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## RESEARCH ARTICLE



# The role of sense of community in improving the health-related quality of life among **Black Americans**

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#### **Abstract**

Black Americans have the lowest life expectancy and health-related quality of life (HRQoL; a strong predictor of premature mortality) of any racial/ethnic group in the United States. Low rates of physical activity and engagement in healthy eating are two known contributors to low HRQoL. Black Americans are more likely to live in environments that inhibit engagement in these two contributors. The present study examined sense of community as a buffer against the adverse effects of low physical activity and healthy eating on HRQoL among Black Americans. A sample of 290 Black American adults were recruited for the present study. Results indicate that sense of community buffers against the adverse effects of low physical activity on HRQoL. The results of the present study can be used by health promotion interventionists and policy-makers to improve HRQoL and reduce premature mortality among Black Americans.

### **KEYWORDS**

Black Americans, health promotion, health-related quality of life, sense of community

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## 1 | INTRODUCTION

# 1.1 | Health-related quality of life (HRQoL)

HRQoL is a multidimensional conceptualization of health that consists of an individual's subjective assessment of their physical and psychological functioning (Hays & Morales, 2001). The National Institutes of Health (NIH) and the Centers for Disease Control and Prevention (CDC) have drawn attention to the importance of HRQoL (Forrest et al., 2018; Slabaugh et al., 2017) in part because HRQoL can be a stronger predictor of premature mortality than many unidimensional predictors of health (i.e., smoking, obesity) (Brown, Thompson, et al., 2013; Centelmo et al., 2016), and because of its negative association with disease burden (Brown, Jia, et al., 2013). Additional attention stems from research findings that have concluded that a small improvement in HRQoL (i.e., 0.5 standard deviations) can result in significant health improvements (Norman et al., 2003). The attention drawn to HRQoL by national organizations led the United States government to set a goal to improve HRQoL among residents of the United States in its Healthy People 2020 (2010) initiative.

Research seeking to understand facilitators and barriers associated with HRQoL among individuals at-risk for low HRQoL (e.g., those with cancer, chronic health conditions, uninsured/underinsured) followed the Healthy People 2020 initiative (2010) (Kale & Carroll, 2016; Wippold & Nmezi, Williams, et al., 2020; Wippold & Roncoroni, 2020). Tailored interventions to improve HRQoL based on these facilitators and barriers impacting HRQoL were then created (Kang et al., 2016; Zhang et al., 2007). Despite the much needed growing emphases on understanding and improving HRQoL among at-risk individuals, Black Americans continue to report disproportionately low HRQoL (Jimenez et al., 2015). This is reflected by the lifespan of Black Americans as Black Americans have the lowest life expectancy compared to any other ethnic/racial group in the United States (Arias et al., 2021). Interventions to improve HRQoL among underserved communities are urgently needed, though must be tailored to the communities they serve and informed by preliminary research seeking to understand the facilitators and barriers associated with HRQoL (Wippold & Nmezi, Williams, et al., 2020).

# 1.2 | Known contributors to HRQoL—physical activity and healthy eating

Physical activity and healthy eating are widely recognized to be major contributors to HRQoL (Bize et al., 2007; Wu et al., 2019). Low rates of physical activity and healthy eating are known to negatively impact HRQoL, whereas the opposite is also true—high rates of physical activity and healthy eating are known to positively impact HRQoL (Bize et al., 2007; Wu et al., 2019), including among Black adults (Wippold & Frary, 2021). The strong association among physical activity, healthy eating, and HRQoL is worrisome because Black Americans are often limited to residing in environments with poor resources for physical activity and limited access to healthy eating options (Cooksey Stowers et al., 2020; Hawes et al., 2019). It is known that residing in these environments contribute to low rates of physical activity and healthy eating among Black Americans (Li et al., 2017; Williams et al., 2018).

## 1.3 | Social-ecological model of health

Interventions seeking to improve health and HRQoL by targeting physical activity and healthy eating are widespread (Tucker et al., 2017). A common criticism of many health promotion interventions is the overreliance on addressing exclusively individual-level factors (e.g., motivation and self-efficacy to improve rates of physical activity and healthy eating), as opposed to a combined approach that addresses both individual and societal-level factors (e.g., sense of community) (Spence & Lee, 2003). Interventions that address both individual and societal-level factors impacting HRQoL among Black Americans are urgently needed because these interventions are

comprehensive, and therefore well-suited to eliminate or reduce health disparities (Paskett et al., 2016). Despite the urgent need for multilevel interventions to promote HRQoL among Black Americans, the decision to address societal-level facilitators and/or barriers in these interventions must be based on formative research among Black Americans (Wippold, Frary, Abshire, et al., 2021). That is because "one-size-fits-all" health promotion interventions are often not effective for underserved communities such as Black Americans (Wippold, Frary, Abshire, et al., 2021). Furthermore, few studies have examined how societal-level factors can mitigate the impact of individual-level risk factors on HRQoL.

