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UNIVERSITY OF SAN DIEGO
Hahn School of Nursing and Health Science
DOCTOR OF NURSING PRACTICE

DOCTOR OF NURSING PRACTICE PORTFOLIO
By

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DOCTOR OF NURSING PRACTICE

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Final Manuscript

Screening People Experiencing Homelessness for Adverse Childhood Events (ACEs)

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Abstract

The purpose of this project was to implement a screening tool identifying patients who have four or more Adverse Childhood Events (ACEs) and connecting them to resources to build protective resilience. Stress during the developmental years can lead to preventable health conditions that are costly and impede quality of life. Nine out of the ten leading causes of death are ACE related illnesses. These are caused by complications of toxic stress syndrome. During a 7-month period, 138 patients were screened; 45% had ACEs of four or more.

Keywords: Adverse Childhood Events Screening Tool, health disparities, homeless population

Screening People Experiencing Homelessness for Adverse Childhood Events (ACEs)

The Adverse Childhood Events screening tool (ACEs) is a clinically validated screening tool created to estimate risks of chronic health conditions by measuring exposure to toxic stress during a person's developmental years. Part of the population with an elevated risk of high ACEs are those who make less than \$15,000 per year or who are unable to work (Giano et al., 2020). Evidence supports that having a lower socioeconomic status correlates to decreased quality of life and health status (Omerov et al., 2020). Additionally, people experiencing homelessness are at an even higher risk for high ACE scores and are therefore subjected to significantly more health disparities than people with stable housing. Those who are housing insecure have a shortened life expectancy of approximately 20 years ("Homelessness & Health Care," n.d.). Along with the difficulties of meeting basic needs such as securing food, shelter, and safety, people who are housing insecure also experience difficulties navigating and organizing the complexities of their healthcare needs (Omerov et al., 2020). With a multitude of risk factors coalescing to create both preventable and costly chronic health conditions, prioritizing preventative medical care for people experiencing homelessness may not only address their health needs but also has the ability to reduce overall medical costs. People who have experienced four or more ACEs spend approximately \$818 on medical costs annually (compared with \$407 for patients with only 1 ACE) (California, n.d.). Because experiencing homelessness increases chronic health disparities, an increase in preventative medical care with the use of an evidence-based screening tool could greatly benefit the health of our communities.

Background and Significance (Review of Literature)

The ACE screening tool was developed in 1998 through a study conducted by Kaiser Permanente and the CDC. In the study, ten questions were used to measure factors related to

abuse, neglect, and household dysfunction (*Home*, n.d.). The study showed that those who answered “yes” to four or more of these 10 questions regarding their childhood had a significantly higher risk for developing health conditions later in life such as heart disease, diabetes, arthritis, etc. (Felitti et al., 1998). Answering “yes” to any of these 10 questions assumes exposure to toxic stress syndrome. Prolonged exposure to toxic stress during the developmental years has catastrophic effects on metabolic function, brain development, immune system, and cardiovascular system (What Are ACEs?, n.d.). Studies support that the cumulative effect of a high number of ACEs, or the allostatic load, increases overall risk of developing chronic illnesses (You et al., 2019).

A high ACE score is considered answering “yes” to four or more questions on the screening tool. Many diseases are associated with a high ACE score (Vásquez et al., 2019). Those with high ACEs have been found to have greater incidence of headache and chronic pain than those who report less than four ACEs (You et al., 2019). High ACEs have also been linked to violence, early and unplanned pregnancies, incarceration, and unemployment (Bellis et al., 2014). Risk for gastrointestinal and extraintestinal symptoms experienced by adults also increases with high ACEs (Noejovich, 2018). High ACEs and lower socioeconomic status are associated with higher rates of insomnia and other sleep disorders (Sundel et al., 2018). Studies also show that those who have high ACEs are likely to report a need for additional help to manage their healthcare needs (Jahn et al., 2021; Larkin et al., 2012). One way to assist people with their high ACEs is to build protective resilience. Building protective resilience is known to help lessen the impact of ACE associated diseases in the homeless population (Liu et al., 2020).

