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The EVE Study: Exercise, vascular health, and environment in Older Black and White females

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OBJECTIVES/GOALS: Arterial stiffness is a determinant of vascular health. Older Black females exhibit greater arterial stiffness than White females. Exercise minimizes negative health effects of prolonged exposure to adverse social determinants of health (SDoH). Here, we will assess the role of exercise on race differences in arterial stiffness and SDoH in females. METHODS/STUDY POPULATION: We will recruit 96 postmenopausal females (48 Black, 48 White) from the Birmingham, AL area. Graded exercise tests will be used to define training status ("trained": VO2max ≥60th percentile, "untrained": ≤35th percentile). We will assess arterial stiffness via pulse wave velocity (SphygmoCor XCEL). SDoH will include income, education, neighborhood deprivation, racial discrimination, food insecurity, and healthcare access, all measured via corresponding surveys. We will then perform a two-way analysis of variance (race × training status) to assess the differences in arterial stiffness between groups. Through linear regression, we will evaluate the statistical relations between arterial stiffness and race, training status, and SDoH. RESULTS/ANTICIPATED RESULTS: Our central hypothesis is that Black females will have greater arterial stiffness, by way of greater exposure to adverse SDoH, than White females, but that habitual aerobic exercise will attenuate this race difference. Ultimately, we aim to inform future clinical trials related to understanding female-specific cardiovascular disease progression. DISCUSSION/SIGNIFICANCE OF IMPACT: Black females face significant exposure to adverse SDoH and have the highest rates of cardiovascular disease in the United States. However, females are still widely underrepresented in relevant research. This will be the first study to examine the roles of aerobic exercise, race, and SDoH in cardiovascular disease risk among females.

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PrEP Access Navigator (PAN): Creating a comprehensive 'application cheat sheet' for the Trillium Drug Program

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OBJECTIVES/GOALS: To develop a user-friendly tool to simplify the Trillium Drug Program (TDP) application process, addressing barriers for pre-exposure prophylaxis (PrEP) users aged 25 to 64 years. This project may also serve as a scalable model for improving accessibility across other service delivery programs. METHODS/STUDY POPULATION: This study uses the Translational Research Framework to create and refine an online TDP guide. Participants include Ontario residents aged 23 to 64 years. Challenges are identified in the "Understand" phase, while user-driven feedback in the "Act" phase iteratively enhances the tool. Virtual prototyping interviews via Zoom will assess user experience, and error rates will be evaluated by comparing tool suggestions with verified mock scenarios. Twenty participants will test the tool in two iterations: Version 1 from January to February 2025, and Version 2 based on feedback from February to March 2025. RESULTS/ANTICIPATED RESULTS: It is anticipated that participants will encounter fewer barriers to completing the TDP application when using the tool. We expect to see an improvement in user experience by simplifying complex procedures and guiding participants through mock applications with generated scenarios. Data collected from user feedback will highlight specific elements of the tool that require enhancement. Ultimately, we anticipate an increase in successful TDP applications among participants and improvements in accessibility and efficiency of the application process for PrEP users aged 23 to 64 years in Ontario. DISCUSSION/SIGNIFICANCE OF IMPACT: The developed tool aims to reduce financial barriers to PrEP access by facilitating successful enrolment in the TDP. The project's broader impact includes improving health outcomes for underserved communities and contributing to equitable healthcare service delivery.

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High mental health burden among community members: Results from a community engagement program in North Central Florida

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OBJECTIVES/GOALS: Community members in North Central Florida who were identified with high mental health burden, through completion of a Health Needs Assessment in our community engagement program, experienced higher rates of health disparities like food insecurity, recent marijuana use, and burden of disease compared to persons with lower mental health burden. METHODS/STUDY POPULATION: Data were collected through HealthStreet, a University of Florida community engagement program to reduce disparities in healthcare and research. Multivariate and logistic regression analyses were conducted to identify differences between community members with high mental health burden (HMHB; reported depression and scored 8–10 on the stress/loneliness scale) and people with low mental health burden (LMHB; no reported depression and scored 1–7 on the stress/loneliness scale) on age, sex, race, food insecurity, trust in research/researchers, recent marijuana use, high blood pressure, and anxiety. RESULTS/ANTICIPATED RESULTS: Among 3,736 CMs, 21.9% (n = 819) were considered to have high mental health burden. They were statistically significantly more likely to be middle-aged (37.9% vs. 31.2% LMHB), food insecure (62.6% vs. 35.2% LMHB), self-reported marijuana use in the past 30 days (29.2% vs. 15.5% LMHB), and experienced anxiety (70.8% vs. 34.4% LMHB). There were no differences by sex or trust. DISCUSSION/SIGNIFICANCE OF IMPACT: People with HMHB do in fact have more disparities than people with LMHB but trust in research(ers) is not affected. These disparities contribute to significant distress over the lifespan. HealthStreet has engaged people with higher mental health burden and provided social referrals, which is crucial to reduce disparities and improve outcomes.

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