Racial Disparities in COVID-19 Mortality Among Essential Workers in the United States

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Racial disparities are apparent in the impact of coronavirus disease 2019 (COVID-19) in the United States, yet the factors contributing to racial inequities in COVID-19 mortality remain controversial. To better understand these factors, we investigated racial disparities in COVID-19 mortality among America’s essential workers. Data from the American Community Survey and Current Population Survey was used to examine the correlation between the prevalence of COVID-19 deaths and occupational differences across racial/ethnic groups and states. COVID-19 mortality was higher among non-Hispanic (NH) Blacks compared with NH Whites, due to more NH Blacks holding essential-worker positions. Vulnerability to coronavirus exposure was increased among NH Blacks, who disproportionately occupied the top nine essential occupations. As COVID-19 death rates continue to rise, existing structural inequalities continue to shape racial disparities in this pandemic. Policies mandating the disaggregation of state-level data by race/ethnicity are vital to ensure equitable and evidence-based response and recovery efforts.

KEY WORDS: coronavirus, health status disparities, infectious diseases, occupational health, race factors, viral transmission

Introduction

The World Health Organization (2020) reported 3,018,952 confirmed cases and 207,973 deaths from the coronavirus disease 2019 (COVID-19) worldwide on April 29, 2020. With 1,005,147 (33.29% of all) cases and 57,505 (27.65% of all) deaths, the United States is the epicenter of the pandemic (Centers for Disease Control and Prevention [CDC], 2020a). As national-level data disaggregation by race continues to lag, released data and articles from states, cities, and news outlets provide glimpses into COVID-19’s disproportionate impact. As of April 6, 2020, the Alabama Department of Public Health reported disproportionate rates of infection and death between non-Hispanic (NH) Black and NH White patients (Zanolli, 2020). On April 16, 2020, Louisiana reported that although NH Blacks comprise 33% of the state’s population, they represented 60% of the state’s deaths from the virus (Louisiana Department of Health, 2020). COVID-19-specific inequities continue to surface in disease hotspots such as New York City, where NH Black residents account for 22% of the city’s population but 28% of deaths, while Hispanic residents account for 29% of the population and 34% of deaths (New York State Department
As death rates continue to climb, better data-driven understanding of the disproportionate racial impact of the pandemic is warranted to enable officials to best direct state-level mitigation, testing, treatment, and funding efforts.

It is no surprise to some that COVID-19 is exposing health disparities in the United States, which is outranked only by Portugal and Chile on income-based health inequities (Hero, Zaslavsky, & Blendon, 2017). The “weathering hypothesis”—defined as “chronic exposure to social and economic disadvantage [that] leads to accelerated decline in physical health outcomes and could partially explain racial disparities in a wide array of health conditions” (Forde, Crookes, Suglia, & Demmer, 2019)—provides a possible framework for better understanding these disparities (Forde et al., 2019; Geronimus, Hicken, Keene, & Bound, 2006).

This phenomenon manifests in higher rates of chronic medical conditions, including asthma, chronic obstructive pulmonary disease, heart disease, and diabetes among people of color compared with NH Whites (CDC, 2018; Maxwell, 2020). Critics have argued that the weathering hypothesis fails to consider allostatic load—that is, the wear and tear the body experiences as it strives to achieve stability in disruptive environments (Thomas, 2006). Nonetheless, the disproportionate health effects of the COVID-19 pandemic are consistent with the unequal presentation of chronic medical conditions among communities of color that result from a historical legacy of structural inequities.

Strong ties among health insurance coverage, care, and outcomes are well established in the literature (Committee on the Consequences of Uninsurance, 2002; Hoffman & Paradise, 2008); individuals without health insurance coverage have been found to be less likely to receive medical care and more likely to experience worse health outcomes (Bovbjerg & Hadley, 2007). In 2018, the U.S. Census Bureau (2019c) found that, compared with those who identify as NH White, Hispanics were three times more likely and NH Blacks nearly twice as likely to be uninsured. While the Affordable Care Act has substantially increased insurance rates for all races and ethnicities over the past 10 years (Artiga, Orgera, & Damico, 2020), health outcomes for uninsured patients of color remain a major concern during the COVID-19 pandemic.