High ACEs lead to the development of chronic diseases by having a detrimental effect on the physiologic functionality of the body. There are three categories stress can be categorized as:

positive, tolerable, and toxic (*What Is Toxic Stress?*, n.d.). Positive stress is defined as motivating and even healthy; examples include having an assignment deadline or experiencing something new. The physiologic changes that endure from positive stress include a slightly elevated heart rate, increased blood pressure, and minor increase of norepinephrine and cortisol. However, the overall effect on the body is minimal and fleeting; there are no lasting physiologic changes. In this sense, positive stress helps children develop coping skills and allows them to build confidence. Tolerable stress is more serious; still, it is mitigated by positive relationships and support the child receives while also allowing them to practice their coping skills. Examples of tolerable stress include rejection from colleges or jobs, misplacing something important, being late, natural disasters, loss of a loved one, etc. The important factor of what makes something tolerable, is the presence of the buffering support systems and coping mechanisms; both these factors help the body return to baseline from its physiologic reaction to stress. Toxic stress syndrome is defined as overactivation of the sympathetic nervous system for a prolonged period of time. This results in elevated heart rate, elevated blood pressure, dilation of bronchioles, conversion of glycogen to glucose, decreased motility, high levels of cortisol and norepinephrine, etc. High levels of these catecholamines in circulation at times of growth and development have devastating long-term effects on multiple organ systems in the body (Sege & Browne, 2017). These include persistent inflammation in the body from toxic stress syndrome which creates lasting detrimental changes in the biology of the cardiovascular system, endocrine system, digestive system, and neurological development (*What Are ACEs?*, n.d.).

Additionally, experiencing poverty increases the risk of experiencing ACEs at an early age (Lewer et al., 2020). Studies have shown that 16% of the general population have high

ACEs; it is also estimated that those who fall below the federal poverty line are five times more likely to experience high ACEs (Trauma Informed Oregon, n.d.).

Purpose

The goal of this evidence-based project was to implement the use of the ACE screening tool in a primary care setting that primarily serves people experiencing homelessness. Patients who have four or more ACEs should be referred to internal services such as psychiatry, behavioral health, social work, alcohol and drug counselors, and case managers. By identifying people at risk for developing costly and preventable chronic health conditions, efforts to build protective resilience can be taken with the listed referrals.

Patients who are housing insecure are a high-risk population for ACEs. Because these patients are five times more likely to experience complications from high ACEs compared to the general public, it was essential to implement the use of this tool in the workflow. Utilizing the ACE screening tool helps combat health disparities by delivering timely and relevant medical care and referrals to combat effects of high ACEs.

Methods

This study was conducted in a federally qualified medical center (FQMC) located in California. The medical clinic primarily serves people experiencing homelessness.

The screening process involved the medical assistant (MA) administering the ACE screening tool once they brought the patient back to the exam room for their scheduled appointment. In this private environment, the patient was asked the 10 questions of the ACE screening tool. If the patient answered “yes” to less than four questions, the MA would input the score onto the electronic health record (EHR) and continue the visit. If the score was four or more, the MA would alert the provider before the score was entered into the EHR for the team to

view. The provider would determine, based on their assessment, which internal referrals were appropriate for the patient with the high ACE score. Internal referrals provided to these patients included psychiatry, behavioral health therapists, social workers, alcohol and drug counselors, and case managers. The patient was then given education and information for next steps to help mitigate their risks of chronic health conditions. Figure 1 shows the workflow that was created to help guide the implementation process.

Results

Statistical analysis was completed using IBM SPSS Statistics, Software Version 28.0. Over a 7-month time period, from May 2021 to November 2021, a total of 130 patients were screened at the medical clinic for ACEs. Of the patients screened, 58 patients had four or more ACEs. The identified interventions were offered to 39 of these patients. Overall, 44.6% of the patients screened had a high ACE score of four or more. Twenty-seven of the patients who received the internal referrals had never used these services before.

The majority of the patients served at the clinic are non-Hispanic white males in their mid 50's. Only patients over the age of 18 were included in the project. The mean age of the participants was 54 (further breakdown of patients' ages can be seen in Figure 3). Males encompassed 64.6% of the participants and 66.2% of the participants identified their ethnicity as not Hispanic or Latino. The most common race was white, at 70%, and the second most common race was African American, at 17.7% (Table 1).

Behavioral Health and Psychiatry referrals were the most common interventions provided to this patient population. The next most common intervention provided to this patient population was the Use of Two (or more) Services followed by Social Work referral. None of

the patients were referred to the Alcohol and Drug Counselors. The distribution of the internal referrals given in the intervention group are demonstrated in Figure 2.