The ecological model of health is a model that draws attention to individual-level facilitators/barriers (e.g., health-related motivation, attitudes toward health promotion) and societal-level facilitators/barriers (e.g., environment) that impact health and health promotion (Kingrywestergaard & Kelly, 1990). Beginning in the 1980s, this approach to health and health promotion garnered much attention (Bronfenbrenner, 1979) because most models of health at the time focused exclusively on individual-level factors, leading some to describe health promotion specialists as "prisoners of the proximate" due to their overreliance on individual-level factors (McMichael, 1999). The attention to these models was followed by health promotion efforts seeking to address individual-level and societal-level factors. Efforts to increase physical activity and healthy eating rooted in an ecological model have been successful (Richard et al., 2011). The social-ecological model of health builds on the ecological model by focusing on social contextual factors (e.g., access to resources due to systemic discrimination) that impact health (Sorensen et al., 2003). That is, this model recognizes the health-related impact of disparities in the environment that vary as a function of privilege or social standing.

# 1.4 | Sense of community—a HRQoL protective factor

Sense of community is a societal-level factor that has been positively associated with a number of health outcomes, including well-being and quality of life (Davidson & Cotter, 1991; Michalski et al., 2020; Talo et al., 2014). Sarason first used the concept to refer to an individual's belief that they are part of a supportive and dependable network that is readily available (Sarason, 1974). The importance of sense of community goes beyond its direct associations with well-being and quality of life—sense of community has also been found to mitigate the effects of adverse physical and psychological indicators on health and HRQoL (Wippold & Tucker, Roncoroni, et al., 2020). That is, sense of community can be a protective factor when adverse risk factors impacting HRQoL are present (e.g., low rates of physical activity and healthy eating). Sense of community has been linked to self-rated physical and psychological health across the lifespan (Michalski et al., 2020). One mechanism through which sense of community can impact HRQoL is through social support and social norms—primary elements of sense of community—that have been identified as facilitators to physical activity and healthy eating among Black Americans (Fleury & Lee, 2006; Moser et al., 2005). As communities provide social support and demonstrate behaviors and communicate expectations (i.e., social norms) in support of health-promoting behaviors, there then exists the potential to leverage social support and social norms to influence individual motivation in physical activity and healthy eating (Fleury & Lee, 2006; Moser et al., 2005).

Research has also linked an individual's sense of community to coping behaviors and likelihood to be exposed to and engage in health-promoting behaviors (e.g., physical activity and healthy eating). Specifically, sense of community is positively associated with problem-focused coping behaviors that seek to address the root of concerns (Bachrach & Zautra, 1985; McMillan & Chavis, 1986). This is corroborated by research indicating that loneliness (i.e., the absence of sense of community) (Sarason, 1974) is negatively associated with problem-focused coping styles (Deckx et al., 2018) and has serious negative impacts on health (Hawkley & Cacioppo, 2010). Therefore, an individual experiencing barriers to health-promoting behaviors that engages in problem-focused coping behaviors is likely to develop viable strategies to circumvent those barriers. Sense of community has also been associated with "greater sense of purpose and perceived control" when exposed to concerns (Bachrach & Zautra, 1985). Both sense of purpose and perceived control are associated with health promotion (Kim et al., 2020;

Vargas et al., 2021). Additionally, individuals with a high sense of community are not only more likely to be exposed to events that encourage health-promoting behaviors (e.g., physical activity and healthy eating), they are more likely to participate in those events (Yip et al., 2016). Therefore, it is likely that sense of community is a societal-level factor that may play a unique role in mitigating the impact of known risk factors on the HRQoL (e.g., engagement in physical activity and healthy eating) of Black Americans.

## 1.5 | Hypotheses

The present study draws from the work of McMillan and Chavis on sense of community (McMillan & Chavis, 1986), the social-ecological model of health (Sorensen et al., 2003), and the urgent need for multilevel interventions to improve the HRQoL of Black Americans. That is because: (1) Black Americans experience disproportionately low HRQoL, (2) there are no known HRQoL interventions among Black Americans that intentionally addresses societal-level factors (e.g., sense of community), and (3) interventions that address societal-level factors (e.g., those rooted in the social-ecological model) are well-suited to eliminate health disparities. The present study is the first, to the authors' knowledge, to explicitly examine a hypothesized link between HRQoL and sense of community among Black Americans. Therefore, the hypotheses of the present study are as follows:

# 1.6 | Physical activity

**Hypothesis #1** – Controlling for age, subjective social status, marital status, and gender, greater sense of community will buffer against the adverse effects of low engagement in physical activity on physical HRQoL.

**Hypothesis #2** – Controlling for age, subjective social status, marital status, and gender, greater sense of community will buffer against the adverse effects of low engagement in physical activity on psychological HRQoL.

## 1.7 | Healthy eating

**Hypothesis #3** – Controlling for age, subjective social status, marital status, and gender, greater sense of community will buffer against the adverse effects of low engagement in healthy eating on physical HRQoL.

