

# Connecting Critical Life Experiences and Mental Well-Being in Medical Students

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## Introduction

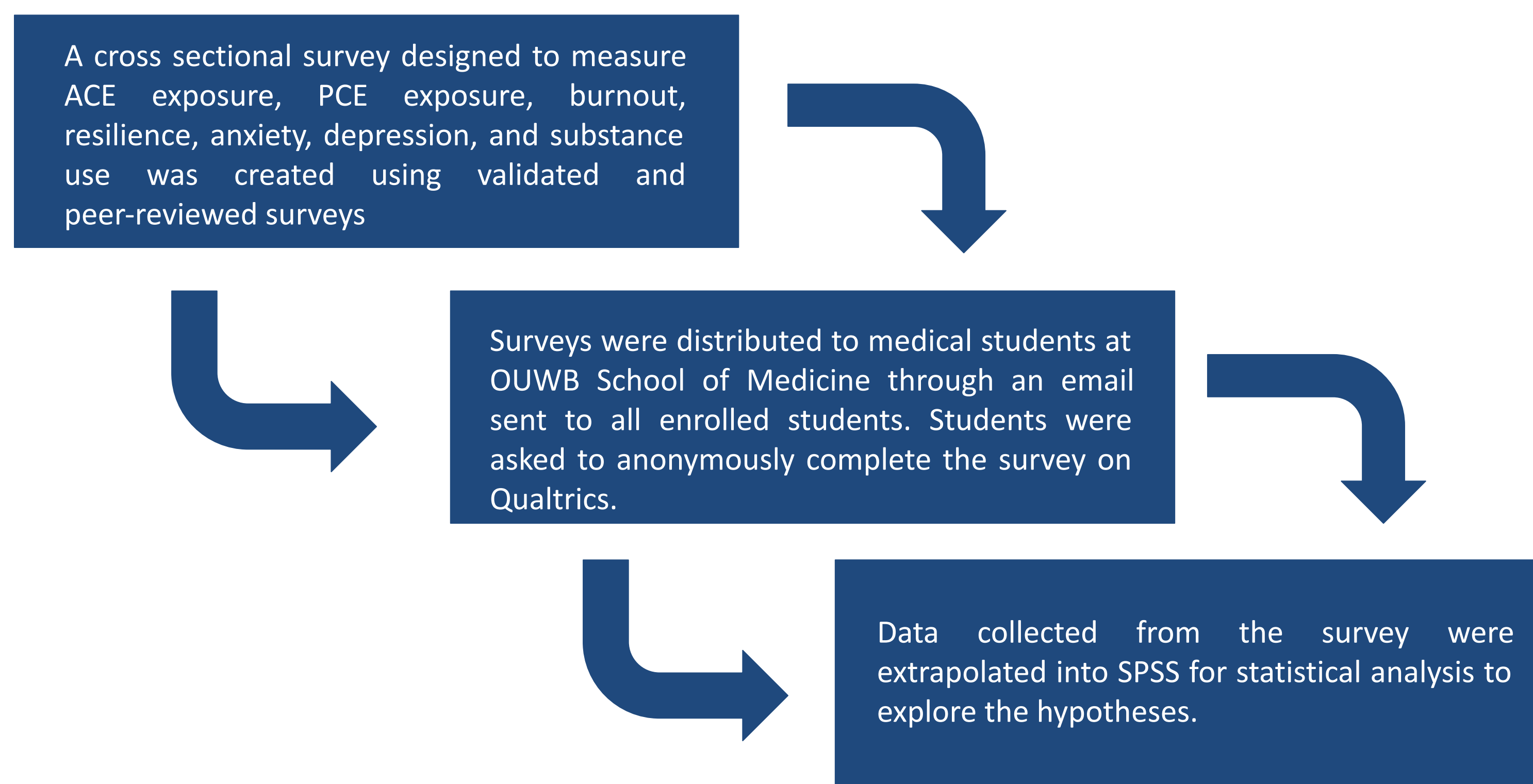
- **Adverse childhood experiences (ACEs):**
  - Negative events that have occurred between the ages of 1-17
  - Display lasting effects on psychological, physical, and social well-being long into adulthood
  - Exhibit a profound positive correlation with significant physical and mental health challenges<sup>1</sup>
  - Reported in 51% of medical students, aligning with proportions observed in the general population<sup>1</sup>
- **Positive Childhood Experiences (PCEs):**
  - Experiences before age 18 that are thought to be beneficial, including relationships with parents, household routines, and beliefs that provide comfort
  - Shown to have a positive association with emotional efficacy and to exhibit a protective effect on adult mental health
  - Shown in a study of university students to have a cumulative effect on lowering risk for depression, anxiety, and loneliness<sup>2</sup>
- ACEs and PCEs can be grouped as **critical life experiences (CLEs)**.
  - Impact of ACEs have been extensively studied
  - Potential protective effect of PCEs are still emerging
  - PCEs shown to serve as a buffer to ameliorate the negative effects of ACEs on mental health<sup>3</sup>
  - No current consideration of ACEs and PCEs as CLEs within one study to assess effects on behavioral pathologies in medical students