Discussion

When this project was implemented in May 2021, Medi-Cal incentivized the use of the ACE screening tool by reimbursing medical clinics \$29 per patient screened over the age of 18 (*Medi-Cal NewsFlash*, n.d.). Unfortunately, at the beginning of 2022, Medi-Cal dropped the extra initiative reimbursement for ACE screenings. As a consequence of this action, the reimbursement landscape changed, eliminating the incentive to screen patients for ACEs. As this clinic is a capitated medical clinic, they receive a fixed amount of dollars per month from Medi-Cal for all the patients who they cover as their primary care. Unlike the fee-for-service model, the capitated clinics cannot bill for the exact services they provide. They were, however, able to bill \$29 per ACE screen while the Medi-Cal incentive process was active.

Due to time and workflow constraints as well as staffing shortages during the COVID-19 pandemic, the management team at the clinic suspended the program in order to provide relief and to streamline the intake process the MA's were tasked with completing. The unfolding of these events is a direct example of how Medi-Cal's legislative decisions on payment and reimbursement directly affects the quality of medical care delivered to patients. Although the clinic is a nonprofit FQHC, it also has overhead costs and the management staff is tasked with the tremendous responsibility of deciding which interventions take precedence. After the management team communicated to staff that the ACE screening tool was no longer a priority for the clinic, it was removed from their EHR system. The last screenings were finished by November 2021.

The implementation of this project reveals how communication among staff throughout the implementation process is vital for successful change. The goal of screening was to identify patients at risk who had high ACEs and refer them to the appropriate services. Of the total patients screened, 19 who had high ACEs did not have the results reviewed with a provider and did not receive any referrals. These 19 patients were screened during the first few months of the implementation process. After these missed referrals were identified during data review, a retraining was scheduled with the MAs to review the workflow. During review, opportunities were identified where improvements could be made to the communication process whereby the MAs could alert the providers when patients who screened high for ACEs were identified as described in the training and the *ACE Screening Workflow*. Another identified factor of the communication breakdown was due to the difficulty communicating the goals of referrals to all the providers as management was unable to schedule training time with them to specifically review the *ACE Screening Workflow*. The only official communication the providers received regarding the ACEs implementation was an e-mail.

Limitations

The goal of identifying patients with high ACEs was to provide them with resources to build protective resilience. This helps them strengthen their capacity for self-regulation (Leitch, 2017). Some of the researched interventions with positive results include cognitive behavioral therapy, expressive journaling, and mindfulness-based therapies (Korotana et al., 2016). Another helpful technique in this population group was motivational interviewing (Lorenc et al., 2020). While all the specialists leading the interventions in this study were qualified to employ these techniques during sessions, it was up to the discretion of these specialists what techniques they

deemed appropriate for each patient. There was no way to ensure that the specific interventions listed above were used with the patients who had high ACE scores.

Another limitation of this study is the ACE screening tool itself. The 10 questions on the screening form were created from a study that is now over 20 years old. The CDC defines ACEs as anything that threatens a child's sense of safety and stability for a prolonged period of time (*Fast Facts*, 2022). With this in mind, it becomes clear that there should be an expanded set of questions that supplement the current ACE screening tool. These questions should consist of racism as one of the categories that encompass ACEs. This category can further be broken down into discrimination, stigma, minority stress, historical trauma (Lanier, 2020). Although there needs to be substantially more evidence to add these topics in the ACE questionnaire, research clearly shows aspects of racism have been linked to a plethora of health disparities experienced by our communities (Bowen et al., 2022). As racism can threaten safety and stability, there is a linkage between experiencing adversities from racism and toxic stress. Adding questions encompassing racism to the screener would provide a comprehensive and improved approach to estimating the patients' exposure to toxic stress syndrome.

Conclusion

This project was successful in its mission to identify patients with high ACE scores and increase internal referrals within the clinic. There were 27 patients identified who had yet to utilize the identified interventions who received referrals. The patients were receptive to participating in the screening, discussing the results, and receiving referrals regarding their scores. This was consistent with previous work which found that ACE screenings were feasible in primary care settings for both the providers and patients (*Implementation of the Adverse Childhood Experiences Conversation in Primary Care / Family Practice / Oxford Academic*,

n.d.). This study can be replicated in any outpatient office setting, and the workflow can be individualized to be more applicable to the specific medical clinic. Implementing the ACE screening tool at this site revealed that communication with all staff involved, including management, should be as transparent as possible throughout the screening and advisory process.

