

# A CONVERGENT MIXED METHODS STUDY OF CARDIOVASCULAR DISEASE RISK FACTORS AMONG YOUNG BLACK MEN IN THE UNITED STATES

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**Background:** An understanding of the factors that influence cardiovascular (CVD) risk among young Black men is critically needed to promote cardiovascular health earlier in the life course and prevent poor outcomes later in life.

**Purpose:** To explore how individual (eg, depression, racial discrimination) and environmental factors (eg, neighborhood resources) are associated with CVD risk factors among young Black men.

**Methods:** We conducted a convergent mixed methods study (qualitative/quantitative, QUAL+quant) with Black men aged 18 to 30 years (N = 21; 3 focus groups). Participants completed a self-administered electronic survey immediately prior to the focus groups.

**Results:** Participants (Mage = 23) reported: two or more CVD risk factors (75%; eg, high blood pressure); racial discrimination (32%); and depressive symptoms in the past 2 weeks (50%). Five themes emerged: 1) emergence and navigation of Black manhood stressors; 2) high expectations despite limited available resources; 3) heart disease socialization: explicit and vicarious experiences; 4) managing health care needs against fear, avoidance and toughing it out; and 5) camaraderie and social support can motivate or deter. The integrated qualitative and quantitative analyses highlight race, gender, and class intersectionality factors that are relevant to what it means to be young, Black, male and of lower socioeconomic status in the United States.

**Conclusion:** Our findings help to identify modifiable, culturally specific and contextually relevant factors that relate to CVD risk factors among young Black men. Such work is crucial to inform interventions, primary prevention efforts, policies, and social-struc-

## INTRODUCTION

While the United States has experienced a 68% decrease in cardiovascular disease (CVD) death rates, stark disparities persist between Black and White populations.<sup>1,2</sup> Early identification of risk is essential to reducing disparities among Black men. Yet the current knowledge base on CVD among Black men is focused on older Black men.<sup>3</sup> The purpose of this convergent mixed methods study was to explore how individual (eg, racial discrimination) and environmental factors (eg, neighborhood resources) are associated with CVD

risk factors among young Black men aged 18 to 30 years. Our intent was to inform the design, language and focus of a planned intervention program for this key group, with the goal of addressing modifiable factors to prevent CVD later in life.

## Individual Factors Contributing to CVD Risk

Educational attainment, marital status, social support, depression, racial discrimination, masculinity, and stress are well-documented contributors to Black men's CVD-related beliefs and behaviors.<sup>4-7</sup> Of these, depression is the most robust psychoso-

tural changes to thwart the development of CVD and advanced disease stages. *Ethn Dis.* 2022;32(3):169-184; doi:10.18865/ed.32.3.169

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cial predictor of CVD outcomes.<sup>8</sup> The pressures of embracing the traditional household provider role contribute to poor health among Black men<sup>9,10</sup> in addition to chronic stressors such as racism, discrimination, and poverty.<sup>11</sup> Junk food self-medication is a strategy to alleviate such stress, however, this behavior contributes to CVD risk.<sup>12</sup> While health care engagement could help prevent CVD, Black men are noted to schedule fewer annual health examinations than other racial/ethnic groups.<sup>13</sup> Medical mistrust and expectations of racist treatment

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from providers are correlates of delayed health screenings and lower health care utilization among Black men.<sup>14-17</sup> Lower income, unemployment, family obligations and work conflicts are also barriers to seeking care in this group.<sup>18,19</sup> Alternatively,

social support, including having a supportive spouse/partner, promotes CVD risk reduction behaviors.<sup>20-22</sup>

### **Environmental Factors Contributing to CVD Risk**

Food, physical activity and tobacco use environments contribute to CVD risk factors.<sup>23,24</sup> Shopping patterns, travel mode, and distance traveled influence food environment-behavior associations, with differences noted by socioeconomic status.<sup>25</sup> Abundant unhealthy food options coupled with high-priced healthy foods make purchasing healthier foods a challenge for some Black Americans—holding true across income and education levels.<sup>26</sup> Availability of activity-supportive built environments are key for physical activity,<sup>27</sup> however, people living in areas with higher objectively measured crime have a 28% reduction in odds of physical activity.<sup>28</sup> Data indicate that Black individuals are more likely to live in high crime areas—a result of segregative housing policies<sup>29</sup>; individuals in such neighborhoods have poorer cardiometabolic health profiles.<sup>30</sup> The tobacco industry has also historically targeted products and advertisements to these areas, leading to disproportionate tobacco exposures in low-income and Black communities.<sup>31,32</sup> Further, Black men experience geographic disparities in cardiac prevention and treatment efforts.<sup>33</sup> Additional research is needed to investigate how these factors alongside the individual factors described above intersect with behavioral, normative, and control beliefs to influence CVD risk reduction behaviors.

## **METHODS**

We developed a conceptual model drawn from the Theory of Planned Behavior<sup>34</sup> and Ecological Systems Theory<sup>35</sup> to guide our efforts (Figure 1). The model informed the study measures and data analyses. Demographic (eg, education) and psychosocial (eg, depression) factors were purported to influence theoretical mediators of CVD risk reduction behaviors. According to the Theory of Planned Behavior, an individual's intention to perform a behavior (eg, exercise) is the strongest predictor of whether one will engage in the behavior. Moreover, one's intentions are presumed to be shaped by their attitudes and norms toward the behavior (eg, whether exercising is good or bad; how other people view exercise), and perceived behavioral control to perform the behavior. Merging this theory with Ecological Systems Theory enabled us to explore how environmental factors (eg, concentrated disadvantage) may affect the relationship between intention and behavior. The comprehensive model depicts how multi-level factors ultimately shape CVD risk.