**Hypothesis #4** – Controlling for age, subjective social status, marital status, and gender, greater sense of community will buffer against the adverse effects of low engagement in healthy eating on psychological HRQoL.

## 2 | MATERIALS & METHODS

#### 2.1 | Participants

Participants were eligible for participation if they (a) were 18 years or older, (b) resided in the United States, and (c) identified as African American or Black. To ensure eligibility criteria were met, participants were asked if they identified as African American or Black at the commencement and conclusion of the survey. The item assessing whether or not the participant identified as African American or Black at the end of the survey also indicated that their compensation would not be impacted by their response. Therefore, participants who did not respond affirmatively to this question (i.e., that they identified as African American or Black) were excluded from the present study, though were compensated. A total of 290



participants met eligibility criteria and were included in the following analyses. Most participants identified as female (61%), employed (74%), and single (54%), with a mean age of 37.73 (SD = 12.54). Additional demographic characteristics are shown in Table 1.

# 2.2 | Measures

# 2.2.1 | Brief sense of community scale (BSCS)

The BSCS is an eight-item measure that assesses one's perceived sense of community (Peterson et al., 2008). Respondents were asked to indicate their level of agreement with statements about their needs fulfillment, group

**TABLE 1** Demographic characteristics of participants (*N* = 290)

Characteristic	n	%	Characteristic	n	%
Sex			Marital status		
Male	114	39	Married	75	26
Female	176	61	Single	156	54
Occupation status			Divorced	28	10
Employed	214	74	Separated	4	1
Unemployed	76	26	Never married	26	9
Hispanic/Latino			Annual income		
Yes	2	1	Less than \$20,000	78	27
No	287	99	\$20,000-\$40,000	78	27
Race+			\$40,000-\$60,000	57	20
American Indian or Alaska Native	2	1	\$60,000-\$80,000	35	12
Asian or Asian American	2	1	\$80,000-\$100,000	21	7
Black or African American	288	99	More than \$100,000	21	7
Caucasian/White/European American	1	.3	Subjective social status <sup>a</sup>		
Native Hawaiian or other Pacific Islander	1	.3	10	3	1
Highest level of education			9	0	0
High school or GED	30	10	8	11	4
Some college	73	25	7	46	16
Trade/technical school	9	3	6	51	18
2-year college	34	12	5	59	20
4-year college	105	36	4	46	16
Professional/graduate school	39	13	3	50	17
			2	16	6
			1	8	3

Note: + participants selected all that apply.

<sup>&</sup>lt;sup>a</sup>Higher scores indicate higher subjective social status.

membership, influence, and emotional connection with their neighborhood. Items were scored using a 5-point Likert scale of 1 (Strongly Disagree) to 5 (Strongly Agree) with higher scores indicating a stronger sense of community. A sample item of the BSCS is "Please select the degree to which you agree with the following: My neighborhood helps me fulfill my needs." The Cronbach's  $\alpha$  for the measure was 0.93.

# 2.2.2 | Health-promoting lifestyle profile II (HPLP II)

The HPLP II measures the extent to which an individual engages in health promoting behaviors (Walker et al., 1987). A total of 17 items were included in this study from the HPLP II subscales of nutrition (i.e., healthy eating) and physical activity. Respondents were asked to indicate the frequency in which they engage in health promoting behaviors related to engagement in healthy eating and physical activity. Items were scored using a 4-point Likert scale of 1 (*Never*) to 4 (*Routinely*) with higher scores revealing frequent engagement in healthy eating and physical activity. A sample item from the healthy eating subscale is "Indicate the frequency in which you engage in each behavior: Limit use of sugars and food containing sugar (sweets)." A sample item from the physical activity subscale is "Indicate the frequency in which you engage in each behavior: Follow a planned exercise program." The Cronbach's  $\alpha$  for the physical activity subscale was 0.86 and the Cronbach's  $\alpha$  for the healthy eating subscale was 0.78.

# 2.2.3 | World health organization quality of life BREF (WHOQOL-BREF)

The WHOQOL-BREF measures an individual's perceptions of their quality of life across several health-related domains (Group, 1998). A total of 15 items were included in this study from the WHOQOL-BREF physical health, psychological health, and overall quality of life subscales. Items were scored using a 5-point Likert scale with higher scores indicating greater physical and psychological HRQoL. A sample item from the physical health subscale is "To what extent do you feel that physical pain prevents you from doing what you need to do?." A sample item from the psychological health subscale is "How much do you enjoy life?" and a sample item from the overall quality of life subscale is "How would you rate your quality of life?." The Cronbach's  $\alpha$  for the physical health subscale was 0.83 and the Cronbach's  $\alpha$  for the psychological health subscale was 0.86.

