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Self-Rated Health and Structural Racism Indicated by County-Level Racial Inequalities in Socioeconomic Status: The Role of Urban-Rural Classification

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Abstract Recent attention to the interrelationship between racism, socioeconomic status (SES) and health has led to a small, but growing literature of empirical work on the role of structural racism in population health. Area-level racial inequities in SES are an indicator of structural racism, and the associations between structural racism indicators and self-rated health are unknown. Further, because urban-rural differences have been observed in population health and are associated with different manifestations of structural racism, explicating the role of urban-rural classification is warranted. This study examined the associations between racial inequities in SES and self-rated health by county urban-rural classification. Using data from County Health Rankings and American Communities Surveys, black-white ratios of SES were regressed on rates of fair/poor health in U.S. counties. Racial inequities in homeownership were negatively associated with fair/poor health ($\beta = -0.87$, s.e. = 0.18), but racial inequities in unemployment were positively associated with fair/poor health ($\beta = 0.03$, s.e. = 0.01). The associations between structural racism and fair/poor health varied by county urban-rural classification. Potential mechanisms include the concentration of resources in racially segregated counties with high racial inequities that lead to better health outcomes, but are associated with extreme black SES disadvantage. Racial inequities in SES are a social justice imperative with implications for population health that can be targeted by urban-rural classification and other social contextual characteristics.

Keywords Structural racism · Racial inequities · Rural. Urban · Self-rated health

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Introduction

A large literature has demonstrated the detrimental effects of racism on physical and mental health [1–18]. Much of this literature examines the effects of interpersonal discrimination on health [1, 2, 4, 11, 17], however, racism in the U.S. is perpetuated at every level of society including through institutions and along societal structures such as socioeconomic status (SES) [3, 8, 9]. Structural racism may be defined as "the totality of ways in which societies foster racial discrimination through mutually reinforcing systems of housing, education, employment, earnings, benefits, credit, media, health care, and criminal justice" [3] or "the macrolevel systems, social forces, institutions, ideologies, and processes that interact with one another to generate and reinforce inequities among racial and ethnic groups" [8]. Compared to whites, blacks have higher unemployment rates [19], lower median income [20], less wealth [21–23], are less likely to receive 4-year college degrees [24] and are less likely to be homeowners [22, 23, 25].

The legacy of racism in the U.S. includes slavery, Jim Crow laws, barring blacks from government subsidies such as post-war loans from the Federal Housing Administration and the GI bill that built wealth and social advantages among white Americans, as well as current-day unequal sentencing and other discriminatory practices of the justice system. This has led to long-lasting racial inequities [3, 15, 26].

The public health literature has previously examined structural racism by determining the effects of racial residential segregation on health [12, 27]. Racial segregation is a result of either racist or colorblind policy within federal, state and local governments as well as individual real estate agents and community members [28]. With this understanding, racial residential segregation can be considered an example of institutional racism [3], a subset of structural racism, that describes discriminatory practices and ideologies within particular institutions that lead to racial inequities in specific places and society overall [27]. Studies demonstrate that racial segregation is more often associated with poor health outcomes [16, 29, 30]. However, studies of health and racial segregation as a form of structural racism are limited in their scope. Associations between racial segregation and health are often examined in a particular context. Most racial segregation measures were developed to examine urban contexts only [31]. Moreover, structural racism in the form of racial segregation only measures the effects of racial discrimination on place of residence (i.e. neighborhood). Though some studies use the terms "institutional racism" and "structural racism" interchangeably [27], interrogating the effects of a broader measure of structural racism on health may illuminate the pervasiveness of historic and contemporary macro-level racism on population health.

Studies of structural racism and health should extend to examine the effects of racial inequities in SES resulting from policies and actions perpetuated by federal, state, metropolitan and county officials and political/governing entities resulting in unequal opportunities [32] that ultimately affect health outcomes. Harnessing the role of place as racial segregation does as a measure of institutional racism, area-level racial inequities in SES indicate structural racism in a particular place that stem from potentially varied, yet unchecked, social forces that lead to the disadvantaging of blacks. Moreover, because SES is one of the strongest predictors of health [33, 34], examining the effects of county-level racial inequities in SES is an important imperative. A small, but growing literature of empirical studies has shown that state- and county-level racial inequities in income, employment, education, incarceration and voting are associated with health outcomes [3, 8, 9] such as infant mortality [15], low birth weight [14, 35], myocardial infarction [10] and obesity [18]. These studies suggest that structural racism affects population health. Because of possible variation in the implementation of racist or color-blind policies (that result in racial inequities) by county, it is important to explicate the role that "place" and contextual factors play to more fully understand how structural racism on the county-level affects health and then develop interventions and policies to address the effects of place-specific structural racism.

