

Neighborhood Disadvantage, Residential Segregation, and Beyond—Lessons for Studying Structural Racism and Health

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Abstract A recent surge of interest in identifying the health effects of structural racism has coincided with the ongoing attention to neighborhood effects in both epidemiology and sociology. Mindful of these currents in the literature, it makes sense that we are seeing an emergent tendency in health disparities research to operationalize structural racism as either neighborhood disadvantage or racial residential segregation. This review essay synthesizes findings on the relevance of neighborhood disadvantage and residential segregation to the study of structural racism and health. It then draws on recent literature to propose four lessons for moving beyond traditional neighborhood effects approaches in the study of structural racism and health. These lessons are (1) to shift the focus of research from census tracts to theoretically meaningful units of analysis, (2) to leverage historic and geographic variation in race relations, (3) to combine data from multiple sources, and (4) to challenge normative framing that aims to explain away racial health disparities without discussing racism or racial hierarchy. The author concludes that research on the health effects of structural racism should go beyond traditional neighborhood effects approaches if it is to guide intervention to reduce racial and ethnic health disparities.

Keywords Structural racism · Racial inequality · Neighborhood disadvantage · Residential segregation · Neighborhood effects · Health disparities

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Introduction

A call to study structural racism has appeared across multiple health disciplines in the last 2 years, from medicine [1, 2], to nursing [3, 4], to medical sociology [5, 6], to environmental health [7]. This recent surge of interest in structural racism has coincided with ongoing attention to neighborhood effects in both epidemiology and sociology [8, 9]. Mindful of these currents in the literature, it makes sense that we are seeing an emergent tendency in health disparities research to operationalize structural racism as either neighborhood disadvantage or racial residential segregation [10, 11]. Not only are census tract-level demographic characteristics easily linked to health survey data but also there is dramatic neighborhood-level patterning to racial/ethnic health disparities across parts of the USA. For the health disparities scholars who have long called for a focus on the health effects of racism [12–14], it may seem like progress to reframe neighborhood health effects using the language of structural racism. But an approach that views neighborhoods as causal in the path between structural racism and health has been critiqued by scholars who argue neighborhood disadvantage is a consequence of structural racism, and not a proxy for structural racism itself [6]. Criticism has also been raised by scholars who think the focus on neighborhood characteristics fails to consider the relational nature of structural racism [15].

Although health disparities researchers increasingly acknowledge that structural racism is a fundamental cause of health inequality [5], it is unclear how best to operationalize structural racism in order to study its effects on population health. Are neighborhood comparisons a promising approach for exploring the health effects of structural racism? This review essay synthesizes findings on neighborhood disadvantage and racial residential segregation as they pertain to racial health disparities. It then explores the limitations of

neighborhood effects research for advancing understanding of structural racism and health. Finally, it draws on recent literature to propose four lessons for moving beyond traditional neighborhood effects approaches in the study of structural racism and health.

Structural Racism and Health

What was once a lonely critique of the atheoretical use of race in epidemiology research [13] has turned into a resounding call within public health to study the health consequences of structural or institutionalized racism [10, 12, 16]. Thought leaders have urged that scholars cease the mere documentation of differences in average health between racial groups, and shift inquiry toward the mechanisms by which structural racism drives racial health disparities in a way that deeply engages theory and history [10, 12, 14, 17]. These critiques are finally being heard, as is demonstrated by the accelerating pace of publication on structural racism, conferences dedicated to the topic, and the adoption by local health departments of strategic plans to address structural racism [e.g., 18].

