Beyond Biology: Social and Psychosocial Determinants of Cardiovascular Health

Mario Sims, PhD, FAHA
Distinguished Professor
Social Medicine, Population and Public Health
University of California, Riverside
School of Medicine

HELP Conference
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No industry relationships to disclose

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What Inspired My Research?

1. LIVED EXPERIENCE

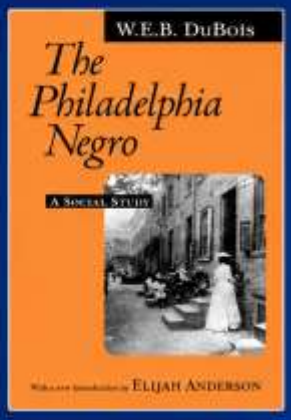
Saw firsthand how neighborhood conditions shape health

2. INTELLECTUAL FOUNDATION

Inspired by W.E.B. Du Bois' *The Philadelphia Negro* (1899)

3. MENTORSHIP

Learned how to study communities and translate lived experience into science



W.E.B. Du Bois | 1899

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Overview of Presentation

- Principles of Health Equity
- What is *Beyond Biology*
- Need for the study of social determinants of health (SDOH) and CVD - *JHS*
- Previous Research – *four SDOH domains*
- New Areas of Research

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Health Disparities
Health disparities do not refer to all differences in health.
A health disparity/inequality is...
A difference in which disadvantaged social groups—such as the poor, racial/ethnic minorities, women, or other groups who have persistently experienced social disadvantage or discrimination—systematically experience worse health or greater health risks than more advantaged social groups.
DISADVANTAGED SOCIAL GROUPS
MORE ADVANTAGED SOCIAL GROUPS
Pursuing health equity means pursuing the elimination of health disparities.
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Health Equity
Health equity means everyone has a fair shot at living the healthiest life possible.
Achieving health equity means removing obstacles to health
Poverty
Discrimination
Good jobs with fair pay
Quality education
Safe, stable housing
Safe environments
Access to quality health care
When we remove barriers, everyone has the opportunity to be healthy and thrive.
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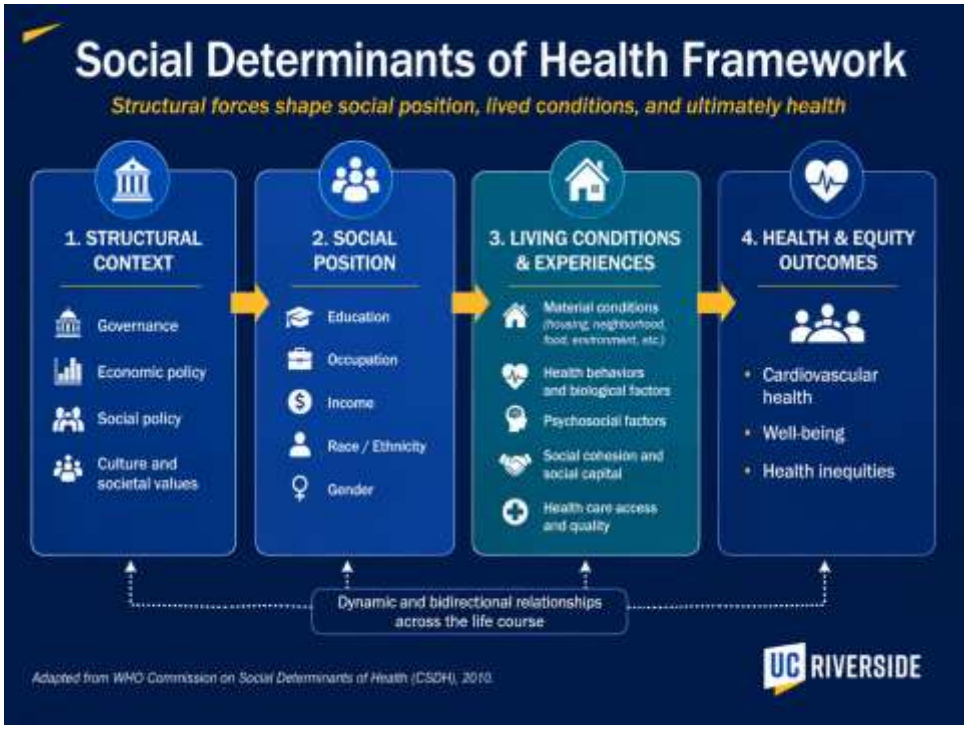
Social Determinants of Health Framework
Structural forces shape social position, lived conditions, and ultimately health
1. STRUCTURAL CONTEXT
Governance
Economic policy
Social policy
Culture and societal values
2. SOCIAL POSITION
Education
Occupation
Income
Race / Ethnicity
Gender
3. LIVING CONDITIONS & EXPERIENCES
Material conditions (housing, neighborhood, food, environment, etc.)
Health behaviors and biological factors
Psychosocial factors
Social cohesion and social capital
Health care access and quality
4. HEALTH & EQUITY OUTCOMES
Cardiovascular health
Well-being
Health inequities
Dynamic and bidirectional relationships across the life course
Adapted from WHO Commission on Social Determinants of Health (CSDH), 2010.
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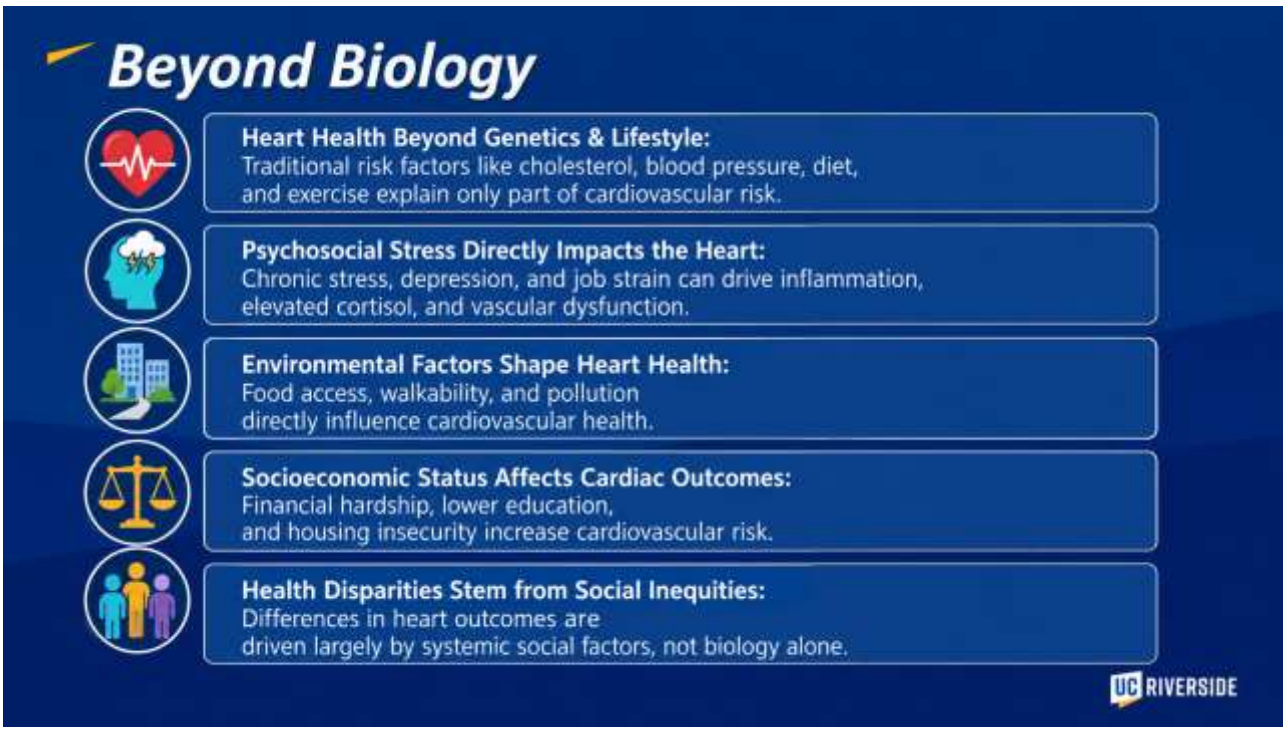
Beyond Biology
Heart Health Beyond Genetics & Lifestyle:
Traditional risk factors like cholesterol, blood pressure, diet, and exercise explain only part of cardiovascular risk.
Psychosocial Stress Directly Impacts the Heart:
Chronic stress, depression, and job strain can drive inflammation, elevated cortisol, and vascular dysfunction.
Environmental Factors Shape Heart Health:
Food access, walkability, and pollution directly influence cardiovascular health.
Socioeconomic Status Affects Cardiac Outcomes:
Financial hardship, lower education, and housing insecurity increase cardiovascular risk.
Health Disparities Stem from Social Inequities:
Differences in heart outcomes are driven largely by systemic social factors, not biology alone.
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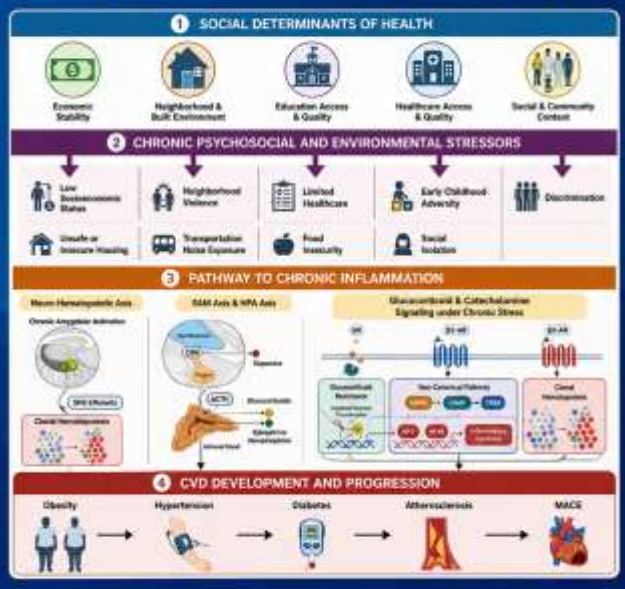
Embodiment of SDOH & Biology of Adversity