An interesting, yet unexplored, factor is urban-rural differences in structural racism and health. Most studies of structural racism in the form of racial segregation are performed in urban contexts (mostly due to methodological issues) [30, 31, 36, 37]. Little is known about the effects of structural racism on health in non-urban contexts [38, 39]. Studies that demonstrate health differences in urban versus rural contexts suggest a confluence of factors negatively impact health including healthcare resources [39, 40], contextual factors [41–43] and racism [38]. However, urban-rural classification may affect the types of and manner in which policies that can lead to racial inequities are implemented, and thus affect health. For example, many of the tools of racial residential segregation may be considered specific to urban contexts (such as redlining), but the White Flight and discriminatory lending practices of the FHA that built exclusively white suburban neighborhoods may have contributed to disadvantage among blacks by concentrating power, wealth and resources in these suburban areas. In rural areas, racial inequities of opportunity have also been highlighted. A report from the Hamilton Institute demonstrates that, though rural counties have higher percentages of white residents, Jim Crow laws restricted black economic opportunity in the rural South [44]. These differences in the history of structural racism across urban-rural places suggest that the associations between structural racism and population health may vary by county urban-rural classification.

The aim of this study to determine the association between racial inequities in SES and county-level

health. The study also identified the role of urban-rural classification in these associations. It is hypothesized that counties with larger racial inequities in median income, college graduation, unemployment, and homeownership rates will have higher rates of fair/poor health, and that these associations will vary by urban-rural classification. Determining these associations will allow for a more comprehensive understanding of how racism at the macro-level can impact population health.

Methods

County Health Rankings (CHR) is compilation of health and health-related outcomes in U.S. counties over time. A collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, CHR collects data from various sources including the Behavioral Risk Factor Surveillance System (BRFSS). The BRFSS is an annual survey conducted by state-level health departments of population health status and health behaviors. A base survey with the option of additional models is collected every year by state health departments. Data from every U.S. county from 2014 to 2016 were included in this study. County-level health data was linked with county-level sociodemographics from the American Community Surveys 5-Year Estimates (ACS). The ACS is a survey of the U.S. population conducted by the U.S. Census Bureau annually. Five years of data are compiled to obtain representative data for every U.S. county, so this study included data from the 2010–2014, 2011–2015, and 2012–2016 ACS 5-Year Estimates. This combined dataset on health and county demographics represented 9430 county-years.

The dependent variable was self-rated health. Self-rated health is an important predictor of mortality and morbidities [45, 46]. BRFSS respondents were asked "In general, how would you describe your health?" Responses included: excellent, very good, good, fair or poor. Responses were dichotomized to give the percentage of respondents in each U.S. county who reported fair or poor health by year.

Independent variables included four indicators of structural racism. The median income, percentage who completed a 4-year college degree, percentage who were unemployed and percentage who were homeowners for blacks and non-Hispanic whites were obtained for each county. Structural racism was measured as racial inequity in these indicators, operationalized as county-level black-white ratios. Variables were formatted such that a higher value represented greater racial inequity in socioeconomic status (SES) in the county.

Analyses accounted for year and were stratified by county urban-rural classification. Categories are based on the 2013 National Center for Health Statistics Urban-Rural Classification Scheme for Counties [47], which has been used to assess urban-rural differences in health in previous studies. Categories included large central metro, large fringe metro, medium metro, small metro, micropolitan and non-core, and are based on population density and proximity to a metropolitan statistical area (MSA). MSAs are defined by the Office of Management and Budget as a "contiguous area of relatively high population density" and can comprise of one or more cities or distinguished urban areas. Large central metro counties are those that are a part of a MSA with a population of at least 1 million and either completely contained within the largest principal city in the MSA, contain the entire population of the largest principal city, or contain at least 250,000 residents from the largest principal city in the MSA. Large fringe metro counties are those within an MSA with ≥1 million population, but are not large central metro counties. Medium metro counties are those in an MSA with at least 250,000 population, but fewer than 1 million, and small metro counties are in MSAs with fewer than 250,000 residents. Micropolitan counties are in micropolitan statistical areas (i.e. a cluster of at least 10,000 residents) and non-core counties contain no clusters of at least 10,000 residents. The Dissimilarity Index measures the unevenness component of racial residential segregation and demonstrates the spatial distribution of race groups within a geographical area [31]. It describes the percentage of the minority group (here Blacks) that would need to move from their area of residence for there to be an even distribution of Blacks and whites in a given geographical area [31]. The Dissimilarity Index was calculated with the following equation:

