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# Beyond individual neighborhoods: A geography of opportunity perspective for understanding racial/ethnic health disparities

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ABSTRACT

There has been insufficient attention to how and why place and neighborhood context contribute to racial/ethnic health disparities, as well as to policies that can eliminate racial/ethnic health disparities. This article uses a geography of opportunity framework to highlight methodological issues specific for quantitative research examining neighborhoods and racial/ethnic health disparities, including study design, measurement, causation, interpretation, and implications for policy. We argue that failure to consider regional, racialized housing market processes given high US racial residential segregation may introduce bias, restrict generalizability, and/or limit the policy relevance of study findings. We conclude that policies must address the larger geography of opportunity within the region in addition to improving deprived neighborhoods.



## 1. Introduction

Increasing attention has been paid to the large and persistent US racial/ethnic health disparities (US DHHS, 2000). However, we contend there has been insufficient attention to the role of neighborhood context in generating racial/ethnic health disparities in the US. Specifically, in health research, neighborhoods have been studied primarily in isolation from sorting (i.e. residential segregation) processes that result in substantially different distributions of neighborhood context for minorities and whites. Such neighborhood-focused research examines health without attention to the larger context within which neighborhood and moving decisions are made—within regional housing markets, which operate differentially along racial/ethnic lines (Massey and Denton, 1993), and result in a racial/ethnically unequal geography of opportunity (Briggs, 2005; Galster and Killen, 1995; Squires and Kubrin, 2006). Failure to consider the larger housing market in racial/ethnic disparity studies may introduce several types of bias, or limit the policy relevance of the study findings.

High racial residential segregation (hereafter: segregation) is a central feature of American inequality, and has been deemed a fundamental cause of racial health disparities (Acevedo-Garcia et al., 2008; Williams and Collins, 2001). Segregation generates inequalities in neighborhood resources, services, and contexts considered salubrious (e.g. school quality, safety, healthy food access, social networks, proximity to employment) which we will hereafter call "neighborhood opportunity" (Ihlanfeldt, 1999; Massey, 2001). These racial processes may be so severe in the US that they compromise our ability to disentangle the effects of "race" on health from effects mediated by neighborhoods. While these phenomena are sometimes studied directly, they are also often regarded as a methodological "nuisance" in neighborhoods research (Sampson, 2008), making isolated causal inferences regarding neighborhood effects and/or racial/ethnic disparities more challenging. We argue that the methodological difficulty arises precisely because racial segregation and discrimination/racism processes are such profound features of racial inequality in America, and therefore must be taken into account when understanding how place contributes to racial/ethnic health disparities.

In urban studies and sociology, neighborhood inequality is analyzed in a regional (metropolitan) framework, and linked to processes of racial discrimination (e.g. in housing) that operate across the entire region, resulting in differential access to neighborhood resources by race/ethnicity (Massey and Denton, 1993; O'Connor, 2001). For instance, the segregation literature has analyzed patterns in the vastly different racial composition of neighborhoods across metropolitan America (Massey and Denton, 1988). More recently, a geography of opportunity school has focused not on racial composition, but on documenting the variation in neighborhood resources across regions. The central

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premise of a geography of opportunity framework is that residents of a metropolitan area are situated within a context of neighborhood-based opportunities that shape their quality of life (Briggs, 2005; Powell, 2005b). However, this approach is not racially neutral since distributions of neighborhood opportunity can then be mapped onto distributions of racial composition, which consistently shows large racial/ethnic disparities in access to neighborhoods of high opportunity (Pastor, 2001). In sum, both the segregation and geography of opportunity approaches use a regional perspective, which implies examining the entire distribution of neighborhoods across geographically defined markets (e.g. housing and labor markets) that underlie neighborhood inequality, while also acknowledging racialized processes in housing and labor markets that produce racial disparities in neighborhood environments. In contrast, the neighborhood effects literature treats neighborhoods in isolation from this larger context. Substantively, decontextualizing neighborhoods results from ignoring processes of racial stratification, but in turn it also has methodological implications that limit the utility of neighborhood effects research for estimating health disparities.

We argue that a failure to adopt a regional approach with explicit attention to the racial patterns of the geography of opportunity, given such high racial segregation, has implications for the design, measurement, analyses, and policy relevance of research studies conducted on neighborhood health effects. There has been some discussion highlighting the limitations of neighborhood-health effects literature (and of observational neighborhood studies) for estimating causal effects (Diez Roux, 2004; Oakes, 2004, 2006; Sampson et al., 2002). And while important, this research has not necessarily taken into account the underlying unequal geography of opportunity that is so stark across American regions. Moreover, there are methodological issues in neighborhood effects research, *in addition to threats to internal validity*, that are particularly relevant for the study of *health disparities*, which we believe have not been adequately discussed elsewhere. Such issues include (1) the implications of neighborhood *study designs* for health disparities (central city vs. regional sampling frames) which may impact selection bias, generalizability, or biased racial disparity estimation; (2) the implications of racial stereotyping and residential segregation for valid *measurement* of neighborhood conditions; (3) the importance of institutional, in addition to interpersonal, racism for *interpreting* neighborhood-health research (including differential policy relevance and counteracting effects of different racism forms), and (4) the *policy relevance* of focusing on individual neighborhoods, which results in favoring place-based solutions over regional policy solutions.