1. Connections between SDOH and biologic pathways lead to *inflammation and CVD*
2. SDOH are sources of stress people face → *neigh violence, low SES, food insecurity*
3. Biologic adversity promotes pathways to *chronic inflammation*
4. Ultimately result in risk factors for CVD *MACE*

Powell-Wiley TM et al. 2022;130:782-799

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Geographic Disparities: Chronic Diseases, Social Determinants

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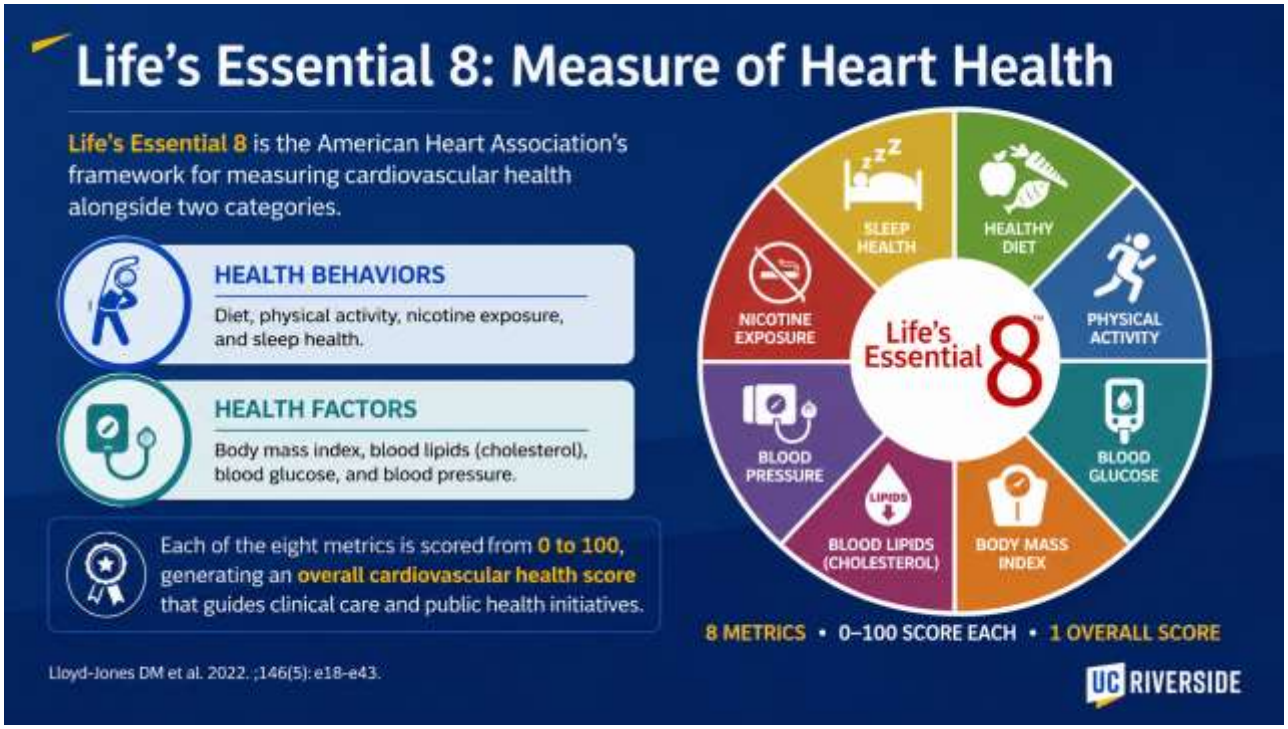
Life's Essential 8: Measure of Heart Health
Life's Essential 8 is the American Heart Association's framework for measuring cardiovascular health alongside two categories.
HEALTH BEHAVIORS
Diet, physical activity, nicotine exposure, and sleep health.
HEALTH FACTORS
Body mass index, blood lipids (cholesterol), blood glucose, and blood pressure.
Each of the eight metrics is scored from 0 to 100, generating an overall cardiovascular health score that guides clinical care and public health initiatives.
SLEEP HEALTH
HEALTHY DIET
PHYSICAL ACTIVITY
BLOOD GLUCOSE
BODY MASS INDEX
BLOOD LIPIDS (CHOLESTEROL)
BLOOD PRESSURE
NICOTINE EXPOSURE
Life's Essential 8
8 METRICS • 0–100 SCORE EACH • 1 OVERALL SCORE
Lloyd-Jones DM et al. 2022. ;146(5): e18-e43.
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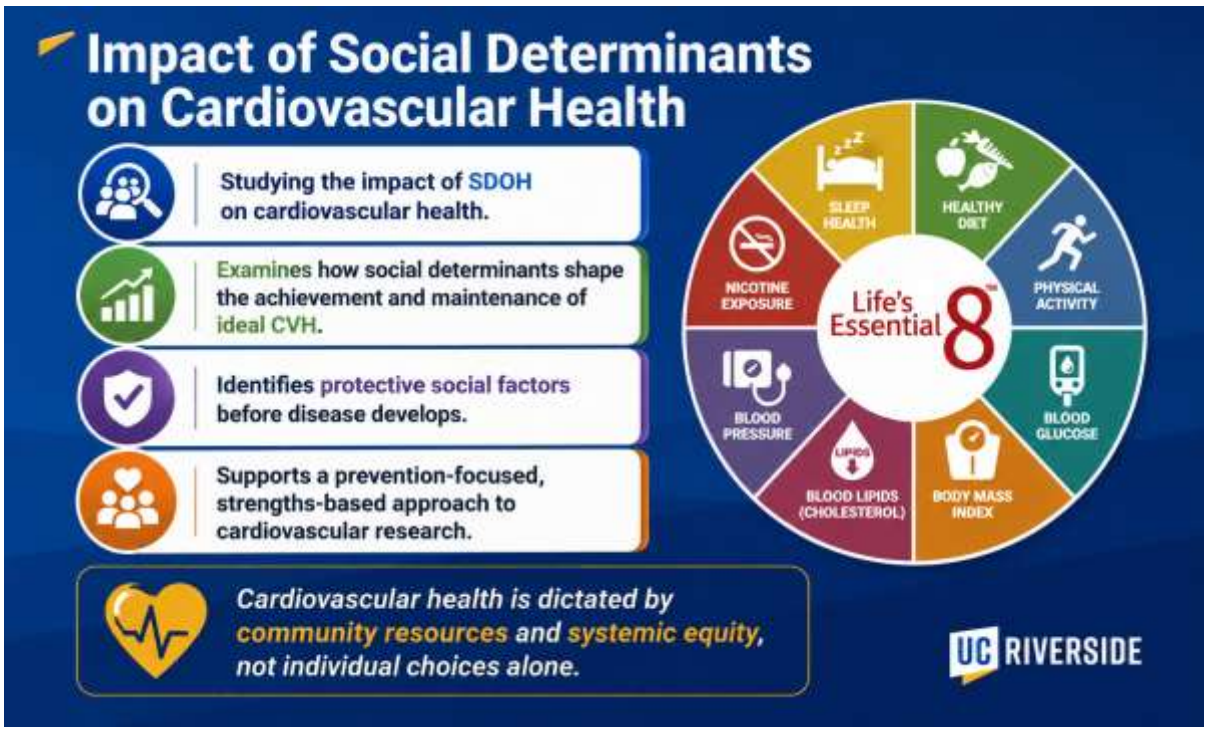
Impact of Social Determinants on Cardiovascular Health
Studying the impact of SDOH on cardiovascular health.
Examines how social determinants shape the achievement and maintenance of ideal CVH.
Identifies protective social factors before disease develops.
Supports a prevention-focused, strengths-based approach to cardiovascular research.
Cardiovascular health is dictated by community resources and systemic equity, not individual choices alone.
SLEEP HEALTH
HEALTHY DIET
PHYSICAL ACTIVITY
BLOOD GLUCOSE
BODY MASS INDEX
BLOOD LIPIDS (CHOLESTEROL)
BLOOD PRESSURE
NICOTINE EXPOSURE
Life's Essential 8
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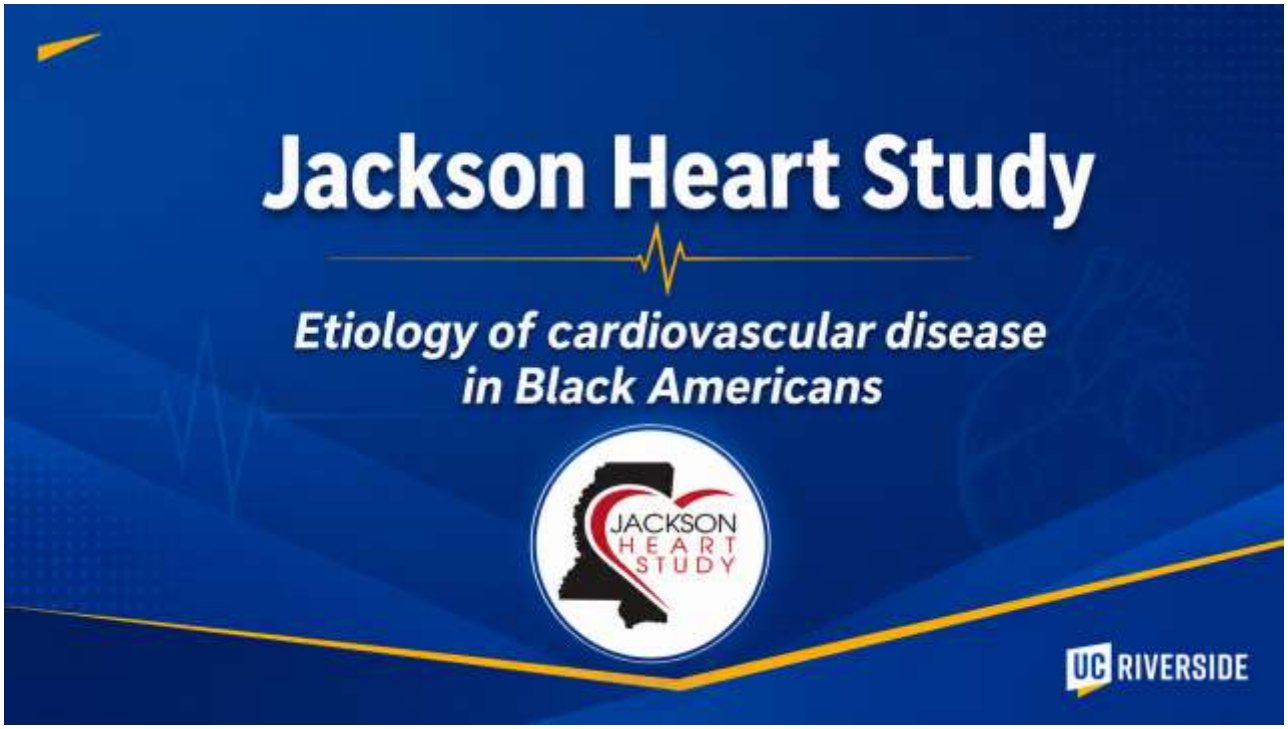
Jackson Heart Study
Etiology of cardiovascular disease in Black Americans
JACKSON HEART STUDY
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JHS STUDY DESIGN
A Longitudinal Cohort Study of Black American Health
1
Single-site study
2
5306 Black American men and women (N=5306)
3
Sample drawn from 4 components
4
Clinic visit 2000 – 2013
5
Current exam 4 (2018 – 2025)
approved for exam 5
6
Annual follow up
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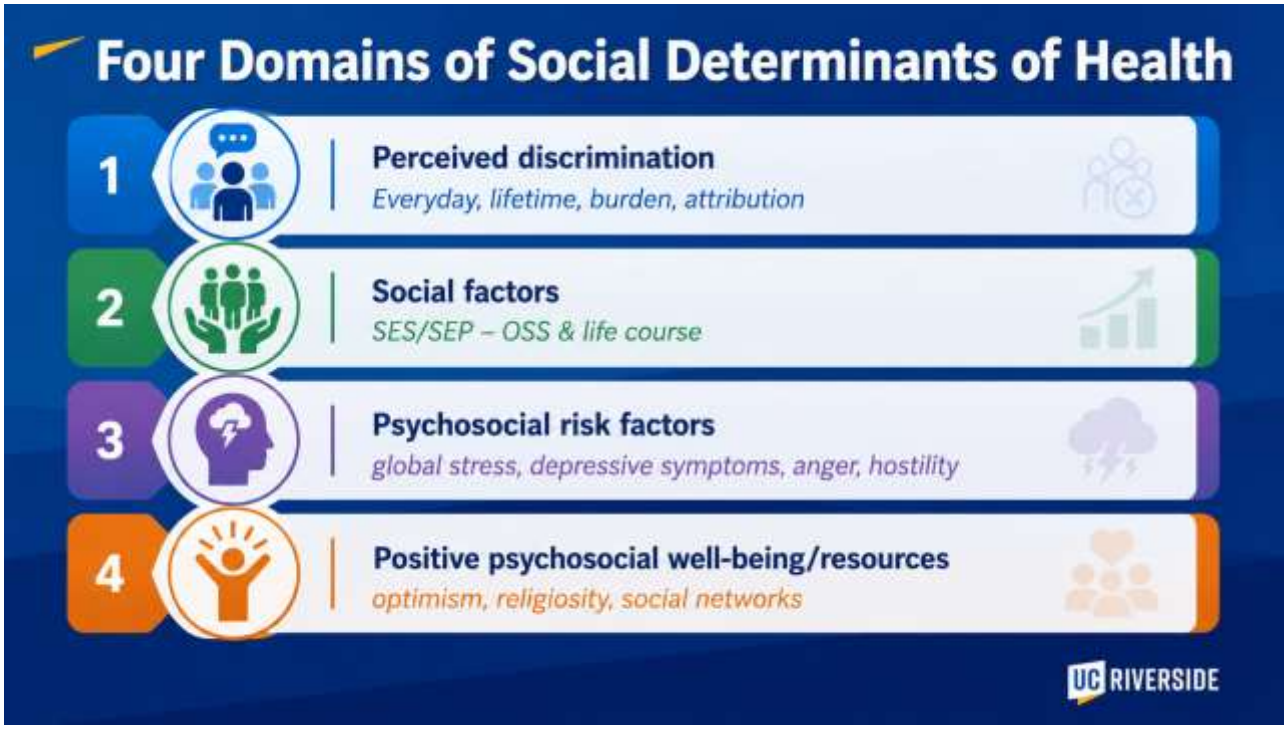
Four Domains of Social Determinants of Health
1
Perceived discrimination
Everyday, lifetime, burden, attribution
2
Social factors
SES/SEP – OSS & life course
3
Psychosocial risk factors
global stress, depressive symptoms, anger, hostility
4
Positive psychosocial well-being/resources
optimism, religiosity, social networks
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Discrimination Findings
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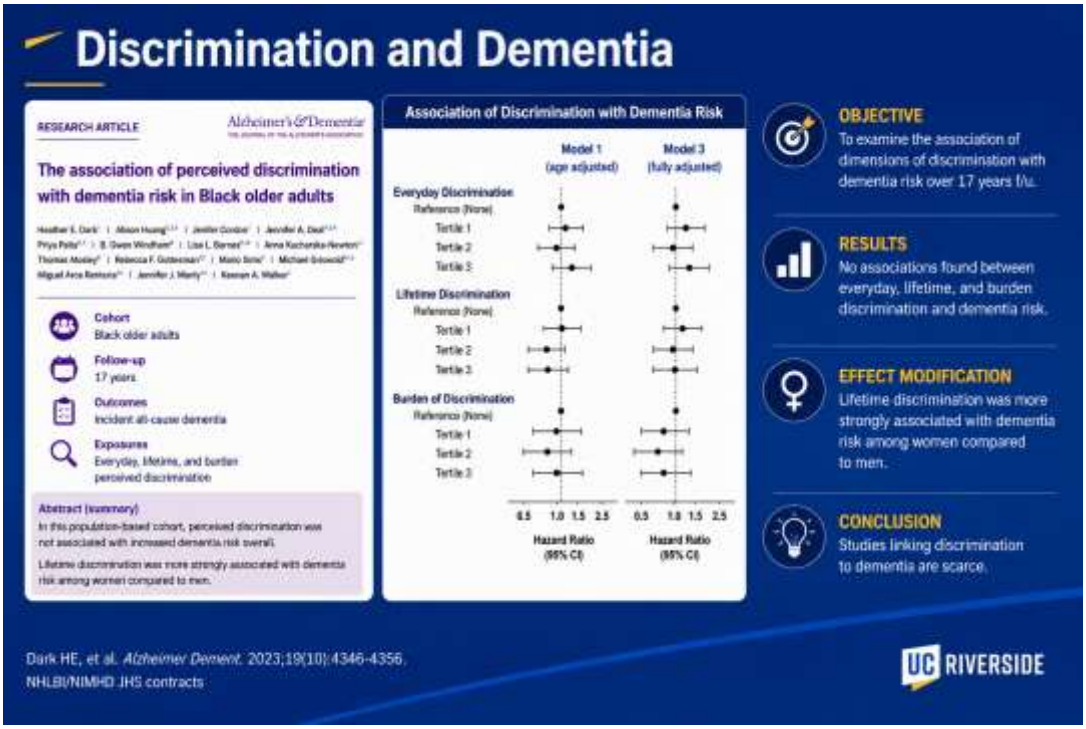
Discrimination and Dementia
RESEARCH ARTICLE
Alzheimer's & Dementia
The association of perceived discrimination with dementia risk in Black older adults
Cohort
Black older adults
Follow-up
17 years
Outcomes
Incident all-cause dementia
Exposures
