes assessed. Based on the review, several gaps and limitations are highlighted and discussed.

Tzouvara, V., Kupdere, P., Wilson, K., Matthews, L., Simpson, A., & Foye, U. (2023). Adverse childhood experiences, mental health, and social functioning: A scoping review of the literature. *Child Abuse & Neglect*, 139, 106092.
DOI:10.1016/j.chiabu.2023.106092

Adverse childhood experiences (ACEs) negatively impact people's physical and mental health and social functioning. Research literature focuses on the impact of ACEs on physical and mental health, yet to our knowledge, no study has examined the literature on ACEs, mental health, and social functioning outcomes. To map how ACEs, mental health, and social functioning outcomes have been defined, assessed, and studied in the empirical literature and identify gaps in the current research which need further investigation. A scoping review methodology following a five-step framework was implemented. Four databases were searched CINAHL, Ovid (Medline, Embase) and PsycInfo. The analysis involved both numerical and a narrative synthesis in line with the framework. Fifty-eight studies were included in the analysis, and three key issues were identified a) the limitations of research samples to date, b) the choice of outcome measures for ACEs, social and mental health outcomes, and c) the limitations of current study designs. The review demonstrates variability in the documentation of participant characteristics and inconsistencies in the definitions and applications of ACEs, social and mental health and related measurements. There is also a lack of longitudinal and experimental study designs, studies on severe mental illness, and studies including minority groups, adolescents, and older adults with mental health problems. Existing research is highly variable methodologically and limits our broader understanding of the relationships between ACEs, mental health, and social functioning outcomes. Future research should implement robust methodologies to provide evidence that could be used for developing evidence-based interventions.

Smith, K. E., & Pollak, S. D. (2021). [Rethinking concepts and categories for understanding the neurodevelopmental effects of childhood adversity](#). *Perspectives on Psychological Science*, 16(1), 67–93. DOI:10.1177/1745691620920725

Discovering the processes through which early adverse experiences affect children's nervous-system development, health, and behavior is critically important for developing effective interventions. However, advances in our understanding of these processes have been constrained by conceptualizations that rely on categories of adversity that are overlapping, have vague boundaries, and lack consistent biological evidence. Here, we discuss central problems in understanding the link between early-life adversity and children's brain development. We conclude by suggesting alternative formulations that hold promise for advancing knowledge about the neurobiological mechanisms through which adversity affects human development.

Child Welfare Information Gateway. (2019). [Long-term consequences of child abuse and neglect](#). <https://www.childwelfare.gov/resources/long-term-consequences-child-abuse-and-neglect/>

This factsheet provides an overview of some of the most common physical, psychological, behavioral, and societal consequences of child abuse and neglect, while acknowledging that much crossover among categories exists. This is an update on the document by the National Clearinghouse on Child Abuse and Neglect Information.

Mosley-Johnson, E., Garacci, E., Wagner, N., Mendez, C., Williams, J. S., & Egede, L. E. (2019). [Assessing the relationship between adverse childhood experiences and life satisfaction, psychological well-being, and social well-being: United States Longitudinal Cohort 1995–2014](#). *Quality of Life Research*, 28(4), 907–914. DOI:10.1007/s11136-018-2054-6

More than half of the U.S. population has experienced Adverse Childhood Experiences (ACE), which are linked to physical and mental health issues. This study examines the

relationship between ACEs and life satisfaction, psychological well-being, and social well-being. Data of 6323 participants from three waves of the Midlife Development in the United States (MIDUS) (1995–1996, 2004–2006, and 2011–2014) were used. Repeated measures models were used to test the associations between ACEs and all three psychosocial scales. Generalized estimating equations (GEE) were used to account for multiple survey measures. Adjusting for demographics and survey wave, GEE models were run for each ACE construct. After controlling for demographic covariables, those reporting an ACE had significantly lower levels of life satisfaction ($\beta=-0.20$, 95% CI $-0.26 - -0.15$) compared to those without an ACE. Those reporting higher ACE counts were associated with lower life satisfaction compared to those with no ACE ($\beta=-0.38$, 95% CI $-0.56 - -0.20$; $\beta=-0.36$, 95% CI $-0.46 - -0.27$; and $\beta=-0.13$, 95% CI $-0.19 - -0.08$ for ACE counts of 3, 2, and 1, respectively). Abuse ($\beta=-0.41$, 95% CI $-0.48 - -0.33$) and household dysfunction ($\beta=-0.18$, 95% CI $-0.25 - -0.10$) were associated with significantly lower life satisfaction. Overall, those exposed to ACEs had significantly lower sense of social well-being. In this sample of adults, ACEs were significantly associated with lower life satisfaction, lower psychological well-being, and lower social well-being, especially for those who report abuse and household dysfunction during childhood.

Watt, M. J., Weber, M. A., Davies, S. R., & Forster, G. L. (2017). [Impact of juvenile chronic stress on adult cortico-accumbal function: Implications for cognition and addiction](#). *Progress in Neuro-Psychopharmacology and Biological Psychiatry*, 79, 136–154. DOI:10.1016/j.pnpbp.2017.06.015

Repeated exposure to stress during childhood is associated with increased risk for neuropsychiatric illness, substance use disorders and other behavioral problems in adulthood. However, it is not clear how chronic childhood stress can lead to emergence of such a wide range of symptoms and disorders in later life. One possible explanation lies in stress-induced disruption to the development of specific brain regions associated with executive function and reward processing, deficits in which are common to the

disorders promoted by childhood stress. Evidence of aberrations in prefrontal cortex and nucleus accumbens function following repeated exposure of juvenile (pre- and adolescent) organisms to a variety of different stressors would account not only for the similarity in symptoms across the wide range of childhood stress-associated mental illnesses, but also their persistence into adulthood in the absence of further stress. Therefore, the goal of this review is to evaluate the current knowledge regarding disruption to executive function and reward processing in adult animals or humans exposed to chronic stress over the juvenile period, and the underlying neurobiology, with particular emphasis on the prefrontal cortex and nucleus accumbens. First, the role of these brain regions in mediating executive function and reward processing is highlighted. Second, the neurobehavioral development of these systems is discussed to illustrate how juvenile stress may exert long-lasting effects on prefrontal cortex-accumbal activity and related behavioral functions. Finally, a critical review of current animal and human findings is presented, which strongly supports the supposition that exposure to chronic stress (particularly social aggression and isolation in animal studies) in the juvenile period produces impairments in executive function in adulthood, especially in working memory and inhibitory control. Chronic juvenile stress also results in aberrations to reward processing and seeking, with increased sensitivity to drugs of abuse particularly noted in animal models, which is in line with greater incidence of substance use disorders seen in clinical studies. These consequences are potentially mediated by monoamine and glutamatergic dysfunction in the prefrontal cortex and nucleus accumbens, providing translatable therapeutic targets. However, the predominant use of male subjects and social-based stressors in preclinical studies points to a clear need for determining how both sex differences and stressor heterogeneity may differentially contribute to stress-induced changes to substrates mediating executive function and reward processing, before the impact of chronic juvenile stress in promoting adult psychopathology can be fully understood.

Mersky, J. P., Topitzes, J., & Reynolds, A. J. (2013). [Impacts of adverse childhood experiences on health, mental health, and substance use in early adulthood: A cohort study of an urban, minority sample in the US](#). *Child Abuse & Neglect*, 37(11), 917–925. DOI:10.1016/j.chiabu.2013.07.011

Research has shown that adverse childhood experiences (ACEs) increase the risk of poor health related outcomes in later life. Less is known about the consequences of ACEs in early adulthood or among diverse samples. Therefore, we investigated the impacts of differential exposure to ACEs on an urban, minority sample of young adults. Health, mental health, and substance use outcomes were examined alone and in aggregate. Potential moderating effects of sex were also explored. Data were derived from the Chicago Longitudinal Study, a panel investigation of individuals who were born in 1979 or 1980. Main-effect analyses were conducted with multivariate logistic and OLS regression. Sex differences were explored with stratified analysis, followed by tests of interaction effects with the full sample. Results confirmed that there was a robust association between ACEs and poor outcomes in early adulthood. Greater levels of adversity were associated with poorer self-rated health and life satisfaction, as well as more frequent depressive symptoms, anxiety, tobacco use, alcohol use, and marijuana use. Cumulative adversity also was associated with cumulative effects across domains. For instance, compared to individuals without an ACE, individuals exposed to multiple ACEs were more likely to have three or more poor outcomes (OR range = 2.75–10.15) and four or more poor outcomes (OR range = 3.93–15.18). No significant differences between males and females were detected. Given that the consequences of ACEs in early adulthood may lead to later morbidity and mortality, increased investment in programs and policies that prevent ACEs and ameliorate their impacts is warranted.