Applying a structural lens to the study of racial and ethnic health disparities reminds us that racism “need not be intentional or individualist” [19:795]. Structural racism, distinct from interpersonal and internalized racism, refers to the institutional practices, policies, and norms that structure opportunity and assign value based on phenotype [10, 12]. Structural racism also includes the macro-level forces that maintain racial hierarchy, often while appearing to be race-neutral [19]. For example, in addition to explicit practices of institutional discrimination, racial hierarchy is maintained through the white racial framing that rationalizes the social reproduction of material inequalities [15]. Especially in a time of what Bonilla-Silva [20] calls “color-blind racism,” or racism that is veiled, the potential for the human body to reveal truths of racial discrimination that people themselves cannot recount when surveyed makes population health an important site for the study of dynamics in racial hierarchy [21]. Similarly, perhaps because contemporary racism is often hidden, neighborhoods have become popular objects of study for health disparities researchers. For there is no mistaking the differences in socioeconomic resources between a wealthy white suburb, an immigrant enclave, and “the hood.” In this sense, structural racism is unusually perceptible in neighborhoods.

Neighborhood Effects Research

Health disparities scholars may not realize that attention to structural racism was central to the development of neighborhood effects research. Beginning in the 1970s, there was a backlash against earlier theories that had accepted

neighborhood inequality as a natural phenomenon [22]. Urban sociologists, including Logan and Molotch [23], began to call attention to the political economy of place and to argue that structural racism maintains purposeful segregation and exploitation of urban residents. With the publication of *The Truly Disadvantaged* in 1987 [24], Wilson brought attention to racialized poverty in the form of concentrated urban disadvantage. This prompted Massey and Denton [25] to emphasize how racial residential segregation concentrates disadvantage in segregated non-white neighborhoods and wealth in segregated white neighborhoods, creating a situation they termed “American Apartheid.” These landmark publications helped spur what is now nearly three decades of interest in the consequences of neighborhood disadvantage and racial residential segregation, the mainstays of neighborhood effects research.

The tendency in neighborhood effects research has been to study the influence of local contexts by aggregating individual-level attributes in order to construct neighborhood-level variables, such as neighborhood disadvantage or residential segregation [26, 27]. What I refer to as “traditional” neighborhood effects research uses regression methods to isolate the effect of these neighborhood-level variables on individual health outcomes, measuring both predictor variables and outcome variables cross-sectionally. It uses census tracts or ZIP codes to approximate neighborhoods—an imperfect approximation that is standard practice, nonetheless [28]. It makes sense that scholars study the residential environment at the census tract or ZIP code level because demographic data tend to be aggregated and made publicly available at this level of specificity. Thus, neighborhood composition is used to infer neighborhood context. Traditional neighborhood effects research has progressed with the use of multilevel data to control for the effects of individual characteristics and isolate the independent contribution of a neighborhood-level variable to health outcomes [27]. And methods of neighborhood comparison continue to improve in response to concerns about selection bias.

With census data readily available, it has been convenient to design studies that compare the health outcomes of individuals based on the demographic characteristics of their neighborhoods, or more accurately, their census tracts. In doing so, we have learned that demographic characteristics, including poverty, unemployment, and minority racial position, tend to cluster with health disadvantages. While neighborhood effects research has revealed health associations for an ever-growing assortment of neighborhood-level variables, this review focuses on two factors that have been thoroughly studied in the literature: neighborhood disadvantage and racial residential segregation. I discuss the prospects and limits of using neighborhood disadvantage and racial residential segregation in order to study structural racism’s influence on health. First, it is helpful to review what we have learned about the influence of

neighborhood disadvantage and racial residential segregation on health.

Neighborhood Disadvantage

Neighborhood health effects research has focused especially on neighborhood disadvantage—usually measured by percent of households in poverty or by a latent variable that captures neighborhood composition of poverty, educational attainment, unemployment, age distribution, and family disorganization [29]. We have learned that neighborhood clustering of socioeconomic resources is associated with a host of poor health outcomes, ranging from low birth weight [26, 30], to cancer incidence [31], to heart disease incidence and mortality [32, 33]. Even mortality during the 1995 Chicago Heat Wave was found to be lowest in the most affluent neighborhoods [34]. Countless studies document positive associations between neighborhood disadvantage and disease, injury, and mortality [8]. But of these studies, relatively few illuminate the policies or social structures that create and maintain stark racial health disparities at the local level in the USA [6, 35]. Racial residential segregation is a key part of this puzzle of persistent neighborhood inequality.

