

PROJECT SUMMARY

Project title: Screening and Health Care Services for Adverse Childhood Experiences in Vulnerable Populations in Primary Care Settings

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Project Description: The aim of this research is to identify and assess the extent to which medical students are taught about adverse childhood experiences (ACEs): screening, treatment, community referrals and their impact on personal health and health disparities in primary care settings. Based on this aim, we pose several research questions to be answered through systematic review of the literature, curricula, and student surveys about how medical schools are preparing students to address the effects of ACEs, with a focus on vulnerable populations. We will disseminate findings through scholarly presentations at graduate medical education conferences and meetings, peer reviewed publications, our community of practice, and a policy brief and provide technical assistance to programs on how to incorporate ACEs in their curriculum and respond to the needs of vulnerable populations.

Statement of the problem, gaps in current research: Increasingly, studies are showing that adverse childhood experiences (ACEs) influence the health and well-being of a person throughout their lifespan. Yet, there is paucity of information in the literature regarding strategies to teach medical students how to screen for ACEs and be responsive to the needs of vulnerable populations that are impacted by ACEs. While there is a growing body of research that supports a dose-response relationship between number of ACEs experienced during childhood and a range of adverse health outcomes of adulthood, especially among vulnerable populations, relatively little is known about the extent to which medical students are being taught about the effects of ACEs on the health of vulnerable populations, including LGBTQ, homeless persons and, migrant workers, and how to screen for and care for those who have multiple exposures. To date, little systematic attention has been given to ensuring future primary health care providers are trained to screen for ACEs, undertake interventions that can improve long term health outcomes across the life course, or refer patients to community resources that can lead improvements in health and healthcare.

Research questions or hypothesis:

1. What evidence exists regarding what and how medical students are being taught about ACEs: what they are, what impact they have across the life course, how they affect vulnerable populations, and what skills they are being taught to help students address them?
2. What are the core elements of the medical educational curriculum that can be revised and adapted to ensure students have the knowledge and skills to provide culturally competent health care for vulnerable populations exposed to ACEs?

Project goals:

1. To identify the extent to which medical students are trained to screen, treat, or refer persons exposed to ACEs in primary care settings.
2. To identify and/or develop model curricular elements that can be used by other medical schools to prepare students to effectively address the needs of vulnerable populations exposed to ACEs.
3. To disseminate research results and curricular modules on how medical schools are addressing ACEs in vulnerable populations to graduate medical education audience.

Geographic coverage: Our research will be national in scope, covering the entire United States

RESEARCH DESCRIPTION

Title: Screening and Health Care Services for Adverse Childhood Experiences in Vulnerable Populations in Primary Care Settings

Statement of the Problem

Cumulative adverse childhood experiences (ACEs) have been identified as the most powerful predictor of children's cognitive development and a predictor of many health and mental health conditions across the life course. The resulting stress from ACEs has been shown to become "toxic" when there is a "strong, frequent, or prolonged activation of the body's stress response systems in the absence of the buffering protection of a supportive, adult relationship." The trauma that originates from ACEs can lead to impaired development, by causing "regions of the brain to fail to form or grow properly. These alterations in brain maturation have long-term consequences for cognitive, language, and academic abilities, and are connected with mental health disorders." ACEs have been demonstrated to be important determinants of neuro-cognitive development, risk taking behaviors, health trajectories, and quality of life.

The aim of this research is to identify and assess the extent to which medical students are taught about adverse childhood experiences (ACEs): screening, treatment, community referrals and their impact on personal health and health disparities. Based on this aim, we pose several research questions to be answered through a systematic review of the literature, a survey of the 146 US medical schools on how ACEs are addressed in their curricula, and a survey of medical students to assess how well schools are preparing students to address the effects of ACEs, with a focus on vulnerable populations.