Stambaugh, L. F., Ringeisen, H., Casanueva, C. C., Tueller, S., Smith, K. E., & Dolan, M. (2013). [Adverse childhood experiences in NSCAW](https://www.acf.hhs.gov/sites/default/files/documents/opre/aces_brief_final_7_23_13_2.pdf). U. S. Department of Health and Human Services. https://www.acf.hhs.gov/sites/default/files/documents/opre/aces_brief_final_7_23_13_2.pdf

More than half of the children in the NSCAW II sample report four or more adverse childhood experiences. This finding is from a brief that uses the second cohort of the National Survey of Child and Adolescent Well-Being (NSCAW II) to examine rates of adverse childhood experiences among children who have been reported for maltreatment to the child welfare system. It also compares this sample's adverse experiences to those reported in the U.S. Centers for Disease Control and Prevention (CDC) Adverse Childhood Experiences Study (ACES). ACES is a study from the mid-1990s which surveyed over 17,000 adults and examined the association between adverse childhood experiences and later adult outcomes. The report examines the prevalence of the adverse experiences identified in ACES among NSCAW participants and compares rates between the two studies.

Finkelhor, D., Shattuck, A., Turner, H., & Hamby, S. (2012). [Improving the Adverse Childhood Experiences Study scale](https://doi.org/10.1001/jamapediatrics.2013.420). *JAMA Pediatrics*, 167(1), 70-75. DOI:10.1001/jamapediatrics.2013.420

To test and improve upon the list of adverse childhood experiences from the Adverse Childhood Experiences (ACE) Study scale by examining the ability of a broader range to correlate with mental health symptoms. Nationally representative sample of children and adolescents. Telephone interviews with a nationally representative sample of 2030 youth aged 10 to 17 years who were asked about lifetime adversities and current distress symptoms. The adversities from the original ACE scale items were associated with mental health symptoms among the participants, but the association was significantly improved (from $R^2 = 0.21$ to $R^2 = 0.34$) by removing some of the original ACE scale items and adding others in the domains of peer rejection, peer victimization, community violence exposure,

school performance, and socioeconomic status. Our understanding of the most harmful childhood adversities is still incomplete because of complex interrelationships among them, but we know enough to proceed to interventional studies to determine whether prevention and remediation can improve long-term outcomes.

Jonson-Reid, M., Kohl, P. L., & Drake, B. (2012). [Child and adult outcomes of chronic child maltreatment](#). *Pediatrics*, 129(5), 839–845. DOI:10.1542/peds.2011-2529

To describe how child maltreatment chronicity is related to negative outcomes in later childhood and early adulthood. The study included 5994 low-income children from St Louis, including 3521 with child maltreatment reports, who were followed from 1993–1994 through 2009. Children were 1.5 to 11 years of age at sampling. Data include administrative and treatment records indicating substance abuse, mental health treatment, brain injury, sexually transmitted disease, suicide attempts, and violent delinquency before age 18 and child maltreatment perpetration, mental health treatment, or substance abuse in adulthood. Multivariate analysis controlled for potential confounders. Child maltreatment chronicity predicted negative childhood outcomes in a linear fashion (eg, percentage with at least 1 negative outcome: no maltreatment = 29.7%, 1 report = 39.5%, 4 reports = 67.1%). Suicide attempts before age 18 showed the largest proportionate increase with repeated maltreatment (no report versus 4+ reports = +625%, $P < .0001$). The doseresponse relationship was reduced once controls for other adverse child outcomes were added in multivariate models of child maltreatment perpetration and mental health issues. The relationship between adult substance abuse and maltreatment report history disappeared after controlling for adverse child outcomes. Child maltreatment chronicity as measured by official reports is a robust indicator of future negative outcomes across a range of systems, but this relationship may desist for certain adult outcomes once childhood adverse events are controlled. Although primary and secondary prevention

remain important approaches, this study suggests that enhanced tertiary prevention may pay high dividends across a range of medical and behavioral domains.

Burke, N. J., Hellman, J. L., Scott, B. G., Weems, C. F., & Carrion, V. G. (2011). [The impact of adverse childhood experiences on an urban pediatric population](#). *Child Abuse & Neglect*, 35(6), 408–413. DOI:10.1016/j.chiabu.2011.02.006

The goal of this study was to investigate the adverse childhood experiences (ACEs) in youth in a low-income, urban community. Data from a retrospective chart review of 701 subjects from the Bayview Child Health Center in San Francisco are presented. Medical chart documentation of ACEs as defined in previous studies were coded and each ACE criterion endorsed by a traumatic event received a score of 1 (range = 0–9). This study reports on the prevalence of various ACE categories in this population, as well as the association between ACE score and two pediatric problems: learning/behavior problems and body mass index (BMI) \geq 85% (i.e., overweight or obese). The majority of subjects (67.2%, N = 471) had experienced 1 or more categories of adverse childhood experiences (ACE_m \geq 1) and 12.0% (N = 84) had experienced 4 or more ACEs (ACE \geq 4). Increased ACE scores correlated with increased risk of learning/behavior problems and obesity. There was a significant prevalence of endorsed ACE categories in this urban population. Exposure to 4 or greater ACE categories was associated with increased risk for learning/behavior problems, as well as obesity. Results from this study demonstrate the need both for screening of ACEs among youth in urban areas and for developing effective primary prevention and intervention models.

Anda, R. (2007). [*The health and social impact of growing up with adverse childhood experiences: The human and economic costs of the status quo*](#). Centers for Disease Control & Prevention.

The common stressful and traumatic exposures affect a constellation of experiences including: abuse (emotional, physical, sexual), neglect (emotional, physical), witnessing domestic violence, growing up with substance abuse (alcohol or other drug abuse) or mental illness in the household, parental discord, or crime in the home. This document is a presentation made by Dr. Robert Anda, co-Principal Investigator for the ACE studies of the Centers for Disease Control and Prevention, at the 2007 Guest House Institute Summer Leadership Conference in Minneapolis, Minnesota.

Gilbert, R., Widom, C. S., Browne, K., Fergusson, D., Webb, E., & Janson, S. (2009). [*Burden and consequences of child maltreatment in high-income countries*](#). *The Lancet*, 373(9657), 68–81. DOI:10.1016/S0140-6736(08)61706-7

Child maltreatment remains a major public-health and social-welfare problem in high-income countries. Every year, about 4–16% of children are physically abused and one in ten is neglected or psychologically abused. During childhood, between 5% and 10% of girls and up to 5% of boys are exposed to penetrative sexual abuse, and up to three times this number are exposed to any type of sexual abuse. However, official rates for substantiated child maltreatment indicate less than a tenth of this burden. Exposure to multiple types and repeated episodes of maltreatment is associated with increased risks of severe maltreatment and psychological consequences. Child maltreatment substantially contributes to child mortality and morbidity and has long-lasting effects on mental health, drug and alcohol misuse (especially in girls), risky sexual behavior, obesity, and criminal behavior, which persist into adulthood. Neglect is at least as damaging as physical or sexual abuse in the long term but has received the least scientific and public attention. The high burden and serious and long-term consequences of child

maltreatment warrant increased investment in preventive and therapeutic strategies from early childhood.

