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Ohio Cardiovascular and Diabetes Health Collaborative



In partnership with:



Race and the Clinical Management of Cardiovascular Health

March 16, 2022



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Ohio Cardiovascular and Diabetes Health Collaborative

Welcome

Michael W. Konstan, MD

Principal Investigator, Cardi-OH

Shari Bolen, MD, MPH

Co- Principal Investigator, Cardi-OH

Case Western Reserve University School of Medicine

About Cardi-OH

Founded in 2017, the mission of Cardi-OH is to improve cardiovascular and diabetes health outcomes and eliminate disparities in Ohio's Medicaid population.



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Ohio Cardiovascular and Diabetes Health Collaborative

WHO WE ARE: An initiative of health care professionals across Ohio's seven medical schools.

WHAT WE DO: Identify, produce and disseminate evidence-based cardiovascular and diabetes best practices to primary care teams.

HOW WE DO IT: Utilize monthly newsletters and an online repository of resources at Cardi-OH.org, podcasts available on Cardi-OH Radio, and the Project ECHO® virtual training model.

Learn more at Cardi-OH.org



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 - The survey link will be shared at the end of today’s webinar and also sent by email
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Continuing Medical Education (CME)



- 1.00 AMA PRA Category 1 Credit is available for this webinar
- You must complete CME Evaluation and claim credits by **Friday, April 15**
- If you do not receive an email to complete your CME evaluation or need other assistance, contact Cathy Sullivan, csullivan1@metrohealth.org

Disclosure Statement:

- Herman A. Taylor, Jr., MD, MPH has reported a financial relationship with commercial interests.

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MedTAPP Acknowledgment



The Ohio Cardiovascular and Diabetes Health Collaborative is funded by the Ohio Department of Medicaid and administered by the Ohio Colleges of Medicine Government Resource Center. The views expressed in this presentation are solely those of the authors and do not represent the views of the state of Ohio or federal Medicaid programs.

Objectives



- Describe how the construct of race has been applied in clinical care of cardiovascular health
- Review recent changes in academic and clinical discourse on the use of the construct of race in clinical guidelines
- Describe how the historical context and recent changes on the construct of race in clinical guidelines impact primary care practice

Agenda



Topics	Presenter(s)	Timing
Welcome and Overview	Michael W. Konstan, MD Shari Bolen, MD, MPH	5 mins.
Ohio Department of Medicaid: Introductory Remarks	Mary Applegate, MD	5 mins.
Race and the Clinical Management of Cardiovascular Health	Herman A. Taylor, Jr., MD, MPH	15 mins.
Panel Discussion	Herman A. Taylor, Jr., MD, MPH Cynthia Delgado, MD Lou Edje, MD, MHPE Leon McDougale, MD, MPH Anne Gaglioti, MD, MS (Moderator)	23 mins.
Audience Question and Answer	Anne Gaglioti, MD, MS (Moderator) All	10 mins.
Next Steps and Wrap-Up	Shari Bolen, MD, MPH	2 mins.