Implementation of the ACE screening tool in a variety of settings has been accepted as the new standard of care to promote issues of public health and healthy aging in patients (Vásquez et al., 2019). As it has been estimated that people with high ACEs spend close to \$818 on medical costs annually, any screenings and interventions done to help lower this number would significantly help our communities address healthcare needs in a cost-effective manner. This evidence-based project may be used as a tool to help guide the implementation process of the ACE screening tool in any outpatient medical setting.

ACE Screening Workflow

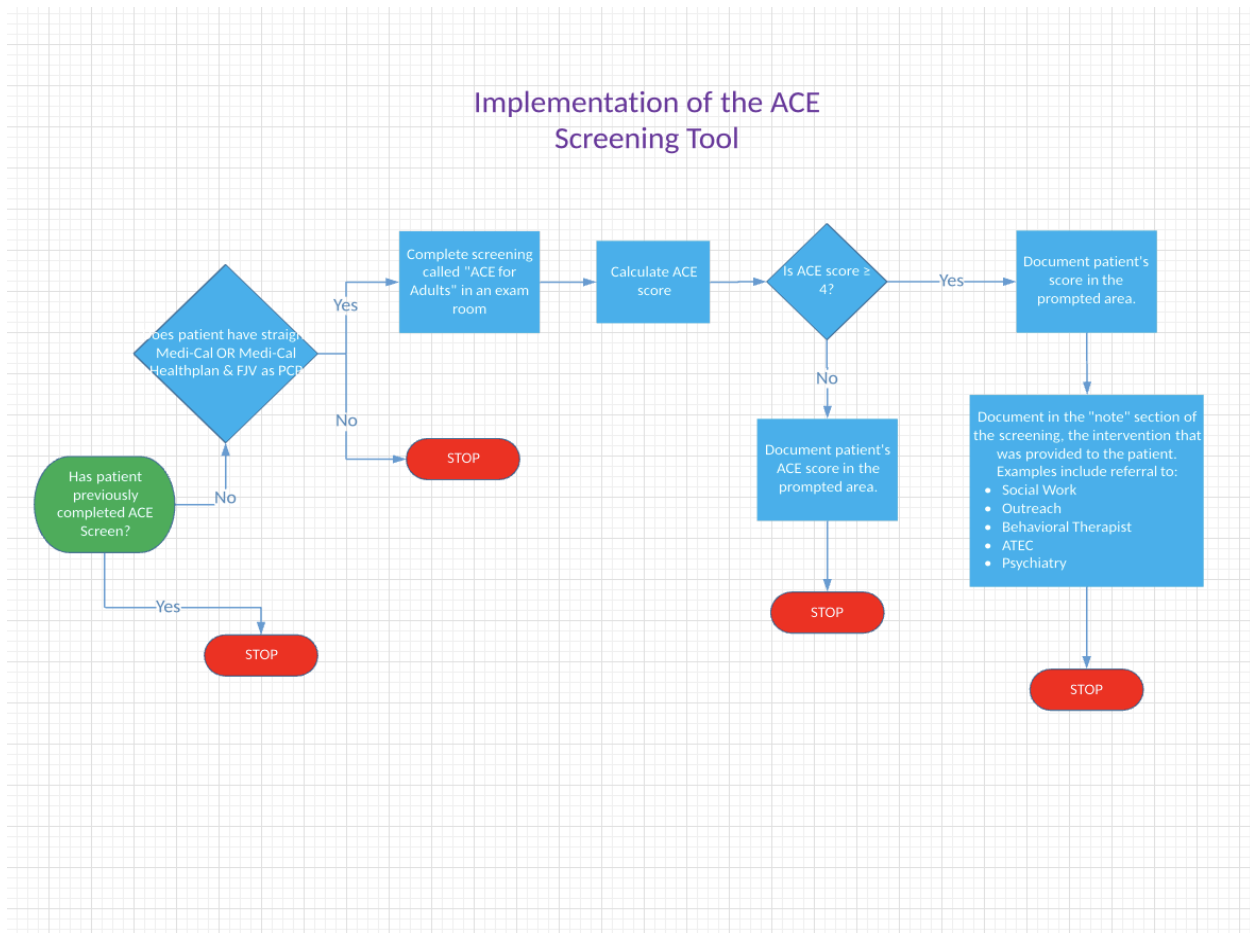