### **Study Design**

The study took place from April to June 2017 in Philadelphia, PA. We employed a convergent mixed methods design (QUAL + quan, ie, qualitative + quantitative), with priority on the qualitative data.<sup>36</sup> Qualitative and quantitative data were collected at the same time to compare participants' perspectives with those drawn from survey measures to identify areas of convergence or divergence.<sup>36</sup>

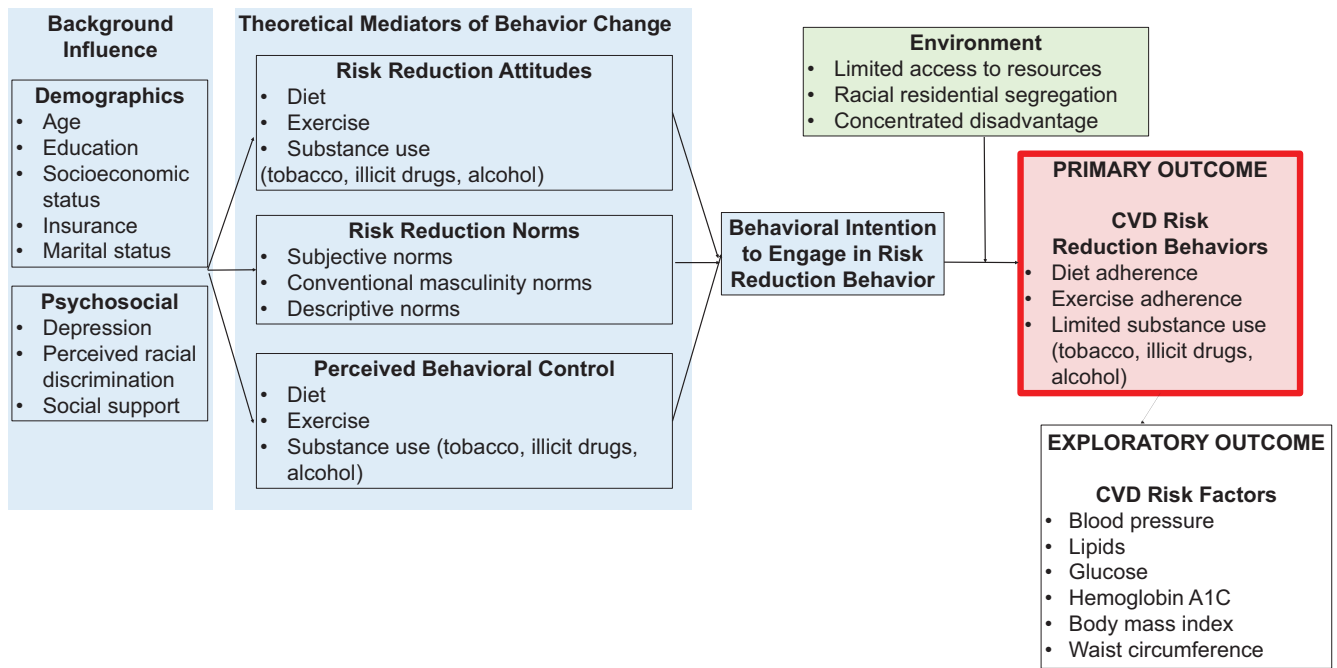


Figure 1. Conceptual model

Approval was obtained from the University of Pennsylvania Institutional Review Board. All participants provided written informed consent.

## Measures

### Qualitative Measures

A semi-structured focus group guide included open-ended questions about: a) perceptions of Black men's CVD risk; b) masculinity norms relevant to CVD risk and management (eg, self-reliance); c) race-gendered aspects of Black men's health and health care experiences (eg, provider discrimination); and d) geospatial issues relevant to CVD risk (eg, limited access to resources).

### Quantitative Measures

The self-administered electronic survey included sociodemographic

characteristics, perceived health status, self-reported CVD risk factors<sup>37</sup> (eg, physical inactivity), discrimination by health care providers,<sup>38</sup> satisfaction with health care providers, and service availability and accessibility. Depression was assessed using the Patient Health Questionnaire-2<sup>39</sup> (PHQ-2; 2-items, Cronbach's  $\alpha = .93$ ).<sup>40</sup> The Medical Outcomes Study (MOS) Social Support Scale<sup>41</sup> (19-items, Cronbach's  $\alpha = .97$ ) was used to assess the degree to which relationships provide emotional/informational support (Cronbach's  $\alpha = .95$ ), tangible support (Cronbach's  $\alpha = .93$ ), positive social interaction (Cronbach's  $\alpha = .96$ ), and affectionate support (Cronbach's  $\alpha = .92$ ).

## Procedures

Potential participants were recruited via: 1) face-to-face recruitment by

trained research staff; 2) study flyers posted in the community (eg, barber-shops); 3) social media; and 4) word of mouth. The interviewer-administered eligibility screening was implemented by phone or in person. Inclusion criteria were: 1) aged 18 to 30 years; 2) self-identify as Black/African American (eg, Caribbean-American); 3) male sex at birth; and 5) able to speak, read and write English. Transgender populations were excluded because Black men with male sex at birth were the focus of the research given biological CVD risk factors.

Data collection occurred in a private conference room at the University of Pennsylvania. Participants completed the self-administered, 10-minute electronic survey on study tablets immediately prior to their focus group (6-9 participants per group). Focus groups were facilitated by two Black