Racial Residential Segregation

Racial residential segregation tends to be studied as a neighborhood-level variable that has direct consequences for health (though scholars have also considered how segregation moderates other neighborhood effects on individual health [9]). Mounting evidence shows that segregation is bad for health and particularly so for blacks [36]. However, the evidence is mixed. The segregation-health association is complex and results vary depending on how segregation is defined and measured [36]. For example, a study by White and colleagues [37] found no association between segregation and hypertension for US-born or younger foreign-born blacks, but a positive association for older foreign-born blacks. Yet a similar study found a positive association between segregation and heart disease mortality for both younger and older blacks, as well as for older whites [38].

It remains unclear whether or not, and if so how, segregation has direct effects on health [39]. Massey proposed a stress mechanism by which segregation influences chronic inflammation and, in turn, chronic disease [40]. Acevedo-Garcia provided evidence for a direct mechanism by which segregation increases risk of tuberculosis and potentially other infectious diseases [41]. Still, Kramer and Hogue concluded in a recent review that any negative consequences of segregation likely result from segregation's role as a process of racial inequity, rather than from the absolute proximity or distance

between blacks and whites [36]. This suggests that racial residential segregation has its effects by partially mediating structural racism.

Consistent with an understanding of segregation as mediator, Schulz and colleagues propose a conceptual framework that treats racial residential segregation as an indicator of the social structures and racial ideologies that unequally distribute the social resources necessary for health [42]. By framing racial residential segregation as a fundamental cause of racial disparities in health precisely because it reflects structural racism, Schulz and colleagues draw a direct connection between structural racism and population health disparities [42]. They recognize that communities with less political power have less control over environmental exposures and less access to health-promoting resources, something that has been found by others as well [43].

Where research on residential segregation breaks down is in the problematic assumption that spatial proximity equals social proximity. The customary way to measure segregation is with an index of dissimilarity which quantifies how evenly two groups (i.e., whites and nonwhites) are distributed across neighborhoods that make up a larger area like a city [36]. However, groundbreaking research by Grigoryeva and Ruef [44] suggests that the social effects of segregation remain powerful even when racial groups live in close proximity. To illustrate, they contrast how the Northeastern US has been characterized by racially separate districts, while the South reflects a pattern of backyard segregation where black households face the alleys and white households face the streets [44]. This spatial arrangement would not be classified as segregated using traditional approaches. Grigoryeva and Ruef's finding is relevant to health disparities research because it challenges the assumption that segregation can be sufficiently measured at the neighborhood level and using census data [44]. The researchers reveal that it is not so much the spatial arrangement of residential segregation that is consequential for health, but the social arrangement of racial hierarchy. Their study calls into question whether or not eliminating neighborhood-level residential segregation would alter the social processes that lead to health inequalities.

Challenges in Specifying Mechanisms

Despite its promise, neighborhood effects research has yet to indicate specific avenues to reduce racial health disparities. It is interesting to compare Yen and Syme's 1999 review [29] of the state of research on the social environment (particularly neighborhood disadvantage and residential segregation) and health to Diez Roux's 2016 review [8]. Written nearly 20 years apart, the reviews raise several of the same issues: (1) the need to specify mechanisms, (2) the need to distinguish association from causation more carefully, and (3) concerns about

selection. According to Diez Roux, “it could be argued that the nature of the evidence so far does not justify neighborhood interventions as a way to improve health” [8:430]. The social mechanisms by which neighborhood poverty influences individual health remain unknown [45]. Decades of work to isolate the independent influence of neighborhood factors have not yielded compelling evidence that neighborhood disadvantage drives health disparities in a way that is independent of other factors like segregation or race [46, 47]. As is the case with research on many of the social determinants of health, the direct effects of social environments on health have been difficult to document in observational studies. This does not mean that there are no direct effects. Still, we can acknowledge that neighborhood disadvantage, racial residential segregation, and race become social determinants of health, in part, *because* they capture some of the influence of structural racism [5, 25]. In other words, race “precisely captures the impacts of racism” [12:1212]. Despite the tendency to study disadvantage, segregation, and race independently, these concepts overlap spatially in ways that are rooted in structural racism [25]. It may be, in part, due to this complexity that scholars have struggled to clarify local influences on health with standard methods, including multilevel modeling [9, 47–49].