# 2.3 | Procedure

The survey was administered through MTurk following approval by the Institutional Review Board at the authors' current institution. MTurk is an online resource often used by social scientists (Huff & Tingley, 2015; Paolacci & Chandler, 2014). Users of MTurk ("Turkers") use this resource to complete tasks (e.g., respond to a behavioral questionnaire) for compensation. The study, and a description of the study, appeared in the dashboard of all eligible Turkers. Turkers can only views tasks for which they qualify. All Turkers must be over the age of 18 to use the platform, therefore the only qualification criteria for the present study to appear in the dashboard was that the Turker had to identify as African American or Black when they created their MTurk profile. Turkers who clicked on the study were provided a consent form through the MTurk platform before beginning the survey. The consent form included a brief description of the survey, the estimated completion time of 15 min, and the compensation rate of \$2.50 for completing the survey. Participants were ensured that the survey was confidential and were instructed to omit their name or other identifying information on any of the survey materials.

Although research shows that MTurk can be a useful solution to recruit "hard-to-reach populations" and that Turkers are more diverse than traditional samples (e.g., college students) often used in psychological research (Smith

et al., 2015), it should be noted that 8% of Turkers identify as African American or Black (Burnham et al., 2018)—a percentage below the percentage of individuals in the United States who identify as African American or Black. Although concerns regarding violations of the common method bias can be levied against MTurk, it should be noted that data from MTurk are widely considered reliable (Buhrmester et al., 2011; Goodman et al., 2013) and that the respondents to this survey were previous users of MTurk (i.e., the respondents were already familiar with the delivery of the study materials via the MTurk platforms).

#### 3 | RESULTS

**Hypothesis #1** – Controlling for age, subjective social status, marital status, and gender, greater sense of community will buffer against the adverse effects of low engagement in physical activity on physical HRQoL.

Model 1 containing only the covariates (i.e., age, subjective social status, marital status, gender) was statistically significant,  $R^2 = 0.10$ , F(4, 267) = 7.50, p < 0.001. Of the covariates, subjective social status was a significant predictor of physical HRQoL. Model 2 containing the covariates and the mean-centered independent variables of physical activity and sense of community was statistically significant,  $R^2 = 0.14$ , F(6, 265) = 7.05, p < 0.001. In Model 2, the subjective social status covariate remained a significant predictor of physical HRQoL. The mean-centered independent variables of sense of community was also a significant predictor of physical HRQoL. Model 3 containing the covariates, the mean-centered independent variables, and mean-centered interaction term (i.e., the product of physical activity and sense of community) was statistically significant,  $R^2 = 0.15$ , F(7, 264) = 6.83, p < 0.001. In Model 3, the subjective social status covariate remained a significant predictor of physical HRQoL. The mean-centered independent variable of sense of community was also a significant predictor of physical HRQoL. Finally, the mean-centered interaction term was also significant predictors of physical HRQoL (see Table 2).

**Hypothesis #2** - Controlling for age, subjective social status, marital status, and gender, greater sense of community will buffer against the adverse effects of low engagement in physical activity on psychological HRQoL.

Model 1 containing only the covariates (i.e., age, subjective social status, marital status, gender) was statistically significant,  $R^2$  = 0.22, F(4, 265) = 18.59, p < 0.001. Covariates of age, gender, and subjective social status were significant predictors of psychological HRQoL. Model 2 containing the covariates and the mean-centered independent variables of physical activity and sense of community was statistically significant,  $R^2$  = 0.31, F(6, 263) = 19.25, p < 0.001. In Model 2, age, gender, and subjective social status covariates remained significant predictors of psychological HRQoL. The mean-centered independent variables of physical activity and sense of community were also significant predictors of psychological HRQoL. Model 3 containing the covariates, the mean-centered independent variables, and mean-centered interaction term (i.e., the product of physical activity and sense of community) was statistically significant,  $R^2$  = 0.32, F(7, 262) = 17.53, p < 0.001. In Model 3, age, gender, and subjective social status covariates remained significant predictors of psychological HRQoL. The mean-centered independent variables and their interaction term were also significant predictors of psychological HRQoL (see Table 3).

**Hypothesis #3** – Controlling for age, subjective social status, marital status, and gender, greater sense of community will buffer against the adverse effects of low engagement in healthy eating on physical HRQoL.

Model 1 containing only the covariates (i.e., age, subjective social status, marital status, gender) was statistically significant,  $R^2 = 0.10$ , F(4, 274) = 7.83, p < 0.001. The subjective social status covariate was a significant predictor of physical HRQoL. Model 2 containing the covariates and the mean-centered independent variables of healthy eating

and sense of community was statistically significant,  $R^2 = 0.14$ , F(6, 272) = 7.07, p < 0.001. In Model 2, the subjective social status covariate remained a significant predictor of physical HRQoL. The mean-centered sense of community variable was a significant predictor of physical HRQoL while mean-centered healthy eating variable was not a significant predictor. Model 3 containing the covariates, the mean-centered independent variables, and the mean-centered interaction term (i.e., the product of healthy eating and sense of community) was statistically significant,  $R^2 = 0.14$ , F(7, 271) = 6.06, p < 0.001. In Model 3, the subjective social status covariate remained a significant predictor of physical HRQoL. The mean-centered sense of community variable was a statistically significant predictor of physical HRQoL while mean-centered healthy eating variable was not a significant predictor. There was no significant interaction between healthy eating and sense of community (see Table 4).