**Table 1. Descriptive characteristics of the sample by focus group number, N = 20**

Variable	Total sample n (%)	FG 1, n = 5, n (%)	FG 2, n = 6, n (%)	FG 3, n = 9, n (%)
Age in years; mean (SD)	22.5 (2.61)	21 (2.0)	23.7 (3.6)	22.89 (2.03)
Number of adults in the household; mean (SD)	2.1 (0.97)	2 (.707)	2.17(1.33)	2.11 (.928)
Number of children in the household; mean (SD)	.6 (1.0)	1.4 (1.67)	.17 (.408)	.44 (.726)
Annual income, \$; mean (SD)	16,540 (14,923)	22,000 (16,970)	20,400 (20,896)	12762 (10,922)
Receive public assistance				
Yes	5 (25)	1 (20)	2 (33.3)	2 (22.2)
No	15 (75)	4 (80)	4 (66.7)	7 (77.8)
Currently employed				
Yes	9 (45)	3 (60)	2 (33.3)	4 (44.4)
No	11 (55)	2 (40)	4 (66.7)	5 (55.6)
Educational attainment				
Less than a high school diploma	1 (5)	1 (20)	0	0
A high school diploma or GED	6 (30)	1 (20)	3 (50)	2 (22.2)
Some college or a 2-year degree	6 (30)	2 (40)	1 (16.7)	3 (33.3)
Four-year college degree	6 (30)	0	2 (33.3)	4 (44.4)
Post-graduate work	1 (5)	1 (20)	0	0
Relationship status <sup>a</sup>				
Live-in/cohabitating partner	1 (5)	0	1 (16.7)	0
Single/not in a relationship	12 (60)	4 (80)	3 (50)	5 (55.6)
Single/seeing somebody that I don't live with	7 (35)	1 (20)	2 (33)	4 (44.4)
Sexual orientation				
Heterosexual	13 (65)	3 (60)	2 (33.3)	8 (88.9)
Homosexual	6 (30)	1 (20)	4 (66.7)	1 (11.1)
Bisexual	1 (5)	1 (20)	0	0
Type of health insurance <sup>b</sup>				
Private	8 (47.1)	2 (50)	2 (40)	4 (50)
Medicaid	7 (41.2)	1 (25)	2 (40)	4 (50)
Other source (eg, military)	1 (5.9)	0	1 (20)	0
Uninsured	1 (5.9)	1 (25)	0	0
Past 12-month health coverage <sup>c</sup>				
Always covered	14 (73.7)	4 (80)	5 (100)	5 (55.6)
A time without insurance	5 (26.3)	1 (2)	0	4 (44.4)
Ever served time in prison, jail or other correctional facility				
Yes	2 (10)	0	2 (33.3)	0
No	18 (90)	5 (100)	4 (66.7)	9 (100)
Regular source of care				
Yes	13 (65)	4 (80)	3 (50)	6 (66.7)
No	7 (35)	1 (20)	3 (50)	3 (33.3)

a. No participants endorsed being married, separated, widowed or divorced

b. Two participants selected "Don't Know" and one refused to answer

c. For the question, "During the last 12 months, did you have health insurance all the time, or was there a time during the year when you did not have any health coverage?", one participant refused to answer

male facilitators with extensive experience in managing group dynamics. Participants wore a name tag with a pseudonym for confidentiality and received \$25 cash for the 90-minute discussion. All sessions were audio-recorded and transcribed verbatim.

### Data Analyses

Qualitative data were analyzed in NVivo v.11<sup>42</sup> using a combined deductive and inductive approach.<sup>43</sup> The first and second authors developed the codebook and coded all the transcripts. Analysis began with

descriptive and interpretive coding and then advanced as analytic memos were used to compare and refine emerging themes. Coding discrepancies were brought to co-authors for final consensus. Percent agreement (96.6%) was calculated using NVivo.

The coders agreed on code assignments; however, there were discrepancies in the coded segments which skewed reliability estimates (ie, coding full vs partial sentences). Thus we report percent agreement and not inter-rater reliability. Once all transcripts were coded, we used thematic analysis to highlight patterns and themes using the methods outlined by Vaismoradi et al.<sup>44</sup> This process included the phases of initialization (eg, coding transcripts), construction (eg, defining themes), rectification (eg, distancing) and finalization (eg, developing the story line).

All quantitative analyses were done in IBM SPSS v.21 (Chicago, IL).<sup>45</sup> Descriptive statistics were used to describe the frequency and averages of the variables. Survey data were missing for one participant. The mixed methods data were fully integrated at the design, analysis, interpretation and dissemination stages.<sup>46</sup> We used a weaving approach to present the findings; the qualitative and quantitative findings are written together on a theme-by-theme basis.<sup>46</sup> For better visualization, we merged the results from the focus group and survey data in a joint display table to compare the two datasets, exploring convergence and divergence in the findings.

## RESULTS

Table 1 describes the study sample ( $M_{age} = 22.5$  years,  $SD = 2.6$ ). One-quarter had lived without health insurance in the past year. Three in four reported two or more CVD risk factors (eg, high blood pressure, drank alcohol) (Table 2). One-third report-

ed racial discrimination, and tangible support (the offering of material aid or behavioral assistance) was the lowest perceived form of available social support compared to the other MOS social support subscales (Table 2). The five focus group themes, associated sub-themes, and survey results are described below and presented in Table 3. Unedited, verbatim exemplar quotes are provided. We did not have participants state their ages during the discussion, so we are unable to report ages alongside the quotes. Focus group numbers are denoted as “FG1, FG2 and FG3” to indicate which group the quotes are from.

### Emergence and Navigation of Black Manhood Stressors

The participants described stressors Black men experience as the head of the household. There was convergence and expansion of the quantitative and qualitative data. More than half of the sample reported being unemployed on the survey. They believed “society puts on such a heavy burden on the male figure that men have to feel like they have to be at a certain standard when it comes to handling families...and it takes more toll on their health” (FG2). Another shared: “From the womb it’s, like, we already got to feel like we should be providing... and then when you get older...that pressure, it just gets worse...I don’t think we cope with it well because we don’t know how to...” (FG3)

The men discussed ways they tried to navigate the pressure and stress they experienced. Some identified a connection between mental state and eating:

“...if you’re depressed and you’re stressing sometimes...it could cause you to eat more” (FG1).