Rationale

In a landmark study conducted by Kaiser Permanente and the CDC, investigators found dramatic evidence that supports a hypothesis that living in a stressful environment can have a negative impact on the health of children and result in adverse health conditions experienced by adults across the life course.¹ This study further found that the number of categories of adverse childhood exposures had a graded relationship to the presence of adult diseases including ischemic heart disease, cancer, chronic lung disease, skeletal fractures, and liver disease. Results revealed that persons who had experienced four or more categories of ACEs, compared to those who had experienced none, had 4-to 12-fold increased health risks for alcoholism, drug abuse, depression, and suicide attempt; a 2- to 4-fold increase in smoking, poor self-rated health, > 50 sexual intercourse partners, and sexually transmitted disease; and a 1.4- to 1.6-fold increase in physical inactivity and severe obesity.¹

Subsequent research has validated the Kaiser/CDC study finding that increased exposure to ACEs is related to a greater likelihood of developing a variety of behavioral, health, and mental health problems, including smoking, multiple sexual partners, heart disease, cancer, lung disease, liver disease, sexually transmitted diseases, substance abuse, depression, and suicide attempts²⁻⁴ Additional research supports the dose-response relationship found in the CDC/Kaiser study between the number of adverse childhood experiences a young child has and a wide range of adverse social, cognitive, behavioral, health and mental health outcomes experienced over the life course, including alcoholism and alcohol abuse, cardio-vascular disease,⁵⁻¹² diabetes,¹²⁻¹⁹ obesity,^{20,21} cancer,²¹ depression,²²⁻²⁸ and suicide.²⁹ There is now abundant evidence that adults with mood disorders are much more likely to have experienced ACEs, including childhood sexual and physical abuse, neglect, witnessing domestic violence, early parental loss, parental divorce, parental mental illness, and out-of-home placement.³⁰⁻³⁵

There also is evidence that vulnerable populations, including migrant workers, homeless persons, and the LGBTQ community are at increased risk of exposure to ACEs early in life, including abuse, witnessing domestic

violence, other forms of household dysfunction, discrimination, and the adverse effects of other social determinants which frequently co-occur^{1,36} Increased exposure to ACEs by vulnerable populations is related to a greater likelihood of developing a variety of behavioral, health, and mental health problems, including smoking, multiple sexual partners, heart disease, cancer, lung disease, liver disease, sexually transmitted diseases, substance abuse, depression, and suicide attempts²⁻⁴ Given that vulnerable populations are at increased risk for ACEs and ACEs put these individuals at elevated risk for social disadvantage³⁷ and future poor health outcomes, vulnerable populations should be screened routinely for ACEs. Barriers identified in addressing ACEs in primary care include lack of screening by physicians, care providers do not make it a routine practice to screen for ACEs, and the lack of knowledge among providers of ACEs screening protocols, prevention interventions, and community resources.³⁸

Research Description and Policy Relevance

This research project seeks to assess the extent to which medical students are taught about the needs of vulnerable populations and the skills to screen and care for those exposed to ACEs. This study will determine if embedded in didactics and patient simulation, medical students are exposed to the screening, diagnosing, and the treatment protocols for ACEs that may be seen in vulnerable population and may predispose patients to poor health outcomes. Further, the study will explore if medical schools include ACEs in their curriculum as an area of clinical training in rotations, capstones, or simulation. Research findings suggest that greater attention by physicians in screening for ACEs may lead to preventive interventions that can reduce the burden of chronic diseases experienced later in life. While these vulnerable populations, are at high risk for ACEs,¹ it is unclear from the literature the extent to which medical school curriculum focuses on the effects of adverse childhood experiences (ACEs), particularly for vulnerable populations. This lack of inclusion into the training of medical students may be related to a discordance with impact of stress and physical health outcomes.

