Exploring Adverse Childhood Experiences and Toxic Stress in An Urban Community: A Pilot Study

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Introduction

Since the release of the original Kaiser Permanente data on Adverse Childhood Experiences (ACEs) in the 1990s, studies have shown that ACEs are linked to and causative of increased rates of suicide, substance abuse, mental illness, and poor health outcomes. This is especially true among minority populations that face social determinants of health.[1,2]

Research points to a dose-response relationship between ACEs and lifetime health outcomes.[3] The purpose of this study was to identify the most common Adverse Childhood Experiences (ACEs) and sources of toxic stress in Detroit. The overall goal was to evaluate how stressors such as ACEs and growing up in an urban community like Detroit may impact health behaviors and health outcomes.

The design was a cross-sectional survey and retrospective chart review to explore reported ACE frequencies and verify reported health outcomes commonly associated with ACEs.

Methods

After full IRB approval was obtained, subjects at 2 clinical sites were recruited to participate: patients receiving care at a primary care FQHC or a community mental health agency. A convenience sample of respondents completed the 44-question survey in a confidential manner after consenting to participate.

The survey assessed for the prevalence of 14 common "urban" ACEs and self-reported health outcomes and behaviors. Subsequently, a review of the EMR was performed to verify whether the subject had been diagnosed with any commonly associated poor health outcomes.

Data analysis included descriptive statistics, Pearson correlations and logistic regression modeling via SPSS Version 25.[4]
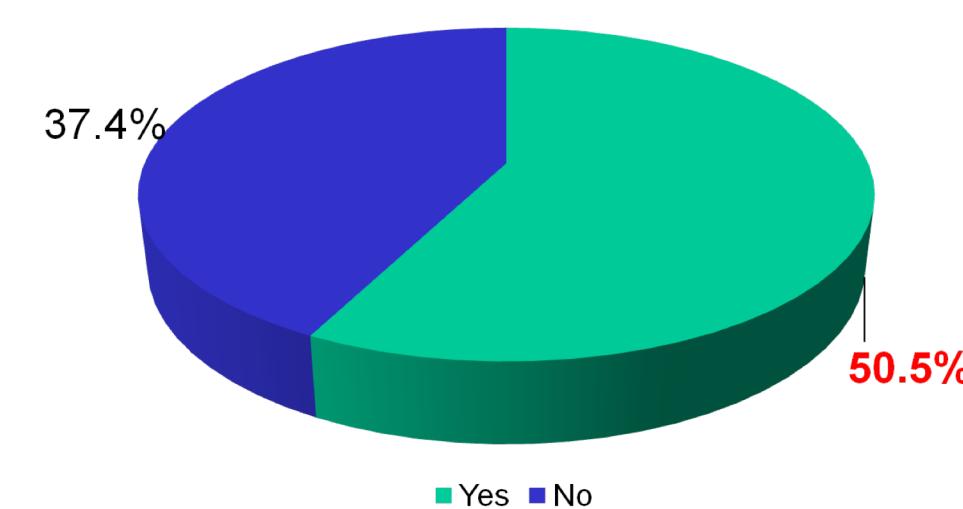
Results