Speakers



Mary Applegate, MD
Ohio Department of Medicaid



Herman A. Taylor, Jr., MD, MPH
Morehouse School of Medicine



Cynthia Delgado, MD
University of California San Francisco



Lou Edje, MD, MHPE
University of Cincinnati College of Medicine



Leon McDougale, MD, MPH
The Ohio State University College of Medicine



Anne Gaglioti, MD, MS
Case Western Reserve University



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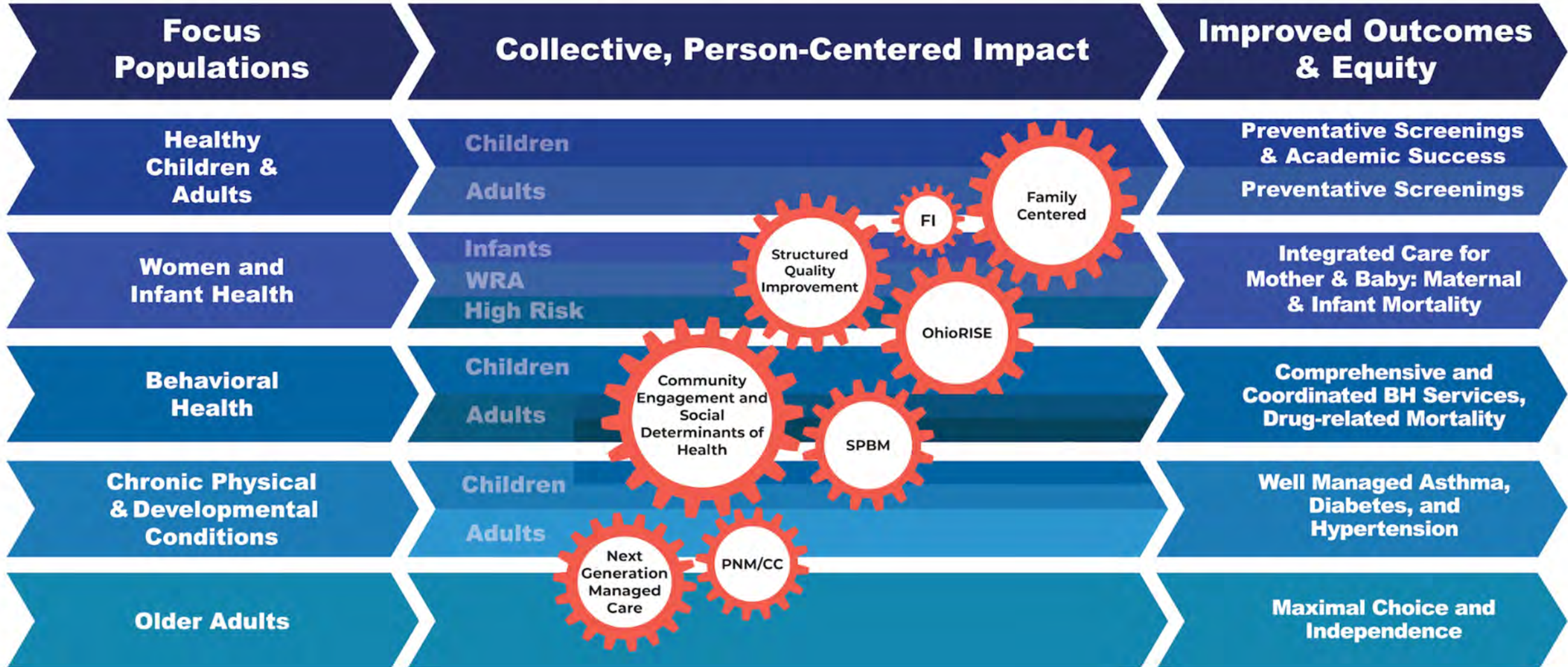
Ohio Department of Medicaid: Introductory Remarks

Mary Applegate, MD, FAAP, FACP

Medical Director



Ohio Medicaid's Population Health and Quality Strategy





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Race and the Clinical Management of Cardiovascular Health: Centering Our Discussion

Herman A. Taylor, Jr., MD, MPH, FACC

Endowed Professor and Director, Cardiovascular Research Institute

Morehouse School of Medicine

Adjunct Professor of Medicine, Emory School of Medicine

Adjunct Professor of Epidemiology, Harvard Chan School of Public Health

Director, Morehouse-Emory Cardiovascular Center for Health Equity



“We are leading the creation and advancement of health equity”



CVRI

Cardiovascular Research Institute of Morehouse School of Medicine



Our vision is to advance innovative multidisciplinary research to promote and preserve cardiovascular health.

Multiomic approaches to understanding cardiovascular resilience and longevity.

Physiology of vascular biology and associated metabolic diseases (e.g., obesity).

Understanding and modifying the exposome (e.g., social and digital epidemiology approaches) to improve cardiovascular health.



Overview



- Introductions
- History, Context, and Definitions
- Consequences of Racism
- Race Disparities in CVD and The Jackson Heart Study
- The Construct of Race and Prevention and Treatment of CVD
- Resilience and the MECCA Study

Race and Cardiovascular Health



- Race is overwhelmingly a social construct.
 - Only around 15% of genetic diversity among racial groups can be attributable to continental ancestry.
- Racism has impact on health and health outcomes.
- In the U.S., we have persistent but not inevitable racial cardiovascular health disparities due to racism.

The Construct of Race and Racism



*“(Racism) is a system of power that structures opportunity (education, housing, jobs, justice) and assigns value (worthy or unworthy, full of potential or full of menace) based on so-called “race”, **the social interpretation of how we look.**”*

-Camara Jones, MD, PhD

Three key impacts:

- unfair disadvantage for some
- unfair advantage for others
- waste of human resources

Interpersonal and Systematic Racism - Individual and Population Level Disease



The Long Reach of Chronic Racism

Enduring Racialized Structures/ Fragile Protections → Persistent Health Risks

- Residential segregation
- Deprivation of resources
- Disenfranchisement
- Civil and Voting Rights Laws
- Educational inequality
- Health care inequities
- Dietary insecurities
- Survival first, wellness later →
 - Unhealthy options/choices (e.g., dietary, sedentary habits, smoking other stress-related behaviors)

Interpersonal Racist Encounters

- Inflammation mediated damage
- Neurohormonal derangement
- Acute HPA and SNS derangements