Causal inference concerns aside, neighborhood effects research has succeeded in bearing witness to the clustering of racial health disparities at the local level. By re-framing the local clustering of preterm birth or asthma as a consequence of “structural racism,” scholars can challenge the notion that such inequality is inevitable [50]. This is indeed a productive step. But does it follow that scholars should operationalize structural racism using neighborhood-level measures, such as neighborhood disadvantage or segregation?

Retaining a focus on traditional neighborhood measures such as disadvantage and segregation is unlikely to reveal how specific policies, powerful decision makers, and institutions built on racial hierarchy generate and maintain racial health disparities [15]. Research that relies on census data alone tends to obfuscate the racialized social structures that drive or mitigate local health disparities, such as mortgage markets [6], toxic industrial plants [51], or community organizations [52]. Variables constructed from census data lack institutional actions or actors, which makes them insipid proxies for structural racism. For example, instead of attributing racial health disparities to the discriminatory housing market practices that restrict neighborhood attainment of black and Latino families over generations [53], scholars attribute them to segregation [39]. Instead of attributing racial gaps in life expectancy to the systematic underfunding of majority-black schools [54], scholars attribute them to neighborhood poverty [55]. For some, these are subtle differences, but racism scholars Feagin [15], Sewell [6], Bonilla-Silva [56], and others have argued that preserving the abstractness of

predictor variables prevents structural racism from becoming real in the imaginations of scholars and policy makers.

Furthermore, the ahistorical paradigm common to neighborhood effects research obscures the role of racism in shaping local context. Neighborhoods in the USA have been shaped by centuries of racial hierarchy [25, 57, 58]. This simultaneous process of placing people and peopling places involves a feedback loop between composition (people) and context (social, political, and physical environments) [47]. To give one simple illustration, the effects of local context may be different in early life than they are in later life [9, 59]. Yet cross-sectional neighborhood measures mask variation over the life course in exposure to place-based forms of structural racism. Also, without longitudinal measures of neighborhood exposure, scholars cannot explore heterogeneity of effects over residential trajectories. Failure to interpret localized health disparities in their historical context risks reinforcing a view of poor health in poor places as intractable.

As the health disparities field becomes increasingly directed toward macro-structural explanations, scholars will need to innovate in the earliest stages of research design by rejecting an ahistorical perspective and moving beyond traditional neighborhood measures.

Lessons

Looking Beyond Neighborhoods to Study Structural Racism and Health

In the current era, structural racism has become more covert than in the times of Jim Crow [56]. Racial gaps in morbidity and mortality are often normalized and assumed immutable, or worse, they go unstudied as in the case of Native Americans and other small subgroups [10]. Because neighborhood inequality is clearly visible in census data, residential segregation and the associated neighborhood disadvantage can be used to document the racialized reality of local health disparities. In this respect, traditional neighborhood effects research helps reveal the health consequences of structural racism, but this research is insufficient for informing policy and other efforts to reduce racial health disparities.

Some key lessons for bridging this conceptual gap can be found in recent efforts to innovate in the study of structural influences on racial health inequalities. Scholars have operationalized structural racism, using policy [60, 61], political fragmentation [43], and institutional discrimination [6], in order to study its effects on health. Here, I draw on the literature to propose four lessons to help advance the study of structural influence on racial health inequality: (1) shift the focus of research from census tracts to theoretically meaningful units of analysis, (2) leverage historic and geographic variation in race relations, (3) combine data from multiple sources, and (4)

challenge normative framing that aims to explain away racial health disparities without discussing racism or racial hierarchy.