$$D = \Sigma_{i=1}^{n}\left[t_i \backslash p_i - \frac{P}{2TP(1-P)}\right], \quad (1)$$

where t_i is the total population in the tract, p_i is the Black population in the census tract, T is the total population in the county, and P is the total Black population in the

county. Covariates included county population size, percentage of Black residents in the county, overall median income, percentage of residents with a 4-year college degree, percentage of residents who were unemployed and percentage of residents who were homeowners.

Analysis of variance tests were used to determine differences in structural racism indicators, fair/poor health and other co-variates by county urban-rural category. Random effects linear regressions were used to determine the associations between measures of structural racism and county-level health outcomes. The dataset was analyzed as panel data such that county was the panel variable and year was the time variable. Each indicator of structural racism was regressed on the dependent variable controlling for population size, racial composition, county SES measures and urban-rural category (Model 1). In Model 2, racial segregation was additionally included in the model. Multiplicative interaction terms were additionally included in regressions to determine the potential moderating effects of urban-rural category on the associations between indicators of structural racism and health (Model 3). Associations between structural racism indicators and health were then assessed within county urban-rural categories. *P*-values less than or equal to 0.05 were considered statistically significant and all t-tests were two-sided. All statistical procedures were performed using STATA statistical software, Version 14 (StataCorp LP, College Station, TX).

Results

Table 1 displays demographics, indicators of structural racism and health in U.S. counties by urban-rural classification from 2014 to 2016. Median income, college graduation rates, unemployment rates and homeownership rates varied by urban-rural classification with higher socioeconomic status (SES) observed in central fringe metro counties. There were more Black residents in central metro counties (20.7%), with the lowest Black populations in non-core counties (7.6%, $p < 0.001$). Racial segregation varied by county urban-rural category with the highest Dissimilarity Index scores found in central metro counties and the lowest in non-core counties ($p < 0.001$). Overall population levels were highest in central metro counties and smallest in non-core counties ($p < 0.001$). The mean black-white median income ratio was 0.67, but varied by county urban-rural category. For example, in central metro counties, the black-white median income ratio was 0.54 compared to 0.71 in central fringe metro counties ($p < 0.001$). Black-white ratios of college graduates also varied by county urban-rural category with an overall mean of 0.61, and ranged from 0.48 in central metro counties to 0.72 in central fringe metro counties ($p < 0.001$). Unemployment rates among blacks were almost two-and-a-half times higher than whites. In central fringe metro counties, the black-white unemployment ratio was 1.82, but in non-core counties blacks had 2.86 times the rate of unemployment as whites ($p < 0.001$). The black homeownership rate was about two-thirds that of whites (black-white ratio = 0.62) overall. However, it varied by county urban-rural category. The largest black-white difference in homeownership was observed in central metro counties (0.56) and smaller racial differences in observed in central fringe metro and non-core counties (0.64, $p < 0.001$). The average rate of reporting fair or poor health was 17.1%. In central fringe metro counties, 14.8% reported fair/poor health while in micropolitan counties, 17.8% reported poor health ($p < 0.001$).

Associations between indicators of structural racism and health are observed in Table 2. In Model 1, which adjusts for population size, racial composition, and county SES, increasing racial inequity in unemployment rates were positively associated with fair/poor health ($\beta = 0.03$, s.e. = 0.01) and racial inequity in homeownership was negatively associated with fair/poor health ($\beta = -0.87$, s.e. = 0.18). Fair/poor health rates were higher in central fringe metro counties ($\beta = 1.70$, s.e. = 0.39), medium metro ($\beta = 1.05$, s.e. = 0.39), micropolitan ($\beta = 1.17$, s.e. = 0.39), and non-core counties ($\beta = 1.53$, s.e. = 0.40) compared to central metro counties. Model 2 additionally included the Dissimilarity Index. Counties with higher Dissimilarity Index scores (i.e. more segregated) had lower fair/poor health rates ($\beta = -0.73$, s.e. = 0.34), and associations between racial inequity in unemployment and homeownership with fair/poor health remained similar to that observed in Model 1. In Model 3, which included multiplicative interaction terms, found that the associations between college inequity and fair/poor health differed in medium metro ($\beta = 5.44$, s.e. = 2.69), small metro ($\beta = 6.41$, s.e. = 2.68), micropolitan ($\beta = 5.96$, s.e. = 2.67) and non-core counties ($\beta = 5.80$, s.e. = 2.66) compared to central metro counties. Table 3 presents associations

Table 1 Demographics, structural racism indicators and health in U.S. county-years by urban-rural classification, 2014–2016.

