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Structurally vulnerable neighborhood environments and racial/ethnic COVID-19 inequities

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Abstract

Preliminary evidence suggests that the experience of the novel coronavirus is not shared equally across geographic areas. Findings in the United States suggest that the burden of COVID-19 morbidity and mortality may be hardest felt in disadvantaged and racially segregated places. Deprived neighborhoods are disproportionately populated by people of color, the same populations that are becoming sicker and dying more often from COVID-19. This commentary examines how structurally vulnerable neighborhoods contribute to racial/ethnic inequities in SARS-COV-2 exposure and COVID-19 morbidity and mortality and considers opportunities to intervene through place-based initiatives and the implementation of a Health in All Policies strategy.

Keywords

neighborhoods; racial/ethnic health inequities; COVD-19

COMMENTARY TEXT

The experience of the novel coronavirus is not shared equally across places. In their working paper examining 30,318 COVID-19 deaths from 3,144 United States (U.S.) counties, Chen and Krieger found higher COVID-19 county death rates (cumulative deaths as of April 16, 2020 per 100,000 population) in the most disadvantaged counties (% of persons living in poverty, % of crowded households, and concentration of extreme racial and socioeconomic segregation) and counties with the largest populations of people of color (% of population that is not white, Non-Hispanic) (2020). These findings suggest that the burden of COVID-19 morbidity and mortality may be hardest felt in disadvantaged and

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racially segregated places in the U.S., places disproportionately populated by people of color (Bailey et al., 2017). Indeed, data show that Black, Latinx, and American Indian/Alaskan Native individuals are becoming sicker and dying more often from COVID-19 than white individuals (Braithwaite & Warren, 2020). Similar racial/ethnic inequities in COVID-19 mortality have been observed in other countries as well, including Brazil and the United Kingdom (Phillips, 2020). Multiple intersecting racist systems have been implicated in the racial/ethnic inequities in COVID-19 outcomes in the U.S. (e.g. the overrepresentation of racially minoritized groups in the "essential" workforce, inequitable incarceration rates, and racism in healthcare (Bailey et al., 2017; Braithwaite & Warren, 2020)). This commentary specifically examines how structurally vulnerable neighborhoods before and during the pandemic impact racial/ethnic inequities in exposure to SARS-COV-2 and morbidity and mortality from COVID-19 in the U.S. (Figure 1). We conclude by considering opportunities for research and intervention to understand and prevent such inequities in the U.S. and around the world.

Structural racism and neighborhoods: unequal investment and access

Structural racism "…refers to the totality of ways in which societies foster racial discrimination, through mutually reinforcing inequitable systems (in housing, education, employment, earnings, benefits, credit, media, health care, criminal justice, and so on) that in turn reinforce discriminatory beliefs, values, and distribution of resources…" (Bailey et al., 2017, p. 1454). One manifestation of structural racism in the U.S. is racial residential segregation, or "the physical separation of the races in residential contexts…" implemented and upheld by policies, economic institutions, the judicial system, and local home owners' associations and real estate organizations in the early 20th century (Williams & Collins, 2001, p. 405). As a result, Black Americans were subject to severe limitations on where they could live and what investments could be made in their neighborhoods. Though *de jure* racial segregation through explicit racial discrimination in the sale or rental of housing was outlawed by the 1968 Civil Rights Acts, the reality of racial segregation persists for people of color. Independent of individual socioeconomic status, people of color are still more likely to live in neighborhoods with fewer resources, less investment, and greater likelihood of exposure to harmful pollutants and stressful circumstances compared to non-Hispanic white people (Bailey et al., 2017; Williams & Collins, 2001). We refer to these neighborhoods as structurally vulnerable, recognizing the non-random and non-voluntary ways in which (1) neighborhoods have been subjected to generations of disinvestment, (2) discriminatory policies and uneven economic development have disproportionately pushed people of color toward residence in such neighborhoods, (3) neighborhoods with large populations of people of color continue to be targets of neglect, and (4) people of color are at risk of being displaced when neighborhood investment begins.

Structurally vulnerable neighborhoods before COVID-19

Research has shown that living in a structurally vulnerable neighborhood is associated with increased risk for adverse health behaviors and chronic conditions (e.g. cardiovascular disease, Type 2 diabetes, and obesity) (Diez Roux & Mair, 2010). Living in a neighborhood with high levels of air pollution, insufficient food outlets, few parks and recreational spaces, or community safety concerns and over-policing may limit residents' opportunities for

physical activity and healthy food choices (Diez Roux & Mair, 2010). This may in turn increase risks for chronic conditions associated with diet and exercise.

