Novel Approaches to Achieve Health Equity: Lessons for Addressing Disparities in Parkinson’s Disease

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Presenter Disclosures

Joseph Ravenell, MD, MS

No relationships to disclose
Course Objectives

1. Discuss a health equity research framework

2. Case study: Interventions to address hypertension in black men

3. Discuss health equity research approaches in Parkinson’s Disease
What are Health Disparities?

Health disparities are defined as significant differences between one population and another. The Minority Health and Health Disparities Research and Education Act of 2000, which authorizes several HHS programs, describes these disparities as differences in "the overall rate of disease incidence, prevalence, morbidity, mortality or survival rates."

U.S. Department of Health and Human Services Office of Minority Health
Health Equity

“Health equity means that everyone has a fair and just opportunity to be healthier. This requires removing obstacles to health such as poverty, discrimination, and their consequences, including powerlessness and lack of access to good jobs with fair pay, quality education and housing, safe environments, and health care.”

https://www.rwjf.org/en/library/research/2017/05/what-is-health-equity-.html
# National Institute on Minority Health and Health Disparities Research Framework

<table>
<thead>
<tr>
<th>Domains of Influence (Over the Lifecourse)</th>
<th>Levels of Influence*</th>
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<tbody>
<tr>
<td><strong>Biological</strong></td>
<td>Individual</td>
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<tr>
<td>Biological</td>
<td>Biological Vulnerability and Mechanisms</td>
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<td></td>
<td>Caregiver–Child Interaction, Family Microbiome</td>
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<td></td>
<td>Community Illness Exposure, Herd Immunity</td>
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<td>Sanitation, Immunization, Pathogen Exposure</td>
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<tr>
<td><strong>Behavioral</strong></td>
<td>Interpersonal</td>
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<tr>
<td>Behavioral</td>
<td>Health Behaviors, Coping Strategies</td>
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<td></td>
<td>Family Functioning, School/Work Functioning</td>
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<td></td>
<td>Community Functioning</td>
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<td></td>
<td>Policies and Laws</td>
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<td><strong>Physical/Built Environment</strong></td>
<td>Community</td>
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<tr>
<td>Physical/Built Environment</td>
<td>Personal Environment</td>
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<tr>
<td></td>
<td>Household Environment, School/Work Environment</td>
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<td></td>
<td>Community Environment, Community Resources</td>
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<td></td>
<td>Societal Structure</td>
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<tr>
<td><strong>Sociocultural Environment</strong></td>
<td>Societal</td>
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<tr>
<td>Sociocultural Environment</td>
<td>Sociodemographics, Limited English, Cultural Identity, Response to Discrimination</td>
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<tr>
<td></td>
<td>Social Networks, Family/Peer Norms, Interpersonal Discrimination</td>
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<tr>
<td></td>
<td>Community Norms, Local Structural Discrimination</td>
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<tr>
<td></td>
<td>Social Norms, Societal Structural Discrimination</td>
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<tr>
<td><strong>Health Care System</strong></td>
<td>Societal</td>
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<tr>
<td>Health Care System</td>
<td>Insurance Coverage, Health Literacy, Treatment Preferences</td>
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<td>Patient–Clinician Relationship, Medical Decision-Making</td>
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<td>Availability of Services, Safety Net Services</td>
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<td>Quality of Care, Health Care Policies</td>
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<thead>
<tr>
<th>Health Outcomes</th>
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<tbody>
<tr>
<td>Individual Health</td>
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<tr>
<td>Family/Organizational Health</td>
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<tr>
<td>Community Health</td>
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<tr>
<td>Population Health</td>
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</table>
Excessive CV Mortality from Hypertension in Black Men

AHA Heart Disease and Stroke Statistics—2018 Update

![Bar chart showing deaths per 100,000 for Black Men (52), Black Women (36), White Men (20), and White Women (17).]
Barriers to Hypertension Control

Uncontrolled BP in Black Men

Controlled BP in Black Men

Healthcare-Seeking Behavior

Regular MD

Cost/Access Trust

Medication & Lifestyle Non-Adherence

Lifestyle & Medication
Black men are less likely to have a primary care provider

Arch Intern Med. 2008;168(12):1285-1293
According to Him: Barriers to Healthcare among African-American Men