**Hypothesis #4** – Controlling for age, subjective social status, marital status, and gender, greater sense of community will buffer against the adverse effects of low engagement in healthy eating on psychological HRQoL.

Model 1 containing only the covariates (i.e., age, subjective social status, marital status, gender) was statistically significant,  $R^2 = 0.23$ , F(4, 272 = 20.01, p < 0.001. Age, gender, and subjective social status covariates were significant predictors of psychological HRQoL. Model 2 containing the covariates and the mean-centered

**TABLE 2** Hierarchical regression analysis of the impact of the interaction between sense of community and physical activity on physical HRQoL

Model		В	SE	р	R <sup>2</sup>	Sig. △R <sup>2</sup>
1					0.101	
	Age	0.02	0.014	0.266		
	Subjective social status	-0.52	0.106	0.000		
	Marital status	-0.02	0.167	0.891		
	Gender	-0.71	0.364	0.053		
2					0.138	0.004
	Age	0.02	0.014	0.172		
	Subjective social status	-0.40	0.01	0.000		
	Marital status	0.01	0.165	0.966		
	Gender	-0.51	0.363	0.165		
	Physical activity	-0.44	0.264	0.095		
	Sense of community	-0.47	0.197	0.017		
3					0.153	0.028
	Age	0.02	0.014	0.226		
	Subjective social status	-0.38	0.110	0.001		
	Marital status	0.03	0.164	0.867		
	Gender	-0.52	0.360	0.152		
	Physical activity	-0.48	0.262	0.070		
	Sense of community	-0.48	0.196	0.015		
	Sense of community x physical activity	-0.52	0.235	0.028		

Abbreviation: HRQoL, health-related quality of life.



**TABLE 3** Hierarchical regression analysis of the impact of the interaction between sense of community and physical activity on psychological HRQoL

Model		В	SE	р	R <sup>2</sup>	Sig. △R <sup>2</sup>
1					0.219	
	Age	0.042	0.015	0.006		
	Subjective social status	-0.809	0.110	0.000		
	Marital status	-0.149	0.175	0.395		
	Gender	-1.137	0.381	0.003		
2					0.305	0.000
	Age	0.050	0.014	0.001		
	Subjective social status	-0.601	0.111	0.000		
	Marital status	-0.101	0.166	0.544		
	Gender	-0.768	0.366	0.037		
	Physical activity	-0.930	0.267	0.001		
	Sense of community	-0.699	0.199	0.001		
3					0.319	0.022
	Age	0.048	0.014	0.001		
	Subjective social status	-0.583	0.110	0.000		
	Marital status	-0.079	0.165	0.633		
	Gender	-0.780	0.363	0.033		
	Physical activity	-0.962	0.265	0.000		
	Sense of community	-0.707	0.198	0.000		
	Sense of community x physical activity	-0.546	0.237	0.022		

Abbreviation: HRQoL, health-related quality of life.

independent variables of healthy eating and sense of community was statistically significant,  $R^2$  = 0.29, F(6, 270) = 18.60, p < 0.001. In Model 2, age, gender, and subjective social status covariates remained significant predictors of psychological HRQoL. The mean-centered independent variables of healthy eating and sense of community were significant predictors of psychological HRQoL. Model 3 containing the covariates, the mean-centered independent variables, and the mean-centered interaction term (i.e., the product of healthy eating and sense of community) was statistically significant,  $R^2$  = 0.29, F(7, 269) = 15.88, p < 0.001. In Model 3, age, gender, and subjective social status covariates remained significant predictors of psychological HRQoL. The mean-centered variables of healthy eating and sense of community were statistically significant predictors of psychological HRQoL. There was no significant interaction between healthy eating and sense of community (see Table 5).

#### 4 | DISCUSSION

Black Americans report low rates of HRQoL—a multidimensional indicator of health that consists of an individual's subjective assessment of their physical and psychological functioning that is strongly associated with premature mortality (Brown, Thompson, et al., 2013; Hays & Morales, 2001). Despite national efforts supported by the NIH,

**TABLE 4** Hierarchical regression analysis of the impact of the interaction between sense of community and healthy eating on physical HRQoL

Model		В	SE	р	$R^2$	Sig. △R <sup>2</sup>
1					0.103	
	Age	0.018	0.014	0.192		
	Subjective social status	-0.502	0.102	0.000		
	Marital status	-0.093	0.164	0.574		
	Gender	-0.687	0.357	0.056		
2					0.135	0.007
	Age	0.017	0.014	0.227		
	Subjective social status	-0.393	0.106	0.000		
	Marital status	-0.050	0.163	0.758		
	Gender	-0.546	0.355	0.125		
	Sense of community	-0.538	0.194	0.006		
	Healthy eating	-0.271	0.325	0.405		
3					0.135	0.765
	Age	0.016	0.014	0.233		
	Subjective social status	-0.392	0.106	0.000		
	Marital status	-0.049	0.163	0.763		
	Gender	-0.547	0.355	0.125		
	Sense of community	-0.538	0.194	0.006		
	Healthy eating	-0.273	0.326	0.403		
	Sense of community x healthy eating	-0.089	0.299	0.765		

Abbreviation: HRQoL, health-related quality of life.

the CDC, and the Healthy People 2020 initiative, no known intervention has been developed to promote HRQoL among Black Americans. This is alarming because interventions for other groups who also experience low rates of HRQoL are widespread (Kang et al., 2016; Zhang et al., 2007). Formative research is needed before the development and implementation of an intervention to promote HRQoL among Black Americans, because "one-size-fits-all" health promotion interventions are often limited in impact.

