Examining the Associations of Perceived Community Racism With Self-Reported Physical Activity Levels and Health Among Older Racial Minority Adults

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Background: Racial health disparities are more pronounced among older adults. Few studies have examined how racism influences health behaviors. This study’s purpose was to examine how opportunities for physical activity (PA) and community racism are associated with older racial minorities’ reported engagement in PA. We also investigated how PA levels influenced health. Methods: We analyzed survey data obtained from a health assessment conducted in 3360 households in Texas, USA, which included items pertaining to PA, community characteristics, and health. Results: Our sample contained 195 women and 85 men (mean age 70.16), most of whom were African American. We found no direct relationship between opportunities and PA. Results suggested that perceived community racism moderated this association. When community racism was low, respondents found ways to be active whether they perceived opportunities or not. When community racism was high, perceived lack of opportunities significantly impeded PA engagement. We found the expected association between PA and health. Conclusions: Results suggested that negative effects of community racism were counteracted through increased opportunities for PA.

Keywords: race, older populations, United States

Although advances have been made, racial inequalities persist in the United States. Enduring racial disparities are particularly evident with respect to health and well-being. Relative to their White counterparts, racial minorities have poorer health, are less physically active, and live shorter lives.1,2 Researchers have offered evidence of health disparities for a host of outcomes, including infant mortalities, self-reported health, hypertension, AIDS, diabetes, functional disabilities, and certain forms of cancer.3-7 While a difference in socioeconomic status (SES) is related to these disparities, researchers have shown that race has independent effects8 and there is even a body of evidence that racial health disparities are greater in higher strata of SES.9 Additionally, while some within group variations exist, the patterns are generally consistent across racial groups.2 There is also evidence that racial health disparities are more pronounced among older adults. While health generally declines as one ages, the data suggest different racial patterns with respect to this relationship.10 For example, in a nationally representative sample, only 24% of African Americans and 29% of Hispanics age 65 or older reported being in good health, compared with the corresponding assessment of 39% among Whites.11

Given this enduring pattern of racial health inequality, considerable effort has been expended to understand and offer solutions to alleviate these disparities (eg, Healthy People, 2000, 2010, 2020). In this examination, we focus on 2 factors particularly salient in the literature: opportunities for physical activity (PA) and the effects of racism. Regular PA has been repeatedly shown to decrease risks of mortality and morbidity among multiple population groups, even after controlling for other risk factors.12 As Powell, Paluch, and Blair13 highlight, moderate to vigorous levels of PA are associated with a bevy of desired health outcomes, including decreases in certain forms of cancer, depression, Type 2 diabetes, and heart disease, as well as improvements in cognitive and physical functioning. Thus, it is troubling that older racial minorities are less physically active than are Whites,14 with the majority of some racial groups reporting no PA.15 As a result, efforts have been made to increase PA opportunities, as the more chances people have to engage in PA, the more active they are likely to be.16,17

A separate strand of research focuses on how prejudice and discrimination influence people’s health. From this perspective, incidents of race-based discrimination, or racism, encountered by racial minorities negatively affects their psychological well-being18 and serve as structural impediments to their ability to access health care and engage in healthy behaviors.2 Krieger et al19
argue that racism is identified by members of racial and ethnic minority groups when they perceive enduring unfair treatment by members of the racial and ethnic majority or have been denied access to resources based on their racial or ethnic status. Previous research suggests that perceived community racism may be particularly important to determining behaviors of older African Americans living in the Southern U.S. in comparison with other regions of the country.20 The lingering effects of the de jure racism that existed in this region before the Civil Rights Era of the 1960s led to a persistent contentious relationship along racial lines, particularly for those with firsthand experience. There is also evidence that this region’s legacy of racial conflict has exacerbated white prejudice toward its growing Latino population.21

Interestingly, these 2 approaches have largely operated independent of one another; consequently, the relationships among racism, access to opportunities for PA, and overall health are not well understood. The purpose of this study was to remedy this situation by examining the degree to which opportunities for PA and community racism interactively predict engagement in moderate levels of PA in a sample of racial minorities age 60 or older. We also investigate how these PA levels influence their self-reported health. In the following section, we provide an overview of our theoretical framework and offer specific hypotheses.