Joseph E. Ravenell, MD, MS; Eric E. Whitaker, MD, MPH; Waldo E. Johnson Jr., PhD

<table>
<thead>
<tr>
<th>Intrinsic Barriers</th>
<th>A, C, H, HIV, MSM, MS, SA, TS, SA</th>
<th>A, MSM, TS</th>
<th>A, C, H, HIV, MSM, MS, SA, TS</th>
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</thead>
</table>
| Lack of Awareness                   | "Diseases related to our nationality, to our race ... hypertension and prostate problems ... colon cancer. What is the prevention for that? What are the signs? What are the early symptoms of it?" | "I never went down to get my AIDS test. I’m scared ... I don’t think I could deal with that mentally if they told me "well yes, you have it." My life would end as I know it, right then and there."
| Fear                                | "People come up to us talking about that they are ‘tired of hearing and talking about it because you gonna die from something anyway, so what difference does it make?’" | "The only time I really go to the doctor is when something is really hurting. When I’m injured or something or have a problem, but otherwise, I don’t even know my doctor’s name, seriously."
| Fatalism                            | "When I go to the doctor ... I always ask to let me see them take the needles out of the box, ’Cause I don’t like them going to the back, like they pulling something out of the garbage, poking me with something that they have already poked somebody else."
| Healthcare as Needed                | "I never went down to get my AIDS test. I’m scared ... I don’t think I could deal with that mentally if they told me “well yes, you have it.” My life would end as I know it, right then and there."
| Medical Mistrust                    | "People come up to us talking about that they are ‘tired of hearing and talking about it because you gonna die from something anyway, so what difference does it make?’" | "The only time I really go to the doctor is when something is really hurting. When I’m injured or something or have a problem, but otherwise, I don’t even know my doctor’s name, seriously."
|                                     | "When I go to the doctor ... I always ask to let me see them take the needles out of the box, ’Cause I don’t like them going to the back, like they pulling something out of the garbage, poking me with something that they have already poked somebody else." |
fear
mistrust
“I don’t need a doctor”
How can we reach Black Men?
The Barbershop: A Cultural Institution
Why Barbershops?

• “The Black man’s Country Club”
• Relaxed non-medical atmosphere
• Frequent follow up (q 1-4 weeks)
• Tradition of “Barber Surgeons”
• Barbers as key opinion leaders (“important others”; set social norms)

“shops are and always have been places where black men could feel free to discuss anything and everything – without the interference and censorship found in other public forums”
– NPR radio, Pittsburgh
Barbershops as Hypertension Detection, Referral, and Follow Up Centers for Black Men

Step 1. Barber measures blood pressure at each haircut visit

Step 2. Barber refers hypertensive customers for medical care

Step 3. MD initiates and titrates therapy based on barbershop and office BP readings

Step 4. Barber helps to monitor effectiveness of therapy and encourages medication adherence
Attorney is Guilty of having High Blood Pressure

My name is Mr. B. I am a 35 year old Attorney. I came in to get my haircut and George took my blood pressure. My pressure today was high, so George advised me to see a doctor, even though I felt fine. Now that I have evidence that my pressure is high, I’m going to make the time to find a doctor so I can have a good defense against high blood pressure, the silent killer!
Barber-based Intervention

Regular customer returns to barbershop for haircut

BP measured with haircut, encounter form completed

BP < 135/85 mmHg
Positive feedback provided

Customer has medical provider
Follow-up appointment encouraged

Customer visits provider, shows BP report card
Rx started or intensified

BP ≥ 135/85 mmHg
BP report card given, model story discussed

Customer does not have medical provider
Referred to study nurse for provider referral
A Barber-Based Intervention for Hypertension in African American Men: Design of a Group Randomized Trial

Ronald G. Victor, MD\textsuperscript{a}, Joseph E. Ravenell, MD MS\textsuperscript{a}, Anne Freeman, MSPH\textsuperscript{b}, Deepa G. Bhat, ME\textsuperscript{a}, Joy S. Storm, BS\textsuperscript{a}, Moiz Shafiq, MD\textsuperscript{a}, Patricia Knowles\textsuperscript{a}, Peter J. Hannan, MStat\textsuperscript{c}, Robert Haley, MD\textsuperscript{d}, and David Leonard, PhD\textsuperscript{a,e}

Baseline Survey (2 mos.)

Randomize Shops

Shop 1

Shop 2

Shop 3

Shop 4

...Shop 24

15%

30%

20%

10 mos.