Lesson 1: Shift Away from Census Tracts as Units of Analysis

By shifting the focus of research from census tracts (neighborhoods), an arbitrary unit of analysis, to units of analysis informed by the research question, we can better locate the institutional actors and decisions in need of intervention. For example, when Currie and colleagues [51] investigated the effects of the openings and closings of 1600 industrial plants, they looked for effects within various radial distances of the plant. They found that a plant's toxic emissions extended for one mile, as did an increased probability of low birth weight. In addition, they showed that plant openings led to declines in housing values, but only within 0.5 miles. Though not framed as such, Currie's study reveals an institutional mechanism of structural racism because, as other research shows, blacks and Latinos are more likely to live near toxic plants [62].

Unlike census tracts, theoretically meaningful units of analysis (e.g., school districts, congressional districts, cities, counties, or states) are more easily connected to policy. State-level policy, in particular, shapes health in ways that can magnify or reduce health disparities. For example, state-level policy is associated with cumulative risk of imprisonment [63]. Policy implemented at the state level can influence premature mortality differently for whites and nonwhites depending on their region of residence [64]. Research that examines state-level variation in social and policy environments can shed light on the health consequences of race relations, economic development, regional culture, and more. For example, Lukachko and colleagues [65] used novel state-level measures of structural racism capturing four domains (political participation, employment, educational attainment, and judicial treatment). They found that blacks in states with high structural racism were more likely to have experienced a heart attack than blacks in states with low structural racism. This study also suggested that many whites experienced health advantages from state-level structural racism [65]. In another study, Wallace's team [66] borrowed Lukachko's indicators of structural racism to demonstrate that state-level structural racism was associated with higher odds of small-for-gestational age birth for both black and white women. Both studies examined the synergistic effects of racial and socioeconomic inequality and broke from the tradition of using whites as the reference group.

Of course, state-level analyses have their own limitations such as confounding by compositional differences and unreliable estimates due to residential mobility and uneven exposures across the state. (For further discussion of the opportunities and limitations of state-level analyses, see a recent

review by Montez and colleagues [67]). The lesson here is not to replace the primacy of neighborhood-level studies with that of state-level studies. Rather, the literature calls for research that selects the unit of analysis based on hypotheses about the mechanisms of structural racism [5, 15].

Lesson 2: Leverage Historic and Geographic Variation in Race Relations

As scholars, we need to pay attention to historic and geographic variation in race relations and racial hierarchy. Structural racism is not a static phenomenon [57, 58]. Not only does residential segregation as a form of structural racism change over time but it also varies regionally. For example, what looks like segregation in the rural South might not be recognized as segregation in northern and midwestern cities [44]. In the case of mass incarceration, black men are more than 60% more likely to serve time in state prison in the Midwest than the West, while Latino men are 75% more likely to serve time in state prison in the West than the Midwest [63]. This geographic variation can be used to explore to what extent health inequalities narrow or widen across different expressions of structural racism.

Racial and ethnic health disparities must be understood as a product of historic race relations, and also as a product of current race relations and their maintenance. Researchers using a life course perspective to study exposures to racism from pregnancy to later life need to consider the dynamic nature of race relations. Some exposures depend on the interaction of age, period, and place [67]. For example, the fact that most older African-American adults today were born in the South during Jim Crow and attended segregated schools is relevant when we think about how racism has shaped trends in chronic disease. Chronic diseases, the main causes of death today, typically grow out of exposures over the life course rather than from exposure at a single point in time [68].

Mounting evidence shows that major shifts in race relations can improve health outcomes for nonwhites. Examples of this include civil rights gains [69], immigration reform [10], and school desegregation [70]. Scholars can use quasi-experimental methods to estimate the health consequences of these sometimes abrupt shifts in race relations. For example, in a highly influential study, Lauderdale [71] used the increase in anti-Arab sentiment that followed the September 11, 2001, attacks as a natural experiment to demonstrate the effect of discrimination experienced by mothers during pregnancy on birth outcomes. Also, in the first study to examine the effect of school desegregation on teen births, Liu and colleagues [70] used difference-in-differences methods to show that school desegregation resulted in a decrease in teen pregnancy among black females, but not white females. Scholars even demonstrated that a major immigration raid created such acute racialized fear for Latinos in Iowa that there was a spike

in risk of low birth weight among babies born to Latina mothers in the state [72].