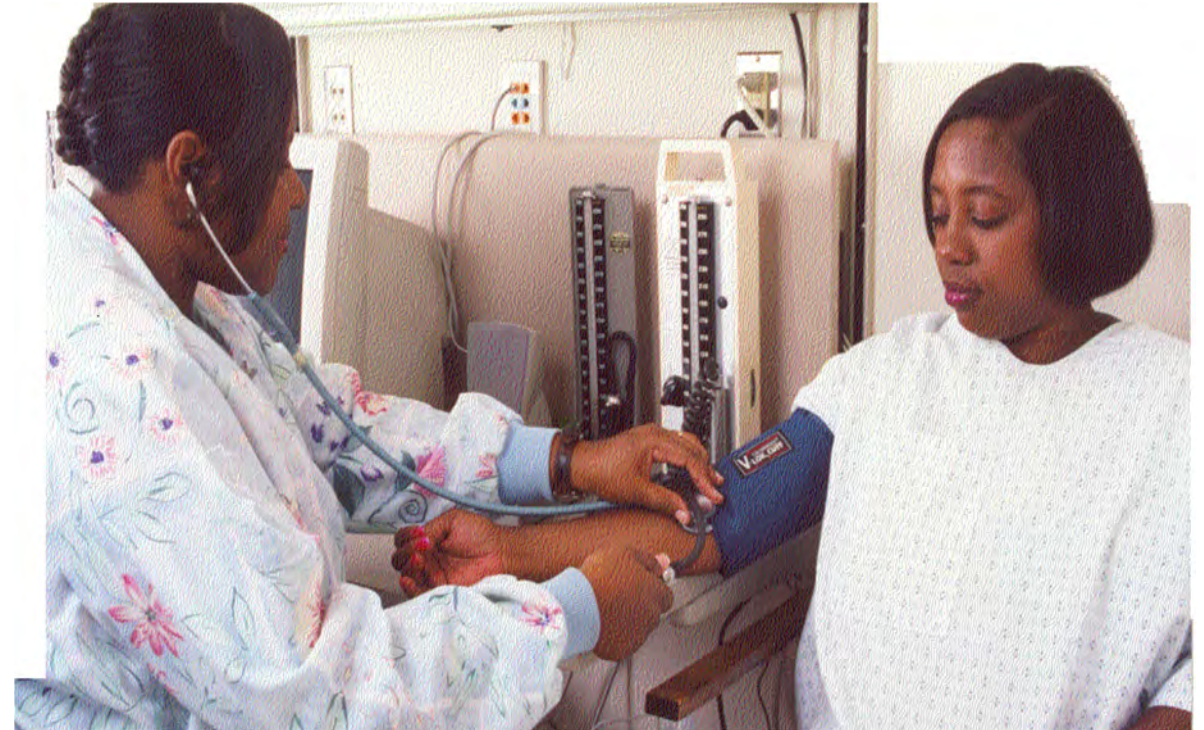
Maladaptive Epigenetic Changes

- Psychosocial Stressors
- Environmental Racism



The Jackson Heart Study

- 3 School Consortium (including 2 local HBCUs)
- Training for Transgenerational Impact
- Community Engagement Emphasis



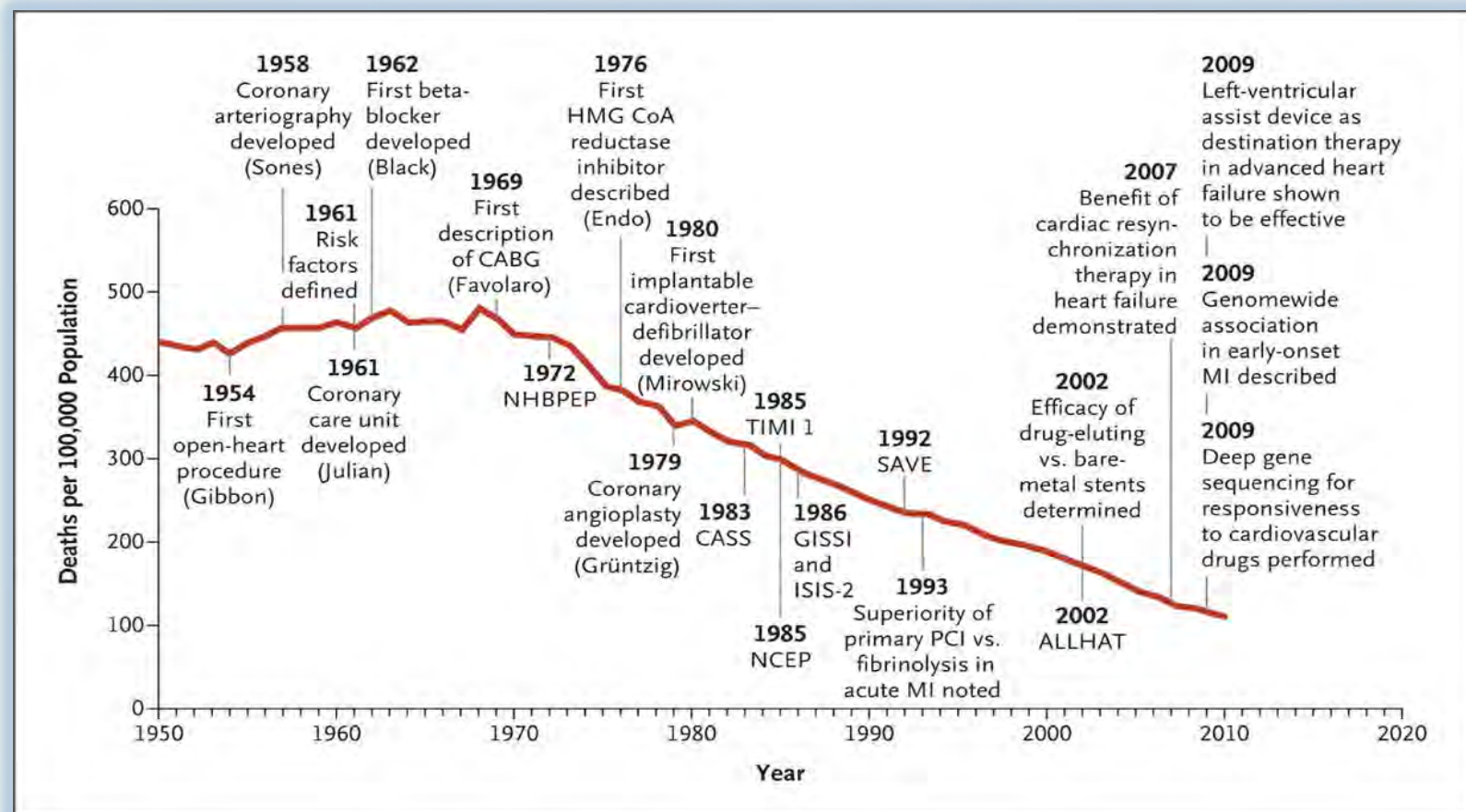
“Golden Age of Cardiology”: An Example of the Impact of Racism on CV Health Disparities