Everyday, lifetime, and burden perceived discrimination
Abstract (summary)
In this population-based cohort, perceived discrimination was not associated with increased dementia risk overall.
Lifetime discrimination was more strongly associated with dementia risk among women compared to men.
Association of Discrimination with Dementia Risk
Model 1 (age adjusted)
Model 3 (fully adjusted)
Everyday Discrimination
Reference (None)
Tertile 1
Tertile 2
Tertile 3
Lifetime Discrimination
Reference (None)
Tertile 1
Tertile 2
Tertile 3
Burden of Discrimination
Reference (None)
Tertile 1
Tertile 2
Tertile 3
0.5 1.0 1.5 2.5
Hazard Ratio (95% CI)
OBJECTIVE
To examine the association of dimensions of discrimination with dementia risk over 17 years f/u.
RESULTS
No associations found between everyday, lifetime, and burden discrimination and dementia risk.
EFFECT MODIFICATION
Lifetime discrimination was more strongly associated with dementia risk among women compared to men.
CONCLUSION
Studies linking discrimination to dementia are scarce.
Dark HE, et al. Alzheimer Dement. 2023;19(10):4346-4356.
NHLBI/NIMHD JHS contracts
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Discrimination and CVD risk factors
MAYO CLINIC
ORIGINAL ARTICLE
Perceived Discrimination and Cardiovascular Outcomes in Older African Americans: Insights From the Jackson Heart Study
Key Takeaways
Higher perceived discrimination was associated with worse cardiovascular outcomes (including CVD events and mortality) in African Americans.
Findings highlight the importance of addressing discrimination as a CVD risk factor.
American Journal of Public Health
RESEARCH ARTICLE
Perceived Discrimination and Hypertension Among African Americans in the Jackson Heart Study
Key Takeaways
Higher perceived discrimination was associated with greater odds of hypertension.
The association persisted after adjusting for key sociodemographic and behavioral factors.
AMERICAN JOURNAL OF Preventive Medicine
RESEARCH ARTICLE
The Role of Perceived Discrimination in Obesity Among African Americans
Key Takeaways
Perceived discrimination was positively associated with obesity among African American women.
Suggests discrimination may contribute to obesity-related health disparities.
Ethnicity and Disease
RESEARCH ARTICLE
Perceived Discrimination and Reported Trust and Satisfaction with Providers in African Americans: The Jackson Heart Study
Key Takeaways
Higher perceived discrimination was associated with lower trust and satisfaction with health care providers.
Lower trust and satisfaction may be a pathway linking discrimination to poor health outcomes.
Consistent evidence
Links perceived discrimination to CVD risk factors.
Key risk factors
Include hypertension, obesity, and cardiometabolic risk.
The need
for interventions to reduce discrimination and improve cardiovascular health.
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Socioeconomic Status Findings
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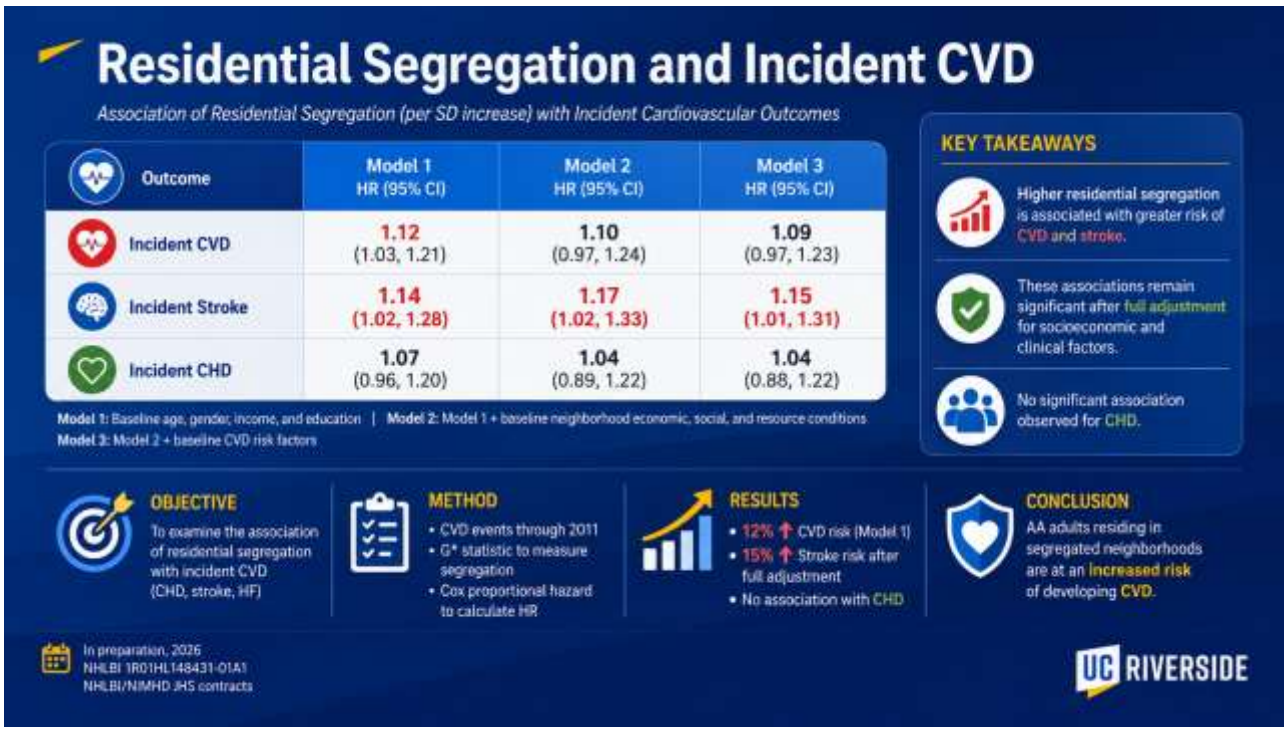
Residential Segregation and Incident CVD
Association of Residential Segregation (per SD increase) with Incident Cardiovascular Outcomes
Outcome
Model 1 HR (95% CI)
Model 2 HR (95% CI)
Model 3 HR (95% CI)
Incident CVD
1.12 (1.03, 1.21)
1.10 (0.97, 1.24)
1.09 (0.97, 1.23)
Incident Stroke
1.14 (1.02, 1.28)