These same conditions make deprived neighborhood environments potential sources of chronic stress over the life course. For example, economically deprived neighborhoods and those with large communities of color are more likely to experience police killings (Feldman et al., 2019), and African Americans, American Indians/Alaskan Natives, and Latino men have a higher lifetime risk of being killed by police compared to non-Hispanic whites (Edwards et al., 2019). As a result, the threats of over-policing and police violence are powerful potential chronic stressors (DeVylder et al., 2018). Living in a stressful environment may contribute to allostatic load (the dysregulation of multiple physiologic systems, including the cardiovascular and inflammatory systems) which in turn increases the risk of multiple chronic conditions (Diez Roux & Mair, 2010; Ribeiro et al., 2018).

That people of color have higher rates of chronic disease in the U.S. is unsurprising when one recognizes that these communities are also more likely to live in structurally vulnerable neighborhoods (Bailey et al., 2017; Braithwaite & Warren, 2020). Given what is known about increased risk of COVID-19 morbidity and mortality among those with underlying chronic conditions, it is understandable that residents of these neighborhoods – disproportionately people of color – may be more vulnerable. Rather than emphasizing the chronic health conditions themselves, we must recognize the culpability of these structural preexisting conditions.

Changes to structurally vulnerable neighborhoods in response to COVID-19

Globally, there is a push to implement structural, social, and economic place-based modifications to slow the transmission of SARS-COV-2. However, the impact and effectiveness of these policies may be inequitably distributed between structurally privileged and structurally vulnerable communities. Shelter-in-place orders may increase risk of exposure among people living in crowded housing where social distancing is not possible and at least one individual must venture out to work. Living in a neighborhood with limited access to healthcare and food prior to the pandemic may be even more harmful now, with contracted public transportation systems and shelter-in-place discouraging travel beyond immediate surroundings. Over-policing of communities of color to enforce shelter-in-place causes additional fear and anxiety (Burns, 2020). And though important for minimizing exposure to SARS-COV-2, the closing of churches, community centers, and parks, along with the discouragement of social gatherings, may also increase risk of COVID-19 morbidity and mortality for residents of structurally vulnerable neighborhoods. Studies have found that dimensions of a neighborhood's social environment (e.g. levels of social connectedness, social cohesion, social support, and social interactions) are protective against depression, poor self-reported health, obesity, and physical inactivity (Pérez et al., 2019). By disrupting aspects of the social environment that had previously been protective for health, shelter-in-place may increase residents' vulnerabilities to COVID-19. Though these changes to neighborhoods and their consequences for health and wellbeing are currently unfolding, recognizing the potential impacts on racial/ethnic inequities related to COVID-19

can influence how resources are distributed now to prevent further damage (Chen & Krieger, 2020).

Moving forward

The consequences of the pandemic reach far beyond COVID-19 morbidity and mortality. The effects of social and economic insecurity and the trauma of massive loss of life will continue to impact societies around the world for generations. Just as we are seeing during the pandemic, residents of color in structurally vulnerable neighborhoods are at risk of bearing the brunt of these long-term consequences if nothing is done. The U.S. is not alone in this reality. Research from Brazil finds that Black and Brown individuals were more likely that White individual to live in highly economically segregated neighborhoods, and that residents of highly segregated neighborhoods had higher odds of hypertension and diabetes (Barber et al., 2018). Wherever structural racism shapes where people live and the exposures characterizing those places, health inequities will persist. Research to understand the causes of racial/ethnic inequities in COVID-19 outcomes must incorporate the factors accounting for the unique historical and contemporary realities of racism in different societies.

In addition, this pandemic is a global call to action for neighborhood transformation efforts to prioritize addressing health inequities. At the local level, “place-based initiatives” can improve neighborhood quality before and during a pandemic. Place-based initiatives are neighborhood development efforts that span multiple sectors (e.g. housing, education, city planning, public health), prioritize the unique circumstances of a small geographic area, and center the values and goals of residents (Bailey et al., 2017). One example is the Purpose Built Communities model, based on the successful revitalization of the East Lake neighborhood in Atlanta, GA, which includes the creation of mixed-income housing, support for cradle-to-college education, and investment in community wellness resources, all in partnership with community residents. This model has supported effective place-based community development in over 20 neighborhoods around the U.S.. Central to these efforts is a consideration of the complexities of local history, culture, and needs as they intersect with neighborhood improvements and the deliberate commitment to ensuring that development ultimately benefits neighborhood residents and alleviates structural harms.

At the city, state, and national levels, incorporating a “Health in All Policies”(HiAP) strategy across governmental agencies can support the implementation of policies to address structural vulnerabilities within neighborhoods (Corburn et al., 2014). HiAP calls for multisectoral, multiagency collaboration in communities to “address the root causes of health inequities by encouraging inter-sectoral action for health promotion” (2014, p. 624). The goal of HiAP is to “[move] beyond ad hoc or short-term health promotion programs…[in order to integrate] health and health equity into newly established processes of governmental decision making” (2014, p. 625). The World Health Organization provides a framework for countries to implement a HiAP strategy (WHO, 2014). One example in the city of Richmond, California, U.S., involved collaboration with residents to develop an Urban Health Equity in All Policies strategy that became law in 2014 (Corburn et al., 2014). The strategy transformed Richmond’s governance approach into one that “prioritize[s] health equity within almost all its planning, fiscal, and service decisions” (Corburn et

al, 2014, p.632). Structural racism operating across sectors created structurally vulnerable neighborhoods, and so the responsibility to overturn structural racism must be similarly distributed.