Although survey results did not indicate clinically significant levels of depressive symptoms ( $M = 1.21$ ,  $SD = 1.40$ ), half ( $n = 10$ ) endorsed little interest or pleasure in doing things, and 47.4% ( $n = 9$ ) reported feeling down, depressed, or hopeless several days or more than half the days over the past two weeks. Substance use was normalized in the discussions as a means of coping with racial and gender stress (ie, alcohol, “Black & Milds” [pipe tobacco cigar]): “You’re more likely to...just get away from the pain... that leads to, like, drinking and stuff so that also messes up your health” (FG3)

### High Expectations Despite Limited Available Resources

This theme emerged as a commonality in not only CVD risk factors, but also the daily expectations of being a Black man in their communities. There was convergence between the data sources. The average annual income was \$16,540 ( $SD = \$14,923$ ), and 25% ( $n = 5$ ) reported receiving public assistance. Most survey respondents (63.2%,  $n = 12$ ) reported not eating healthy in the past month (eg, ate few fruits and vegetables). Several participants elaborated on how this plays out in CVD risk: “They make the fast food cheaper than the fruits and vegetables...And I understand produce and growing crops and all that other stuff, but you raise the price...I’m

**Table 2. Descriptive characteristics of the sample's CVD risk factors by focus group number, N = 20**

Variable	Total sample n (%)	FG 1, n = 5, n (%)	FG 2, n = 6, n (%)	FG 3, n = 9, n (%)
How many times saw provider in past year; mean (SD)	2.26 (1.49)	3.4 (1.82)	2.33 (1.37)	1.5 (.926)
Body mass index; mean (SD)	26.93 (6.52)	27.01 (7.57)	25.66(3.97)	27.82(7.95)
PHQ-2 Depression score; mean (SD)	1.21 (1.40)	.40 (.894)	.83 (1.33)	2 (1.41)
PHQ-2 little interest or pleasure in doing things				
Not at all	10 (50)	4 (80)	4 (66.7)	2 (22.2)
Several days	6 (30)	1 (20)	1 (16.7)	4 (44.4)
More than half the days	4 (20)	0	1 (16.7)	3 (33.3)
Nearly every day	0	0	0	0
PHQ-2 feeling down, depressed or hopeless				
Not at all	10 (52.6)	4 (80)	4 (66.7)	2 (25)
Several days	8 (42.1)	1 (20)	2 (33.3)	5 (62.5)
More than half the days	1 (5.3)	0	0	1 (12.5)
Nearly every day	0	0	0	0
MOS social support score; mean (SD)	4.02 (0.925)	4.77 (.219)	4.07(1.24)	3.56 (.678)
MOS emotional/informational support score; mean (SD)	4.02 (0.988)	4.73(.369)	4.13(1.17)	3.56 (.917)
MOS tangible support score; mean (SD)	3.71 (1.32)	4.65 (.418)	3.75 (1.58)	3.17(1.28)
MOS positive social interaction score; mean (SD)	4.23 (0.866)	4.93 (.149)	4.17 (1.17)	3.89 (.687)
MOS affectionate support; mean (SD)	4.13 (0.964)	4.87 (.298)	4.22 (1.28)	3.67 (.745)
Perceived health status				
Excellent	5 (25)	2 (40)	2 (33.3)	1 (11.1)
Very good	7 (35)	2 (40)	3 (50)	2 (22.2)
Good	3 (15)	1 (20)	0	2 (22.2)
Fair	4 (20)	0	0	4(44.4)
Poor	1 (5)	0	1 (16.7)	0
Satisfaction with primary care provider <sup>a</sup>				
Dissatisfied	1 (5.3)	0	0	1(12.5)
Satisfied	12 (63.2)	2 (40)	4 (66.7)	6 (75)
Very satisfied	6 (31.6)	3 (60)	2 (33.3)	1(12.5)
Can talk to provider about important issues				
Strongly disagree	1 (5)	0	1 (16.7)	0
Disagree	1 (5)	0	1 (16.7)	0
In the middle	4 (20)	0	1 (16.7)	3 (33.3)
Agree	7 (35)	2 (40)	2 (33.3)	3 (33.3)
Strongly agree	7 (35)	3 (60)	1 (16.7)	3 (33.3)
Perceived racial discrimination by people in helping jobs <sup>a</sup>				
Not at all	13 (68.4)	4 (80)	3 (50)	6 (75)
Sometimes	6 (31.6)	1 (20)	3 (50)	2 (25)
CVD risk-related behaviors in the past month <sup>b</sup>				
Smoked cigarettes	2 (10.5)	1 (20)	0	1 (11.1)
Drank alcohol	14 (73.7)	3 (60)	4 (80)	7 (77.8)
Used marijuana and/or other drugs	8 (42.1)	2 (40)	2 (40)	4 (44.4)
Had high blood pressure	2 (10.5)	1 (20)	0	1 (11.1)
Had diabetes	0	0	0	0
Had high cholesterol	0	0	0	0
Did not exercise for at least 30 minutes at least 5 days per week	10 (52.6)	2 (40)	1 (20)	7 (77.8)
Did not eat a healthy diet (e.g., ate foods high in salt and fat)	12 (63.2)	3 (60)	2 (40)	7 (77.8)

MOS, Medical Outcomes Survey<sup>41</sup>

a. One participant refused to answer

b. Participants could select multiple options, choosing all that applied; one participant did not report any risk behaviors