Putnam, F. W. (2006). [The impact of trauma on child development](#). *Juvenile and Family Court Journal*, 57(1), 1–11. DOI:10.1111/j.1755-6988.2006.tb00110.x

A growing body of research links childhood experiences of abuse and neglect with serious life-long problems including depression, suicide, alcoholism and drug abuse, and major medical problems such as heart disease, cancer, and diabetes. Two basic processes, neurodevelopment and psychosocial development, are affected by early abuse and neglect. Scientists have begun to understand the mechanisms through which these adverse experiences alter child development and produce pernicious mental, medical, and social outcomes. These insights have opened opportunities to intervene to prevent maltreatment and to mitigate its effects. Future success depends on the greater dissemination and refinement of these interventions.

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M. P., & Marks, J. S. (1998). [Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences \(ACE\) study](#). *American Journal of Preventive Medicine*, 14(4), 245–258. DOI:10.1016/S0749-3797(98)00017-8

The relationship of health risk behavior and disease in adulthood to the breadth of exposure to childhood emotional, physical, or sexual abuse, and household dysfunction during childhood has not previously been described. A strong graded relationship between the breadth of exposure to abuse or household dysfunction during childhood and multiple risk factors for several of the leading causes of death in adults was found.

General Economic

Peterson, C., Aslam, M. V., Niolon, P. H., Bacon, S., Bellis, M. A., Mercy, J. A., & Florence, C. (2023). [Economic burden of health conditions associated with adverse childhood experiences among US adults](#). *JAMA Network Open*, 6(12), e2346323–e2346323. DOI:10.1001/jamanetworkopen.2023.46323

Adverse childhood experiences (ACEs) are preventable, potentially traumatic events in childhood, such as experiencing abuse or neglect, witnessing violence, or living in a household with substance use disorder, mental health problems, or instability from parental separation or incarceration. Adults who had ACEs have more harmful risk behaviors and worse health outcomes; the economic burden associated with these issues is uncertain. In this economic evaluation, regression models of cross-sectional survey data from the 2019–2020 Behavioral Risk Factor Surveillance System (BRFSS) and previous studies were used to estimate ACE population-attributable fractions (PAFs) (ie, the fraction of total cases associated with a specific exposure) for selected health outcomes (anxiety, arthritis, asthma, cancer, chronic obstructive pulmonary disease, depression, diabetes, heart disease, kidney disease, stroke, and violence) and risk factors (heavy drinking, illicit drug use, overweight and obesity, and smoking) among the 2019 US adult population. Adverse childhood experience PAFs were used to calculate the proportion of total condition-specific medical spending and lost healthy life-years related to ACEs using Global Burden of Disease Study data. Data analysis was performed from September 10, 2021, to November 29, 2022. Monetary valuation of ACE-associated morbidity and mortality using standard US value of statistical life methods and presented in terms of annual and lifetime per affected person and total population estimates at the national and state levels. A total of 820 673 adults, representing 255 million individuals, participated in the BRFSS in 2019 and 2020. An estimated 160 million of the total 255 million US adult population (63%) had 1 or more ACE, associated with an annual economic burden of \$14.1 trillion (\$183 billion in direct medical spending and \$13.9 trillion in lost healthy life-years). This was \$88 000 per affected adult annually and \$2.4 million over

their lifetimes. The lifetime economic burden per affected adult was lowest in North Dakota (\$1.3 million) and highest in Arkansas (\$4.3 million). Twenty-two percent of adults had 4 or more ACEs and comprised 58% of the total economic burden—the estimated per person lifetime economic burden for those adults was \$4.0 million. In this cross-sectional analysis of the US adult population, the economic burden of ACE-related health conditions was substantial. The findings suggest that measuring the economic burden of ACEs can support decision-making about investing in strategies to improve population health.

Assini-Meytin, L. C., Thorne, E. J., Sanikommu, M., Green, K. M., & Letourneau, E. J. (2022). Impact of child sexual abuse on socioeconomic attainment in adulthood. *Journal of Adolescent Health, 71*(5), 594–600. DOI:10.1016/j.jadohealth.2022.05.013

While child sexual abuse (CSA) victimization is linked to adverse mental and behavioral health outcomes, few studies have examined the association between CSA and socioeconomic attainment in adulthood, particularly for men. This study assesses the impacts of CSA victimization on socioeconomic outcomes in adulthood, separately for men and women. Analyses are based on the National Longitudinal Study of Adolescent to Adult Health restricted use dataset. Adolescent to Adult Health is a nationally representative cohort of teenagers in grades 7–12 (1994–1995; N = 20,000) followed to ages 33–44 (2016–2018; N = 12,300). These analyses were based on N = 10,119 participants. We used propensity score weighting to equate on observed confounders of those who experienced CSA victimization with those who had not. All analyses were conducted in the R statistical software. In this analytical sample, 25.2% of women and 9.8% of men reported of having been sexually abused as a child. Results from propensity score weighted models showed that by their late 30s, men and women who experienced CSA had lower educational attainment, lower odds of being financially stable, and a decrease in household income compared to their peers. CSA was associated with lower odds of

being employed among women only. Findings from this study suggest that men and women who survive CSA, experience socioeconomic disadvantages in adulthood relative to peers who did not experience CSA. Preventive programs and treatment and other services for survivors of CSA could positively impact individuals' economic productivity over the life course, reducing the individual and societal costs associated with CSA victimization.

Harter, C. L., & Harter, J. F. R. (2022). [The link between adverse childhood experiences and financial security in adulthood](#). *Journal of Family and Economic Issues*, 43, 832–842. DOI:10.1007/s10834-021-09796-y

This study provides an evidence-based link between adverse childhood experiences (ACEs) and adult financial wellbeing. Drawing on a comprehensive financial wellbeing framework that was developed by the Consumer Financial Protection Bureau, we analyze data from the Behavioral Risk Factor Surveillance System, a survey designed primarily to measure health behaviors and outcomes, but which also asks about financial wellbeing aspects such as food and housing security. We use ordered probit analysis to investigate how respondents' self-reported levels of food security and housing security are influenced by demographics that include remembered ACEs and find that, at various income levels, financial stress in adulthood is related to childhood trauma. This interdisciplinary approach to studying financial outcomes extends work in public health and psychology that establishes a link between ACEs and adult physical and mental health measures. The finding is timely as policy makers craft responses to global public health, financial, and other shocks. Recognizing this link between ACEs and adult financial wellbeing provides additional evidence that educators, therapists, social workers, and other professionals should collaborate and develop integrated practices to prevent or reduce ACEs and promote resilience.

Henkhaus, L. E. (2022). [The lasting consequences of childhood sexual abuse on human capital and economic well-being](#). *Health Economics*, 31(9), 1954–1972. DOI:10.1002/hec.4557

Childhood sexual abuse is a prevalent problem, yet understanding of later-in-life outcomes is limited due to unobservable determinants. I examine impacts on human capital and economic well-being by estimating likely ranges around causal effects, using a nationally representative U.S. sample. Findings suggest that childhood sexual abuse leads to lower educational attainment and worse labor market outcomes. Results are robust to partial identification methods applying varying assumptions about unobservable confounding, using information on confounding from observables including other types of child abuse. I show that associations between childhood sexual abuse and education outcomes and earnings are at least as large for males as for females. Childhood sexual abuse by someone other than a caregiver is as influential or more so than caregiver sexual abuse in predicting worse outcomes. Considering the societal burden of childhood sexual abuse, findings could inform policy and resource allocation decisions for development and implementation of best practices for prevention and support.