1.17 (1.02, 1.33)
1.15 (1.01, 1.31)
Incident CHD
1.07 (0.96, 1.20)
1.04 (0.89, 1.22)
1.04 (0.88, 1.22)
Model 1: Baseline age, gender, income, and education | Model 2: Model 1 + baseline neighborhood economic, social, and resource conditions
Model 3: Model 2 + baseline CVD risk factors
KEY TAKEAWAYS
Higher residential segregation is associated with greater risk of CVD and stroke.
These associations remain significant after full adjustment for socioeconomic and clinical factors.
No significant association observed for CHD.
OBJECTIVE
To examine the association of residential segregation with incident CVD (CHD, stroke, HF)
METHOD
• CVD events through 2011
• G* statistic to measure segregation
• Cox proportional hazard to calculate HR
RESULTS
• 12% ↑ CVD risk (Model 1)
• 15% ↑ Stroke risk after full adjustment
• No association with CHD
CONCLUSION
AA adults residing in segregated neighborhoods are at an increased risk of developing CVD.
In preparation, 2026
NHLBI 1R01HL148431-01A1
NHLBI/NIMHD JHS contracts
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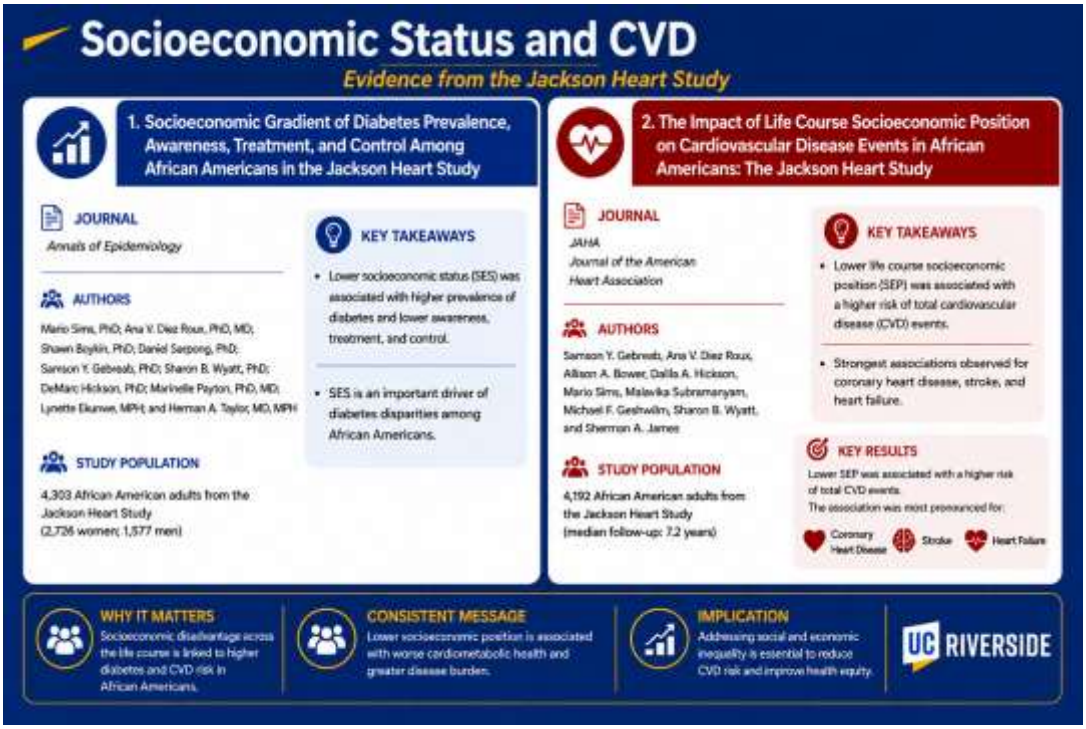
Socioeconomic Status and CVD
Evidence from the Jackson Heart Study
1. Socioeconomic Gradient of Diabetes Prevalence, Awareness, Treatment, and Control Among African Americans in the Jackson Heart Study
JOURNAL
Annals of Epidemiology
AUTHORS
Mario Sims, PhD; Ana V. Diez Roux, PhD, MD; Shawn Boykin, PhD; Daniel Seipong, PhD; Samson Y. Gebreab, PhD; Sharon B. Wyatt, PhD; DeMarc Hickson, PhD; Marinelle Payton, PhD, MD; Lynette Ekunwe, MPH; and Herman A. Taylor, MD, MPH
STUDY POPULATION
4,303 African American adults from the Jackson Heart Study
(2,726 women; 1,577 men)
KEY TAKEAWAYS
Lower socioeconomic status (SES) was associated with higher prevalence of diabetes and lower awareness, treatment, and control.
SES is an important driver of diabetes disparities among African Americans.
2. The Impact of Life Course Socioeconomic Position on Cardiovascular Disease Events in African Americans: The Jackson Heart Study
JOURNAL
JAHA
Journal of the American Heart Association
AUTHORS
Samson Y. Gebreab, Ana V. Diez Roux, Allison A. Bower, Dalila A. Hickson, Mario Sims, Malavika Subramanyam, Michael F. Geshwilm, Sharon B. Wyatt, and Sherman A. James
STUDY POPULATION
4,192 African American adults from the Jackson Heart Study
(median follow-up: 7.2 years)
KEY TAKEAWAYS
Lower life course socioeconomic position (SEP) was associated with a higher risk of total cardiovascular disease (CVD) events.
Strongest associations observed for coronary heart disease, stroke, and heart failure.
KEY RESULTS
Lower SEP was associated with a higher risk of total CVD events.
The association was most pronounced for:
Coronary Heart Disease
Stroke
Heart Failure
WHY IT MATTERS
Socioeconomic disadvantage across the life course is linked to higher diabetes and CVD risk in African Americans.
CONSISTENT MESSAGE
Lower socioeconomic position is associated with worse cardiometabolic health and greater disease burden.
IMPLICATION
Addressing social and economic inequality is essential to reduce CVD risk and improve health equity.
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Psychosocial Risk
Factor Findings
JACKSON HEART STUDY
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Cumulative psychosocial factors and CVD