**Theoretical Framework**

We grounded our work in the social ecological model,22 which suggests that individuals’ interactions with their structural and social environments influence their PA. This movement reflects a trend in the social sciences since Durkheim’s23 19th century analysis of suicide to move beyond individualistic perspectives to an orientation that examines the influences of environments on individual behavior.24 An important aim of social ecological research approaches to PA is to include contextual explanations of PA participation beyond psychological variables.25 Social and structural environments that are supportive of PA make it easier for individuals to be physically active26 while less supportive environments may prevent participation, even when individuals are motivated to do so.27,28

Environmental factors operate on multiple levels ranging from social influence of family and friends, to neighborhood and community factors, to the societal level.26 Most of the research examining environmental influences on adult PA has focused on the physical environments of neighborhood and communities. Overall, creating or enhancing accessible, safe, and inclusive places and programs for PA (ie, “Opportunities”) can increase the number of people who participate.29 This research suggests that accessible opportunities, often identified in the research as increased neighborhood walkability and proximate availability of recreation facilities, are associated with higher levels of adult PA.30,31 While correlates of PA are multifaceted, research suggests that increasing opportunities for PA makes it easier for individuals to be physically active.32 Thus, even though older adults generally report more perceived barriers to PA than other groups (eg, lack of available facilities and social support),33 when these barriers are reduced, their PA levels may increase.

In addition, ecological approaches have increased our understanding that community resources for PA are not distributed equitably in our society. Many older racial minorities in the Southern U.S. live in communities with a historically-privileged White majority population with segregated concentrations of racial and ethnic minorities.34 Building from Blalock’s threat hypothesis, historical racial divisions that manifested from a legacy of slavery and Jim Crow laws may elicit prejudice and distrust.35 Racially divided communities often suffer from a lower investment in public goods,36 particularly in those neighborhoods more heavily populated by racial and ethnic minorities. Thus, it is conceivable that racial minorities residing in communities with high levels of perceived prejudice and discrimination may be more likely to live in segregated neighborhoods with fewer available facilities to support physically activity.37

Researchers have also examined more complex associations of perceived discrimination and racism on health behaviors.38 Philipp39 argued that racial minorities’ leisure behaviors might be more constrained when overt or subtle behaviors by others made them feel unwelcome in specific settings and social groups. Livengood and Stodolska40 specifically observed this type of relationship among American Muslims in the post-9/11 era. Their study participants reported that unwelcoming behaviors of park users (eg, angry looks and backhanded comments) restricted their range of appropriate parks and impeded their freedom to engage in certain leisure behaviors. Woodward41 also observed that in the post-Civil Rights era, African Americans who were raised in the Southern U.S. were more likely to be socialized by strict racial codes related to access to public spaces and interracial leisure settings. This effect may be more prominent in older racial minorities with first-hand experience of de jure racism in community-based leisure spaces and activities. Perceptions of racism, particularly viewed from the perspective of historical race relations of the American South, may discourage older racial minorities from utilizing available resources if the social context of this environment produces psychological discomfort or unease.

Finally, we examined the association between moderate PA and self-report health. Powell et al.,13 in their comprehensive review of the literature, illustrated how PA was associated with a host of positive health outcomes. These effects are also observed among older adults, as regular PA is associated with decreased risk of hypertension, obesity, stroke, diabetes, and certain cancers.10,15 Unfortunately, comparatively little research has examined these associations among older racial minorities, though we investigate these linkages in the current analysis.

Given this review, we developed several hypotheses to guide our research. First, in line with the social
ecological model, we predicted that opportunities for PA would be positively associated with engagement in moderate physical activity (Hypothesis 1). We also recognized community resources might not influence PA for all persons in a similar manner, as other factors, such as community racism, might buffer some of these benefits. Thus, we hypothesized the positive relationship between opportunities for PA and being physically active would be moderated by perceived racism in the community (Hypothesis 2). Finally, in line with the literature linking PA and health, we predicted engaging in in moderate PA would be positively associated with self-report health (Hypothesis 3). We tested these relationships by way of structural equation modeling.