Although many states have implemented stay-at-home orders in an attempt to contain COVID-19’s rapid spread, many individuals employed by “essential” businesses are unable to remain at home. U.S. Bureau of Labor Statistics (2020) data reveal that, in general, 19.7% of NH Black and 16.2% of Hispanic workers report being able to work from home versus 29.9% of NH White workers (U.S. Bureau of Labor Statistics, 2019). This gap highlights systemic and racial injustices that may be perpetuated by COVID-19 exposure. Our current study aimed to investigate racial disparities in COVID-19 mortality among essential workers in the USUnited States to establish a deeper understanding of the compounding factors and indicators contributing to the inequalities permeating the novel coronavirus. Our central hypothesis was that COVID-19 mortality was higher among NH Blacks compared with NH Whites because NH Blacks hold more essential-worker positions.
Materials and Methods

Data Sources

Population data by race/ethnicity in each U.S. state and in the entire United States were collected from the U.S. Census Bureau's (2019) 2018 American Community Survey (ACS). We collected the frequency of COVID-19 total deaths in addition to death counts by race/ethnicity from state health department websites (please see the References section for those citations marked as [dataset] references). Most states \((n = 35; 70\%)\) and the District of Columbia (DC) had available COVID-19 death data by race/ethnicity at the time of data collection; the exceptions were Alaska, Delaware, Hawaii, Iowa, Maine, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Dakota, Oregon, South Dakota, West Virginia, and Wyoming, which were excluded from our study. We aggregated the individual death data from all available states and DC to create an overall death prevalence. For New York state, population and COVID-19 data were collected from the CDC’s National Vital Statistics System (CDC, 2020b) due to the limited availability of data from the New York State Department of Health.

Using the reported total number of COVID-19 deaths in each state, we calculated the percentage of deaths in each racial/ethnic group. All COVID-19 death data were up to date as of April 9 to April 24, 2020, depending on the state. We obtained current occupational statistics by race/ethnicity and state from the 2019 Annual Social and Economic supplement to the Current Population Survey (CPS; U.S. Census Bureau, 2019b) and linked COVID-19 death data to the CPS by race/ethnicity and state.

Data Measures

In all analyses, we defined race/ethnicity groups as NH White, NH Black, Hispanic, NH Asian (including Native Hawaiians and Pacific Islanders), and NH Other (including American Indians/Alaska Natives and multiracial individuals). COVID-19 deaths included both confirmed and probable deaths. A confirmed death was defined as that of an individual with a positive COVID-19 laboratory test. A probable death was defined as that of an individual without a known positive COVID-19 laboratory test whose death certificate gave the cause of death as “COVID-19” or an equivalent. Individuals who before death displayed symptoms characteristic of COVID-19 infection were therefore counted as COVID-19 deaths using clinical judgment.

We examined 22 CPS occupational categories: (i) management operations; (ii) business and financial operations; (iii) computer and mathematical science; (iv) architecture and engineering; (v) life, physical, and social science; (vi) community and social service; (vii) legal; (viii) education, training, and library; (ix) arts, design, entertainment, sports, and media; (x) health care practitioner and technical; (xi) health care support; (xii) protective service; (xiii) food preparation and serving; (xiv) building and grounds cleaning and maintenance; (xv) personal care and
service; (xvi) sales; (xvii) office and administrative support; (xviii) farming, fishing, and forestry; (xix) construction and extraction; (xx) installation, maintenance, and repair; (xxi) production; and (xxii) transportation and material moving. We excluded the armed forces due to extremely limited sample size.