## Objectives & Hypotheses

The objective of this study was to examine the connection between CLEs during childhood and burnout, resilience, substance use, anxiety, and depression in medical students to identify student populations in need of targeted interventions. In doing so, this study may help mitigate adverse health outcomes in the context of the stressors faced by students in medical school.

- H1.** ACE exposure will be associated with burnout and negatively associated with resilience
- H2** PCE exposure will be associated with resilience and negatively associated with burnout
- H3.** ACE exposure will be associated with anxiety/depression symptoms.
- H4.** ACE exposure will be associated with substance use

## Approach/Process



## Evaluation Plan

Applying normative standard deviations for a primary outcome measure involving burnout, depression, anxiety, and stress, and with a significance level of 0.05 and a desired power of 0.95, the investigation of the hypothesis indicated that an optimal sample size fell within the range of N = 111 individuals (Cohen's d = 0.3) to N = 79 individuals (Cohen's d = 0.35). 87 students responded to the survey.

Descriptive statistics, correlation analysis, hierarchical regression analysis, and ANCOVA (with gender and age as covariates) were undertaken to explore our hypothesis. Additionally, moderation analysis was conducted, with PCEs as the moderator, to examine whether they mitigate the negative impact of ACEs on the mental health of students.

## Discussion

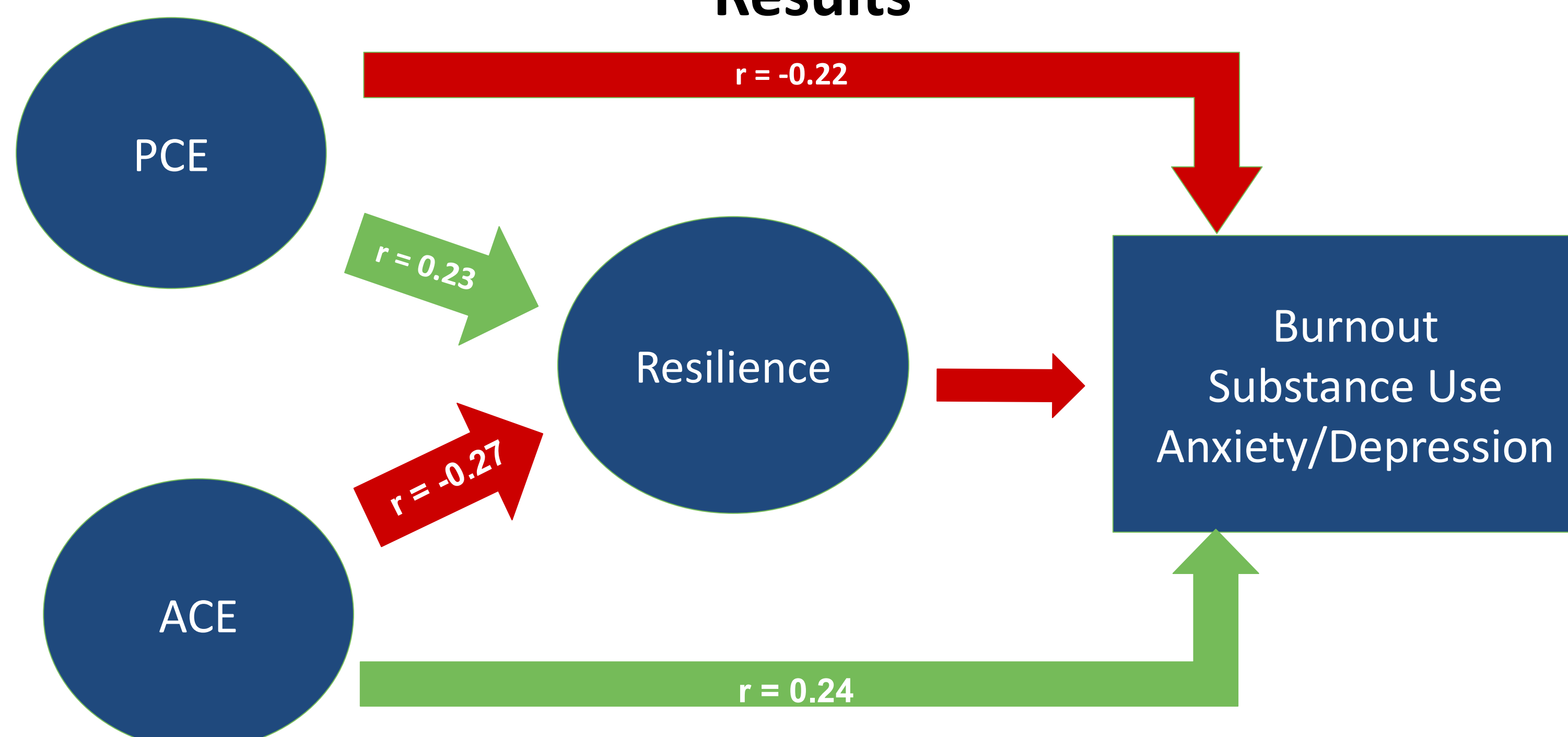