Table 1*Breakdown of Demographics*

Demographic Categories	Total		ACE<4		ACE≥4	
	N	%	Mean	SD	Mean	SD
Age	130		55.75	10.859	53.28	11.207
Gender			N	%	N	%
Male	84	64.6	50	69.4	34	58.6
Female	46	35.4	22	30.6	24	41.4
Race			N	%	N	%
White	91	70	48	66.7	43	74.1
African American	23	17.7	14	19.4	9	15.5
Asian	5	3.8	3	4.2	2	3.4
Pacific Islander	2	1.5	2	2.8	-	-
American Indian	3	2.3	1	1.4	2	3.4
Not Listed	6	4.6	4	5.6	2	3.4
Ethnicity			N	%	N	%
Not Hispanic	86	66.2	48	66.7	38	65.5
Hispanic	40	30.8	22	30.6	18	31
Declined	4	3.1	2	2.8	2	3.4

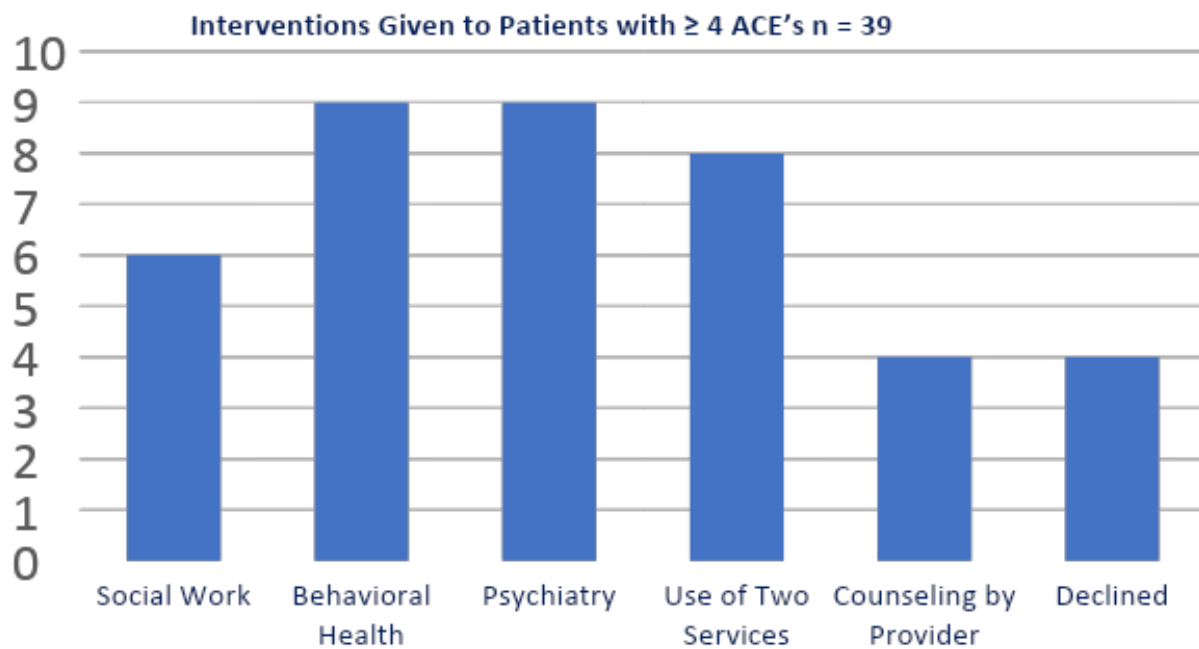
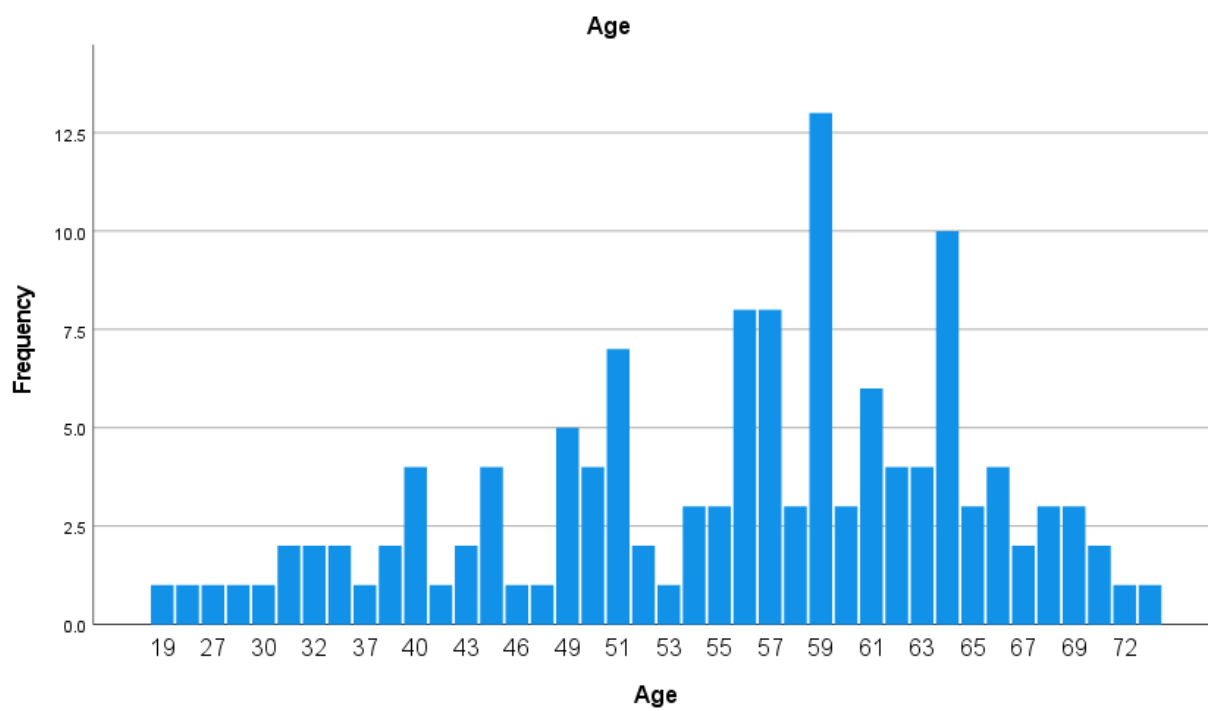
Figure 2*Interventions for High ACEs at FJVMC*