**Table 3. Focus group and survey data, including mixed methods interpretation, N = 20**

Focus group themes	Survey results	Mixed methods comparison and interpretation
Emergence and navigation of Black manhood stressors	55% (n = 11) were currently unemployed The overall depression score average was 1.21 (SD = 1.40) indicating no depression 50% (n = 10) reported little interest or pleasure in doing things several days or more than half the days 47.4% (n = 9) reported feeling down, depressed, or hopeless several days or more than half the days FG3 was predominantly heterosexual (88.9%, n = 8) and reported the highest average depression score (M = 2, SD = 1.41)	Convergence and Expansion -- More than half of the participants were unemployed and the pressures to provide were described across the groups. Depression scores were low relative to the optimal depression screening cutpoint of 3. However, half of the sample endorsed experiencing depressive symptoms over the past 2 weeks, which should warrant follow-up. With discussions of substance use as a means of coping, it is also possible that those experiencing depressive symptoms may have self-medicated with alcohol and/or drugs to cope with the stressors in their lives.
High expectations despite limited available resources	Average annual income \$16,540 (SD = \$14,923) 25% received public assistance	Convergence -- The surveys and focus group discussions highlighted the structural barriers participants experienced (e.g., lack of insurance coverage, racial discrimination, unhealthy food environment). The expectation is for individuals to eat healthy, exercise and engage in routine care to reduce CVD risk; however, the findings show that these opportunities are not equitably available to all individuals.
Risk factors are structurally facilitated, yet Black men pay the price	Most participants reported that they were in very good or excellent health (70%, n = 12)	
Heart disease prevention, sometimes easier said than done	31.6% (n = 6) reported racial discrimination 26.3% (n = 5) reported a time in the past 12 months without health insurance coverage; 1 person reported currently being uninsured	
Heart disease socialization: Explicit and vicarious experiences	Only one participant did not report any CVD risk-related behaviors	Convergence -- The participants described the ways that their own behaviors, as well behaviors modeled for them, could influence CVD risk factors. Family members and intimate partners were particularly salient for this demographic.
Reinforcement or shattering of intergenerational practices	Not eating a healthy diet (63.2%, n = 12), not exercising (52.6%, n = 10) and drinking alcohol (73.7%, n = 14) were the most commonly reported risk-related behaviors	
Managing health care needs against fear, avoidance and toughing it out	65% (n = 13) reported a regular source of care An average of 2.3 (SD = 1.49) visits to see a health care provider in the past year	Divergence and Expansion -- Participants went to see health care providers and had a regular source of care. Levels of reported satisfaction on the survey, however, are divergent from the challenges described in the focus group discussions. The ways participants described navigating discrimination (eg, leaving providers who exhibited discriminatory practices) may shed insight on the incongruence. That is, they may experience more satisfaction because they chose to change providers where they experienced discrimination.
Navigating discrimination by healthcare providers	94.7% (n = 18) satisfied or very satisfied with primary care provider 70% (n = 14) agreed or strongly agreed that they could talk to their provider about important issues 31.6% (n = 6) reported racial discrimination	
Comaraderie and social support can motivate or deter	Tangible support had the lowest average of perceived social support (M = 3.71, SD = 1.32) Positive social interaction had the highest average of perceived social support (M = 4.23, SD = .87) 40% (n = 8) were in a relationship	Convergence and Expansion -- Participants described ways that their relationships either supported heart healthy lifestyles (e.g., motivation to change diet) or promoted risk behaviors (e.g., preparation of unhealthy meals). While tangible support was the lowest reported form of social support on the survey, focus group analyses reveal that most meals were prepared by others, either intimate partners, family members or restaurants/ takeout stores.

paying like \$5 for a bag of grapes, but I'm paying \$1.50 for a McChicken at McDonalds... which one I'm going to go with?" (FG1)

People in wealthier areas were perceived to have financial freedom to put money toward physical activity, less pressure from society, and healthier food options:

"So like opposed to people who live downtown and they have a more variety of places to pick up food whether it be fast food or...healthier options"

(FG1). “But if you go into an upper class neighborhood you don’t see nothing [unhealthy], like the urban area has almost everything [unhealthy] at everybody’s disposal” (FG2).

Discussions focused on convenience and accessibility of food options, and ways to engage in physical activity and a healthy diet. A predominant thread was that purchasing food was more convenient than cooking, but that the food purchase options available were all unhealthy. They said:

“...you’re not going to find no Whole Foods and no healthy like food store on the corner that we’re going to run to... Ain’t nobody going to wait for a long time to cook. They want something that’s fast.” (FG1)  
“...I live in the hood. It’s not that many like healthy stores for us to go to. You got a Papi store [bodega/small corner store] at like every corner...so nine times out of ten, you’re going to go to one of the Papi stores or Chinese stores.” (FG1)

Only one participant countered this narrative:

“it is actually cheaper to cook a healthier meal than to eat junk food every day...but a lot of people don’t know that and a lot of people don’t know how to educate themselves nutritionally. So you would rather spend that 15 minutes to go get a cheese steak from the corner store than to sit down and spend 45 minutes to prep a meal, eat it, and cook it...” (FG3)

### *Risk Factors Are Structurally Facilitated, Yet Black Men Pay the Price*

As a sub-theme of high expectations, participants shared their understanding of ways inequitable structural factors (eg, lack of access to resources) influence their health. In discussing the jobs available to Black men, one man in FG2 stated “...we’re breathing in more of the toxic fumes, so we are taking more of the dangerous side of the labor force.” Another shared: “...You got Black men doing a lot more rigorous jobs than Caucasian people. Most of them are doing office jobs, we’re doing...the outside type of stuff. The trash, the construction. We’re doing the real rough, rugged stuff that actually breaks our body down quicker.” (FG2)

With respect to the role of food retailers, participants in FG3 noted the effects of product placement and pricing in stores: “...they got the fruit all the way in back and granola bars all the way at the bottom shelf. You see everything else but the healthy stuff...” and “...the unhealthy stuff is cheaper...” Participants in all three focus groups referenced macro-level structural factors related to racial dynamics (eg, gentrification and de facto neighborhood racial segregation, food deserts, employment opportunity gaps) that contribute to Black men’s engagement in CVD risk-related health behaviors. Economic (racial wealth gap) and commercial (local business-owner practices) factors were described as contributors to the availability of resources and af-

ected participants’ ability to engage in positive health decision-making.

### *Heart Disease Prevention, Sometimes Easier Said than Done*

A second sub-theme centered on the reality of their circumstances as a barrier to CVD prevention, even when they were knowledgeable. Across all three groups, participants acknowledged the benefits of diet and exercise in reducing CVD risk, but the average BMI was 26.9 (SD = 6.52). They discussed success stories and how they saw lasting results when reducing sodium and fat in their diets and increasing physical activity. Cigarette smoking was also discussed, although only two participants (10.5%) reported cigarette smoking and only a few associated tobacco and increased CVD risk. One participant (FG2) shared a breakdown of the effects of carcinogens on the heart, but across the groups there was limited conversation about the risk of smoking.