Bellis, M. A., Hughes, K., Ford, K., Rodriguez, G. R., Sethi, D., & Passmore, J. (2019). [Life course health consequences and associated annual costs of adverse childhood experiences across Europe and North America: A systematic review and meta-analysis](#). *The Lancet Public Health*, 4(10), e517–e528. DOI:10.1016/S2468-2667(19)30145-8

An increasing number of studies are identifying associations between adverse childhood experiences (ACEs) and ill health throughout the life course. We aimed to calculate the proportions of major risk factors for and causes of ill health that are attributable to one or multiple types of ACE and the associated financial costs. In this systematic review and meta-analysis, we searched for studies in which risk data in individuals with ACEs were

compared with these data in those without ACEs. We searched six electronic databases (MEDLINE, CINAHL, PsycINFO, Applied Social Sciences Index and Abstracts, Criminal Justice Databases, and the Education Resources Information Center) for quantitative studies published between Jan 1, 1990, and July 11, 2018, that reported risks of health-related behaviours and causes of ill health in adults that were associated with cumulative measures of ACEs (ie, number of ACEs). We included studies in adults in populations that did not have a high risk of ACEs, that had sample sizes of at least 1000 people, and that provided ACE prevalence data. We calculated the pooled RR for risk factors (harmful alcohol use, illicit drug use, smoking, and obesity) and causes of ill health (cancer, diabetes, cardiovascular disease, respiratory disease, anxiety, and depression) associated with ACEs. RRs were used to estimate the population-attributable fractions (PAFs) of risk attributable to ACEs and the disability-adjusted life-years (DALYs) and financial costs associated with ACEs. This study was prospectively registered in PROSPERO (CRD42018090356). Of 4387 unique articles found following our initial search, after review of the titles (and abstracts, when the title was relevant), we assessed 880 (20%) full-text articles. We considered 221 (25%) full-text articles for inclusion, of which 23 (10%) articles met all selection criteria for our meta-analysis. We found a pooled prevalence of 23.5% of individuals (95% CI 18.7–28.5) with one ACE and 18.7% (14.7–23.2) with two or more ACEs in Europe (from ten studies) and of 23.4% of individuals (22.0–24.8) with one ACE and 35.0% (31.6–38.4) with two or more ACEs in north America (from nine studies). Illicit drug use had the highest PAFs associated with ACEs of all the risk factors assessed in both regions (34.1% in Europe; 41.1% in north America). In both regions, PAFs of causes of ill health were highest for mental illness outcomes: ACEs were attributed to about 30% of cases of anxiety and 40% of cases of depression in north America and more than a quarter of both conditions in Europe. Costs of cardiovascular disease attributable to ACEs were substantially higher than for most other causes of ill health because of higher DALYs for this condition. Total annual costs attributable to ACEs were estimated to be US\$581 billion in Europe and \$748 billion in north America. More than 75% of these costs arose in

individuals with two or more ACEs. Millions of adults across Europe and north America live with a legacy of ACEs. Our findings suggest that a 10% reduction in ACE prevalence could equate to annual savings of 3 million DALYs or \$105 billion. Programmes to prevent ACEs and moderate their effects are available. Rebalancing expenditure towards ensuring safe and nurturing childhoods would be economically beneficial and relieve pressures on health-care systems.

Schurer, S., Trajkovski, K., & Hariharan, T. (2019). Understanding the mechanisms through which adverse childhood experiences affect lifetime economic outcomes. *Labour Economics*, 61, 101743. DOI:10.1016/j.labeco.2019.06.007

Over the past two decades, researchers have shown a growing interest in the role of adverse childhood experiences (ACEs) – children's confrontation with maltreatment and household dysfunction – in shaping health outcomes. This is the first study to quantify the economic penalties of ACEs and identify the mechanisms which produce the relationship. We source data from the National Child Development Study to construct an ACE index based on prospective childhood information. We estimate a robust earnings penalty of 9% for each additional ACE, a 25% higher probability of being welfare dependent, and a 27% higher probability of subjective poverty at age 55, over and above the influence of childhood socioeconomic disadvantage. The income penalty of ACEs is mainly produced by parental neglect, a component of the ACE index based on teacher assessments. It is observed for children from all socioeconomic backgrounds. Observed differences in later-life earnings between children with and without neglect exposure can be almost fully explained by observable differences in human capital accumulated by the beginning of mid-age. The productivity loss in an economy due to parental neglect is likely to be high. Our findings contribute to a wider discussion on the multidimensionality of childhood poverty.

Letourneau, E. J., Brown, D. S., Fang, X., Hassan, A., & Mercy, J. A. (2018). [The economic burden of child sexual abuse in the United States](#). *Child Abuse & Neglect*, 79, 413-422. DOI:10.1016/j.chiabu.2018.02.020

The present study provides an estimate of the U.S. economic impact of child sexual abuse (CSA). Costs of CSA were measured from the societal perspective and include health care costs, productivity losses, child welfare costs, violence/crime costs, special education costs, and suicide death costs. We separately estimated quality-adjusted life year (QALY) losses. For each category, we used the best available secondary data to develop cost per case estimates. All costs were estimated in U.S. dollars and adjusted to the reference year 2015. Estimating 20 new cases of fatal and 40,387 new substantiated cases of nonfatal CSA that occurred in 2015, the lifetime economic burden of CSA is approximately \$9.3 billion, the lifetime cost for victims of fatal CSA per female and male victim is on average \$1,128,334 and \$1,482,933, respectively, and the average lifetime cost for victims of nonfatal CSA is of \$282,734 per female victim. For male victims of nonfatal CSA, there was insufficient information on productivity losses, contributing to a lower average estimated lifetime cost of \$74,691 per male victim. If we included QALYs, these costs would increase by approximately \$40,000 per victim. With the exception of male productivity losses, all estimates were based on robust, replicable incidence-based costing methods. The availability of accurate, up-to-date estimates should contribute to policy analysis, facilitate comparisons with other public health problems, and support future economic evaluations of CSA-specific policy and practice. In particular, we hope the availability of credible and contemporary estimates will support increased attention to primary prevention of CSA.

Peterson, C., Florence, C., & Klevens, J. (2018). [The economic burden of child maltreatment in the United States, 2015](#). *Child Abuse & Neglect*, 86, 178–183.
DOI:10.1016/j.chiabu.2018.09.018

Child maltreatment incurs a high lifetime cost per victim and creates a substantial US population economic burden. This study aimed to use the most recent data and recommended methods to update previous (2008) estimates of 1) the per-victim lifetime cost, and 2) the annual US population economic burden of child maltreatment. Three ways to update the previous estimates were identified: 1) apply value per statistical life methodology to value child maltreatment mortality, 2) apply monetized quality-adjusted life years methodology to value child maltreatment morbidity, and 3) apply updated estimates of the exposed population. As with the previous estimates, the updated estimates used the societal cost perspective and lifetime horizon, but also accounted for victim and community intangible costs. Updated methods increased the estimated nonfatal child maltreatment per-victim lifetime cost from \$210,012 (2010 USD) to \$830,928 (2015 USD) and increased the fatal per-victim cost from \$1.3 to \$16.6 million. The estimated US population economic burden of child maltreatment based on 2015 substantiated incident cases (482,000 nonfatal and 1670 fatal victims) was \$428 billion, representing lifetime costs incurred annually. Using estimated incidence of investigated annual incident cases (2,368,000 nonfatal and 1670 fatal victims), the estimated economic burden was \$2 trillion. Accounting for victim and community intangible costs increased the estimated cost of child maltreatment considerably compared to previous estimates. The economic burden of child maltreatment is substantial and might off-set the cost of evidence-based interventions that reduce child maltreatment incidence.

Slack, K. S., Berger, L. M., & Noyes, J. L. (2017). Introduction to the special issue on the economic causes and consequences of child maltreatment. *Children and Youth Services Review*, 72(1), 1-4. DOI:10.1016/j.childyouth.2016.11.013

This article editorial provides an overview of the articles featured in the special issue of *Children and Youth Services Review*. This special issue on the Economic Causes and Consequences of Child Maltreatment brings together research that addresses the role of income and material resources on child maltreatment behaviors and involvement in child protection systems, and the effects of maltreatment and child protection system involvement on later educational, employment, and other economic outcomes. The articles can roughly be grouped into five themes focusing on relations of: (1) economic resources with child maltreatment and child welfare involvement; (2) neighborhood socioeconomic factors with child maltreatment; (3) the macro-economy, income-related policies, and child maltreatment; (4) economic factors and out-of-home placement outcomes; and (5) experiencing child maltreatment and out-of-home placement with young adult socioeconomic outcomes. The editors highlights the contributions of each group of papers and summarizes key points raised by the policymaker and policy practitioner discussants.