Methods

Data Source and Participants

The data for this study were obtained from a 2010 regional community health assessment conducted in the U.S. state of Texas. For a complete explanation of methods, see Center for Community Health Development. The surveyed region included 1 urban and 6 rural counties in central Texas with a combined census estimated population of 296,467. A survey committee with representatives from 28 different organizations worked to assemble a 32-page questionnaire. The final instrument consisted of items generated from a number of different sources and existing scales (eg, from the Center for Disease Control and Prevention’s Health Related Quality of Life scale) all aimed at assessing various indicators of and dimensions of one’s health. In this particular analysis, we focused on community racism, opportunities for PA, people’s PA levels, and dimensions of their health, as previously outlined.

Once the questionnaire items were generated, 15,000 households were randomly selected from a comprehensive list of residential addresses. Each household received a letter alerting to the study, and 1 week later, research team members attempted to contact an adult in each household by phone; 10,501 were reached. Of those reached, 5362 agreed to take part in the study, and these persons were subsequently mailed a questionnaire packet. Of those who agreed to participate, 3360 returned the questionnaire packet, for a response rate of 62.66%. As the purpose of this study was to focus on older racial minority adults, we limited the sample to persons who identified as African American, Asian, Hispanic, Native American, or “other” and who were ages 60 or over.

Our sample consisted of 195 women (69.6%) and 85 men (30.4%). Most of the participants identified as African American (n = 174, 62.1%), followed by Hispanic (n = 71, 25.4%), Native American (n = 10, 3.6%), Asian or Pacific Islander (n = 6, 2.1%), persons who listed “other” (n = 17, 6.1%), and 2 persons who did not provide their race. The mean age was 70.16 years (SD = 8.11), most had high school (n = 118, 42.1%) or college (n = 106, 37.9%) for their highest level of education, and the mean household income was US$31,913.35 (SD = 44,454.25).

Measures

Participants completed a questionnaire in which they provided demographic information and responded to questions pertaining to their PA levels, community characteristics, and health.

PA Opportunities. Participants were asked to indicate, “How much of a problem are these issues in the particular town, city, or rural area where you currently live?” and options included “lack of recreational and cultural activities” and “access to safe places to exercise or be physically active.” A 5-point scale from 1 (not a problem) to 5 (very serious problem) anchored both items. We reverse scored both items so higher scores were reflective of greater opportunities to be active and took the mean for the 2 items. The 2 items demonstrated acceptable internal consistency (α = .78).

Community Racism. We measured community racism with a single item from the health assessment questionnaire. The stem read, “How much of a problem are these issues in the particular town, city, or rural area where you currently live?” and “racism” was the item to which the participants responded. A 5-point scale from 1 (not a problem) to 5 (very serious problem) anchored the item.

PA. In the PA portion of the questionnaire, the introduction read “Physical activities are activities where you move and increase your heart rate, whether you do them for pleasure, work, or transportation.” We then provided examples of moderate PA, including fast walking, strength training, and gentle swimming, and indicated that when engaging in moderate activities, “your heart beats faster than normal” and “you can talk but not sing.” Participants were then asked, “In a usual week, how many days per week do you do moderate activities for at least 10 minutes at a time?”

Health. We measured self-report health with a single item, “in general, would you say your health is,” anchored by a 5-point scale from 1 (excellent) to 5 (poor). We then reverse scored this item so that higher scores were reflective of better health.

