World Academy of Science, Engineering and Technology
International Journal of Health and Medical Engineering
Vol:18, No:06, 2024

Food Insecurity and Other Correlates of Individual Components of Metabolic Syndrome in Women Living with HIV (WLWH) in the United States

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Abstract : Background: Access to effective antiretroviral therapy in the United States has resulted in the rise in longevity in people living with HIV (PLHIV). Despite the progress, women living with HIV (WLWH) experience increasing rates of cardiometabolic disorders compared with their HIV-negative counterparts. Studies focusing on the predictors of metabolic disorders in this population have largely focused on the composite measure of metabolic syndrome (METs). This study seeks to identify the predictors of composite and individual METs factors in a nationally representative sample of WLWH. In particular, the study also examines the role of food security in predicting METs. Methods: The study comprised 1800 women, a subset of participants from the Women's Interagency HIV Study (WIHS). The primary exposure variable, food security, was measured using the U.S. 10-item Household Food Security Survey Module. The outcome measures are the five metabolic syndrome indicators (elevated blood pressure [systolic BP > 130 mmHg and diastolic BP ≥ 85 mmHg], elevated fasting glucose [≥ 110 mg/dL], elevated fasting triglyceride [≥ 150 mg/dL], reduced HDL cholesterol [< 50 mg/dL], and waist circumference > 88 cm) and the composite measure - Metabolic Syndrome (METs) Status. Each metabolic syndrome indicator was coded one if yes and 0 otherwise. The values of the five indicators were summed, and participants with a total score of 3 or greater were classified as having metabolic syndrome. Participants classified as having metabolic syndrome were assigned a code of 1 and 0 otherwise for analysis. The covariates accounted for in this study fell into sociodemographic factors and behavioral and health characteristics. Results: The participants' mean (SD) age was 47.1 (9.1) years, with 71.4% Blacks and 10.9% Whites. About a third (33.1%) had less than a high school (HS) diploma, 60.4% were married, 32.8% were employed, and 53.7% were low-income. The prevalence of worst dietary diversity, low, moderate, and high food security were 24.1%, 26.6%, 17.0%, and 56.4%, respectively. The correlate profile of the five individual METs factors plus the composite measure of METs differ significantly, with METs based on HDL having the most correlates (Age, Education, Drinking Status, Low Income, Body Mass Index, and Health Perception). Additionally, metabolic syndrome based on waist circumference was the only metabolic factor where food security was significantly correlated (Food Security, Age, and Body Mass Index). Age was a significant predictor of all five individual METs factors plus the composite METs measure. Except for METs based on Fasting Triglycerides, body mass index (BMI) was a significant correlate of the various measures of metabolic syndrome. Conclusion: High-density Lipoprotein (HDL) cholesterol significantly correlated with most predictors. BMI was a significant predictor of all METs factors except Fasting Triglycerides. Food insecurity, the primary predictor, was only significantly associated with waist circumference.

Keywords : blood pressure, food insecurity, fasting glucose, fasting triglyceride, high-density lipoprotein, metabolic syndrome, waist circumference, women living with HIV

Conference Title : ICSHI 2024 : International Conference on Sociology of Health and Illness
Conference Location : Venice, Italy
Conference Dates : June 20-21, 2024