The Perryman Group. (2014). [Suffer the little children: An assessment of the economic cost of child maltreatment](https://www.perrymangroup.com/media/uploads/report/perryman-suffer-the-little-children-11-13-14.pdf). <https://www.perrymangroup.com/media/uploads/report/perryman-suffer-the-little-children-11-13-14.pdf>

Florence, C., Brown, D. S., Fang, X., & Thompson, H. F. (2013). [Health care costs associated with child maltreatment: Impact on Medicaid](#). *Pediatrics*, 132(2), 312-318. DOI:10.1542/peds.2012-2212

Data on child maltreatment were collected from the National Survey of Child and Adolescent Well-Being, a nationally representative sample of cases investigated or assessed by local Child Protective Services agencies between October 1999 and

December 2000. Medicaid claims data for 2000 to 2003 were obtained from the Medicaid Analytic Extract (MAX). Children from the National Survey of Child and Adolescent Well-Being who had Medicaid were matched to the MAX data by Social Security number or birthdate, gender, and zip code. Propensity score matching was used to select a comparison group from the MAX data. Two-part regression models were used to estimate the impact of child maltreatment on expenditures. Data with individual identifiers were obtained under confidentiality agreements with the collecting agencies. Children who were identified as maltreated or as being at risk of maltreatment incurred, on average, Medicaid expenditures that were >\$2600 higher per year compared with children not so identified. This finding accounted for ~9% of all Medicaid expenditures for children. Child maltreatment imposes a substantial financial burden on the Medicaid system. These expenses could be partially offset by increased investment in child maltreatment prevention. Child maltreatment is a serious and prevalent public health problem in the United States. Responsible for substantial morbidity and mortality, maltreatment affects children's physical and mental health. Although many health impacts of child maltreatment have been documented, no claims-based study has quantified the impact of maltreatment on health service utilization and costs. This study presents systematic claims-based estimates of maltreatment impacts on utilization and costs for the Medicaid population.

Gelles, R. J., & Perlman, S. (2012). [*Estimated annual cost of child abuse and neglect*](#). Prevent Child Abuse America.

Gelles and Perlman's report details the terrible costs of child abuse and neglect. Our hope is to awaken the nation to the change we can make. Together we can prevent the abuse and neglect of our nation's children.

Fang, X., Brown, D. S., Florence, C. S., & Mercy, J. A. (2012). [The economic burden of child maltreatment in the United States and implications for prevention](#). *Child Abuse & Neglect*, 36(2), 156–165. DOI:10.1016/j.chiabu.2011.10.006

Objectives: To present new estimates of the average lifetime costs per child maltreatment victim and aggregate lifetime costs for all new child maltreatment cases incurred in 2008 using an incidence-based approach. Methods: This study used the best available secondary data to develop cost per case estimates. For each cost category, the paper used attributable costs whenever possible. For those categories that attributable cost data were not available, costs were estimated as the product of incremental effect of child maltreatment on a specific outcome multiplied by the estimated cost associated with that outcome. The estimate of the aggregate lifetime cost of child maltreatment in 2008 was obtained by multiplying per-victim lifetime cost estimates by the estimated cases of new child maltreatment in 2008. Results: The estimated average lifetime cost per victim of nonfatal child maltreatment is \$210,012 in 2010 dollars, including \$32,648 in childhood health care costs; \$10,530 in adult medical costs; \$144,360 in productivity losses; \$7,728 in child welfare costs; \$6,747 in criminal justice costs; and \$7,999 in special education costs. The estimated average lifetime cost per death is \$1,272,900, including \$14,100 in medical costs and \$1,258,800 in productivity losses. The total lifetime economic burden resulting from new cases of fatal and nonfatal child maltreatment in the United States in 2008 is approximately \$124 billion. In sensitivity analysis, the total burden is estimated to be as large as \$585 billion. Conclusions: Compared with other health problems, the burden of child maltreatment is substantial, indicating the importance of prevention efforts to address the high prevalence of child maltreatment.

Currie, J., & Spatz Widom, C. (2010). [Long-term consequences of child abuse and neglect on adult economic well-being](#). *Child Maltreatment*, 15(2), 111-120.
DOI:10.1177/1077559509355316

Child abuse and neglect represent major threats to child health and well-being; however, little is known about consequences for adult economic outcomes. Using a prospective cohort design, court substantiated cases of childhood physical and sexual abuse and neglect during 1967–1971 were matched with nonabused and nonneglected children and followed into adulthood (mean age 41). Outcome measures of economic status and productivity were assessed in 2003–2004 (N = 807). Results indicate that adults with documented histories of childhood abuse and/or neglect have lower levels of education, employment, earnings, and fewer assets as adults, compared to matched control children. There is a 14% gap between individuals with histories of abuse/neglect and controls in the probability of employment in middle age, controlling for background characteristics. Maltreatment appears to affect men and women differently, with larger effects for women than men. These new findings demonstrate that abused and neglected children experience large and enduring economic consequences.

Wang, C. T., & Holton, J. (2007). [Total estimated cost of child abuse and neglect in the United States: Economic impact study](#). Prevent Child Abuse America.

The costs of responding to the impact of child abuse and neglect are borne by the victims and their families but also by society. This brief updates an earlier publication documenting the nationwide costs as a result of child abuse and neglect (Fromm, 2001). Similar to the earlier document, this brief places costs in two categories: direct costs, that is, those costs associated with the immediate needs of children who are abused or neglected; and indirect costs, that is, those costs associated with the long-term and/or secondary effects of child abuse and neglect. All estimated costs are presented in 2007

dollars. Adjustments for inflation have been conducted using the price indexes for gross domestic product published by the Bureau of Economic Analysis (<http://www.bea.gov>).

Rovi, S., Chen, P. H., & Johnson, M. S. (2004). [The economic burden of hospitalizations associated with child abuse and neglect](#). *American Journal of Public Health*, 94(4), 586–590. DOI:10.2105/AJPH.94.4.586

This study assessed the economic burden of child abuse related hospitalizations, comparing inpatient stays coded with a diagnosis of child abuse or neglect with stays of other hospitalized children using the 1999 National Inpatient Sample of the Healthcare Costs and Utilization Project. Children whose hospital stays were coded with a diagnosis of abuse or neglect were significantly more likely to have died during hospitalization (4.0% vs 0.5%), have longer stays (8.2 vs 4.0 days), twice the number of diagnoses (6.3 vs 2.8), and double the total charges (\$19266 vs \$9513) than were other hospitalized children. Furthermore, the primary payer was typically Medicaid (66.5% vs 37.0%). Earlier identification of children at risk for child abuse and neglect might reduce the individual, medical, and societal costs.

Waters, H., Hyder, A., Rajkotia, Y., Basu, S., Rehwinkel, J. A., & Butchart, A. (2004). [The economic dimensions of interpersonal violence](#). World Health Organization.

WHO's World report on violence and health (published in 2002) makes a strong case for violence prevention. It reviewed available scientific evidence. It showed the need to work at all levels of the ecological model – with individuals, families, communities and societies – and to draw upon the contributions of multiple sectors, such as justice, education, welfare, employment and health. It concluded that violence prevention is complex but is possible. The present report, on the economic dimensions of interpersonal violence, strengthens the case for investing in prevention even further by highlighting the

enormous economic costs of the consequences of interpersonal violence, and reviewing the limited but nonetheless striking evidence for the cost-effectiveness of prevention programs.

Weeks, R., & Widom, C. S. (1998). [*Early childhood victimization among incarcerated adult male felons*](#). U. S. Department of Justice.