A total of 103 surveys and 59 health verification forms were collected. 80.2% of the sample was African American and 52.4% was male, with a mean age of 43.86 years (range 19- 72 years). The average number of ACEs reported was 5.91 (0-9, SD = 2.35). See Figures for prevalence of each reported ACE. Pearson testing revealed statistically significant bivariate correlations in whether a respondent reported any kind of chemical dependency and male gender (p = 0.008) and completed education level (p = 0.031) One predictor (gender) survived as a statistically significant factor influencing the possession of one or more chemical dependencies (p = 0.003) in regression modeling.
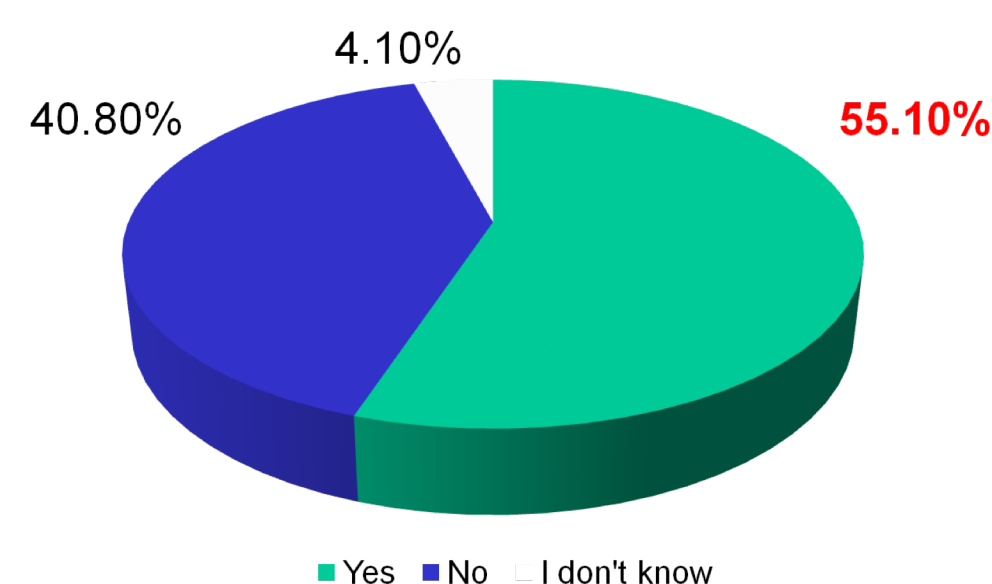
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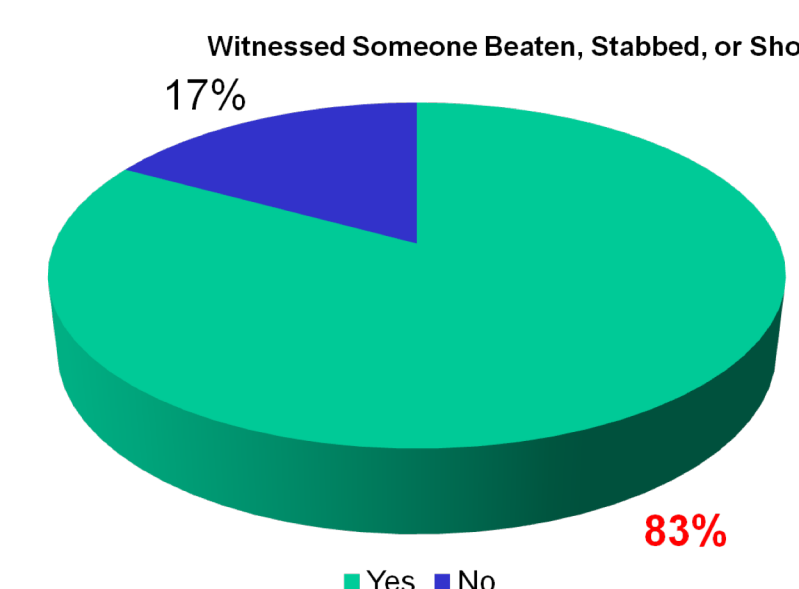