The present study seeks to inform the development of tailored, multilevel interventions to improve HRQoL among Black Americans. The present study examined the mitigating effect of sense of community in the relationship between physical activity and healthy eating on HRQoL. That is because low rates of physical activity and healthy eating are two known risk factors for decreased HRQoL and because Black Americans often reside in neighborhoods with limited opportunities to engage in these behaviors.

The hypotheses of the present study were partially supported. In the first regression analysis, the interaction term of physical activity and sense of community was significant. Of note, high sense of community mitigated the effects of low physical activity (represented by the solid line in Figure 1) on physical HRQoL. In the second regression analysis, both physical activity and sense of community significantly predicted psychological HRQoL and the interaction term of these two variables was significant. Of note, high sense of community mitigated the effects



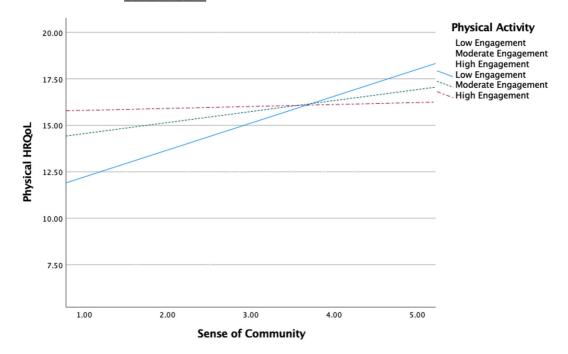
**TABLE 5** Hierarchical regression analysis of the impact of the interaction between sense of community and healthy eating on psychological HRQoL

Model		В	SE	р	R <sup>2</sup>	Sig. △R <sup>2</sup>
1					0.227	
	Age	0.046	0.015	0.002		
	Subjective social status	-0.810	0.107	0.000		
	Marital status	-0.145	0.172	0.400		
	Gender	-1.121	0.374	0.003		
2					0.292	0.000
	Age	0.044	0.014	0.002		
	Subjective social status	-0.634	0.108	0.000		
	Marital status	-0.070	0.166	0.672		
	Gender	-0.890	0.362	0.015		
	Sense of community	-0.772	0.198	0.000		
	Healthy eating	-0.681	0.332	0.041		
3					0.292	0.978
	Age	0.044	0.014	0.002		
	Subjective social status	-0.634	0.109	0.000		
	Marital status	-0.070	0.166	0.672		
	Gender	-0.890	0.363	0.015		
	Healthy eating	-0.681	0.332	0.041		
	Sense of community	-0.772	0.199	0.000		
	Sense of community x healthy eating	-0.008	0.305	0.978		

Abbreviation: HRQoL, health-related quality of life.

of low physical activity (represented by the solid line in Figure 2) on psychological HRQoL. In the third regression analysis, only sense of community significantly predicted physical HRQoL. In the fourth regression analysis, sense of community and healthy eating significantly predicted psychological HRQoL. The interaction term was not significant. The statistical nonsignificance of the interaction term of sense of community and healthy eating on HRQoL may be explained by research indicating that an individual's eating habits tend to be similar to members of their cultural group (Higgs & Thomas, 2016) and that African Americans typically consume foods high in fat (Gary et al., 2004)—an adaptive response to adverse external conditions identified by African Americans (Airhihenbuwa et al., 1996). Thus, the role of sense of community on eating habits of African Americans and the role these two variables play on HRQoL warrants further research. Of note in these last two analyses was that moderate engagers in healthy eating had the lowest physical and psychological HRQoL. While the interaction term in both analyses were statistically nonsignificant, a mitigating trend of high sense of community can be observed (moderate engagement in healthy eating is represented by the densely dashed line in Figures 3 and 4).