Evidence from the Jackson Heart Study

RESEARCH ARTICLE Open Access BMC Public Health

Cumulative psychosocial factors are associated with cardiovascular disease risk factors and management among African Americans in the Jackson Heart Study

Mario Sims[1], LaShaunta M. Glover[2], Samson Y. Gebreab[3] and Tanya M. Spruill[4]

KEY TAKEAWAYS

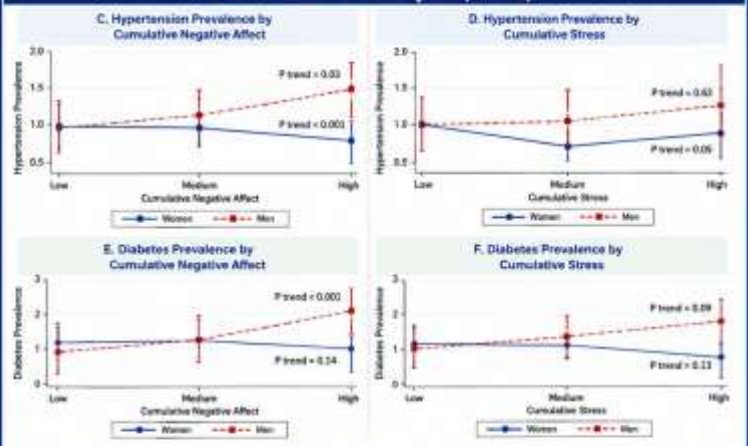
- Greater cumulative negative psychosocial affect and stress were associated with higher prevalence of hypertension and diabetes among African Americans.
- Stronger associations were observed for men in several models.
- These findings highlight the importance of addressing psychosocial burden to reduce CVD risk and improve management in this population.

POPULATION 5,306 African American adults in the Jackson Heart Study

MEASURES Cumulative negative affect (cynicism, anger, anger-out, depressive symptoms) and cumulative stress

OUTCOMES Hypertension prevalence and diabetes prevalence

Predicted Associations by Sex (95% CI)



Overall Conclusion: The joint accumulation of psychosocial factors is associated with increased CVD risk factors and poorer management among African Americans.

Sims et al. *BMC Public Health*. 2020;20:e454–e468
NIMHD U54MD008176; NHLBI 1K01HL084682

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Psychosocial Factors and CVD

Psychosocial Factors Are Associated With Blood Pressure Progression Among African Americans in the Jackson Heart Study

Cassandra D. Ford,[1] Mario Sims,[2] John C. Higginbotham,[3] Martha R. Crowther,[4] Sharon B. Wyatt,[2,5†] Solomon K. Musani,[3] Thomas J. Payne,[6] Ervin R. Fox,[3] and Jason M. Parton[7]

KEY TAKEAWAY
Psychosocial factors were associated with incident hypertension and blood pressure progression among African Americans in the Jackson Heart Study.