Despite acknowledgement of CVD prevention strategies, each focus group had lengthy discussions about things that got in the way of preventive health behaviors. Different costs were a key concern:

“...I’m not about to spend \$20.00 a month to probably only go to the gym a couple times a week” (FG3). Another stated: “...if a doctor recommends something like dramatic change in the diet...If [a man] can’t afford that type of diet, he might not be able to do it...” (FG1)

Yet, many shared strategies they used to integrate heart healthy activities into their lives. Almost half



(47.4%, n = 10) reported that they exercised for 30 minutes at least five days per week in the past month. This included engaging in fitness competitions with friends and relatives, doing exercises at home, and group sports.

“I mean some guys usually exercise if it’s not like doing like treadmills and going to the gym. It’s like playing football or basketball. Something like riding a bike or something... people think just by going to the gym, that’s the only way you can do to stay healthy and lose weight when there’s other activities and stuff that you do every day” (FG1).

### Heart Disease Socialization: Explicit and Vicarious Experiences

Participants recounted stories of the different ways they learned about health, and heart disease in particular, shaped by their families, friends, significant others, and the media. The survey and focus group data converged. They perceived high levels of emotional/information support ( $M = 4.02$ ,  $SD = .925$ ), learning from explicit experiences (eg, health-related conversations) and vicariously through others (eg, relative diagnosed with CVD). Men in FG1 talked about the lack of education on heart disease in school: “...young people need to know too...Maybe if they start like really teaching that stuff inside gym too...I don’t remember any heart disease talk...” In families, conversations about heart disease were believed to be reserved for older relatives: “...My grandma always told my older brother...yo, you

going to get high blood pressure if you keep stressing and hollering and yelling and stuff like that’. But she never once said that to me (FG1).”

In general, participants believed they had more information about other health concerns, such as diabetes, than they did about heart disease risk. Additionally, there was more health literacy around exercise, than cooking, food, or tobacco use. They noted that sometimes it takes witnessing someone else’s experience to motivate change:

“... if you actually see something, like, somebody close to you pass away because of heart disease or something like that, that’s when you’re, like, ‘okay, I need to really check myself.’ But if it ain’t real to you then you ain’t going to do it.” (FG3)

Another participant lost 130 pounds over 18 months, prompted by his mother’s diabetes and his own heart issues:

“...it was motivation for me, because I didn’t want to go to the doctors...I just never wanted to be that person taking pills every day...” (FG2)

### Reinforcement or Shattering of Intergenerational Practices

As a sub-theme in heart disease socialization, the men described what they learned about food and exercise within their families. Participants in FG2 tied diet to their cultural identity: “...what we grew up on...some of us from the south have a different way of cooking. Some people from the islands

have a different way of cooking...” Unhealthy diets were described as learned behaviors that some people acquiesced to because it was believed to be difficult to counter them.

“...if your family from down south or if you know your mom and grandma can cook, you going to eat their food...you ain’t going to be like this, ‘that’s not healthy for me. I’m not going to eat what you cook.’” (FG1)

Another participant said his relatives’ deaths motivated him to become more physically active and stop the generational cycle of heart disease.

“I learned about it from my uncle... my great uncle died from like a heart attack...[then my uncle] and his friends...they got the Fitbit joint and they be doing their challenge...” (FG1)

### Managing Health Care Needs against Fear, Avoidance, and Toughing It Out

Thirteen (65%) participants had a regular source of care, with an average of 2.3 ( $SD = 1.49$ ) visits to a health care provider in the past year. Many talked about delaying health care provider visits because of fear of what they would learn about their health status or wanting to avoid providers and health care settings. They mentioned using self-diagnosis and home remedies to manage their health care needs.

“...they don’t want to know what they don’t want to know. Like if I go to the doctors and I find out... they tell me I got high blood pressure or diabetes and stuff like that. I ain’t want to come here to

hear that so that's going to scare them to not go." (FG1)

Another added, "I guess if you're really sick [you go to a health care provider]. Otherwise you just tough it out."

In FG1, participants engaged in a rich discussion about shared symptom experiences that caused concern. Yet, none had sought treatment for these symptoms. One stated, "I ain't going to lie. Every now and then I've felt some pains in my chest and I'm like is this the day God called me home?" Another responded, "Don't do that, because now you got me thinking about these moments I've had." The concept of "toughing it out" came up in all three groups, where participants described how some Black men experience symptoms but refuse to seek treatment:

"I'm, like, man, I'm good... why y'all talkin' [about] the hospital. Like, I can take care of myself, I got it" (FG 3). "When it affects your ability to just function normally...Basically, when there's absolutely no choice...Or your job, like, 'don't come back until you go to the doctor', like, yeah, let me go to the hospital" (FG3). Participants in FG3 specifically brought up "white coat syndrome" as a barrier: "White coat syndrome, when you just don't like doctors...Like, the sight of them... you don't trust them." Health care costs were also a barrier: "You're not going to take a day off work to go to the hospital...Doctor bills cost a grip...might as well just let it heal up on your own" (FG3).

Some acknowledged that while heart disease was not viewed as a pressing health concern for their age, it was something that should be taken into consideration earlier in life:

"...if you have a heart attack or heart disease, you'll feel that suddenly, but before that, that will happen gradually...I guess what I'm trying to say is it's not a problem right now, but we could do something to prevent it becoming a problem while we are still young." (FG1)

"Some people grow up just not really looking at the future, like, not thinking about when they're 50 or 40 or when all these, all this bad eating and lack of exercise is going to add up, you know?" (FG3)

#### *Navigating Discrimination by Health Care Providers*

Nearly one-third (31.6%, n = 6) reported racial discrimination. Negative encounters made them not want to return:

"...when I got another doctor it was a male, middle-aged White guy...And I just didn't really appreciate his tone. It was just, like, 'well, that can't be the issue'...telling me that what I'm saying isn't happening, like, my pain or whatever it may be...I felt like he was brushing me off just trying to get me out the office. He wasn't looking at me while I was talking he was just on the computer...I was, like, he is being prejudiced so...I ain't go back since. Like, it made me not want to." (FG3)

"I used to have like this White guy as like my doctor, but I got rid of him... I witnessed him like this: 'I bet y'all used to eating fried chicken and stuff like that'...He'll give you an estimate like, 'you'll have high blood pressure before your thirty' and stuff like that so I got rid of him. Now I have a Black lady as a doctor." (FG1)

Some believed the discrimination wasn't only about race. They saw it as a social class concern where health care providers were believed to treat low-income individuals worse than those paying more money for their healthcare:

"I wouldn't say racist. I would definitely say, like, some type of prejudice...like, social class... different incomes...they be like, '...he'll be alright, you know, he'll wait a little longer than the person that's paying a grip [more money]'..." (FG3).