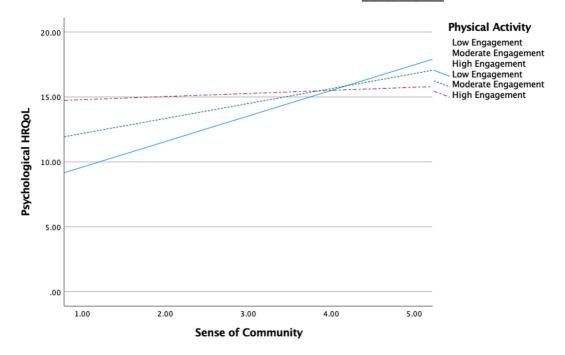
These results indicate that sense of community can be targeted by health promotion interventionists to mitigate the impact of low physical activity on HRQoL among Black Americans. Health promotion interventionists and policy-makers can help foster a sense of community by borrowing from existing interventions that have



**FIGURE 1** Graph of regression analysis of sense of community as moderator between physical activity and physical HRQoL. A significant interaction exists between sense of community and physical activity, with greater sense of community mitigating the adverse effects of low physical activity on physical HRQoL. HRQoL, health-related quality of life.

successfully improved sense of community (see O'Connor for a review of sense of community interventions; O'Connor, 2013) and reduced loneliness (Fakoya et al., 2020; Masi et al., 2011). Though it is advised that future interventions borrowing from past interventions must be intentional about aligning the intervention with the values and preferences of the target community (Fakoya et al., 2020). Interventions seeking to improve sense of community may benefit from addressing social skills, social support, and opportunities for involvement in social interactions (Masi et al., 2011; O'Connor, 2013)—factors positively associated with health-promoting behaviors (Conklin et al., 2014; Kokkonen et al., 2020; Yoshikawa et al., 2021).

Our results also indicate that health promotion specialists must acknowledge that it is not enough to exclusively target sense of community to promote HRQoL. For instance, subjective social status remained a statistically significant predictor of HRQoL across each model, indicating that subjective social status is a factor that is important to consider when developing targeted health promotion interventions for HRQoL promotion among Black Americans. Subjective social status, a measure of an individual's subjective appraisal of their position on the "social ladder," has been found to be predictive of health outcomes including HRQoL, with lower subjective social status being associated with poorer HRQoL (Euteneuer, 2021). Subjective social status has also been found to be a stronger predictor of health compared to many common objective measures of social status (Hoebel & Lampert, 2018). Our findings confirm existing research that has found that increased health behaviors among Black Americans have been found to be associated with increased subjective social status (Reitzel et al., 2013), although it is clear that more research is needed to understand which components of subjective status make the greatest impact on HRQoL (e.g., national or local), and what relationship subjective social status has with a sense of community in the context of health promotion. Together, these results indicate that health promotion programs and policy-level changes (e.g., changes that address social status) are needed to promote HRQoL.

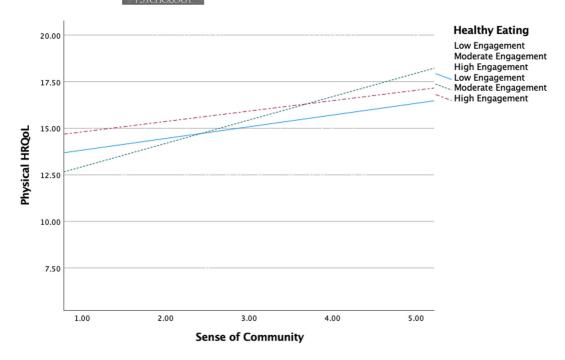


**FIGURE 2** Graph of regression analysis of sense of community as moderator between physical activity and psychological HRQoL. A significant interaction exists between sense of community and physical activity, with greater sense of community mitigating the adverse effects of low physical activity on psychological HRQoL. HRQoL, health-related quality of life.

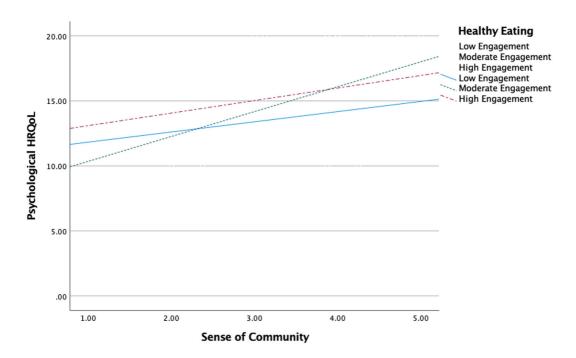
In light of our discussion on future directions, it should be noted that sense of community was measured at the neighborhood level in this study. Sense of community, especially in an age of increased internet connectivity, has many potential levels at which it could be described or experienced—for instance, within community organizations, within workplaces, or in online groups. Differential senses of community should be considered as potential additional components of HRQoL that may have different implications for health intervention or policy. The strengths of these senses of community are an area for future research in this important topic.

By utilizing the information gained in this study, interventions situated at several levels of analysis may benefit. Understanding an individual's sense of community as a factor impacting their HRQoL may shape clinical decision-making, as well as development of targeted community-based HRQoL interventions for prevention and health promotion—especially important for Black Americans who face low HRQoL, an indicator of higher mortality and greater chronic disease, as a result of systemic injustice at multiple levels. Community-based interventions that take sense of community into account can thus take an effective and strengths-based approach to promoting health equity, by incorporating and bolstering a community's preexisting paradigms of membership, influence, integration, and fulfillment of individual and community needs. Black communities in the United States have historical and cultural traditions which incorporate a sense of community into organizing for community wellness and for advocacy (e.g., Black faith organizations, Black cultural holidays), and research and scholarship about HRQoL promotion would do well to recognize these as existing assets of Black resilience (Chae et al., 2021) and building blocks for further empowered health justice initiatives.