Shifting race relations may be reflected as changes in the health status of racial and ethnic subgroups in relation to each other. Especially in light of recent trends in mortality among population subgroups, such as mortality declines among less-educated white women [73], the use of non-Hispanic whites as the default reference group for studying racial health disparities may be increasingly problematic. If the health of racial and ethnic minorities is compared only to whites, it is possible to mistake declining mortality inequality as a move toward equity. Thus, we must pay closer attention to these important changes as well as other variations in race relations.

Lesson 3: Combine Data from Multiple Sources

Some of the most exciting studies that look at structural racism and health have combined data from multiple sources. Lukachko and colleagues [65] operationalized structural racism using state-level measures from five different sources (1. *US Census, Current Population Survey*, 2. *National Conference of State Legislatures*, 3. *US Department of Labor and Statistics*, 4. *US Census, Decennial Census*, 5. *US Department of Justice, Bureau of Justice Statistics*). They linked these measures to individual-level data from a nationally representative survey to study the effects of state-level structural racism on individual risk of myocardial infarction. In another study, Wallace and colleagues [66] merged those same state-level measures of structural racism with individual-level electronic medical record data from 10 states ($n = 121,758$) to look at the effects of state-level structural racism on birth outcomes. Sewell [6] constructed a multilevel data set by linking neighborhood-level data from the 1994 Home Mortgage and Disclosures Act and the Neighborhood Change Database, and combining that with individual-level data from the Project on Human Development in Chicago Neighborhoods. She then nested individuals within neighborhood clusters to test her proposed meso-level theoretical framework. Sewell found that the negative health effects of racial segregation were not independent of poor neighborhood quality. Finally, Krieger and colleagues [69] provided a model for bringing in historical data to study the health effects of legal institutionalized racism in the American South. They combined individual-level mortality data with aggregated US Census population data and US Census county income data to estimate the effects of the 1964 Civil Rights Act on premature mortality with hierarchical age-period-cohort models. This complex research design enabled them to show that the abolition of legal racial discrimination in 1964 had beneficial period effects and cohort effects for blacks, above and beyond influence from county-level income.

Research to reveal the health consequences of structural racism requires that scholars find the data wherever it may

be hiding. We must push for access to data on police violence, mass incarceration, water quality, air quality, immigration raids, and more. And when data is not being collected, we must collect it ourselves.

Lesson 4: Challenge Normative Framing that Aims to Explain Away Racial Health Disparities Without Discussing Racism or Racial Hierarchy

Following from Critical Race Theory, the study of structural racism calls for a challenge to the normative thinking within health sciences that would keep white power structures, white decision makers, and even white people looking innocent and ignorant in the face of the racial hierarchy that shapes all our lives [6, 15, 56, 57]. Americans are closer to structural racism than we dare to see. And we know more about structural racism that we dare to say. Yet it took 158 years from the founding of the *New England Journal of Medicine* for the word “racism” to first appear in the title of a publication, and another 46 years for it to appear a second time [2]. The reason for this silence is not that racism is inconsequential for health. Nor does the silence indicate a lack of scholarly interest in health disparities. Rather, what the silence shows is that we have succeeded in convincing ourselves that racial and ethnic health disparities can be explained by things other than structural racism. This is the normative thinking that must be challenged.