They also discussed the dearth of Black male physicians. While there was not an explicitly stated preference for racial and/or gender concordance, the overarching sentiment was that Black male providers might better understand their lived experiences and provide better quality care.

The quantitative data diverged from these narratives and provided an expanded view of patient-provider relationships. The majority reported that they were satisfied (63.2%, n = 12) or very satisfied (31.6%, n = 6) with their primary care provider and most (70%, n = 14) believed they could talk to their

provider about issues that were important to them. As an example, in FG3, the men described doctors who were “looking out” (helping them) by prescribing “off-brand” medications to save their patients money.

### **Camaraderie and Social Support Can Motivate or Deter**

Camaraderie and social support came in multiple forms, particularly as it related to heart healthy lifestyles. Mostly positive influences were perceived from family, coaches, intimate partners (40%, n = 8 were currently in a relationship) and friends who encouraged exercising and eating healthy. Although some reported negative influences from people who promoted negative coping strategies or behaviors (eg, substance use), they also discussed individuals who had positive influences on their choices. Children and significant others were identified as the primary influential voices.

“...if they go to school and [learn] about eating healthy, first thing they’ll do, especially a daughter, is come back and tell her dad, ‘you should eat healthy, daddy’ or something like that. He’ll think about it and he might just try what she was saying. Guys always soft on his daughter.” (FG1)

There was also motivation to be there for other people and set a good example:

“I didn’t start cooking food until I had my daughter and I realized I didn’t want her being, like, all unhealthy so I just had to switch...” (FG3). Another stated, “if I’m chillin’

with [significant other] and all she do is eat healthy and I know I’m...going to wind up being healthy because that’s all she cooking...” (FG3).

Athletic coaches were also supportive of healthier lifestyles:

“I didn’t really start caring for exercise until I started playing football...the coach...really stressed on...getting your body right so that you can perform at the best level. So when I was playing football I always took care of my body but afterwards I just started to care less and less. I still care but not as much.” (FG3)

Some expressed that their families would support healthy dietary changes:

“My aunts and them would be happy... Like my family wouldn’t be like judgmental or they wouldn’t be real strict like ‘he ain’t eating’. They’ll make a plate and put it up like this and take it home...” (FG2)

Some families, however, were presumed to criticize dietary changes, particularly around family gatherings (eg, holidays, cookouts). Participants in FG3 commented:

“...my family would tell me I’m crazy and I should have waited to go on the diet...‘That mac ‘n cheese ain’t going to hurt’. They be, like, ‘we ain’t asking, eat this burger’. I ain’t eat junk food for, like, 9 months and mom just still trying to make me eat chips, like, ‘you need some type of salt’.”

The qualitative and quantitative findings converged given that tangible support was the lowest form of perceived social support (M = 3.71, SD = 1.32), and positive social interaction was the highest (M = 4.23, SD = 0.87).

## **DISCUSSION**

In this study, we explored how factors such as depression, racial discrimination, and neighborhood disadvantage are associated with CVD risk factors among young Black men. The mixed methods design allowed us to identify areas of convergence, divergence and expansion between the focus group and survey data. Moreover, data integration illustrates a culturally specific, contextualized understanding of factors that influence CVD risk factors among young Black men.

We confirmed that CVD is shaped by a complex array of social-structural factors including where you live, what you can afford, the messages you hear, and discrimination in health care settings.<sup>12,26,47,48</sup>

We also make an important contribution by elevating the voices of a group that is underrepresented in the CVD literature and medically underserved. While our participants reported similar experiences to their older counterparts (eg, race-related stress),<sup>10</sup> they also discussed distinct differences, such as not receiving the same preventive education or supports. Our findings have multiple implications including insights for health care providers, policy-makers (ie, those who influence food pricing) and people engaged in neighborhood-level health promotion efforts.

The data indicate cognizance of factors outside of participants' control that still increased their CVD risk. The most salient were race- and place-related inequities that were perceived to affect things from the types of jobs they held to the cost and quality of available foods. Our conceptual model was confirmed as participant narratives highlighted the disconnect between intention, behavior, and outcomes when environmental forces contribute to CVD risk. They felt like they were blamed for high rates

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*The most salient [of factors identified] were race- and place-related inequities that were perceived to affect things from the types of jobs they held to the cost and quality of available foods.*

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of CVD among Black men, without adequate acknowledgment of external contributors to their CVD inequities. For instance, analysis of more than 20 years of data with Black Americans shows that exposure to discrimination and segregation in early years predicts adult inflammation and amplifies the inflammatory effect of adult exposure to race-related stressors; these effects were stronger predictors of chronic inflammation than

other risk factors (ie, diet, smoking).<sup>49</sup> We advocate for health promotion efforts that account for the constraints environmental factors place on individual health beliefs and behaviors (eg, limited access to healthy foods due to racial residential segregation).

Although they acknowledged receiving messages about the need to exercise and eat healthy, the lack of convenient and accessible options limited their choices. This is consistent with other findings related to Black men's health.<sup>50</sup> The benefits of lifestyle changes are clear for CVD risk reduction,<sup>51</sup> yet opportunities to make these changes are not equitably distributed. Moreover, unhealthy intergenerational practices and the fact that CVD was rarely explicitly discussed added to the challenges experienced. The participants did, however, share strategies to increase physical activity as a means of reducing CVD risk—even if the cost of a gym membership was prohibitive. This included incorporating exercise into their daily lives through activities they enjoyed (eg, basketball, fitness challenges with peers). Yet ten-year estimates indicate that Black men have had the most significant decline in physical activity compared to Black women and White men and women.<sup>52</sup> Multi-level strategies are needed to reduce the complex challenges Black men face and support health promoting behaviors. They should be engaged in this work as experts in their own experiences and strategists to identify intervention efforts that will be feasible and acceptable.