In medical school, students are faced with increased workload, strain of personal relationships, and chronic stress. It is critical to understand the relationship between critical life experiences and burnout, resilience, substance use, and anxiety/depression to identify groups at risk and also to help guide future prevention measures.

In this study, positive childhood experiences were found to be correlated with resilience even in the presence of ACE exposure, alluding to PCEs serving as a protective factor against the adverse effects of ACEs. Additionally, resilience was shown to serve as a moderator of burnout. According to this study, positive experiences in childhood foster resiliency, which then protects medical students from burnout and substance use. While the prevalence and impact of ACE exposure have been extensively studied, the prevalence and impact of PCEs is an emerging field of research<sup>3</sup>. This study underscores the protective effects of PCEs and highlights the importance of PCEs in mitigating the negative effects of ACE exposure. Understanding how critical life experiences impact students' ability to cope in medical school is imperative to protect against burnout in high-stress environments such as medical school.

## References

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## Results



**Figure 1: The mediating effect of resilience on critical life experiences relating to burnout, substance use, and anxiety/depression symptoms in medical students.** PCEs were positively correlated with resilience ( $r=0.23$ ,  $p<0.05$ ). PCEs were negatively correlated with burnout, and anxiety/depression symptoms ( $r < -0.22$ ,  $p < .05$ ). ACEs were positively correlated with burnout, and anxiety/depression symptoms ( $r > 0.24$ ,  $p < .05$ ). ACEs were negatively correlated with resilience ( $r = -0.27$ ,  $p < .05$ ).