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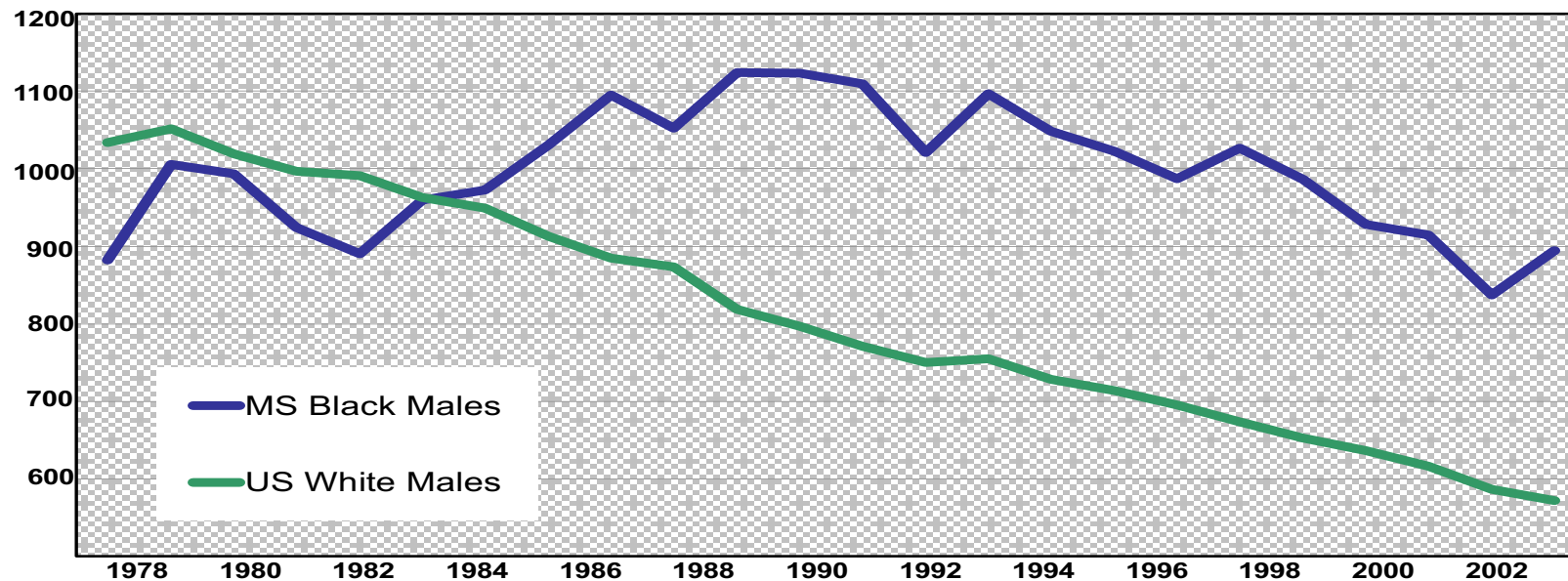
“More new knowledge about mechanisms of cardiovascular disease, its diagnosis prevention and therapy was created in these four decades [1950-1990] than in the whole of human history.”

Cardiovascular Medicine, 1991,
Knobel and Dack, eds.



“Golden Age of Cardiology”: An Example of the Impact of Racism on CV Health Disparities

Racial Disparity Trends in Cardiovascular Mortality for MS Males



Age-Adjusted Cardiovascular Mortality Rates (Ages 35 Years and Over) utilizing Compressed Mortality File and CDC Wonder.