Fear, avoidance, and a desire to “tough it out” contributed to delays in seeking care for symptoms. This find-

ing is consistent with our prior work. In a sample of young men enrolled in Australia, we found similar themes of social pressure, a desire to “power through” symptoms, fear and anger.<sup>53</sup> These results are also consistent with findings that men use health services less often than women and delay seeking care for health issues.<sup>54</sup> Together, these findings illustrate the importance of engaging young men to identify ways to promote healthy behaviors at an early age, as well as modify the negative health care system and environmental factors that contribute to CVD risk. To avoid placing the onus of lower and delayed care utilization on young Black men, it is important to acknowledge factors that contribute to a lack of trust in health care professionals and the health care system. The men talked about experiencing discrimination in health care settings; dismissive provider communication is a powerful deterrent.

Training in structural competency (ie, acknowledgement of factors outside of individuals that influence health outcomes),<sup>55</sup> cultural sensitivity, and accountability are needed. However, to avoid robbing our participants of their agency and resilience, it should be noted that they described advocating for themselves, and even changing providers who they perceived as racist or who didn't suit their needs for other reasons. With new providers, they had high levels of satisfaction and a strong belief in their ability to talk to them about important issues. In addition to transforming the health care system to better care for young Black men, empowering individuals to select providers who respect

them sends an important message that can be used in patient education and public health messaging.

Comparing the qualitative and quantitative data side by side, we noted that, although clinically significant depression scores were not found on the survey, half reported having little interest or pleasure in doing things, or feeling down, depressed, or hopeless in the past two weeks. This result is important because even sub-clinical depressive symptoms may be a risk factor for CVD in young adults.<sup>56</sup> Moreover, similar to other investigations, it also calls to question whether current diagnostic tools, mental health screening protocols and suggested cut points are sufficient to meet the needs of diverse groups.<sup>57</sup> Reports of marijuana and other drug use were also high and discussed as a coping mechanism, as others have noted,<sup>58</sup> illustrating the importance of addressing this pattern early in life. Lack of knowledge was evident in discussions about smoking. While only two participants reported smoking, several talked about smoking “blacks,” a pipe tobacco cigar. It was unclear whether they fully understood the cardiovascular risk of all forms of tobacco although they were fully cognizant of the carcinogenic effects. For public health messaging to influence this demographic, it will be important to address the many products that contain tobacco and affect cardiovascular health.

Similar to other studies, environmental factors (eg, food deserts) also contributed to CVD risk in this sample.<sup>48</sup> Some racial and ethnic minority communities have identified innovative approaches such as com-

munity gardening to increase access to healthy foods and enhance support from people in the neighborhood.<sup>59</sup> Future research to identify innovative approaches to this issue is greatly needed. Such work is crucial given evidence of epigenetic mechanisms by which neighborhood environment increases CVD risk.<sup>60</sup>

Social support is well-documented as contributing to the development and course of CVD.<sup>61</sup> While survey reports of social interaction were highest, tangible support was the lowest type of support reported. Specifically, the men felt that others were there for social activities but less available for material aid or behavioral assistance. It may be that financial constraints made it challenging for others to provide them with tangible support. Researchers found an association between social cohesion, accessibility to activity with neighbors and improved modifiable health behaviors (eg, exercise, diet).<sup>47</sup> There may be ways to leverage neighborhood-level approaches to build social support and improve CVD outcomes, even in populations with limited economic capital.

Participants reported rarely learning about health in school, from providers, or in planned family discussions. Instead, vicarious experiences, accidental learning, and informal role models formed the basis of their knowledge about heart health. Although meal preparation can be a powerful way to improve health, this activity was done mostly by others. Only one participant discussed the benefits of preparing his own meals. Future research could offer group cooking classes to help young Black

men prepare healthy food options, or activities to build skills for grocery shopping. Our findings confirm other data indicating the frustrations participants experience when, on a limited budget, they have to spend more money to eat healthier.<sup>26</sup> Policy and structural changes are warranted to increase access to affordable and healthy food in low-income neighborhoods; grocery shopping and meal preparation skills are of null effect if one cannot access a grocery store or afford what is sold there.

### **Limitations**

We reached saturation thus the sample was adequate for the qualitative analysis.<sup>62</sup> However, it was too small for robust quantitative analysis. Participants self-reported CVD risk factors without objective measurements of risk (eg, weight). Causal inferences cannot be drawn given the study's cross-sectional nature. Despite these limitations, we contribute to the literature given that few studies simultaneously examine the individual and environmental factors that influence CVD risk factors. The findings focus on an underserved demographic and illustrate the importance of addressing CVD risk factors in young Black men.

### **CONCLUSION**

This study is an initial step toward the development and testing of interventions to promote health in young Black men and prevent the development of CVD. The participants raised a host of race, gender, and class intersectionality factors that illustrate

how being a young, Black, male and of lower socioeconomic status affects health behaviors. They also highlighted how macro-level factors (eg, discrimination, food deserts) affect their behavior. Young adulthood is a prime time to intervene and promote beneficial health behaviors. To achieve health equity, there must be a continuous focus on social determinants of health and rectification of the historical, political, economic and other injustices that cause inequities.<sup>63</sup>

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**CONFLICT OF INTEREST**

No conflicts of interest to report.

**AUTHOR CONTRIBUTIONS**

Research concept and design: Brawner, Bowleg, Dominique, Riegel; Acquisition of data: Brawner, Dominique, Robinson; Data analysis and interpretation: Brawner, Talley, Baker; Manuscript draft: Brawner, Talley, Baker, Bowleg, Robinson, Riegel; Statistical expertise: Brawner, Baker; Acquisition of funding: Brawner, Riegel; Administrative: Brawner, Talley, Bowleg, Dominique, Robinson; Supervision: Brawner

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