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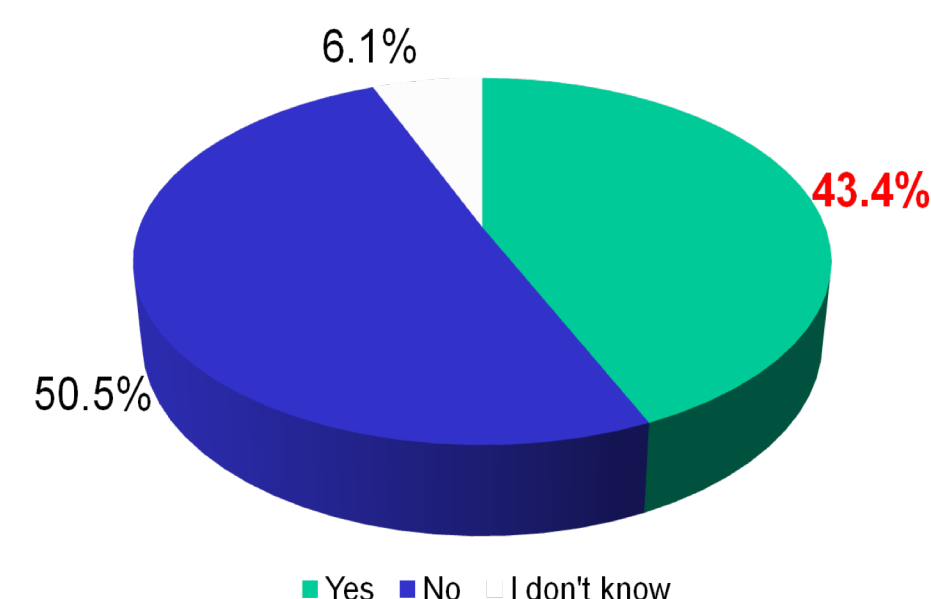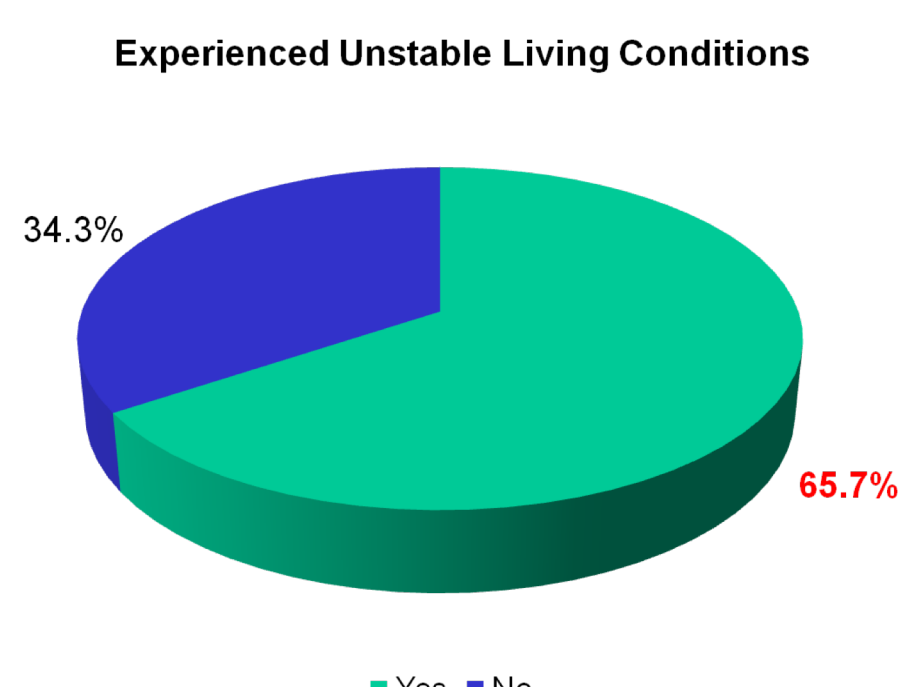
STUDY RESULTS – MENTAL ILLNESS IN HOUSEHOLD
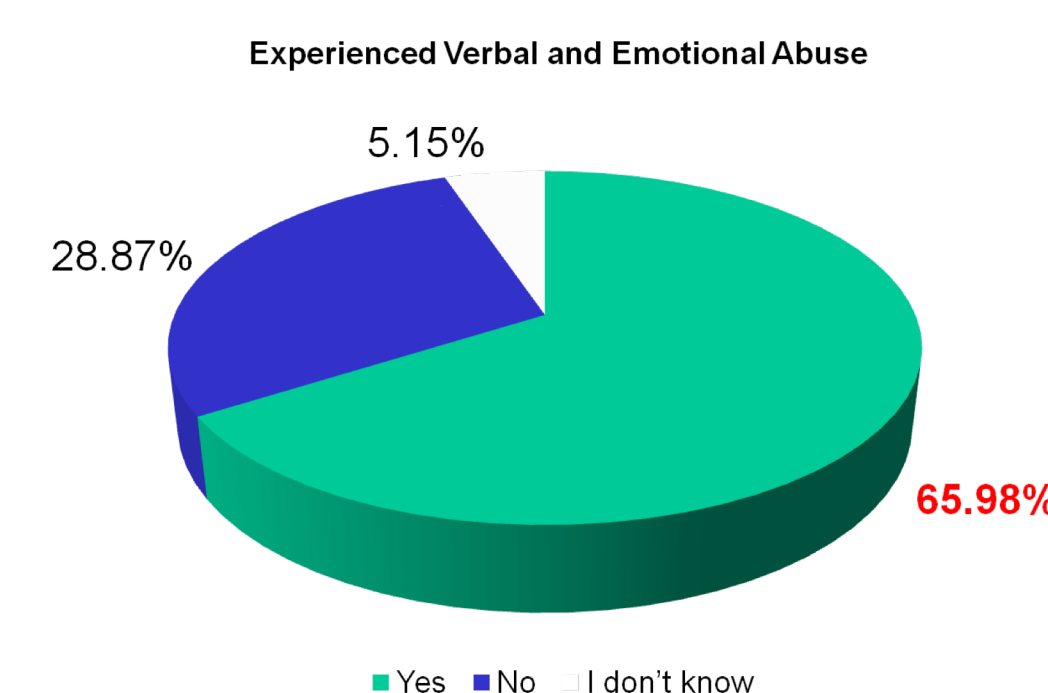
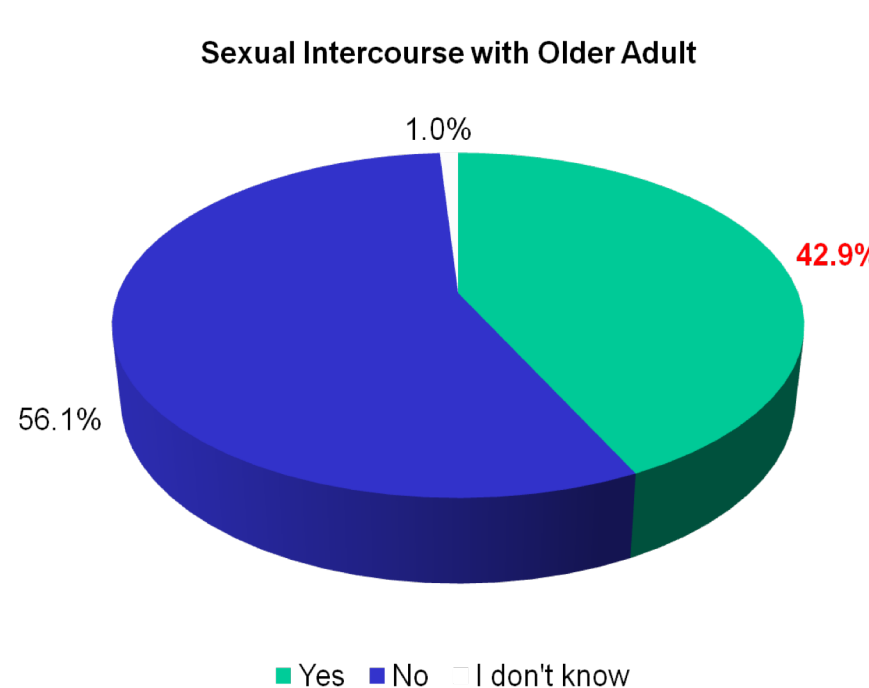STUDY RESULTS – SUBSTANCE ABUSE IN HOUSEHOLD
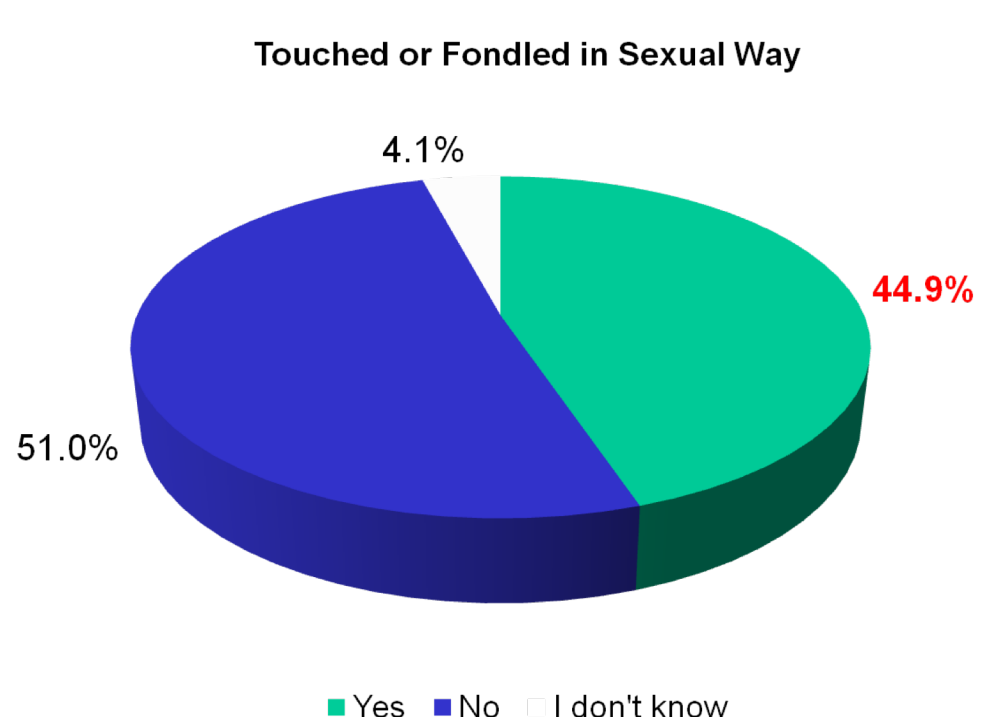
STUDY RESULTS – WITNESSED VIOLENCE
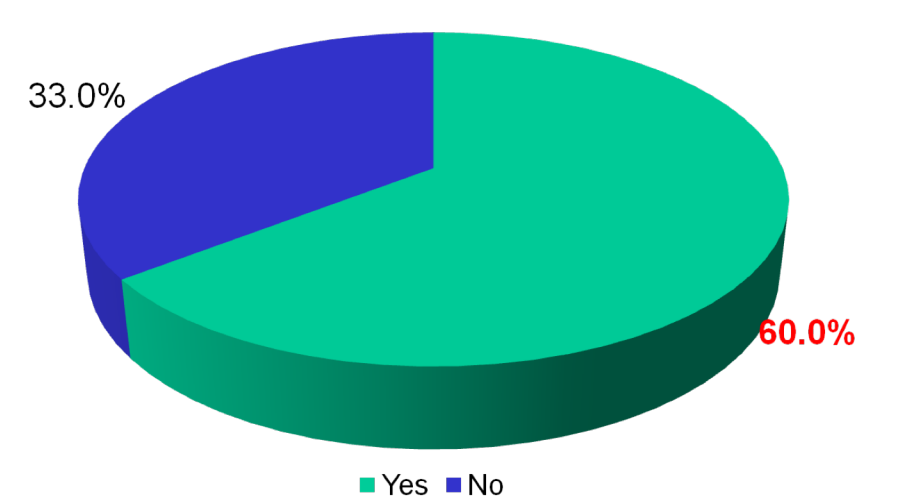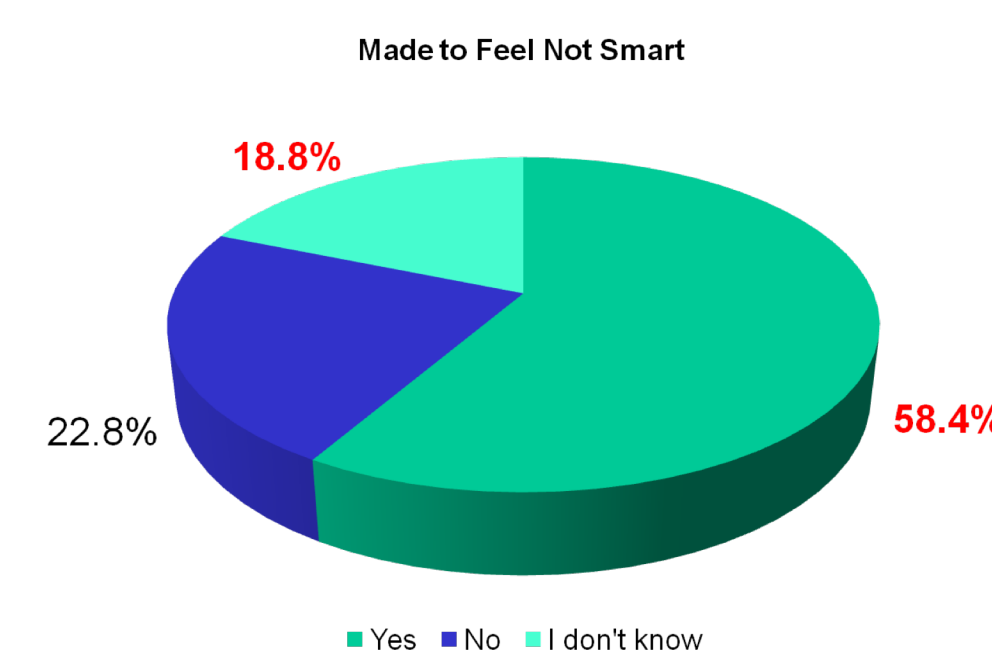
STUDY RESULTS – PHYSICAL NEGLECT

STUDY RESULTS – EMOTIONAL ABUSE

STUDY RESULTS – SEXUAL ABUSE

STUDY RESULTS - RACIAL DISCRIMINATION

STUDY RESULTS – OTHER DISCRIMINATION

Discussion

This pilot study revealed that urban ACEs are largely prevalent in this limited sample. Small sample size and problematic EMR documentation posed major study limitations. The study population therefore lacked heterogeneity, rendering meaningful comparisons and correlations difficult.

A more significant limitation was that the community mental health EMR frequently neglected medical outcomes (STDs, substance use, violence exposure, etc.) in its documentation. As a result, it was not possible to accurately compare data from our reporting sites. The data from the mental health clinic reflected considerable underreporting of subject experiences and practices.

Procedurally, our study revealed the importance of pre-screening EMR content and documentation methods before attempting to gather data, particularly in the case of mental health clinics.

Conclusion

This pilot study revealed there are significant ACEs affecting members of the population sampled. Further studies with larger sample sizes and better health outcome collection methods are needed to refine the prevalence of urban ACES and facilitate the development of successful programming aimed at addressing these issues.

References

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Acknowledgements