Social Determinants of Health



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RESEARCH AND PRACTICE

Perceived Discrimination and Hypertension Among African Americans in the Jackson Heart Study

Mario Sims, PhD, Ana V. Diez Roux, MD, Amanda Dudley, BS, Samson Gebreab, PhD, Sharon B. Wyatt, PhD, Marino A. Brune, PhD, Sherman A. James, PhD, Jennifer C. Robinson, PhD, David R. Williams, PhD, and Herman A. Taylor, MD

Previous research reported an association between perceived discrimination and health outcomes.^{1,2} In particular, hypertension (which is higher among African Americans than Whites) was linked to discrimination,³⁻⁶ although findings were not always consistent.^{4,7-10} Although traditional behavioral risk factors might explain some of the African American-White disparity in hypertension, differences in exposure to discrimination by race might also contribute. African Americans' exposure to discrimination could influence their risk for hypertension through various mechanisms. These include negative coping behaviors, such as unhealthy eating, sedentary lifestyles, and tobacco and alcohol intake. The experience of discrimination could also cause emotional distress,³ which can trigger physiological responses involving the hypothalamic-pituitary-adrenal axis and the sympathetic-parasympathetic systems, which play an important role in the pathophysiology of hypertension.^{7,8,12}

Although exceptions exist, most previous studies of perceived discrimination and hypertension in African Americans employed relatively small samples^{3,13} and focused on a single measure of discrimination.^{3,4} The Jackson Heart Study (JHS), the largest prospective study of cardiovascular disease in African American adults, offered a unique opportunity to examine the association between multiple dimensions of discrimination (everyday, lifetime, burden, and stress from discrimination) and hypertension in a large sample of African Americans. The measures of various dimensions of discrimination obtained in JHS included everyday discrimina-

Objectives. Using Jackson Heart Study data, we examined whether perceived discrimination was associated with prevalent hypertension in African Americans.

Methods. Everyday discrimination, lifetime discrimination, burden of discrimination, and stress from discrimination were examined among 4899 participants aged 35 to 84 years (women = 3123; men = 1816). We estimated prevalence ratios of hypertension by discrimination, and adjusted for age, gender, socioeconomic status, and risk factors.

Results. The prevalence of hypertension was 64.0% in women and 59.7% in men. After adjustment for age, gender, and socioeconomic status, lifetime discrimination and burden of discrimination were associated with greater hypertension prevalence (prevalence ratios for highest vs lowest quartile were 1.08 [95% confidence interval (CI) = 1.02, 1.15] and 1.09 [95% CI = 1.02, 1.18] for lifetime discrimination and burden of discrimination, respectively).

nature publishing group



The Socioeconomic Gradient of Diabetes Prevalence, Awareness, Treatment, and Control Among African Americans in the Jackson Heart Study

MARIO SIMS, PHD, ANA V. DIEZ ROUX, PHD, MD, SHAWN BOYKIN, PHD, DANIEL SARPONG, 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

PURPOSE: Little research has focused on the social patterning of diabetes among African Americans. We examined the relationship between socioeconomic status (SES) and the prevalence, awareness, treatment, and control of diabetes among African Americans.

METHODS: Education, income and occupation were examined among 4,303 participants (2,726 women and 1,577 men). Poisson regression estimated relative probabilities (RP) of diabetes outcomes by SES.

RESULTS: The prevalence of diabetes was 19.6% in women and 15.9% in men. Diabetes awareness, 86.8%, 86.8%, and 39.2% in women, respectively, and 88.2%, 84.4%, and 39.2% in men, respectively, and adjusted models, low-income men and women had greater probabilities of awareness (RP, 1.94; 95% confidence interval [CI], 1.28-2.92; and 1.28; 95%CI 1.01-5.18; and RP, 2.62; 95% CI, 1.08-6.33, respectively) than high income. Diabetes control was not associated with low education in women. Diabetes control was

valence is patterned by SES, and awareness and treatment are patterned by education. Efforts to prevent diabetes in African Americans need to address the factors that increase their risk.

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Key Words: Socioeconomic Status, Jackson Heart Study, African Americans,

