RESEARCH

Title: Environmental, Behavioral, and Genetic Factors on Racial Disparities in Breast Cancer Outcomes

Abstract (200 – 300 words):

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Background: Health disparities in cancer-related outcomes disproportionately affect African American and Hispanic populations in the US. All of Us (AoU) program integrates health data from a diverse group of participants in the United States, which provides a great chance of investigating health disparities considering interactive factors from multiple levels.

Research Objective: This study aims to investigate the feasibility of using the All of Us (AoU) program's database to identify mechanisms underlying racial and ethnic disparities in breast cancer survival rates among female patients.

Methods: The study will use the AoU database, which combines electronic health records, survey data, and genomics from a diverse group of participants in the US. All female participants diagnosed with invasive breast cancer will be included for analysis. The study will analyze multilevel data, nesting individual gene expression data to identify risk factors, and develop a multilevel mediation analysis method to analyze the competing risks for breast cancer survival rates.

Results: Demographical and socioeconomic structures are statistically significantly different for female patients among African Americans and white Americans, which are also significant factors for breast cancer survival rates.

Conclusions: There are racial disparities found in the breast cancer patient population among African Americans and white Americans.

Recommendations: The multilevel statistical methods developed through this study can help explain a wide array of health disparities, which will improve biomedical and epidemiological research on health disparities.

This project is exempt from IRB.