Results

Descriptive Statistics

We present descriptive statistics in Table 1. Results indicate that participants engaged in relatively little moderate PA, with a mean of 3.48 days per week (SD = 2.48). A 1-sample t test showed that this was significantly lower than the recommended 5 days of moderate PA per week, $t(265) = -9.95$, $P < .001$. We also used 1-sample t tests to compare the mean scores for our variables with the midpoints of the scale (3), thereby allowing us to assess

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### Table 1  Frequencies, Means, Standard Deviations, and Bivariate Correlations

<table>
<thead>
<tr>
<th>Item</th>
<th>Mean (%)</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sex</td>
<td>.70</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2. Education</td>
<td>.39</td>
<td>—</td>
<td>—</td>
<td>—25</td>
<td>—</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Income</td>
<td>31913.35</td>
<td>4454.25</td>
<td>-.08</td>
<td>.18</td>
<td>—</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4. PA opportunity</td>
<td>3.39</td>
<td>1.44</td>
<td>-.15</td>
<td>-.13</td>
<td>.01</td>
<td>—</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Community racism</td>
<td>3.62</td>
<td>1.30</td>
<td>-.10</td>
<td>-.05</td>
<td>-.07</td>
<td>.41</td>
<td>—</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Moderate PA</td>
<td>3.48</td>
<td>2.48</td>
<td>.01</td>
<td>.04</td>
<td>.00</td>
<td>-.03</td>
<td>-.06</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>7. Subjective health</td>
<td>2.83</td>
<td>.93</td>
<td>-.08</td>
<td>.30</td>
<td>.13</td>
<td>.18</td>
<td>.10</td>
<td>.13</td>
<td>—</td>
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*Notes. Frequencies provided for sex and education. Sex represents proportion of men, and education represents proportion of people with college degree. $|r| \geq .14, P < .05.$*
the strength of their responses. Results indicate that participants believed they had many opportunities to access recreational and cultural activities and safe places to exercise (mean = 3.62, SD = 1.30), as the mean score was greater than midpoint of the scale, \( t(218) = 7.71, P < .001 \). Results also show participants perceived racism to be a problem in their community (mean = 3.39, SD = 1.44), again evidenced by the mean score being significantly greater than the midpoint of the scale, \( t(214) = 3.39, P < .001 \), respectively. Their health assessment was relatively low (mean = 2.83, SD = .93) and significantly lower than the midpoint of the scale (3), \( t(269) = -3.10, P < .01 \).

### Hypotheses Testing

We tested the hypotheses by way of observed path analysis using AMOS 19. Participant sex, the natural log of their income, and their education (college education or not) served as controls, as we specified them to associate with subjective health. Consistent with Cohen, Cohen, West, and Aiken’s\(^44\) recommendations, we first standardized the first order variables (PA opportunities and community racism) and then created the PA opportunities \( \times \) community racism interaction term using the standardized variables. All exogenous variables were allowed to freely correlate with one another. Results indicate that the model was a close fit to the data: \( \chi^2 (n = 280, df = 6) = 10.73, P = .10; \chi^2 + df = 1.79; \) confirmatory fit index (CFI) = .97; root mean square residual (RMSEA; 90% CI: .00–.10) = .05, \( P_{close} = .40 \). An illustrative summary of the findings is presented in Figure 1.

Hypothesis 1 predicted that PA opportunities would be positively associated with how active people were. This hypothesis was not supported, as the 2 variables were unrelated to one another (\( \beta = .07, P = .32 \)). Further, though not hypothesized, community racism was also not associated with moderate levels of PA (\( \beta = -.04, P = .60 \)).

Hypothesis 2 predicted that community racism would moderate the relationship between PA opportunities and people’s engagement in moderate levels of PA. Though neither of the first order effects were significant (as previously noted), the interaction term was (\( \beta = .17, P = .02 \)). We plotted the interaction according to Cohen et al.’s\(^44\) guidelines. As seen in Figure 2, when community racism was low, opportunities for PA did not influence the days per week in which people were engaged in moderate PA (\( B = -.11, P = .67 \)). However, when racism was high, opportunities for PA were positively associated with people’s activity levels (\( B = .59, P = .02 \)). Examination of the interaction plots further shows that when people in communities with high racism and few opportunities to be active were 66% less active than were persons with few opportunities to be active but lower perceived community racism (1.75 days v. 2.93 days). These data offer support for Hypothesis 2.

Hypotheses 3 was supported, as the more people engaged in moderate levels of PA, the better they rated their subjective health (\( \beta = .13, P = .03 \)).