Stress and Achievement of Cardiovascular Health Metrics: The American Heart Association Life's Simple 7 in Blacks of the Jackson Heart Study

LaPrincess C. Brewer, MD, MPH; Nicole Redmond, MD, PhD, MPH; Joshua P. Slusser, BS; Christopher G. Scott, MS; Alanna M. Chamberlain, PhD; Luc Dlouse, MD, MPH, DSc; Christina A. Patten, PhD; Yvonneue L. Roger, MD; Mario Sims, PhD, MS

KEY TAKEAWAY
Higher chronic stress, minor life events, and lower achievement of Life's Simple 7 cardiovascular health metrics were associated with poorer cardiovascular health among African Americans.

The Contribution of Psychosocial Stressors to Sleep among African Americans in the Jackson Heart Study

Dayna A. Johnson, PhD, MPH, MSW, MS[1,2]; Lynda Lisabeth, PhD[1]; Tené T. Lewis, PhD[3]; Mario Sims, PhD[4]; DeMarc A. Hickson, PhD, MPH[4,5]; Tandaw Samdarshi, MD[1]; Herman Taylor, MD[6]; Ana V. Diez Roux, MD, PhD[7]

KEY TAKEAWAY
Psychosocial stressors were associated with poorer sleep duration and quality among African Americans in the Jackson Heart Study.

Psychosocial Factors and Behaviors in African Americans: The Jackson Heart Study

Mario Sims, PhD, MS,[1] Kristie J. Lipford, PhD,[2] Nikhil Patel, MD,[1] Cassandra D. Ford, PhD,[3] Yuan-I Min, PhD,[2] Sharon B. Wyatt, PhD[4]

KEY TAKEAWAY
Multiple psychosocial factors and behaviors were significantly associated with the psychosocial–cardiovascular disease pathway in African Americans.

Financial Stress and Risk of Coronary Heart Disease in the Jackson Heart Study

Kaitlyn E. Moran, MPH,[1] Mark J. Ommerborn, MPH,[1] Chad T. Blackshear, MS,[2,3] Mario Sims, PhD, MS,[3,4] Cheryl R. Clark, MD, ScD[1,3,4]

KEY TAKEAWAY
Financial stress was associated with higher risk of coronary heart disease among African Americans.

Depressive Symptoms and Risk of Cardiovascular Events in Blacks
Findings From the Jackson Heart Study

Emily C. O'Brien, PhD; Melissa A. Greiner, MS; Mario Sims, PhD; Natalie Chantelle Hardy, MPH; Wei Wang, PhD; Eyal Shahar, MD, MPH; Adrian F. Hernandez, MD, MHS; Lesley H. Curtis, PhD

KEY TAKEAWAY
Baseline depressive symptoms were associated with increased risk of cardiovascular events over 10 years among African Americans.

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Positive Psychosocial Findings

JACKSON HEART STUDY

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Optimism and Risk of Mortality

Preventive Medicine

journal homepage: www.elsevier.com/locate/ypmed

Optimism and risk of mortality among African-Americans: The Jackson heart study

Harold H. Lee [a,b,1], Laura D. Kubzansky [a,c], Sakurako S. Okuzono [a], Claudia Trudel-Fitzgerald [a,c,1], Peter James [d,e], Hayami K. Koga [a], Eric S. Kim [f], LaShaunta M. Glover [g], Mario Sims [g], Francine Grodstein [b]

[a] Department of Social & Behavioral Sciences, Harvard T.H. Chan School of Public Health, Boston, MA, USA
[b] Department of Epidemiology, University of North Carolina at Chapel Hill, NC, USA
[c] Lee Kum Sheung Center for Health and Happiness, Harvard T.H. Chan School of Public Health, Boston, MA, USA
[d] Department of Population Medicine, Harvard Medical School and Harvard Pilgrim Health Care Institute, Boston, MA, USA
[e] Department of Environmental Health, Harvard T.H. Chan School of Public Health, Boston, MA, USA
[f] Department of Psychology, University of British Columbia, Vancouver, BC, Canada
[g] Department of Medicine, University of Mississippi Medical Center, Jackson, MS, USA
[h] Rush Alzheimer's Disease Center, Rush Medical College, Chicago, IL, USA

KEY TAKEAWAY

Higher optimism was associated with significantly lower all-cause mortality among African Americans in the Jackson Heart Study, independent of demographic, psychosocial, health, and behavioral factors.

Hazard Ratios (HR 95% CI) for the Associations of Optimism with All-Cause Mortality, JHS 2000–2018

	Lower optimism (n=1,232; n=345 deaths)		Higher optimism (n=3,456; n=541 deaths)	
Covariate models	HR	95% CI	HR	95% CI
Model 1	1.00	Referent	**0.85**	**0.74–0.97**
Model 2	1.00	Referent	**0.85**	**0.74–0.99**
Model 3	1.00	Referent	0.87	0.76–1.01
Model 4	1.00	Referent	0.89	0.77–1.02

HR = hazard ratio; CI = confidence interval
Model 1 = Age, SES, marital status; Model 2 = Model 1 + depressive symptoms; Model 3 = Model 2 + risk factors; Model 4 = Model 3 + health behaviors