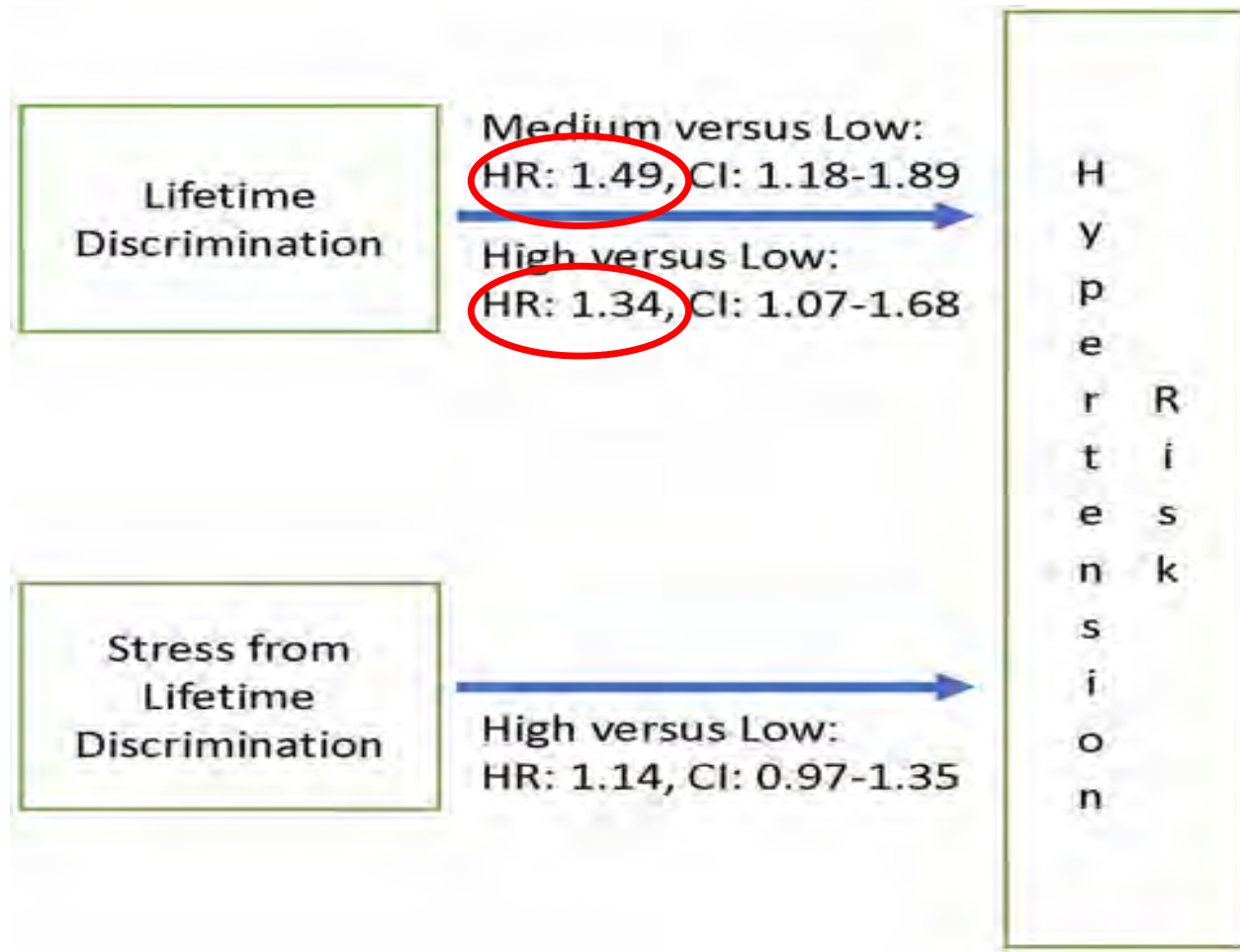
ORIGINAL CONTRIBUTIONS

Socioeconomic Position Is Positively Associated With Blood Pressure Dipping Among African-American Adults: The Jackson Heart Study

DeMarc A Hickson^{1,2}, Ana V Diez Roux³, Sharon B Wyatt⁴, Samson Y Gebreab³, Gbenga Ogedegbe⁵, Daniel F Sarpong⁶, Herman A Taylor^{1,2,7} and Marion R Wofford²

an important public health question for both primary prevention and targeting of interventions.

Diabetes prevalence has been shown to be nearly twice as high in African Americans as in whites (6). There is also evidence that diabetes is patterned by socioeconomic status (SES) with persons of lower SES having higher prevalence and incidence of diabetes (7-11). SES may also affect awareness, treatment, and control of diabetes through differential access to health care services. The social patterning of death for and economic duals with diabetes complications and incidence of diabetes (7-11). SES may also affect awareness, treatment, and control of diabetes through differential access to health care services.



Cardiovascular Disparities: An Unsurprising Tragedy



“...One thing we must of course expect to find, and that is a much higher death rate at present among Negroes than among whites ... They have in the past lived under vastly different conditions and they still live under different conditions...”

W.E.B. Dubois, 1899

The Philadelphia Negro, Chapter X, page 148

The Long Reach of Chronic Racism

Enduring Racialized Structures/ Fragile Protections → Persistent Health Risks

- Residential segregation
- Deprivation of resources
- Disenfranchisement
- Civil and Voting Rights Laws
- Educational inequality
- Health care inequities
- Dietary insecurities
- Survival first, wellness later →
 - Unhealthy options/choices (e.g., dietary, sedentary habits, smoking other stress-related behaviors)

Interpersonal Racist Encounters

- Inflammation mediated damage
- Neurohormonal derangement
- Acute HPA and SNS derangements

Maladaptive Epigenetic Changes

- Psychosocial Stressors
- Environmental Racism

The Construct of Race in Health Care Delivery for Treatment and Prevention of Cardiovascular Disease



Published in final edited form as:

Prog Cardiovasc Dis. 2016 ; 59(3): 282–288. doi:10.1016/j.pcad.2016.09.004.