COVID-19 is not an anomaly. It is but the latest disease to travel through neighborhoods along paths of inequity created by structural racism. The road forward is not yet written, yet the charge is clear. We must build neighborhoods that can prevent and eliminate racial/ethnic health inequities and ensure that all people can truly thrive.

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Biography

Biographical note

Rachel L. Berkowitz is a Postdoctoral Research Fellow. Her work focuses on neighborhood quality, health inequities, patient-centered healthcare, and place-based community-driven development. **Xing Gao** is a doctoral student. Her research centers around the place-effect on health for communities of color and geospatial manifestation of structural racism. **Eli K. Michaels** is a doctoral candidate. She is interested in novel approaches to measuring racism as at multiple social levels and examining associations with chronic disease progression across the lifecourse. **Mahasin S. Mujahid** is the Chancellor's Professor of Public Health and an Associate Professor of Epidemiology. Her research is devoted to examining neighborhood health effects, cardiovascular health disparities, and racial/ethnic health inequities over the life course.

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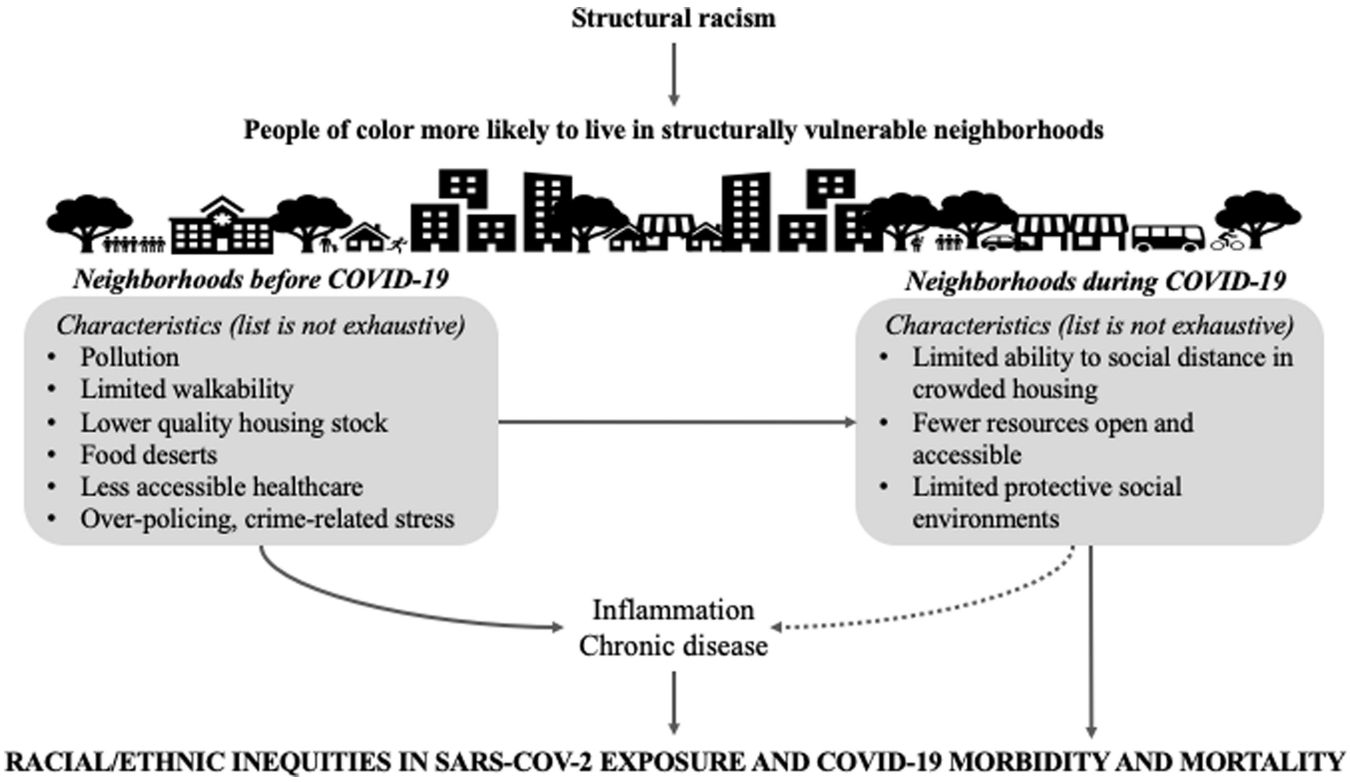

Figure 1:

Conceptual framework for pathways through which neighborhoods, shaped by structural racism, may contribute to racial/ethnic inequities in SARS-COV-2 exposure and COVID-19 morbidity and mortality