Lee HH et al., *Prev Med* 2020;142:e454–e468.
NIA 1R01AG053273-01

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Positive Psych and CVD risk factors
Journal of Diabetes and Its Complications
Sex differences in the association of psychosocial resources with prevalent type 2 diabetes among African Americans: The Jackson Heart Study
LaShaunté M. Glover, Alain G. Bertoni, Sherita H. Golden, Peter Baltrus, Yuan-I Min, Mercedes R. Carnethon, Herman Taylor, Mario Sims
KEY FINDINGS
Psychosocial resources were associated with lower prevalence of type 2 diabetes, with some differences by sex.
OUTCOMES
Type 2 diabetes prevalence
STUDY
JHS (baseline 2000–2004)
Preventive Medicine
Optimism and cardiovascular health among African Americans in the Jackson Heart Study
Mario Sims, LaShaunta M. Glover, Arnita F. Norwood, Christina Jordan, Yuan-I Min, LaPrincess C. Brewer, Laura D. Kubzansky
KEY FINDINGS
Higher optimism was associated with better cardiovascular health across multiple metrics.
OUTCOMES
Cardiovascular health
STUDY
JHS (baseline 2000–2004)
Health Psychology
Multilevel Resilience Resources and Cardiovascular Disease in the United States: A Systematic Review and Meta-Analysis
Joe Won Park, Rachel Mealy, Ian J. Saikarni, Eric B. Loucks, Belinda L. Needham, Mario Sims, Joseph L. Winkel, Akilah J. Robinson, Alanna M. Chamberlain
KEY FINDINGS
Greater multilevel resilience resources were linked to lower risk of cardiovascular disease.
OUTCOMES
Cardiovascular disease
STUDY
Systematic review & meta-analysis
Journal of Psychosomatic Research
Optimism is associated with chronic kidney disease and rapid kidney function decline among African Americans in the Jackson Heart Study
LaShaunté M. Glover, Crystal Butler-Williams, Loretta Cain-Shields, Allana T. Forde, Tanjala S. Purnell, Bessie Young, Mario Sims
KEY FINDINGS
Greater optimism was associated with lower risk of chronic kidney disease and rapid kidney function decline.
OUTCOMES
Chronic kidney disease, Rapid kidney function decline
STUDY
JHS (baseline 2000–2004)
Psychoneuroendocrinology
Optimism and telomere length among African American adults in the Jackson Heart Study
Harold H. Lee, Sakurako S. Okuzono, Eric S. Kim, Immaculata De Vivo, Laura M. Raffield, LaShaunta Glover, Mario Sims, Francine Grodstein, Laura D. Kubzansky
KEY FINDINGS
Higher optimism was associated with longer telomere length, a marker of cellular aging.
OUTCOMES
Telomere length
STUDY
JHS (baseline 2000–2004)
Preventive Medicine
Optimism and cardiovascular health among African Americans in the Jackson Heart Study
Mario Sims, LaShaunta M. Glover, Arnita F. Norwood, Christina Jordan, Yuan-I Min, LaPrincess C. Brewer, Laura D. Kubzansky
KEY FINDINGS
Higher optimism was associated with better cardiovascular health across multiple metrics.
OUTCOMES
Cardiovascular health
STUDY
JHS (baseline 2000–2004)
Collectively, these findings highlight the protective role of positive psychosocial factors (e.g., optimism, resilience) on key cardiometabolic risk factors among African Americans.
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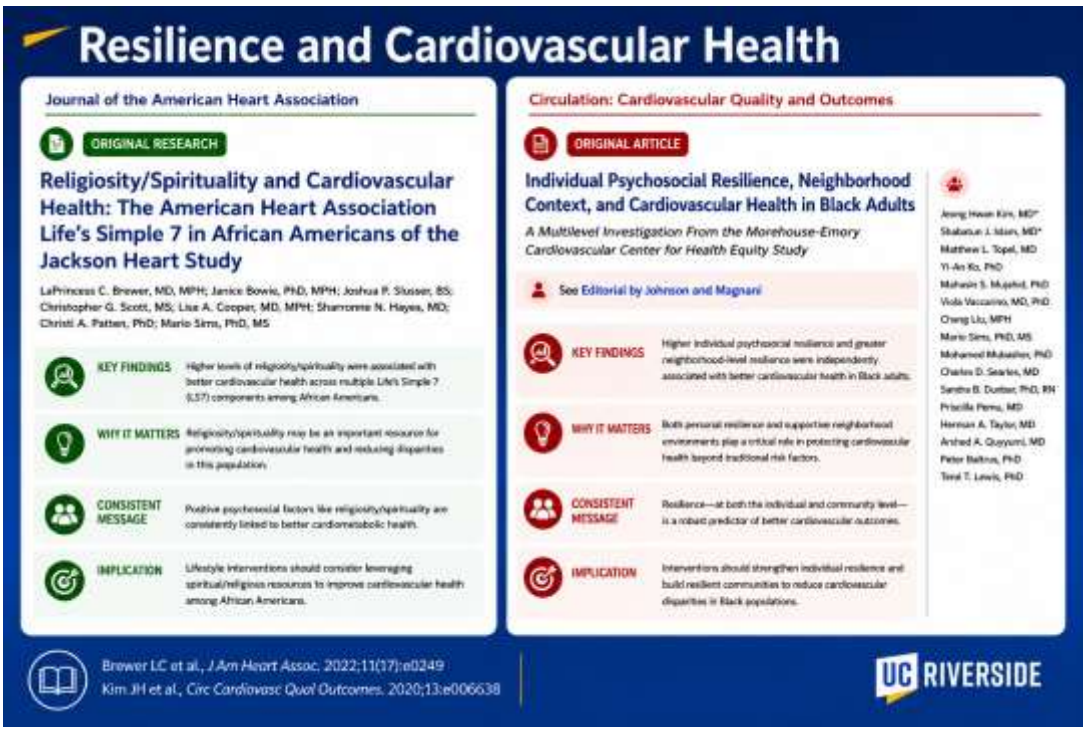
Resilience and Cardiovascular Health
Journal of the American Heart Association
ORIGINAL RESEARCH
Religiosity/Spirituality and Cardiovascular Health: The American Heart Association Life's Simple 7 in African Americans of the Jackson Heart Study
LaPrincess C. Brewer, MD, MPH; Janice Bowie, PhD, MPH; Joshua P. Slusser, BS; Christopher G. Scott, MS; Lisa A. Cooper, MD, MPH; Sharonne N. Hayes, MD; Christi A. Patten, PhD; Mario Sims, PhD, MS
KEY FINDINGS
Higher levels of religiosity/spirituality were associated with better cardiovascular health across multiple Life's Simple 7 (LS7) components among African Americans.
WHY IT MATTERS
Religiosity/spirituality may be an important resource for promoting cardiovascular health and reducing disparities in this population.
CONSISTENT MESSAGE
Positive psychosocial factors like religiosity/spirituality are consistently linked to better cardiometabolic health.
IMPLICATION
Lifestyle interventions should consider leveraging spiritual/religious resources to improve cardiovascular health among African Americans.
Circulation: Cardiovascular Quality and Outcomes
ORIGINAL ARTICLE
Individual Psychosocial Resilience, Neighborhood Context, and Cardiovascular Health in Black Adults
A Multilevel Investigation From the Morehouse-Emory Cardiovascular Center for Health Equity Study
See Editorial by Johnson and Magnani
Jeong Hwan Kim, MD*
Shabarun J. Islam, MD*
Matthew L. Topel, MD
Yi-An Ko, PhD
Mahasin S. Mujahid, PhD
Viola Vaccarino, MD, PhD
Cheng Liu, MPH
Mario Sims, PhD, MS
Mohamed Mubasher, PhD
Charles D. Searles, MD
Sandra B. Dunbar, PhD, RN
Priscilla Pemu, MD
Herman A. Taylor, MD
Arshed A. Quyyumi, MD
Peter Baltrus, PhD
Toni T. Lewis, PhD
KEY FINDINGS
Higher individual psychosocial resilience and greater neighborhood-level resilience were independently associated with better cardiovascular health in Black adults.
WHY IT MATTERS
Both personal resilience and supportive neighborhood environments play a critical role in protecting cardiovascular health beyond traditional risk factors.
CONSISTENT MESSAGE
Resilience—at both the individual and community level—is a robust predictor of better cardiovascular outcomes.
IMPLICATION
Interventions should strengthen individual resilience and build resilient communities to reduce cardiovascular disparities in Black populations.
Brewer LC et al., J Am Heart Assoc. 2022;11(17):e0249
Kim JH et al., Circ Cardiovasc Qual Outcomes. 2020;13:e006638
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Summary

1. Multiple dimensions of SDOH are critical risk factors for CVD disparities
2. *Psychosocial factors & discrimination* are associated CVD risk factors
3. CVD risk factors are patterned by *Socioeconomic status* – buffer/protective
4. *Positive psychosocial resources* are protective of CV RFs and predicts CVH

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Lay Summaries

Measures of adiposity and cardiovascular disease in the Jackson Heart Study

Neighborhoods and type 2 diabetes among African Americans

Masked Hypertension and Cardiovascular Disease in African Americans

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Social and Structural Determinants of Health in the JHS

25 YEARS OF RESEARCH
Summary of the SDOH work my group has done over the last 25 years (under review).

PREVIOUS WORK
Previous work summarized in this study.

THIS FIGURE
Summarizes the impact of SDOH risk factors and downstream CVD among Black Americans in the JHS.

FROM SOCIAL DETERMINANTS TO CARDIOVASCULAR OUTCOMES

SOCIAL AND STRUCTURAL DETERMINANTS

DISCRIMINATION
- Instances of reported racism
- Differences in the delivery of health care
- Lower quality clinical interactions

PSYCHOSOCIAL
- Social isolation
- Lack of social support
- Less access to resources through social networks

SOCIOECONOMIC STATUS
- Lower social mobility
- Lower family income
- Lack of insurance

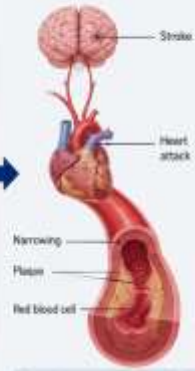
NEIGHBORHOOD
- Low financial investment in neighborhoods
- Community violence
- Less access to healthy food and resources for physical activity
- Lack of transportation
- Lack of child and family care

IMPACT ON BLACK AMERICANS IN THE JHS

These social and structural determinants **increase risk factors** that contribute to cardiovascular health.

Black boys and girls are more likely to have **high blood pressure**. This often continues into adulthood.

CARDIOVASCULAR OUTCOMES



Chronic stress and increased risk factors can lead to **heart attacks, sudden cardiac death, stroke, and peripheral arterial disease.**

Risk factors can be influenced by cultural norms and behaviors, which can be passed down through generations.

Despite these complex factors and their negative impact on cardiovascular health and wellbeing, Black Americans have found strength and resilience in family and community.

Barber, Sims, et al., under review.
NHLBI/NIMHD JHS contracts

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Structural Racism → Driver of Health Inequities

Institutional inequities have persistent and downstream effects on cardiovascular health

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AHA PRESIDENTIAL ADVISORY

Call to Action: Structural Racism as a Fundamental Driver of Health Disparities

A Presidential Advisory From the American Heart Association

ABSTRACT: Structural racism has been and remains a fundamental cause of persistent health disparities in the United States. The coronavirus disease 2019 (COVID-19) pandemic and the police killings of George Floyd, Breonna Taylor, and multiple others have been reminders that structural racism persists and restricts the opportunities for long, healthy lives of Black Americans and other historically disenfranchised groups.

AUTHOR PANEL INCLUDES:
Keith Churchwell, MD, FAHA, Chair
Mitchell S.V. Elkind, MD, MS, FAHA
Regina M. Benjamin, MD, MBA
April P. Carson, PhD, MSPH, FAHA
Edward K. Chang, BS
Willie Lawrence, MD, FAHA
Andrew M. IBM, MPH
Tanya M. Odom, EdM
Carlos J. Rodriguez, MD, MPH, FAHA
Fatima Rodriguez, MD, MPH, FAHA
Eduardo Sanchez, MD, MPH
...and others

MAJOR FINDINGS

The histoical context of structural racism demonstrates the origins of institutional inequities among underserved minority groups.

Current policies have ignored the effects of structural racism, which results in social, economic, and health inequities.