## 2. Residential segregation and study design: the limitations of central city sampling frames

Incorporating a regional (e.g. metropolitan) approach into study design may be necessary for understanding racial health disparities because inequality operates across a regional context, not in a neighborhood context. Metropolitan areas (MAs) or regions are defined based on a core area with a large population nucleus (e.g. central city), in combination with adjacent communities that have a high degree of economic and social integration with that core (e.g. suburban areas) (US Census Bureau, 2008). MAs are larger than cities (and usually counties), and they are a conceptually relevant geographic unit for racial health inequality and neighborhood research because they approximate racially segmented housing and labor markets (Jargowsky, 2003).

Yet the sampling frames of many extant multilevel neighborhood-health studies or studies including neighborhood components (including Project on Human Development in Chicago Neighborhoods, Sampson et al., 1997; Detroit Neighborhood Health Study, Galea, 2009; Baltimore Memory Study, Schwartz et al., 2004; New York Social Environment Study, Ahern et al., 2008; Three-City Study of Welfare Reform, Chase-Lansdale et al., 2003; Fragile Families and Child Wellbeing Study, Hale et al., 2009), may misestimate racial/ethnic health disparities and/or neighborhood contributions to health disparities, by sampling primarily or exclusively from central cities, instead of using regional sampling frames. Notably, many of these aforementioned studies were not designed to estimate racial health disparities, or to estimate neighborhoods' contribution to health disparities; they were designed to examine (and have contributed to our understanding of) the main effects of neighborhoods on health. However, sampling only from central city areas may limit generalizability of estimates for one or more racial/ethnic groups, and additionally it may exhibit confounding or introduce selection bias[1] into neighborhood-health and/or racial disparity estimates (Acevedo-Garcia and Osypuk, 2008b).

Related, although research has advanced our understanding of the physical and social environment within the central city that may affect health, our understanding of suburban neighborhood attributes, and their health effects, remains scant. Furthermore, we lack studies that examine how racial differences in the entire distribution of neighborhood opportunity may result in racial differences in population health. As discussed further below, since housing and urban inequality scholars agree that regional approaches may be necessary to address some of the root causes of housing and neighborhood inequalities, city-based neighborhood studies are limited for informing policy solutions that address inequalities from a regional perspective.

There may be several methodological implications of city-based neighborhood studies. Analyzing neighborhoods *only* in large cities excludes suburban neighborhoods, where whites and higher socioeconomic status (SES) residents disproportionately live, and where two-thirds of the metropolitan-dwelling population lives. For example, Table 1 shows that 32% of the population, 56% of blacks vs. 24% of non-hispanic whites, and 51% of the poor vs. 30% of the non-poor live in the central city within metropolitan area (MAs). The racial disparities in residence are more pronounced in highly segregated MAs, within racial-SES subgroups; 84% of all blacks, and 91% of poor blacks in the five most highly segregated metros live in the central city, compared to 34% of all whites and 57% of poor whites. (Authors' calculations, Census 2000 data). Central city neighborhood studies may therefore bias estimates of racial/ethnic disparity towards the null, due to distribution truncation (Cook et al., 1997; Osypuk and Galea, 2007).

Exclusion of suburban areas may introduce a form of selection bias (Glymour, 2006) into studies examining neighborhood phenomena, since people have been selected into a central-city sample based on residence in the central city, which is differential by race, and related to racialized housing market processes such as housing discrimination by real estate professionals, zoning restrictions, and avoidance of black neighborhoods (Acevedo-Garcia and Osypuk, 2008a; Farley et al., 1997). These racialized processes determining central city vs. suburban residence may also be most pronounced in highly segregated MAs (Ellen, 1999; Farley et al., 1997; Rothwell and Massey, 2009).

[1] We use the term "selection bias" as epidemiologists do, to denote systematic error arising from the manner in which subjects are selected into a study (Kleinbaum et al., 2007; Glymour, 2006); we use the term "confounding" to denote what social scientists call "selection bias" or omitted-variable bias, meaning uncontrolled variables that are common causes of, or associated with, both neighborhood of residence, and the health outcome under study.