		Central metro	Central fringe metro	Medium metro	Small metro	Micropolitan	Non-core	
	$N = 9430$	$N = 204$	$N = 1104$	$N = 1116$	$N = 1074$	$N = 1923$	$N = 4009$	p value
Median income ($10,000), mean ± S.D.	4.71 ± 1.23	5.69 ± 1.42	6.24 ± 1.63	5.02 ± 0.99	4.79 ± 0.88	4.47 ± 0.96	4.25 ± 0.92	<0.001
College graduates, %	13.4	21.6	17.3	15.2	14.2	12.6	11.5	<0.001
Unemployed, %	7.8	8.8	7.6	8.1	7.9	8.1	7.6	<0.001
Homeowner, %	71.4	53.7	73.3	70.1	68.9	69.8	73.7	<0.001
Black residents, %	8.9	20.7	10.4	10.9	9.2	8.1	7.6	<0.001
Dissimilarity Index score, mean ± S.D.	0.41 ± 0.15	0.60 ± 0.12	0.42 ± 0.14	0.44 ± 0.13	0.43 ± 0.14	0.43 ± 0.13	0.36 ± 0.16	<0.001
Population (100,000), mean ± S.D.	1.01 ± 3.23	14.24 ± 14.41	2.13 ± 2.96	1.77 ± 1.96	0.81 ± 0.62	0.42 ± 0.26	0.14 ± 0.11	<0.001
Black-white ratios, mean ± S.D.								
Median income	0.67 ± 0.31	0.54 ± 0.11	0.71 ± 0.23	0.65 ± 0.24	0.65 ± 0.28	0.68 ± 0.32	0.68 ± 0.39	<0.001
College graduates	0.61 ± 0.76	0.48 ± 0.13	0.72 ± 0.51	0.63 ± 0.53	0.64 ± 0.72	0.60 ± 0.60	0.57 ± 0.95	<0.001
Unemployed	2.44 ± 4.84	2.48 ± 0.71	1.82 ± 1.32	2.10 ± 2.01	2.29 ± 2.46	2.37 ± 2.76	2.86 ± 7.26	<0.001
Homeowner	0.62 ± 0.35	0.56 ± 0.12	0.66 ± 0.23	0.63 ± 0.27	0.59 ± 0.30	0.57 ± 0.33	0.64 ± 0.43	<0.001
Fair/poor health, %	17.1	16.5	14.8	16.8	16.7	17.8	17.7	<0.001

between indicators of structural racism and fair/poor health by county urban-rural category. In central metro counties, increased racial inequity in college graduation rates was associated with lower rates of fair/poor health ($\beta = -6.80$, s.e. = 2.91). Increasing racial inequity in homeownership was also associated with lower rates of fair/poor health in central fringe ($\beta = -1.65$, s.e. = 0.56) and micropolitan metro counties ($\beta = -0.78$, s.e. = 0.38). Unemployment racial inequity was associated with higher fair/poor health rates in non-core counties ($\beta = 0.03$, s.e. = 0.01).

Discussion

The aim of this study was to determine the association between racial inequity in socioeconomic status (SES) as measures of structural racism and county-level fair/poor health, as well as to determine whether these associations varied by county rural-urban classification. Overall, counties with higher racial inequity in unemployment rates had higher rates of fair/poor health, while homeownership racial inequity was associated with lower rates of fair/poor health. In central metro counties, racial inequity in college graduation rates was negatively associated with fair/poor health. Larger racial differences in homeownership rates were associated with lower rates of reporting fair/poor health in central fringe and micropolitan counties. Unemployment inequity between black and whites was associated with higher rates of fair/poor health in non-core counties. To the author's knowledge, no previous studies have examined the role of urban-rural classification in the association of structural racism and self-rated health. However, studies have demonstrated that structural racism is associated with birth outcomes [14, 15, 35], myocardial infarction [10], and obesity [18]. The current study also differed from some previous studies in that structural racism was measured on the county-level while other studies used state-level data [10, 14, 15].