Figure 3

Age distribution of Patients Screened for ACEs



References

- Bowen, F. R., Lewandowski, L. A., Snethen, J. A., Childs, G., Outlaw, F. H., Greenberg, C. S., Burke, P. J., Sloand, E., Gary, F., & DeSocio, J. (2022). A Schema of Toxic Stress Informed by Racism, Transgenerational Stress, and Disadvantage. *Journal of Pediatric Health Care: Official Publication of National Association of Pediatric Nurse Associates & Practitioners*, 36(2), 79–89. <https://doi.org/10.1016/j.pedhc.2021.08.005>
- Bellis, M. A., Lowey, H., Leckenby, N., Hughes, K., & Harrison, D. (2014). Adverse childhood experiences: Retrospective study to determine their impact on adult health behaviours and health outcomes in a UK population. *Journal of Public Health*, 36(1), 81–91. <https://doi.org/10.1093/pubmed/fdt038>
- California, S. of. (n.d.). *OSG | Office of the Surgeon General*. Retrieved April 22, 2022, from <https://osg.ca.gov/>
- Fast Facts: Preventing Adverse Childhood Experiences |Violence Prevention|Injury Center|CDC*. (2022, April 14). <https://www.cdc.gov/violenceprevention/aces/fastfact.html>
- 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. *American Journal of Preventive Medicine*, 14(4), 245–258. [https://doi.org/10.1016/S0749-3797\(98\)00017-8](https://doi.org/10.1016/S0749-3797(98)00017-8)
- Giano, Z., Wheeler, D. L., & Hubach, R. D. (2020). The frequencies and disparities of adverse childhood experiences in the U.S. *BMC Public Health*, 20(1), 1327. <https://doi.org/10.1186/s12889-020-09411-z>

Home. (n.d.). ACEs Aware. Retrieved March 23, 2022, from <https://live-aces-aware.pantheonsite.io/>

Homelessness & Health Care. (n.d.). *California Health Care Foundation*. Retrieved April 6, 2022, from <https://www.chcf.org/topic/homelessness-health-care/>

Implementation of the adverse childhood experiences conversation in primary care | Family Practice | Oxford Academic. (n.d.). Retrieved March 24, 2022, from <https://academic.oup.com/fampra/article/37/3/355/5638073>