Using carefully developed methods for eliciting retrospective reports of childhood abuse and neglect, a new study of inmates in a New York prison found that 68 percent of the sample reported some form of childhood victimization and 23 percent reported experiencing multiple forms of abuse and neglect, including physical and sexual abuse. These findings provide support for the belief that the majority of incarcerated offenders have likely experienced some type of childhood abuse or neglect.

Outside U.S.

Knipschild, R., Hein, I., Pieters, S., Lindauer, R., Bicanic, I. A. E., Staal, W., de Jongh, A., & Klip, H. (2024). [Childhood adversity in a youth psychiatric population: Prevalence and associated mental health problems](#). *European Journal of Psychotraumatology*, 15(1). DOI:10.1080/20008066.2024.2330880

Childhood adversity can have lasting negative effects on physical and mental health. This study contributes to the existing literature by describing the prevalence rates and mental health outcomes related to adverse childhood experiences (ACEs) among adolescents registered for mental health care. Participants in this cross-sectional study were youths (aged 12–18 years) who were referred to outpatient psychiatric departments in the Netherlands. Demographic information was collected from the medical records. The Child Trauma Screening Questionnaire (CTSQ) was used to examine the presence of ACEs and posttraumatic stress symptoms (PTSS). To assess mental health problems, we used the Dutch translation of the Youth Self Report. Descriptive statistics and frequencies were used to calculate prevalence rates across the various ACEs domains. ANOVA and chi-square tests were used to explore the relationship between ACEs and mental health. Of the 1373 participants, 69.1% reported having experienced at least one ACE and 17.1% indicated exposure to four or more ACEs in their lives. Although there was substantial overlap among all ACE categories, the most frequently reported were bullying (49.2%), emotional abuse (17.8%), physical abuse (12.2%), and sexual abuse (10.1%). Female adolescents (72.7%) reported significantly more ACEs than their male counterparts (27.0%). Furthermore, a higher number of ACEs was associated with significantly more self-reported general mental health problems, an elevated prevalence of both mood and post-traumatic stress disorders, and a greater presence of two or more co-existing psychiatric diagnoses (comorbid psychiatric classification). This cross-sectional study on childhood adversity and its association with mental health showed that ACEs are highly prevalent in youth registered for mental health care. This study provides support

for a graded and cumulative relationship between childhood adversity and mental health problems.

Jackson, D. B., Jones, M. S., Semenza, D. C., & Testa, A. (2023). [Adverse childhood experiences and adolescent delinquency: A theoretically informed investigation of mediators during middle childhood](#). *International Journal of Environmental Research and Public Health*, 20(4), 3202. DOI:10.3390/ijerph20043202

The purposes of this study are twofold. First, we explore the associations between cumulative ACEs at ages 5 and 7 and delinquency at age 14 in a national sample of youth in the United Kingdom (UK). Second, we explore the role of five theoretically relevant mediators in explaining this relationship. Methods: Analyses were based on data from the UK Millennium Cohort Study—a prospective, longitudinal birth-cohort study of more than 18,000 individuals in the United Kingdom. Results: The results indicate that early ACEs are significantly associated with adolescent delinquency, with effects becoming significantly larger as ACEs accumulate. Findings also reveal that child property delinquency, substance use, low self-control, unstructured socializing, and parent-child attachment at age 11 all significantly mediate the relationship between early ACEs and delinquency in adolescence, with early delinquency and low self-control emerging as the most robust mediators. Conclusions: Findings point to a need for early ACEs screening and a Trauma-Informed Health Care (TIC) approach in early delinquency prevention efforts. Early intervention efforts that bolster child self-control and curtail early-onset problem behaviors may also disrupt pathways from ACEs to adolescent delinquency.

Stea, T. H., Steigen, A. M., Dangmann, C. R., Granrud, M. D., & Bonsaksen, T. (2023). [Associations between exposure to sexual abuse, substance use, adverse health outcomes, and use of youth health services among Norwegian adolescents](#). *BMC Public Health*, 23(1), 1330. DOI:10.1186/s12889-023-16261-y

A strong association between sexual abuse and adverse health outcomes has been reported among adolescents. The present study aimed to provide more information about adverse health outcomes associated with sexual abuse and substance use, and to examine the use of youth health services among Norwegian adolescents. National representative cross-sectional study among 16–19-year-old Norwegian adolescents ($n = 9784$). Multivariable regression analyses, adjusted for socioeconomic status and age, were used to examine the association between exposure to sexual abuse, substance use and health risk factors, and the use of youth health services. Adolescents exposed to sexual abuse had higher odds of depressive symptoms (males: OR:3.8; 95% CI:2.5–5.8, females: 2.9;2.4–3.5), daily headache (males: 5.3;2.8–10.1, females:1.9; 1.5–2.4), high medication use (males: 3.2;1.7–6.0, females: 2.0;1.6–2.6), self-harm (males: 3.8;2.4–6.0, females:3.2; 2.6–3.9), suicidal thoughts (males: 3.3; 2.2–5.0, females:3.0; 2.5–3.6) and suicide attempts (males: 9.5;5.6–16.0, females:3.6;2.7–4.9). Furthermore, exposure to sexual abuse was associated with higher odds of using school health services (males: 3.9;2.6–5.9, females: 1.6;1.3–1.9) and health services for youth (males: 4.8;3.1–7.6, females: 2.1;1.7–2.5). In general, substance use was associated with increased odds of adverse health related outcomes and use of youth health services, but the strength of the relationships varied according to sex. Finally, results indicated a significant interaction between sexual abuse and smoking that was associated with increased odds of having suicidal thoughts for males (2.6;1.1–6.5) but a decreased odds of having suicidal thoughts and have conducted suicide attempts once or more for females (0.6;0.4–1.0 and 0.5;0.3–0.9, respectively). The present study confirmed a strong relationship between exposure to sexual abuse and health risks, especially among males. Moreover, males exposed to sexual abuse were much more likely to use youth health services compared to sexually abused females. Substance use was also associated with adverse health outcomes and

use of youth health services, and interactions between sexual abuse and smoking seemed to influence risk of suicidal thoughts and attempts differently according to sex. Results from this study increase knowledge about possible health related effects of sexual abuse which should be used to identify victims and provide targeted treatment by youth health services.

Bauta, B., & Huang, K. Y. (2022). Child maltreatment and mental health in Sub-Saharan Africa. In F. M. Ssewamala, O. Sensoy Bahar, & M. M. McKay (Eds.), *Child behavioral health in Sub-Saharan Africa: Towards evidence generation and policy development* (pp. 67-92). Springer. DOI:10.1007/978-3-030-83707-5_4

Child maltreatment is a salient issue and global health burden in low- and middle-income countries (LMICs) given existing challenges with security due to regional conflicts, access to economic opportunities, and resources such as health, education, and social services. Despite recognition that child maltreatment is a critical public health issue in developing countries progress has been slow. Challenges remain in implementing recommended strategies effectively due to inadequacy of in-country policies, lack of reactive child welfare systems, and lack of systematic research in LMICs. It remains unclear how international guidelines have been applied in LMICs, what research progress has been made in different regions of LMICs, how child maltreatment impacts child physical and mental health, what interventions can mitigate negative effects, and what is the impact for applying different intervention strategies. In this chapter, a summary of the recent publications in basic science, practice, and policy research related to child maltreatment in African settings is presented. The prevalence and epidemiological research on maltreatment and child health (including physical and mental health) are summarized. The global agenda for child maltreatment prevention and control, resources, systems, policies in Africa, and challenges in integrating violence prevention services and child mental health care in African settings is also outlined. Finally, frameworks and strategies to address child violence, abuse, neglect, and mental health

needs in LMIC settings, and suggestions and recommendations for future studies, are highlighted.