This study will focus specifically on how medical school curricula is addressing ACEs in the family/social history, initial physical examination, course of treatment and community referrals as the possible underlying reasons for chronic diseases patterns seen in the LGBTQq, migrant farmworkers, and homeless populations. We will conduct a systematic review of the medical education literature to identify the extent to which medical schools teach students about ACEs, how to conduct routine screening for ACEs to check for trauma exposures, and incorporate ACE screening information into treatment and referral protocols. We will also identify the extent to which medical students are exposed to ACEs screening protocols and community resources through a review of primary care training courses and curriculum through a survey of medical schools and of medical students. This exploration will also include looking for topics, capstones, and other educational elements in medical education that acknowledges ACEs, the use of the ACE Scale to assesses early experiences like physical abuse, neglect and sexual abuse, and how screening information is used to prevent future negative physical health and mental health outcomes, such as heart disease,³⁹ liver disease,⁴⁰ substance abuse,² depression³ and suicide.²⁹ We will use the data gleaned from this review to make recommendations for model ACEs screening and referral protocols for medical students. Additionally, we will link the core components of ACEs screening to present ACGME competencies. This step will ensure ease of implementation by medical schools, reduce redundancy of content, as well as streamline content to reduce time and effort by linking to extant content.

Target Populations

LGBTq Persons. Lesbian, gay, bisexual, transgender, queer (i.e., sexual minority) individuals experience disproportionately higher prevalence of ACEs.⁴⁵ Compared with heterosexual respondents, gay/lesbian and bisexual individuals experience increased odds for six of eight and seven of eight ACEs, respectively. Compared with heterosexual participants, LGBTQ persons report more childhood psychological and physical abuse by

parents or caretakers, more childhood sexual abuse, more partner psychological and physical victimization in adulthood, and more sexual assault experiences in adulthood. Sexual minority persons had higher rates of adverse childhood experiences (IRR = 1.66 gay/lesbian; 1.58 bisexual) compared to their heterosexual peers.⁴⁶ Higher rates of life-time victimization, particularly victimization experienced in childhood, has been found to help explain higher rates of substance use disorders among sexual minorities.⁴⁷ Exposure to victimization and adversity experiences in childhood and adolescence significantly mediated the association of LGBTQ orientation with suicidality, depressive symptoms, tobacco use, and alcohol abuse. LGBTQ persons who seek mental health services must find culturally competent care within systems that may not address their concerns.⁴⁸

Sexual minority individuals have increased exposure to multiple developmental risk factors beyond physical, sexual and emotional abuse than their heterosexual counterparts. Available evidence suggests that LGBTQ groups are 60% more likely to have experienced childhood victimization compared to heterosexuals⁴⁵ Gay/lesbian respondents were found to have higher odds of exposure to child abuse and housing adversity, and bisexual respondents had higher odds of exposure to child abuse, housing adversity, and intimate partner violence, than heterosexuals.⁴⁹ Greater exposure to these adversities explained between 10–20% of the relative excess of suicidality, depression, tobacco use, and symptoms of alcohol and drug abuse among LGBTQ youths compared to heterosexuals.

Persons Experiencing Homelessness. While homelessness is an indicator of high cumulative risk, it is unlikely that homelessness is the only risk experienced by a child or his/her family. Families at risk for homelessness frequently experience traumatic events prior to becoming homeless, which may contribute directly or indirectly to their loss of housing. Additional traumatic events which may contribute to homelessness include parental incarceration, eviction from an apartment or house, and natural disasters.⁴²

People who experience homelessness also are highly vulnerable to violence and other types of trauma. Individuals with lifetime homelessness experienced higher rates of all childhood adversities compared with individuals without lifetime homelessness. The most prevalent childhood adversities for both women and men experiencing lifetime homelessness were physical abuse, physical neglect, and general household dysfunction. Nearly half of women with a history of homelessness also experienced childhood sexual abuse.⁴³ Children who become homeless have often been exposed to a staggering amount of violence. There is increasing evidence that these childhood experiences underlie conditions and behaviors that emerge later in life, such as chronic depression, suicide, alcoholism and IV drug use. By age twelve, 83 percent of homeless children have witnessed at least one incident of serious violence, and 25 percent have witnessed intimate partner violence.⁴⁴ Early childhood trauma associated with being homeless has been shown to be associated with a child's ability to form attachments and control their emotions.