Scholars have applied Ecosocial Theory, which finds that the social context is embodied in individuals and their health [10, 35], to help explain the effects of structural racism on health. Harrell et al. (2011) suggest that structural racism can lead to rumination about racialized interactions and promote racial stereotype schema [9]. The social environment of counties with large racial inequity in unemployment could be associated

Table 2 Associations between structural racism indicators and fair/poor health in U.S. county-years, 2014–2016.

	Model 1 β (s.e.)	Model 2 β (s.e.)	Model 3 β (s.e.)
Income inequality	−0.07 (0.19)	−0.11 (0.20)	−1.28 (3.48)
College graduation inequality	−0.06 (0.12)	−0.04 (0.14)	−5.84 (2.66)
Employment inequality	0.03 (0.01)*	0.02 (0.01)*	−0.09 (0.43)
Homeownership inequality	−0.87 (0.18)*	−0.92 (0.21)*	0.21 (2.24)
Dissimilarity Index		−0.73 (0.34)*	−0.54 (0.34)
Urban-rural category			
Central metro	–	–	–
Central fringe	1.70 (0.39)*	1.67 (0.41)*	−1.39 (1.19)
Medium metro	1.05 (0.39)*	1.03 (0.40)*	−1.82 (1.23)
Small metro	0.70 (0.39)	0.73 (0.40)	−2.87 (1.21)*
Micropolitan	1.17 (0.39)*	1.22 (0.41)*	−2.09 (1.20)
Noncore	1.53 (0.40)*	1.48 (0.42)*	−2.07 (1.20)
Income inequality × urban-rural category			
Central metro			–
Central fringe			1.08 (3.52)
Medium metro			0.54 (3.55)
Small metro			1.25 (3.52)
Micropolitan			1.35 (3.50)
Noncore			1.44 (3.49)
College graduation inequality × urban-rural category			
Central metro			–
Central fringe			5.09 (2.68)
Medium metro			5.44 (2.69)*
Small metro			6.41 (2.68)*
Micropolitan			5.96 (2.67)*
Noncore			5.80 (2.66)*
Employment inequality × urban-rural category			
Central metro			–
Central fringe			0.12 (0.43)
Medium metro			0.01 (0.44)
Small metro			0.08 (0.43)
Micropolitan			0.08 (0.43)
Noncore			0.12 (0.43)
Homeownership inequality × urban-rural category			
Central metro			–
Central fringe			−1.15 (2.31)
Medium metro			−0.98 (2.32)
Small metro			−1.12 (2.28)
Micropolitan			−1.44 (2.27)
Noncore			−0.96 (2.27)

Models adjusted for population, % Black, Dissimilarity Index, median income, college graduates, employment, and homeownership

*$p < 0.05$

Table 3 Associations between structural racism indicators and fair/poor health in U.S. counties by urban-rural category, 2014–2016.

	Central metro β (s.e.)	Central fringe metro β (s.e.)	Medium metro β (s.e.)	Small metro β (s.e.)	Micropolitan β (s.e.)	Non-core β (s.e.)
Income inequality	2.45 (3.08)	0.54 (0.53)	−0.49 (0.71)	−0.16 (0.54)	−0.09 (0.39)	−0.15 (0.33)
College graduation inequality	−6.80 (2.91)*	−0.43 (0.37)	−0.48 (0.49)	0.58 (0.32)	−0.06 (0.24)	−0.05 (0.24)
Employment inequality	−0.11 (0.58)	0.02 (0.04)	−0.07 (0.06)	−0.02 (0.05)	−0.01 (0.04)	0.03 (0.01)*
Homeownership inequality	−2.67 (2.56)	−1.65 (0.56)*	−1.24 (0.65)	−0.89 (0.46)	−0.78 (0.38)*	−0.59 (0.36)

Models adjusted for population, % Black, Dissimilarity Index, median income, college graduates, employment, and homeownership

*$p < 0.05$

with negative racial interactions that are stressful and/or promote negative racial stereotypes, and thus lead to poorer health outcomes.