Hypertension Treatment in Blacks: Discussion of the U.S. Clinical Practice Guidelines

Stephen K. Williams, MD, MS¹, Joseph Ravenell, MD, MS¹, Sara Seyedali, MD², Sam Nayef, MD², and Gbenga Ogedegbe, MD, MS¹ [Senior Author]

¹Center for Healthful Behavior Change, Division of Health and Behavior, Department of Population Health, New York University School of Medicine, 227 East 30th Street (between 2nd and 3rd Avenues), 6th Floor, New York, NY 10016

²Department of Medicine, Rutgers-Robert Wood Johnson Medical School, Jersey Shore University Medical Center, 1945 Route 33, Neptune, NJ 07753

Abstract

Blacks are especially susceptible to hypertension (HTN) and its associated organ damage leading to adverse cardiovascular, cerebrovascular and renal outcomes. Accordingly, HTN is particularly significant in contributing to the black-white racial differences in health outcomes in the US. As such, in order to address these health disparities, practical clinical practice guidelines (CPGs) on how to treat HTN, specifically in blacks, are needed. This review article is a timely addition to the literature because the most recent U.S. CPG more explicitly emphasizes race into the algorithmic management of HTN. However, recent clinical research cautions that use of race as a proxy to determine therapeutic response to pharmaceutical agents may be erroneous. This review will address the implications of the use of race in the hypertension CPGs. We will review the rationale behind the introduction of race into the U.S. CPG and the level of evidence that was available to justify this introduction. Finally, we will conclude with practical considerations in the treatment of HTN in blacks.

Keywords

Hypertension; minorities; African Americans; blacks

Original Investigation

AJKD

A New Panel-Estimated GFR, Including β_2 -Microglobulin and β -Trace Protein and Not Including Race, Developed in a Diverse Population

Lesley A. Inker, Sara J. Couture, Hocine Tighiouart, Alison G. Abraham, Gerald J. Beck, Harold I. Fek Tom Greene, Vilmondur Gudnason, Amy B. Karger, John H. Eckfeldt, Bertram L. Kasiske, Michael Mai Gerjan Navis, Emilio D. Poggio, Peter Rossing, Michael G. Shlipak, and Andrew S. Levey, on behalf of CKD-EPI GFR Collaborators

Rationale and Objective: Glomerular filtration rate (GFR) estimation based on creatinine and cystatin C (eGFR_{Cr-Cys}) is more accurate than estimated GFR (eGFR) based on creatinine or cystatin C alone (eGFR_{Cr} or eGFR_{Cys}, respectively), but the inclusion of creatinine in eGFR_{Cr-Cys} requires specification of a person's race. β_2 -Microglobulin (B2M) and β -trace protein (BTP) are alternative filtration markers that appear to be less influenced by race than creatinine is.

Study Design: Study of diagnostic test accuracy.

Setting and Participants: Development in a pooled population of 7 studies with 5,017 participants with and without chronic kidney disease. External validation in a pooled population of 7 other studies with 2,245 participants.

Tests Compared: Panel eGFR using B2M and BTP in addition to cystatin C (3-marker panel) or creatinine and cystatin C (4-marker panel) with and without age and sex or race.

Outcomes: GFR measured as the urinary clearance of iothalamate, plasma clearance of iothexol, or plasma clearance of ¹²⁵I-iothalamate.

Results: Mean measured GFRs were 58.1 and 83.2 mL/min/1.73 m², and the proportions of Black participants were 38.6% and 24.0%, in the development and validation populations, respectively. In development, addition of age and sex improved the performance of all equations compared with equations without age and sex, but addition of race did not further improve the performance. In validation, the 4-marker panels were more accurate than the 3-marker panels ($P < 0.001$). The 3-marker panel without race was more accurate than eGFR_{Cr-Cys} (percentage of estimates greater than 30% different from measured GFR [1 - P₃₀] of 15.6% vs 17.4%; $P = 0.01$), and the 4-marker panel without race was as accurate as eGFR_{Cr-Cys} (1 - P₃₀ of 8.6% vs 9.4%; $P = 0.2$). Results were generally consistent across subgroups.

Limitations: No representation of participants with severe comorbid illness and from geographic areas outside of North America and Europe.

Conclusions: The 4-marker panel eGFR is as accurate as eGFR_{Cr-Cys} without requiring specification of race. A more accurate race-free eGFR could be an important advance.

Visual Abstract

Complete author information and references.