Ford and Airhihenbuwa’s [17] Public Health Critical Race praxis (PHCR) approach exemplifies this final lesson. PHCR guides scholars to produce evidence in ways that undo rather than reinforce racist ideologies. Through its four focus areas and 10 principles, PHCR offers scholars a semi-structured approach for advancing research on structural racism and health [17]. Practicing PHCR in health disparities research involves considering the structured nature of white advantages in health and wrestling with tradeoffs between health equity and health maximization [74]. Health disparities researchers can use PHCR to challenge normative thinking that tries to explain away racial health disparities without examining the ways racism works through historical and social contexts. For example, Garcia and colleagues applied PHCR to ask how structural racism has shaped the differential maintenance of recreational spaces between Latino and non-Latino neighborhoods in Los Angeles [75]. Their study went beyond the documentation of disparities in access to parks and playgrounds to highlight that city planners, politicians, and white residents intentionally excluded people of color from recreational spaces through seemingly race-neutral policies such as zoning laws and fiscal discrimination [75]. By focusing on white privilege in their examination of race and the residential environment, Garcia and colleagues revealed the local historical context of present day health inequities and urged new directions for intervention.

These four lessons underscore the need for scholars to be explicit about their framework for understanding structural racism, be it Schulz's adaptation of Fundamental Cause Theory, Sewell's Racism-Race-Reification Process, Bonilla-Silva's Racialized Social Systems framework, Omi and Winant's Racial Formation Perspective, Carmichael and Hamilton's Institutional perspective, Marxist perspectives, or others [6, 42, 57, 58]. Nazroo [76] warned that the current focus on etiologic processes is likely to further racialize inequality in health, so we must remember that there is nothing inevitable or inherent in the link between race and risk of mortality and morbidity. The way to avoid essentialist conclusions is to connect the monitoring of health disparities with a monitoring of changes in "ethnic-making." By exploring the structural dimensions of racialization, we may better identify the root causes of persistent racial and ethnic health disparities.

A neighborhood study that examines structural racism in earnest will take racialized power structures as a starting point for framing the research question and study design. As a result, the findings will not simply document racial health disparities, but will provide evidence of plausible connections between differential treatment in housing, in health care, in law enforcement, in employment, or in schools. Thus, a move to study structural racism calls for a transformation not just when we frame the issues, but during every step of the research process. When we take risks with our research questions, seek data on what is hidden over what is easily accessible, and interpret our findings in connection to their histories, we can begin to counter efforts to explain away the effects of racism on health based on reductionist risk factors. Structural racism is not just the water we drink, but the pipes that deliver it to us; it is not just the air we breathe, but our proximity to highways and factories; it is not just the neighborhoods we live in, but the invisible walls built up around them. In this sense, place matters *because* of structural racism. We should think of structural racism not as a risk factor that can be studied in isolation, but as a ubiquitous system of exposure that unevenly distributes the social determinants of health.

Conclusion

Few health researchers today would contest the adage that "place matters." Indeed, we see some of the most dramatic disparities in health and life expectancy when we compare neighborhoods, even neighborhoods within the same city. Studies linking neighborhood disadvantage and racial residential segregation to health have documented the magnitude of localized disparities. But neighborhood effects research has been slow to specify mechanisms for intervention. Ahistorical assumptions embedded in the measurement of neighborhood variables and the reliance on census data

obscure the connections between social policies and structural arrangements, and racial and ethnic health disparities.

To look back in time is to confront the resounding truth that the overlap between disadvantage, segregation, and race in the USA is no accident. But just because neighborhood contexts are shaped by structural racism does not mean a neighborhood effects lens is sufficient to study structural racism and health. The fixation on neighborhoods, particularly poor neighborhoods, distracts from the research needed to guide interventions to eliminate racial/ethnic health disparities—research that shines a light on the processes of exclusion and the processes of disenfranchisement that shape population health, and on the many ways that marginalized communities still rise. In order to make progress toward eliminating racial and ethnic health disparities, future research on the health effects of structural racism needs to go beyond traditional neighborhood effects approaches. This will not happen unless we identify the ways that racial ideologies are sustained and used as a basis for exclusion from economic, political, and social power, and, ultimately, from health.

Compliance with Ethical Standards

Conflict of Interest The author declares no conflicts of interest.

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