Future policies must be implemented at the individual, community, and population levels to achieve health equity for marginalized groups.

Churchwell K, et al. *Circulation*. 2020;142(24):e454–e468.

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Addressing Structural Racism Through Policy

Strategic policy action is essential to reverse inequities and advance health equity.


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AHA POLICY STATEMENT

Addressing Structural Racism Through Public Policy Advocacy

A Policy Statement From the American Heart Association

ABSTRACT: During the COVID-19 pandemic, the American Heart Association created a new 2024 Impact Goal with health equity at its core. We outline policy strategies to address the root causes of health disparities—namely structural racism—and advance health equity through strategic policy action at every level of government.

Structural racism is a fundamental cause of poor health and disparities. Strategic policy change is critical to eliminate barriers and promote equitable outcomes for all.

We discussed opportunities to change **specific public policies** and remove barriers that contribute to structural racism (SR) and impede progress toward health equity.

There needs to be a **strategic advocacy agenda** that uses levers of government to reverse and shift policy to advance social justice and eliminate inequities in health outcomes.

ISSUE	POLICY SOLUTION	SPECIFIC POLICY LEVERS
Access to quality care	Affordability of health care for all	• Advance Medicaid expansion • Mitigate proliferation of substandard health insurance products
Access to equitable housing	Eliminate discrimination in home loans/ renter assistance	• Equitably increase federal rental assistance (vouchers) • Increase mortgage lending on tribal trust lands

Albert M, et al. *Circulation*. 2020;149:e312–e329.

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Other AHA Research Statements

Scientific statements from the American Heart Association addressing cardiovascular health disparities across diverse populations and social determinants.

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Importance of Housing and Cardiovascular Health and Well-Being

A Scientific Statement From the American Heart Association

KEY FOCUS: Highlights the critical role of safe, stable, and affordable housing in reducing cardiovascular disparities and improving health and well-being.

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Cardiovascular Health in American Indians and Alaska Natives

A Scientific Statement From the American Heart Association

KEY FOCUS: Examines unique risk factors, cultural influences, and strategies to improve cardiovascular health in American Indian and Alaska Native populations.

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Neighborhoods and Cardiovascular Health: A Scientific Statement From the American Heart Association

KEY FOCUS: Explores how neighborhood environments—inclusive of social, built, and economic factors—impact cardiovascular health outcomes.

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Improving Cardiovascular Health Through the Consideration of Social Factors in Genetics and Genomics Research

A Scientific Statement From the American Heart Association

KEY FOCUS: Calls for integrating social determinants into genetics and genomics research to advance health equity and reduce cardiovascular disparities.

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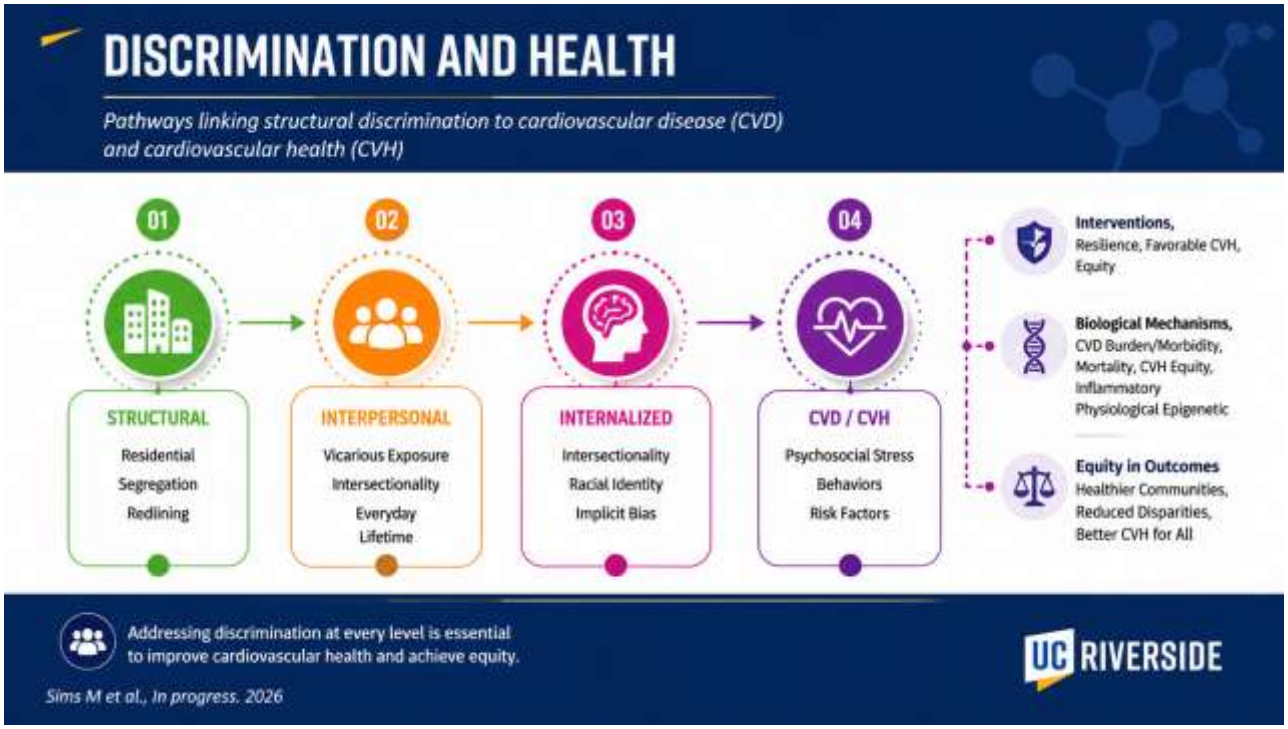
DISCRIMINATION AND HEALTH
Pathways linking structural discrimination to cardiovascular disease (CVD) and cardiovascular health (CVH)
01
02
03
04
STRUCTURAL
Residential Segregation Redlining
INTERPERSONAL
Vicarious Exposure Intersectionality Everyday Lifetime
INTERNALIZED
Intersectionality Racial Identity Implicit Bias
CVD / CVH
Psychosocial Stress Behaviors Risk Factors
Interventions, Resilience, Favorable CVH, Equity
Biological Mechanisms, CVD Burden/Morbidity, Mortality, CVH Equity, Inflammatory Physiological Epigenetic
Equity in Outcomes Healthier Communities, Reduced Disparities, Better CVH for All
Addressing discrimination at every level is essential to improve cardiovascular health and achieve equity.
Sims M et al., In progress. 2026
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New Areas of Research
Advancing health equity through innovative, multidisciplinary approaches
01
Occupation, work stress, economic disparities in CVH
• Intervene in stress in the workplace to reduce income/wealth disparities in CV health
02
Social drivers and resilience, epigenomics and heart & brain health
• Develop more precision medicine approaches to obtaining health equity
03
Social drivers, microbiome and heart & brain health
• Targeted interventions to eliminate the impact of gut health on heart and brain health
Addressing upstream social determinants and biological pathways is key to eliminating disparities in heart and brain health.
Occupation → Work Stress → Health Disparities
Occupation
Workplace Stress
Social Drivers (SDOH) × Genetics/Epigenetics
Epigenetic Marks
Gut Microbiome as a Mediator Linking SDOH to Heart and Brain Health Outcomes
Sugla SF, et al., Circ Cardiovasc Qual Outcomes. 2025;18(5):429-442.
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Conclusion

Key Takeaways: Advancing Health Equity Requires Addressing Root Causes

1. **Cardiovascular health** is shaped by more than genes and individual behaviors.
2. **Structural inequities** create the conditions that drive disparities.
3. **A "Beyond Biology" perspective** reveals how upstream forces drive downstream outcomes.
4. **Achieving cardiovascular health equity** requires action at multiple levels.

Lasting change depends on transforming upstream systems, not only treating downstream disease.

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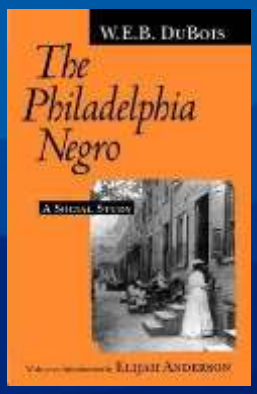
"Broadly speaking, the Negroes as a class dwell in the most unhealthful parts of the city and in the worse houses…. The part of the population having a large degree of poverty,… and social degradation is usually found in the worst portions of our great cities"

W.E.B. DuBois, *The Philadelphia Negro* 1899;p148



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- The content is solely the responsibility of the authors and does not necessarily represent the official views of the NHLBI and NIMHD.

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Thank you!

NIH National Heart, Lung, and Blood Institute

JACKSON HEART STUDY

NIH National Institute on Minority Health and Health Disparities

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