Correspondence: L.A. Inker (linker@u.washington.edu)

Am J Kidney Dis 77(5):673–683, online December

doi: 10.1053/j.ajkd.2020.11.001

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Dissecting racial bias in an algorithm used to manage the health of populations

DAVID OBERMEYER, BRUNN POWERS, CHRISTINE VOGEL, AND SONDHI MULLAIARATHAN Authors Info & Affiliations

SCIENCE • 95, Dec 2, 2020 • 718 | DOI: 10.1126/science.aba4444

7,998 574

Racial bias in health algorithms

The U.S. health care system uses commercial algorithms to guide health decisions. Obermeyer *et al.* find evidence of racial bias in one widely used algorithm, such that Black patients assigned the same level of risk by the algorithm are sicker than White patients (see the Perspective by Benjamin). The authors estimated that this racial bias reduces the number of Black patients identified for extra care by more than half. Bias occurs because the algorithm uses health costs as a proxy for health needs. Less money is spent on Black patients who have the same level of need, and the algorithm thus falsely concludes that Black patients are healthier than equally sick White patients. Reformulating the algorithm so that it no longer uses costs as a proxy for needs eliminates the racial bias in predicting who needs extra care.

Science, this issue p. 447; see also p. 421

Stepping Forward to Resilience: Health Maintenance in the Face of Risk




Understanding the environmental and individual promoters of CV health in this population may yield insights into the nature of physiological resilience

“... the wonder is not that so many are ruined, but that so many survive.”

James Baldwin, 1955
“The Harlem Ghetto” in *Notes of a Native Son*
(emphasis added)




ORIGINAL RESEARCH


 American Heart Association


Cardiovascular Risk and Resilience Among Black Adults: Rationale and Design of the MECA Study

Shabatun J. Islam, MD[†]; Jeong Hwan Kim, MD[†]; Matthew Topel, MD[†]; Chang Liu, MPH; Yi-An Ko, PhD; Mahasin S. Mujahid, PhD; Mario Sims, PhD; Mohamed Mubasher, PhD; Kiran Ejaz, MD; Jan Morgan-Billingslea, BS; Kia Jones, PhD; Edmund K. Waller, MD PhD; Dean Jones, PhD; Karan Uppal, PhD; Sandra B. Dunbar, PhD, RN; Priscilla Pemu, MD; Viola Vaccarino, MD, PhD; Charles D. Searles, MD; Peter Baltrus, PhD; Tené T. Lewis, PhD; Arshed A. Quyyumi, MD; Herman Taylor, MD

The Morehouse-Emory Cardiovascular (MECA) Center for Health Equity

 CVRI
Cardiovascular Research Institute of Morehouse School of Medicine

 MOREHOUSE
SCHOOL OF MEDICINE

 EMORY
UNIVERSITY

Emory Clinical Cardiovascular Research Institute

Closing Thoughts: Building Resilience – Dismantling Racism



“Promoting resilience without also working to address societal conditions that often *make resilience necessary* is only a partial response. The vast majority of the everyday challenges that affect many, but not all, African American families—such as institutional racism, poverty, and [others]...are issues of social justiceThe onus cannot be merely on families to adapt to threatening conditions; the conditions must be altered.” Anderson, 2019



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Panel Discussion

Anne Gaglioti, MD, MS

Case Western Reserve University School of Medicine

Speakers



Herman A. Taylor, Jr., MD, MPH
Endowed Professor and Director
Cardiovascular Research Institute
Morehouse School of Medicine



Lou Edje, MD, MHPE
Professor and Associate Dean, Graduate Medical Education
University of Cincinnati College of Medicine



Cynthia Delgado, MD
Associate Professor of Medicine
University of California San Francisco



Leon McDougale, MD, MPH
Professor and Associate Dean, Diversity & Inclusion
Chief Diversity Officer, Wexner Medical Center
The Ohio State University College of Medicine



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Audience Question and Answer

Anne Gaglioti, MD, MS

Case Western Reserve University School of Medicine

Speakers

REMINDER:
Submit questions using the 'Q&A' feature and specify which speaker should answer



Herman A. Taylor, Jr., MD, MPH
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Professor and Associate Dean, Diversity & Inclusion
Chief Diversity Officer, Wexner Medical Center
The Ohio State University College of Medicine



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Next Steps and Wrap Up

Shari Bolen, MD, MPH

Case Western Reserve University School of Medicine

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The survey link will also be emailed to you.

WEBINAR

Wednesday, May 25, 2022

12 - 1 p.m. ET

1.00 CME credit offered at no cost



CARDI·OH
Ohio Cardiovascular and Diabetes Health Collaborative

Topic: Remote Monitoring in Cardiovascular Conditions



KEYNOTE SPEAKER

Kathleen Dungan, MD, MPH

Professor of Medicine

The Ohio State University

THANK YOU!



Learn More!

To learn more about the collaborative and read up on the latest best practices, visit [Cardi-OH.org](https://www.Cardi-OH.org) and follow us on Twitter [@cardi_OH](https://twitter.com/@cardi_OH) and Facebook [@cardiohio](https://www.facebook.com/@cardiohio).

The Ohio Cardiovascular and Diabetes Health Collaborative is funded by the Ohio Department of Medicaid and administered by the Ohio Colleges of Medicine Government Resource Center. The views expressed in this presentation are solely those of the authors and do not represent the views of the state of Ohio or federal Medicaid programs.