Hughes, K., Ford, K., Bellis, M. A., Glendinning, F., Harrison, E., & Passmore, J. (2021). [Health and financial costs of adverse childhood experiences in 28 European countries: A systematic review and meta-analysis](#). *The Lancet Public Health*, 6(11), e848–e857. DOI:10.1016/S2468-2667(21)00232-2

Adverse childhood experiences (ACEs) are associated with increased health risks across the life course. We aimed to estimate the annual health and financial burden of ACEs for 28 European countries. In this systematic review and meta-analysis, we searched MEDLINE, CINAHL, PsycINFO, Applied Social Sciences Index and Abstracts, Criminal Justice Databases, and Education Resources Information Center for quantitative studies (published Jan 1, 1990, to Sept 8, 2020) that reported prevalence of ACEs and risks of health outcomes associated with ACEs. Pooled relative risks were calculated for associations between ACEs and harmful alcohol use, smoking, illicit drug use, high body-mass index, depression, anxiety, interpersonal violence, cancer, type 2 diabetes, cardiovascular disease, stroke, and respiratory disease. Country-level ACE prevalence was calculated using available data. Country-level population attributable fractions (PAFs) due to ACEs were generated and applied to 2019 estimates of disability-adjusted life-years. Financial costs (US\$ in 2019) were estimated using an adapted human capital approach. In most countries, interpersonal violence had the largest PAFs due to ACEs (range 14.7–53.5%), followed by harmful alcohol use (15.7–45.0%), illicit drug use (15.2–44.9%), and anxiety (13.9%–44.8%). Harmful alcohol use, smoking, and cancer had the highest ACE-attributable costs in many countries. Total ACE-attributable costs ranged from \$0.1 billion (Montenegro) to \$129.4 billion (Germany) and were equivalent to between 1.1% (Sweden and Turkey) and 6.0% (Ukraine) of nations' gross domestic products. Availability of ACE data varies widely between countries and country-level estimates cannot be directly compared. However, findings suggest ACEs are associated with major health and

financial costs across European countries. The cost of not investing to prevent ACEs must be recognised, particularly as countries look to recover from the COVID-19 pandemic, which interrupted services and education, and potentially increased risk factors for ACEs.

Lin, L., Wang, H. H., Lu, C., Chen, W., & Guo, V. Y. (2021). [Adverse childhood experiences and subsequent chronic diseases among middle-aged or older adults in China and associations with demographic and socioeconomic characteristics](#). *JAMA Network Open*, 4(10), e2130143–e2130143. DOI:10.1001/jamanetworkopen.2021.30143

Associations between adverse childhood experiences (ACEs) and chronic diseases among middle-aged or older Chinese individuals have not been well documented. In addition, whether demographic and socioeconomic characteristics modify any such associations has been underexplored. To examine associations between ACEs and subsequent chronic diseases and to assess whether age, sex, educational level, annual per capita household expenditure level, and childhood economic hardship modify these associations. This population-based cross-sectional study used data from the China Health and Retirement Longitudinal Study (CHARLS), a survey of residents aged 45 years or older in 28 provinces across China; specifically, the study used data from the CHARLS life history survey conducted from June 1 to December 31, 2014, and a CHARLS follow-up health survey conducted from July 1 to September 30, 2015. The study population included 11 972 respondents aged 45 years or older who had data on at least 1 of 14 specified chronic diseases and information on all 12 of the ACE indicators included in this study. Data analysis was performed from December 1 to 30, 2020. Any of 12 ACEs (physical abuse, emotional neglect, household substance abuse, household mental illness, domestic violence, incarcerated household member, parental separation or divorce, unsafe neighborhood, bullying, parental death, sibling death, and parental disability), measured by indicators on a questionnaire. The number of ACEs per participant was summed and categorized into 1 of 5 cumulative-score groups: 0, 1, 2, 3, and 4 or more. Hypertension, dyslipidemia, diabetes, heart disease, stroke, chronic lung disease, asthma, liver disease,

cancer, digestive disease, kidney disease, arthritis, psychiatric disease, and memory-related disease were defined by self-reported physician diagnoses or in combination with health assessment and medication data. Multimorbidity was defined as the presence of 2 or more of these 14 chronic diseases. Logistic regression models were used to assess associations of the 12 ACEs with the 14 chronic diseases and with multimorbidity. Modification of the associations by demographic and socioeconomic characteristics was assessed by stratified analyses and tests for interaction. Of the 11 972 individuals included (mean [SD] age, 59.85 [9.56] years; 6181 [51.6%] were females), 80.9% had been exposed to at least 1 ACE and 18.0% reported exposure to 4 or more ACEs. Compared with those without ACE exposure, participants who experienced 4 or more ACEs had increased risks of dyslipidemia, chronic lung disease, asthma, liver disease, digestive disease, kidney disease, arthritis, psychiatric disease, memory-related disease, and multimorbidity. The estimated odds ratios (ORs) ranged from 1.27 (95% CI, 1.02–1.59) for dyslipidemia to 2.59 (95% CI, 2.16–3.11) for digestive disease. A dose-response association was also observed between the number of ACEs and the risk of most of the chronic diseases (excluding hypertension, diabetes, and cancer) (eg, chronic lung disease for ≥ 4 ACEs vs none: OR, 2.01; 95% CI, 1.59–2.55; $P < .001$ for trend) and of multimorbidity (for individuals among the overall study population with ≥ 4 ACEs vs none: OR, 2.03; 95% CI, 1.70–2.41; $P < .001$ for trend). The demographic or socioeconomic characteristics of age, sex, educational level, annual per capita household expenditure level, or childhood economic hardship were not shown to significantly modify the associations between ACEs and multimorbidity. In this population-based, cross-sectional study of adults in China, exposure to ACEs was associated with higher risks of chronic diseases regardless of demographic and socioeconomic characteristics during childhood or adulthood. These findings suggest a need to prevent ACEs and a need for a universal life-course public health strategy to reduce potential adverse health outcomes later in life among individuals who experience them.

Hughes, K., Ford, K., Kadel, R., Sharp, C. A., & Bellis, M. A. (2020). [Health and financial burden of adverse childhood experiences in England and Wales: A combined primary data study of five surveys](#). *BMJ Open*, 10(6), e036374.
DOI:10.1136/bmjopen-2019-036374

Objective: To estimate the health and financial burden of adverse childhood experiences (ACEs) in England and Wales. Design: The study combined data from five randomly stratified cross-sectional ACE studies. Population attributable fractions (PAFs) were calculated for major health risks and causes of ill health and applied to disability adjusted life years (DALYs), with financial costs estimated using a modified human capital method. Setting: Households in England and Wales. Participants: 15 285 residents aged 18–69. Outcome measures: The outcome measures were PAFs for single (1 ACE) and multiple (2–3 and ≥4 ACEs) ACE exposure categories for four health risks (smoking, alcohol use, drug use, high body mass index) and nine causes of ill health (cancer, type 2 diabetes, heart disease, respiratory disease, stroke, violence, anxiety, depression, other mental illness); and annual estimated DALYs and financial costs attributable to ACEs. Results: Cumulative relationships were found between ACEs and risks of all outcomes. For health risks, PAFs for ACEs were highest for drug use (Wales 58.8%, England 52.6%), although ACE-attributable smoking had the highest estimated costs (England and Wales, £7.8 billion). For causes of ill health, PAFs for ACEs were highest for violence (Wales 48.9%, England 43.4%) and mental illness (ranging from 29.1% for anxiety in England to 49.7% for other mental illness in Wales). The greatest ACE-attributable costs were for mental illness (anxiety, depression and other mental illness; England and Wales, £11.2 billion) and cancer (£7.9 billion). Across all outcomes, the total annual ACE-attributable cost was estimated at £42.8 billion. The majority of costs related to exposures to multiple rather than a single ACE (ranging from 71.9% for high body mass index to 98.3% for cancer). Conclusions: ACEs impose a substantial societal burden in England and Wales. Policies and practices that prevent ACEs, build resilience and develop trauma-informed services are needed to reduce burden of disease and avoidable service use and financial costs across health and other sectors.