Jahn, A., Rysgaard, T. K., Andersen, J. H., & Winding, T. N. (2021). Adverse childhood experiences and future self-rated health: A prospective cohort study. *BMC Public Health*, 21(1), 895. <https://doi.org/10.1186/s12889-021-10941-3>

Korotana, L. M., Dobson, K. S., Pusch, D., & Josephson, T. (2016). A review of primary care interventions to improve health outcomes in adult survivors of adverse childhood experiences. *Clinical Psychology Review*, 46, 59–90. <https://doi.org/10.1016/j.cpr.2016.04.007>

Lanier, P. (n.d.). *Racism is an Adverse Childhood Experience (ACE)—The Jordan Institute for Families*. Retrieved May 3, 2022, from <https://jordaninstituteforfamilies.org/2020/racism-is-an-adverse-childhood-experience-ace/>

Larkin, H., Shields, J., & Anda, R. (2012). The Health and Social Consequences of Adverse Childhood Experiences (ACE) Across the Lifespan: An Introduction to Prevention and Intervention in the Community. *Journal of Prevention & Intervention in the Community*, 40, 263–270. <https://doi.org/10.1080/10852352.2012.707439>

Leitch, L. (2017). Action steps using ACEs and trauma-informed care: A resilience model. *Health & Justice*, 5, 5. <https://doi.org/10.1186/s40352-017-0050-5>

- Lewer, D., King, E., Bramley, G., Fitzpatrick, S., Treanor, M. C., Maguire, N., Bullock, M., Hayward, A., & Story, A. (2020). The ACE Index: Mapping childhood adversity in England. *Journal of Public Health*, 42(4), e487–e495.
<https://doi.org/10.1093/pubmed/fdz158>
- Liu, M., Mejia-Lancheros, C., Lachaud, J., Nisenbaum, R., Stergiopoulos, V., & Hwang, S. W. (2020). Resilience and Adverse Childhood Experiences: Associations With Poor Mental Health Among Homeless Adults. *American Journal of Preventive Medicine*, 58(6), 807–816. <https://doi.org/10.1016/j.amepre.2019.12.017>
- Lorenc, T., Lester, S., Sutcliffe, K., Stansfield, C., & Thomas, J. (2020). Interventions to support people exposed to adverse childhood experiences: Systematic review of systematic reviews. *BMC Public Health*, 20(1), 657. <https://doi.org/10.1186/s12889-020-08789-0>
- Medi-Cal NewsFlash: Screening for Adverse Childhood Experiences Is a Medi-Cal Covered Benefit.* (n.d.). Retrieved March 24, 2022, from https://files.medi-cal.ca.gov/pubsdoco/newsroom/newsroom_30091_02.aspx
- Omerov, P., Craftman, Å. G., Mattsson, E., & Klarare, A. (2020). Homeless persons' experiences of health- and social care: A systematic integrative review. *Health & Social Care in the Community*, 28(1), 1–11. <https://doi.org/10.1111/hsc.12857>
- Sege, R. D., & Browne, C. H. (2017). Responding to ACEs With HOPE: Health Outcomes From Positive Experiences. *Academic Pediatrics*, 17(7), S79–S85.
<https://doi.org/10.1016/j.acap.2017.03.007>
- Sundel, B., Burton, E., Walls, T., Buenaver, L., & Campbell, C. (2018). 0350 Socioeconomic Status Moderates the Relationship Between Adverse Childhood Experiences and Insomnia. *Sleep*, 41(suppl_1), A134–A135. <https://doi.org/10.1093/sleep/zsy061.349>

- Vásquez, E., Quiñones, A., Ramirez, S., & Udo, T. (2019). Association Between Adverse Childhood Events and Multimorbidity in a Racial and Ethnic Diverse Sample of Middle-Aged and Older Adults. *Innovation in Aging*, 3(2), igz016.
<https://doi.org/10.1093/geroni/igz016>
- What Are ACEs? And How Do They Relate to Toxic Stress?* (n.d.). Center on the Developing Child at Harvard University. Retrieved March 24, 2022, from <https://developingchild.harvard.edu/resources/aces-and-toxic-stress-frequently-asked-questions/>
- What Is Toxic Stress?* (n.d.). 2.
- You, D. S., Albu, S., Lisenbardt, H., & Meagher, M. W. (2019). Cumulative Childhood Adversity as a Risk Factor for Common Chronic Pain Conditions in Young Adults. *Pain Medicine*, 20(3), 486–494. <https://doi.org/10.1093/pm/pny106>