



ADDRESSING CARDIOMETABOLIC DISEASE IN PEOPLE LIVING WITH HIV (PLHIV): DEVELOPING STRATEGIES TO IMPROVE DIET AND EXERCISE BY ASSESSING MULTI-LEVEL SOCIAL DETERMINANTS OF HEALTH

Poster #



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Background

- Hypertension Disparities:** Differences in the rates, management, and outcomes of hypertension, influenced by race, socioeconomic status, access to healthcare, and other SDOH
- Goal:** Understand the factors driving hypertension disparities in PLHIV
- Focus on SDOH:** Economic stability, education, healthcare access, neighborhood, and social support
- Impact on Hypertension Control:** SDOH affect diet and physical activity. Poor SDOH lead to unhealthy behaviors and higher uncontrolled hypertension, especially in Black PLHIV

Project Aims

- Assess how SDOH influence hypertension control among Black and White PLHIV
- Examine the impact of SDOH on diet and exercise behaviors across races
- Determine the combined effects of SDOH, diet, and exercise on hypertension outcomes

Study Design

Study Population: Black and White adults enrolled in the PROSPER-HIV study

Data Sources: PROSPER-HIV data, CNICS data, and Geocoded census tract/block-level community SDOH

Measurements:

- Diet:** Assessed using the Healthy Eating Index (HEI).
- Exercise:** Measured through daily steps, light exercise, moderate/vigorous exercise, and sedentary time via wearable devices.
- Hypertension Outcomes:** Defined as controlled, uncontrolled, or untreated hypertension based on blood pressure measurements and medication usage.
- SDOH:** Factors such as economic stability, healthcare access, and neighborhood environment, measured via self-reports and census data.
- Statistical Design:** Utilize multilevel regression to examine the interplay between SDOH, dietary intake, and exercise behaviors, and their impact on hypertension control across racial groups.

Theoretical Framework

Theoretical Domain Framework (TDF) Domain	Research Rationales
Knowledge & Beliefs	Better dietary knowledge (higher HEI scores) is crucial for improving hypertension control.
Skills	Self-regulation skills, indicated by physical activity, are key to managing hypertension.
Social Influences	Social support is essential for effective hypertension management.
Environmental Context	Neighborhood environment impacts physical activity, which in turn affects hypertension outcomes.
Motivation & Goals	Motivation drives better diet and exercise behaviors, leading to improved hypertension control.
Behavioral Regulation	Ongoing self-monitoring is important for maintaining controlled hypertension.

Outcomes

Hypertension Group	Race		Total (n=169)
	White (n=31)	Black (n=138)	
Untreated or uncontrolled	4 (13%)	39 (28%)	43 (25%)
Controlled	11 (35%)	45 (33%)	56 (33%)
No	16 (52%)	54 (39%)	70 (41%)

Diet/Exercise Measure	Race		p-value
	White (n=31)	Black (n=118)	
HEI: Whole Fruit	0.26	0.04	0.05
HEI: Whole Grains	0.98	0.35	<0.001
HEI: Sodium	3.43	2.58	0.01
HEI: Total Score	51.02	44.04	0.04
Total Steps per Day	4537	4780	0.45

- HEI: Healthy Eating Index
- Whole Fruit: (0-5) Higher is better.
- Whole Grains: (0-10) Higher is better.
- Sodium: (0-10) Higher is less sodium intake.
- Total Score: (0-100) Higher indicates better overall diet quality.

Outcome	Significant Predictors (Multi-level Regression Model)
Untreated/Uncontrolled Hypertension	Older age, Black
Healthy Eating Index	Black, Social Vulnerable Index Score
Total Steps per Day	Younger age

Key Messages

- Race & Health:** Black individuals had higher rates of uncontrolled/untreated hypertension and lower diet quality.
- Age & Activity:** Older age is associated with untreated/uncontrolled hypertension and fewer daily steps.
- Social Vulnerability & Diet:** Higher SVI is tied to lower diet quality.
- Further Study:** Explore additional factors and refine methodologies.

Community Impact

Key Partners

- UAB Center for AIDS Research (CFAR)
- Forge AHEAD Center Community Advisory Board

Public Health & Societal Impact

- Health Education Resources:** Provide data on SDOH and dietary/behavioral factors that contribute most strongly to disparities in hypertension control among Black PLHIV
- Public Health Practices:** Potential to tailor existing health programs

References



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