Controlled hypertensives

Uncontrolled hypertensives

Pamphlets Only

15%

30%

20%

Barber-Run Intervention

Exit Survey

NYU Langone Health
Effectiveness of a Barber-Based Intervention for Improving Hypertension Control in Black Men

The BARBER-1 Study: A Cluster Randomized Trial

Ronald G. Victor, MD; Joseph E. Ravenell, MD, MS; Anne Freeman, MSPH; David Leonard, PhD; Deepa G. Bhat, ME;

Δ = 19.9%

Δ = 11.1%

Δ = 8.8%

HTN Control Rate %

Intervention

Comparison
NYC Community-based Health Promotion:  
*The Barbershop Quartet Program*

- Community Outreach Program founded by Marian Scott (Co-Investigator)
- Fully-equipped Mobile Health Van staffed by top rate Medical Team
- “Quartet” of Screenings:
  - BP Measurement to Screen for Hypertension
  - Blood Glucose to Screen for Diabetes
  - PSA and DRE to Screen for Prostate Cancer
  - Referral for Screening Colonoscopy
- Assessments AND Counseling performed by NURSES AND PHYSICIANS
NYU Men’s Health Initiative Research Program

Church-based Study (R01HL096946, NHLBI)

Barbershop-based Study (P60MD003421, NCMHD)

NYU PRC Comparative Effectiveness Research Program

24 Churches in Central Harlem

Randomize CHURCHES within pairs (stratify by size and number of paid clergy)

HTN Intervention CRC Usual Care (n=240 men)

CRC Intervention HTN Usual Care (n=240 men)

12 Matched Church Pairs

12 more Churches

6 more Church Pairs

Baseline Assessment

HTN Intervention PLUS CRC Intervention (n=240 men)

HTN Intervention PLUS CRC Intervention (n=240 men)

HTN Intervention CRC Usual Care (n=240 men)

CRC Intervention HTN Usual Care (n=240 men)

12 more Churches

6 more Church Pairs

Baseline Assessment

Men from 24 Barbershops referred to mobile van

Enroll eligible men for study (Age ≥ 50, black, male, BP uncontrolled)

Randomize consenting eligible men

Men from 24 Barbershops referred to mobile van

Enroll eligible men for study (Age ≥ 50, black, male, BP uncontrolled)

Randomize consenting eligible men

6 Month Assessment of Primary Outcomes
(Within-person BP Change and Completed colonoscopy)

NYU Men’s Health Initiative Research Program

NYU PRC Comparative Effectiveness Research Program

Church-based Study (R01HL096946, NHLBI)

Barbershop-based Study (P60MD003421, NCMHD)
The NYU Men’s Health Initiative
MOTIVATIONAL INTERVIEWING INTERVENTION

- **Session 1:**
  - Review DASH eating plan booklets
  - Use MINT techniques to help men set goals

- **Sessions 2-4:**
  - Elicit barriers
  - Summarize pros and cons
  - Provide a menu of options for overcoming barriers
  - Assess values and goals
  - Summarize discussion

**Session 1**
Within 2 weeks of baseline interview

**Session 2**
Session 1 + 1 month

**Session 3**
Session 2 + 2 months

**Session 4**
Session 3 + 2 months
PATIENT NAVIGATION INTERVENTION

Session 1:
- Education on CRC and need for screening
- Elicit barriers
- Assess readiness

Follow-up sessions:
- Revisit barriers
- Assist with scheduling
- Navigate to appropriate screening facility
- Check in prior to screening
- Check-in after screening to debrief
Map of Site Locations
By Site Type

- ✓ Barbershop
- ✔ Church Site
- ✓ Social Services Organization
- ✓ Mosque
- ✓ Food Pantry/Soup Kitchen
- ✓ Community Health Fair/Festival
### Baseline Characteristics (N=731)

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Mister B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (Mean in years)</td>
<td>57.6</td>
</tr>
<tr>
<td>Highest Grade or Year of School</td>
<td></td>
</tr>
<tr>
<td>Less than HS</td>
<td>29.4 %</td>
</tr>
<tr>
<td>HS Grad or GED</td>
<td>40.3 %</td>
</tr>
<tr>
<td>Some college or more</td>
<td>30.3 %</td>
</tr>
<tr>
<td>Born in the United States</td>
<td>72.5 %</td>
</tr>
<tr>
<td>Generally speaks English at home</td>
<td>90.9 %</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
</tr>
<tr>
<td>Married or living with a partner</td>
<td>25.2 %</td>
</tr>
<tr>
<td>Divorced</td>
<td>17.9 %</td>
</tr>
<tr>
<td>Widowed</td>
<td>6.7 %</td>
</tr>
<tr>
<td>Separated</td>
<td>10.4 %</td>
</tr>
<tr>
<td>Never Married</td>
<td>39.6 %</td>
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</table>
## Baseline Characteristics