### Discussion

Our findings support previous research (eg, Mehrotra & Wagner\(^10\)) that suggests minority older adults may be less likely to meet recommended levels of PA—a key predictor of positive health outcomes. We found no direct relationship between PA opportunities and reported PA. This finding is consistent with previous reviews of ecological research that suggests the evidence linking supportive environments and PA behavior is mixed\(^45\) and may be sensitive to different population groups and physical settings.\(^46\) Results also suggest that perceived community racism significantly moderated associations between available opportunities for PA and engagement...
in PA by older minority adults in this sample. When community racism was low, respondents found ways to be active, whether they perceived opportunities or not. However, when community racism was high, the perceived lack of opportunities to support PA seemed to significantly impede PA as reported by respondents.

In our study, the highest levels of PA were reported in communities with both high perceived racism and high perceived access to opportunities for PA. Leisure spaces, such as those consistent with PA opportunities, are racially delineated.47,48 While some intentional efforts have encouraged interracial activities in parks and recreational programs,49 racial and ethnic groups are generally more likely to use segregated leisure spaces. Consistent with this previous research, the relationship between racism, opportunities, and PA behaviors found in our study suggested that a higher availability of opportunities (eg, leisure and recreation spaces) may provide minority populations with access to their own leisure spaces within the larger community. The presence of these opportunities may also be a product of increased social cohesion among minorities in these populations to advocate for public services.50 Thus, this process might also create increased social encouragement to use these spaces.

We found the expected association between PA and self-reported health. Consistent with previous research13,15 PA was positively associated with subjective health, even after controlling for sex, household income, and education level. The current findings complement the previous literature by examining a sample of racial and ethnic minority older adults living in the Southern U.S., a group perceived at the highest risk for poor health outcomes.

**Limitations and Contributions**

Findings of this study should only be interpreted based on its limitations. Due to the cross-sectional nature of this study, we cannot determine whether more opportunities for PA contributed to higher PA levels among older minority residents in communities with higher levels of racism. Alternatively, residents of these communities may advocate for increased opportunities to support existing behaviors or communities with more opportunities may attract healthier residents regardless of community racism. There are some inherent issues with using health assessment data such as these. The measures of PA opportunities were broad. Kaczynski and Henderson45 found that the relationship between opportunities and behaviors is nuanced, and different relationships are observable with different types of opportunities. In addition, we relied on available self-report measures for PA. If feasible, future research should incorporate objective measures (eg, actigraphy). Our measure of PA also combined duration and frequency into the same item, thus making interpretation more difficult. The constructs of perceived racism and self-perceived health were also limited to the single items available in the household survey instrument. Future research should examine these constructs using multiple measures. Typical of household survey research, respondents were more likely to be women, be more educated, and more affluent than Census estimates of the sampled region.42

Despite these limitations, our study’s findings make significant contributions to our understanding of the relationship between PA opportunities and PA behaviors. To date, few studies have examined the relationship...
between community racism and PA beyond neighborhood and community disadvantage. From a social justice perspective, the equitable distribution of supportive PA environments is important. Spatial disparities in physical and subsequent health risk may be related to an inequitable distribution of these opportunities. However, our findings suggest that the relationship between opportunities and facilitation of PA may not be straightforward. Therefore, in addition to recognizing the need to address inequitable access to PA opportunities, policymakers and practitioners should also examine the ways in which different groups are able or unable to negotiate barriers to PA.

**Conclusion**

Reducing disparities in health and PA should be a high priority for public health research and policy. Increasing levels of PA among older minority adults is an important step to reducing health disparities. Our current analysis suggests that when perceived community racism is low, older minority adults found ways to be physically active, whether they perceived opportunities or not. Lower levels of racism may have been indicative of higher levels of social support across the community and increased comfort when using leisure spaces even if the availability of opportunities was limited. However, the negative effects of community racism seemed to be counteracted through increased opportunities for PA. As such, findings demonstrate that local, state, and federal policy makers need to provide resources to construct and maintain accessible recreation and PA resources, particularly in communities with high levels of racism.

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