In stratified analyses, racial inequity in unemployment was associated with higher rates of fair/poor health in non-core counties only. These rural counties may have fewer and/or highly specific employment opportunities such that racial inequities in unemployment rates may be disproportionately associated with poorer self-rated health among black residents. The social environment may also be strained due to racial inequity in unemployment, an important determinant of health [48]. Previous studies have suggested that social capital plays an important role in the social environment's effects on health [49]. Social capital is considered the community-level characteristic that encompasses the social relationships within the community that foster resources to can promote health embedded in the community [49–51]. It is a function of the nature of the relationships and is theorized to affect collective efficacy and other social resources [50]. Though rural areas may be characterized by more social capital [52], racial inequity in unemployment rates in non-core counties could erode social capital in these areas and lead to higher rates of fair/poor health.

Racial inequity in homeownership was associated with lower rates of fair/poor health overall, and in central fringe and micropolitan counties in particular. Racial inequity in college graduation rates was negatively associated with fair/poor health in central metro counties. Previous studies have found that homeownership and education are associated with better health outcomes, but more so among whites [53–56]. In counties with large racial inequity in homeownership, the higher relative homeownership rates among whites could reduce the overall rate of fair/poor health. Urban contexts with high rates of white college graduates relative to blacks can be associated with phenomena like gentrification, urban renewal and better health [57, 58], but also associated with displacement and a contentious social environment that may not be beneficial to blacks [59, 60]. Relatively higher rates of college graduation among whites could reduce the overall percentage of residents reporting fair or poor health because of low rates among well-educated whites, but these health benefits may not be experienced by blacks living in these contexts. The current study controlled for county-level racial segregation and racial composition. In central metro, central fringe metro and micropolitan counties, larger racial inequities in college graduation rates and homeownership could lead to lower rates of fair/poor health largely among white residents by potentially disproportionate and concentrated power, wealth and resources.

There are implications for these results. First, to improve population health, racial inequities in unemployment, particularly in rural counties, should be eliminated. This is a social justice issue that inherently deserves attention; however, the results of this study demonstrate that structural racism has implications beyond racial inequities in SES. Another important implication is the potentially perverse incentive to maintain racial inequity in college graduation rates and homeownership. Because racial inequity in homeownership and college graduation rates is associated with better health in some contexts, there may be an (un)conscious effort to maintain that form of structural racism.

As previously discussed, because structural racism as indicated by racial inequities in SES is often facilitated through policy decisions [61, 62], these results also have some policy implications. Policy related to building social capital and addressing the social factors impacting health may address the impacts of structural racism on

health and improve population health. More importantly, integrating indicators of structural racism into policy decisions using tools such as "Racial Impact Statements" is one way policymakers can begin to systematically assess and address policies leading to racist outcomes across different geographies. These statements are similar to environmental and fiscal impact statements and is a tool policymakers can use to assess racial inequities using measures including racial segregation and other measures of structural racism. Understanding the racial impacts of policy decisions can help policymakers identify potentially harmful policies early in the legislative process. This tool has been more commonly applied to criminal justice [63] and could also apply to policies related to place, structural racism, and health.

This study is strengthened by the use of county-level data from all counties in the U.S. over multiple years. The study is limited in that causality cannot be determined. Because of the study's ecological design, the study was unable to determine the effects of county-level structural racism on individual-level health. Also, race-specific health data was not available for all counties in the U.S., so it is unknown whether the effects of structural racism on self-rated health vary by race. The Dissimilarity Index has been historically used to measure the segregation level of cities and metropolitan statistical areas [31]. The study was also unable to include other forms of structural racism such as racial inequities in voting participation, the justice system and in policing. County-level data on these indicators of structural racism could not be feasibly obtained for every U.S. county. Structural racism in the form of SES inequities among other racial/ethnic groups was not included in this study. Though many other racial/ethnic groups have and are currently disadvantaged by structural racism in the U.S., it can be argued that the experiences of and manner in which structural racism has been perpetuated against Blacks is unique. Future studies should examine how structural racism and discrimination against racial/ethnic groups other than Blacks affects population health.

In conclusion, this study found that the effects of structural racism on county-level self-rated health vary by indicator of racial inequity in SES and by county urban-rural classification. Future studies should determine the mechanisms by which this particular measure of structural racism affects health. Policymakers and activists should work to eliminate racial inequities in SES with population health, health equity and social justice in mind.

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Compliance with Ethical Standards

Conflict of Interest Neither Caryn Bell nor Jessica Owens-Young have any conflicts of interest.

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