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Mister B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment</td>
<td></td>
</tr>
<tr>
<td>Employed for wages</td>
<td>31.2 %</td>
</tr>
<tr>
<td>Unemployed</td>
<td>45.2 %</td>
</tr>
<tr>
<td>Retired</td>
<td>12.1 %</td>
</tr>
<tr>
<td>Unable to work</td>
<td>11.5 %</td>
</tr>
<tr>
<td>Annual household income (sd)</td>
<td>$16,726 (18,007)</td>
</tr>
<tr>
<td>Currently uses tobacco products</td>
<td>54.6 %</td>
</tr>
<tr>
<td>No insurance</td>
<td>22.8 %</td>
</tr>
<tr>
<td>Regular Place of Care</td>
<td>72.3 %</td>
</tr>
<tr>
<td>Has Personal Doctor</td>
<td>59.6 %</td>
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</table>
Blood Pressure at 6-months

Average Blood Pressure Measurements by Program Received

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<thead>
<tr>
<th></th>
<th>Both Programs</th>
<th>Patient Navigation Program Only</th>
<th>Blood Pressure Counseling Program Only</th>
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<tbody>
<tr>
<td>Systolic BP at Baseline</td>
<td>147</td>
<td>147</td>
<td>147</td>
</tr>
<tr>
<td>Systolic BP at End</td>
<td>140</td>
<td>138</td>
<td>139</td>
</tr>
<tr>
<td>Diastolic BP at Baseline</td>
<td>92</td>
<td>94</td>
<td>91</td>
</tr>
<tr>
<td>Diastolic BP at End</td>
<td>88</td>
<td>89</td>
<td>86</td>
</tr>
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</table>
Completed CRC Screening at 6-Months

**Difference remains significant after adjusting for education, health literacy, insurance status, and having a personal doctor**
Results Summary

• There was **no difference in blood pressure** by intervention group

• All intervention groups had lower average Systolic and Diastolic BP at 6-month follow up

• Participants who received the Patient Navigation Intervention were **more than twice as likely** to get screened as those who didn’t get the intervention
Translation of Barbershop Models to Colorectal Cancer

<table>
<thead>
<tr>
<th>Odds Ratio</th>
<th>Reference</th>
<th>Usual Care</th>
<th>Patient Navigation</th>
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<tbody>
<tr>
<td>0</td>
<td></td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>6</td>
<td>8</td>
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Odds Ratio: 3.96 (2.03-7.70)

Improved CRC screening in Black men by patient navigation intervention

Funded: NIH/NIMHD 5P60MD003421-05; CDC U48DP002671-03

Community-Based, Preclinical Patient Navigation for Colorectal Cancer Screening Among Older Black Men Recruited From Barbershops: The MISTER B Trial, AJPH, September 2017

Helen Cole DrPH, Hayley S. Thompson PhD, Marilyn White MD, Ruth Browne PhD, Chau Trinh-Shevrin DrPH, Scott Braithwaite MD, MS, Kevin Fiscella MD, MPH, Carla Boutin-Foster MD, MS, and Joseph Ravenell MD, MS
Implications for Health Equity Research in PD

Fleming, ES et al. 
Ethnicity & Disease 
2008 Spring
Considerations for the future

1. What are the most important and most urgent gaps? (disease awareness? treatment? Patient-level factors? Provider-level?)

2. How can we engage other key stakeholders (patients and communities) to develop and sustain effective interventions?
Acknowledgements

• The barbershops, churches and community leaders for their hospitality and dedication to our projects, as well as the study participants for their time and efforts.

• The Center for Healthful Behavior Change/Dept of Pop Health.

• Special thanks to the research staff and NYU students who have collected data for these studies.

• Funded by National Heart, Lung and Blood Institute (5RO1HL096946); National Center on Minority Health and Health Disparities (1P60MD003421), and the Centers for Disease Control and Prevention (1U48 DP002671)
Muhammad Ali’s Advocacy for Parkinson’s Disease Endures with Boxing Legacy

Rev. Jesse Jackson Announces Battle With Parkinson’s Diagnosis

THANK YOU