Migrant Farmworkers. Migrant farmworker children and families face an extraordinary degree and prevalence of exposures to trauma on a regular basis and across the lifespan, from the dangers of crossing the border; social, economic, and physical vulnerabilities due to the lack of alternatives; immigration status; fear of deportation; living and working in remote areas; child abuse and youth violence; economic challenges; and the myriad of other stressful life events, such as domestic violence, separation, personal injury or illness; substance abuse and sexual violence. ACEs faced by immigrant children are significant and likely to affect their health across the life course. The American Academy of Pediatrics has called on pediatricians and others who care for all children in immigrant communities throughout the United States to be aware of the traumatic events these children have experienced and to better understand and address their complex medical, mental health and legal needs.⁴¹

WORK PLAN

PROJECT GOALS

- I. To identify the evidence regarding how medical students are being taught about ACEs: what they are, what impact they have across the life course, how they affect vulnerable populations, and what skills they are being taught to help students address them?**

Methodology

- A. We will use PRISMA guidelines to conduct a systematic review of the health science literature on the effect that ACEs have on the health of vulnerable populations.
- B. We will use PRISMA guidelines to conduct a systematic review of the medical education literature to assess the strength of the evidence for screening and treating the effects of ACEs on vulnerable populations.
- C. We will conduct a survey of Offices of Graduate Medical Education in all 146 US medical schools to identify how they are incorporating ACEs screening and care into their curricula, and address the needs of LGBTQ persons, migrant farm workers, and homeless persons. An electronic RedCap survey on how the curriculum addresses vulnerable populations to ACEs will be developed, tested and disseminated to Offices of Graduate Medical Education.
- D. We will conduct a survey of medical students at the four HBCU medical schools (Meharry Medical College, Morehouse School of Medicine, Howard University and Charles R. Drew University) to assess how they perceive their training to screen and address the needs of LGBTQ, homeless and migrant workers affected by ACEs.

Anticipated Product

- A. We will disseminate evidence-based recommendations through a minimum of two scholarly presentations and two peer reviewed articles on how medical schools are preparing students to address ACEs among vulnerable populations in primary care.
- B. Products will be distributed to Community of Practice (CoP) of the center for review and distribution once finalized.

- II. To develop model curricular elements that can be used by other medical schools to prepare students to effectively address the needs of vulnerable populations exposed to ACEs.**

Methodology

- A. We will identify and maintain a repository of best practices in medical student education about screening and treatment for ACEs among LGBTQ, homeless persons, and migrant workers.
- B. We will develop model medical education curricular modules on ACEs, including a minimum of one patient simulation script.
- C. We will map recommended curricular units on ACEs to the *Medbiquitous Curriculum Inventory Working Group Standardized Instructional and Assessment Methods and Resource Types*.

Analysis

- A. We will conduct the analysis of survey responses from Offices of Graduate Medical Education at all 146 US medical schools.
- B. We will analyze medical student surveys, using the more appropriate analytics for the sample size.

Anticipated Product

- A. We will establish a web-accessible repository of curricular modules on adverse childhood experiences across the lifespan relative to vulnerable populations.

III. To disseminate research results on how medical schools are addressing ACEs in vulnerable populations to the graduate medical education audience.

Methodology

- A. We will disseminate research results on how medical schools are addressing ACEs in vulnerable populations in primary care settings to the graduate medical education audience through presentations at national professional meetings and submission of articles to peer reviewed journals.
- B. We will disseminate policy recommendations through a policy brief about the role of medical schools in training students about the effects of ACEs on vulnerable populations in primary care settings.
- C. We will identify and disseminate model curricular elements that can be used by other medical schools to prepare students to effectively address the needs of vulnerable populations exposed to ACEs.
- D. We will disseminate a policy brief with recommendations on how medical schools can integrate ACEs screening, intervention and referral responses in their curriculum.

Anticipated product:

- A. A minimum of two presentations will be made to health professions and graduate medical education audiences.
- B. A minimum of two articles will be submitted for publication in peer reviewed journals.
- C. A policy brief with recommendations on how to address ACEs in medical education curriculum will be widely disseminated.

Limitations

- 1. Anticipated limitations include incomplete survey response from both the Offices of Graduate Medical Education and students at the four HBCU medical schools.
- 2. ACEs are a relatively new health concern. There may not be much literature on how medical schools have addressed ACE in their primary care curriculum.

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