Riem, M. M., & Karreman, A. (2019). [Childhood adversity and adult health: The role of developmental timing and associations with accelerated aging](#). *Child Maltreatment*, 24(1), 17–25. DOI:10.1177/1077559518795058

Childhood adversity has been associated with poor adult health. However, it is unclear whether timing of adversity matters in this association and whether adversity is related to poorer age-related physical health status. A representative sample of the adult Dutch population (N = 3,586, age M = 54.94, age range = 18–92) completed surveys on health and diagnoses of age-related diseases. Information about weight and fat percentage was collected using weighing scales and childhood experiences were assessed retrospectively. Adversity was associated with higher body mass index and fat percentage, more physical problems, and high cholesterol, and this association was most pronounced in individuals with experiences of adversity during early adolescence. In addition, individuals with adversity more often reported physical problems or a medical diagnosis at a younger age. This study indicates that (1) timing of exposure to adversity matters in the relationship between experienced childhood adversity and health and (2) adversity is associated with a higher prevalence of age-related diseases at earlier ages.

McCarthy, M. M., Taylor, P., Norman, R. E., Pezzullo, L., Tucci, J., & Goddard, C. (2016). The lifetime economic and social costs of child maltreatment in Australia. *Children and Youth Services Review*, 71, 217–226. DOI:10.1016/j.childyouth.2016.11.014

A cost of illness (COI) study was undertaken to estimate the magnitude and range of lifetime effects associated with child maltreatment in Australia, using an incidence-based approach. Costs were primarily estimated through calculation of population attributable fractions (PAFs) to determine the marginal effects of child maltreatment on a range of outcomes. PAFs were then applied to estimates of expenditure, inflated to 2014–15 Australian dollars, projected over the life course, according to a baseline age of incident cases for child maltreatment in 2012–13, and discounted at 7% per annum. Sensitivity analysis was conducted using a best and lower bound estimate of incidence

of child abuse. The best estimate of the total estimated lifetime financial costs for incident cases of child maltreatment in 2012–13 was \$9.3 billion (a cost per child maltreated of \$176,437), with a lower bound of \$5.8 billion. The best estimate of lifetime costs associated with reduced quality of life and premature mortality (non-financial costs) for all incident cases of child maltreatment in 2012–13 was \$17.4 billion, or \$328,757 per child maltreated. The considerable lifetime costs associated with child maltreatment warrants an expansion of existing investment in primary and secondary prevention and targeted support services for children and families at risk.

Oldehinkel, A. J., & Ormel, J. (2015). [A longitudinal perspective on childhood adversities and onset risk of various psychiatric disorders](#). *European Child & Adolescent Psychiatry*, 24(6), 641–650. DOI:10.1007/s00787-014-0540-0

It is well-known that childhood adversities can have long-term effects on mental health, but a lot remains to be learned about the risk they bring about for a first onset of various psychiatric disorders, and how this risk develops over time. In the present study, which was based on a Dutch longitudinal population survey of adolescents TRAILS (N = 1,584), we investigated whether and how childhood adversities, as assessed with three different measures, affected the risk of developing an incident depressive, anxiety, or disruptive behavior in childhood and adolescence. In addition, we tested gender differences in any of the effects under study. The results indicated that depressive, anxiety and disruptive behavior disorders each had their own characteristic, pattern of associations with childhood adversities across childhood and adolescence, which was maintained after adjustment for comorbid disorders. For depressive disorders, the overall pattern suggested a high excess risk of incidence during childhood, which decreased during adolescence. Anxiety disorders were characterized by a moderately increased incident risk during childhood, which remained approximately stable over time. Disruptive behavior disorders took an intermediate position. Of the three childhood adversities

tested, an overall rating of the stressfulness of the childhood appeared to predict onset of psychiatric disorders best. To conclude, the risk of developing a psychiatric disorder after exposure to adversities early in life depends on the nature of the adversities, the nature of the outcome, and the time that has passed since the adversities without disorder onset. (Author Abstract)

Patterson, M. L., Moniruzzaman, A., & Somers, J. M. (2014). [Setting the stage for chronic health problems: Cumulative childhood adversity among homeless adults with mental illness in Vancouver, British Columbia](#). *BMC Public Health*, 14(1), 350.
DOI:10.1186/1471-2458-14-350

It is well documented that childhood abuse, neglect and household dysfunction are disproportionately present in the backgrounds of homeless adults, and that these experiences adversely impact child development and a wide range of adult outcomes. However, few studies have examined the cumulative impact of adverse childhood experiences on homeless adults with mental illness. This study examines adverse events in childhood as predictors of duration of homelessness, psychiatric and substance use disorders, and physical health in a sample of homeless adults with mental illness. Methods: This study was conducted using baseline data from a randomized controlled trial in Vancouver, British Columbia for participants who completed the Adverse Childhood Experiences (ACE) scale at 18 months follow-up (n = 364). Primary outcomes included current mental disorders; substance use including type, frequency and severity; physical health; duration of homelessness; and vocational functioning. Results: In multivariable regression models, ACE total score independently predicted a range of mental health, physical health, and substance use problems, and marginally predicted duration of homelessness. Conclusions: Adverse childhood experiences are overrepresented among homeless adults with complex comorbidities and chronic homelessness. Our findings are consistent with a growing body of literature indicating that childhood traumas are potent risk factors for a number of adult health and

psychiatric problems, particularly substance use problems. Results are discussed in the context of cumulative adversity and self-trauma theory.

Kabiru, C. W., Beguy, D., Crichton, J., & Ezeh, A. C. (2010). [Self-reported drunkenness among adolescents in four sub-Saharan African countries: Associations with adverse childhood experiences](#). *Child and Adolescent Psychiatry and Mental Health*, 4(17). DOI:10.1186/1753-2000-4-17

Consumption of alcohol is associated with acute and chronic adverse health outcomes. Given the paucity of studies that explore the determinants of alcohol use among adolescents in sub-Saharan Africa and, in particular, that examine the effects of adverse childhood experiences on alcohol use, the authors' objective was to see if indeed there was an association between experience of adverse childhood events and drunkenness among adolescents. Nationally-representative data from 9,819 adolescents aged 12-19 years from Burkina Faso, Ghana, Malawi, and Uganda were studied. Logistic regression models were employed to identify correlates of self-reported past-year drunkenness. Exposure to four adverse childhood experiences comprised the primary independent variables: living in a food-insecure household, living with a problem drinker, having been physically abused, and having been coerced into having sex. Controls for age, religiosity, current schooling status, the household head's sex, living arrangements, place of residence, marital status, and country of survey were utilized. All analyses were conducted separately for males and females. Overall, 9% of adolescents reported that they had been drunk in the 12 months preceding the survey, and respondents who had experienced an adverse event during childhood were more likely to report drunkenness. In the multivariate analysis, only two adverse childhood events emerged as significant predictors of self-reported past-year drunkenness among males: living in a household with a problem drinker before age 10, and being physically abused before age 10. For females, exposure to family-alcoholism, experience of physical abuse, and coerced sex increased the likelihood of reporting drunkenness in the last 12 months. The association

between adverse events and reported drunkenness was more pronounced for females. For both males and females there was a graded relationship between the number of adverse events experienced and the proportion reporting drunkenness. The authors concluded that there is an association between experience of adverse childhood events and drunkenness among adolescents in four sub-Saharan African countries. The complex impacts of adverse childhood experiences on development and behavior may have an important bearing on the effectiveness of interventions geared at reducing alcohol dependence among the youth.

Taylor, P., Moore, P., Pezzullo, L., Tucci, J., Goddard, C., & De Bortoli, L. (2008). [*The cost of child abuse in Australia*](#). Australian Childhood Foundation and Child Abuse Prevention Research Australia.

In this report, the costs to the economy and society of the abuse of children and young people aged 0 to 17 years are assessed, with five main types of child abuse covered – physical, emotional and psychological, sexual abuse, neglect and witness of (or knowledge of) family violence. This definition of child abuse is based on research by the Australian Childhood Foundation and Child Abuse Prevention Research Australia, Monash University.