The use of these findings may take the form of shifting organizational or managerial policy or practice to promote a sense of community among members when considering health promotion efforts. These findings may also impact health policy development when considering zoning and funding for infrastructure that can serve to foster health by considering how developments can bolster a sense of community (for instance, in the design of community centers or



**FIGURE 3** Graph of regression analysis of sense of community as moderator between healthy eating and physical HRQoL. A mitigating trend of high sense of community on physical HRQoL is observed among moderate engagers in healthy eating. HRQoL, health-related quality of life.



**FIGURE 4** Regression analysis of sense of community as moderator between healthy eating and psychological HRQoL. A mitigating trend of high sense of community on psychological HRQoL is observed among moderate engagers in healthy eating. HRQoL, health-related quality of life.

the location of new subdivisions likely to interface with or house Black Americans). A built environment that deepens a positive sense of community among Black Americans may be helpful in supporting HRQoL. For instance, sidewalks and increased walkability has been found to give individuals a greater sense of community within their neighborhood (French et al., 2013), but historical policies like redlining in residential areas have barred many Black Americans from access to walkable neighborhoods. Policies related to the design of neighborhoods may thus impact HRQoL through their impact on sense of community, and changes in policy may address health inequity.

# 4.1 | Limitations of the study

The results of the study should be viewed with an awareness of its limitations. First, participants were recruited from an online platform (i.e., MTurk). Critics of this platform suggest that participants using MTurk are not representative of the US population. On average, participants using MTurk have higher incomes, more education, and are younger than the US population (Levay et al., 2016). These differences may limit the generalizability of the results of the present study. A second limitation related to generalizability, is the sample used—Black Americans in the United States above the age of 18. Black Americans are not a monolithic group as there is rich within-group diversity. Future studies may benefit from employing a nuanced intersectional approach. Despite these limitations to generalizability, it should be noted that little progress has been made since the 1993 NIH Revitalization Act, which mandated proportional inclusion of minoritized communities in health research (Nicholson et al., 2015). Thus, although the generalizability may be limited, the results of the present study significantly contribute to a much needed body of literature—health promotion among Black Americans. The third limitation stems from the outcome measure (i.e., HRQoL). It is probable that some might consider this measure to be broad and unspecific (Hand, 2016). Although true, this measure is an appropriate outcome because: (1) the significance of improving HRQoL is well-researched, (2) many health promotion interventions among Black Americans have been "too narrow in scope" (i.e., they focus on one, unidimensional indicator of health) (Gilbert et al., 2016), and (3) Black Americans tend to have a holistic conceptualization of health (Gross et al., 2018).

# 4.2 | Strengths of the study

The limitations of the present study should be viewed in light of its strengths. The primary strength of the present study is its focus on health promotion among an understudied group. Despite the fact that health research surveys Black Americans at a disproportionately low rate (Nicholson et al., 2015), the present study was able to recruit 290 Black Americans. Another strength of the present study was the investigation into a strengths-based approach to mitigate the impact of low rates of physical activity and healthy eating on HRQoL. It is well-known that health research has a long history of utilizing a deficits-based approach with minoritized groups. The present research contributes to a growing and much needed body of literature examining strengths-based approaches to health among minoritized groups. The final strength of the present study is the focus on multilevel predictors of HRQoL among Black Americans. A common criticism of health promotion interventions is the overreliance on addressing individual-level contributors to health (Spence & Lee, 2003). Interventions that address both individual-level and societal-level contributors to health are well-suited to reduce health disparities (Paskett et al., 2016).

## 5 | CONCLUSION

The results of the present study are of relevance to those interested in promoting health among Black Americans—a group that has the lowest life expectancy of any other racial/ethnic group in the United States and experiences the lowest rates of HRQoL (i.e., a multidimensional health indicator strongly associated with premature mortality). Due

to structural racism, Black Americans often reside in environments that contribute to low rates of physical activity and engagement in healthy eating—two factors that strongly contribute to low HRQoL. Policy-level changes are urgently needed to promote healthier environments, and health promotion interventions targeting a sense of community may provide an immediate solution as policies develop. That is because sense of community has been linked to health promotion behaviors that can mitigate the impact of risk factors on HRQoL. This is the first study to explicitly link sense of community to the HRQoL of Black Americans, a group that both faces health inequity and has historic resources in promoting sense of community for resilience in the face of adversity that can serve as pathways for community-based health interventions. The results of the present study indicate that sense of community may buffer against the adverse effects of low rates of physical activity on HRQoL among Black Americans. These results can be leveraged by health promotion interventionists and policy-makers to promote HRQoL and reduce premature mortality among Black Americans.

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#### CONFLICT OF INTEREST

The authors declare no conflict of interest.

#### DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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#### PEER REVIEW

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