**Statistical Analyses**

We weighted CPS data according to survey methodology (Cheng, 2012). Using CPS data, we calculated the weighted prevalence of each occupation within each racial/ethnic group and examined the difference in prevalence between NH Whites and NH Blacks for each occupation. The percentage of NH Black COVID-19 deaths were divided by the percentage of NH Black population in each state, DC, and all states combined. Using Spearman rank-order correlations, we examined the correlation between the prevalence of COVID-19 deaths and the prevalence of each occupation across racial/ethnic groups and states. All data and statistical analyses were conducted using SAS 9.4 (SAS Institute, Cary, NC) at a significance level of 0.05.

**Results**

**COVID-19 Deaths by Race/Ethnicity**

Overall, among combined states, the prevalence of NH Black deaths from COVID-19 (20.76%) was disproportionately higher than the NH Black unweighted U.S. population (12.14%; Table 1). This trend was also seen within 26 states and DC, with the discrepancy between mortality and population highest in Wisconsin and Kansas. In particular, whereas NH Blacks comprised 6.17% of Wisconsin’s population, they comprised 36.49% of the state’s COVID-19 deaths. In Michigan and New York, NH Blacks comprised 40.00% and 14.90%, respectively, of COVID-19 deaths while representing 13.53% and 8.80%, respectively, of the state’s population.

**Occupational Differences by Race/Ethnicity**

The CPS data revealed differences in occupation prevalence within each racial/ethnic group (Table 2). Compared with NH Whites, NH Blacks were more likely to work in jobs considered essential during the COVID-19 pandemic. Among all 35 states and DC, the five occupations with the highest disparities in the proportion of NH White and NH Black workers were transportation and material moving, health-care support, food preparation and serving, building and grounds cleaning and maintenance, and personal care and service. In particular, 10.58% of NH Blacks worked in transportation and material moving, compared with 5.33% of NH Whites; 5.46% of NH Blacks worked in health-care support, compared with 1.76% of NH Whites.
Table 1. Percentage of COVID-19 Deaths and Percentage of Population by Race/Ethnicity

| State                  | White | Black | Hispanic | Asian | Other | Ratio | Date       |
|------------------------|-------|-------|----------|-------|-------|-------|------------|
| United States          | 55.31 | 60.32 | 12.14    | 9.65  | 3.85  | 5.77  | 2.58       | 1.77 | –          |
| Wisconsin              | 58.77 | 81.21 | 36.49    | 6.17  | 0.00  | 6.95  | 2.37       | 0.94 | 2.83       | 5.91 | 4/18/2020  |
| Kansas                 | 55.81 | 75.95 | 31.40    | 5.35  | 0.00  | 11.96 | 0.00       | 2.80 | 1.16       | 3.80 | 5.87 | 4/18/2020  |
| Missouri               | 41.00 | 79.52 | 38.00    | 11.30 | 0.00  | 4.05  | 0.00       | 2.16 | 3.00       | 2.97 | 3.36 | 4/17/2020  |
| Michigan               | 43.00 | 75.00 | 40.00    | 13.53 | 0.00  | 5.15  | 1.00       | 3.23 | 5.00       | 3.07 | 2.96 | 4/20/2020  |
| Illinois               | 38.36 | 61.01 | 39.87    | 13.55 | 0.00  | 17.48 | 4.13       | 5.66 | 1.35       | 2.30 | 2.94 | 4/18/2020  |
| Arkansas               | 62.50 | 72.24 | 35.00    | 14.96 | 0.00  | 7.70  | 0.00       | 1.79 | 0.00       | 3.31 | 2.34 | 4/19/2020  |
| California             | 36.00 | 36.67 | 12.00    | 5.36  | 31.00 | 39.39 | 17.00      | 14.96 | 4.00      | 3.63 | 2.24 | 4/17/2020  |
| South Carolina         | 42.00 | 63.83 | 57.00    | 26.33 | 0.00  | 5.76  | 0.00       | 1.56 | 1.00       | 2.45 | 2.16 | 4/18/2020  |
| Colorado               | 70.21 | 67.95 | 8.24     | 3.82  | 16.49 | 21.62 | 3.99       | 3.27 | 1.07       | 3.34 | 2.16 | 4/18/2020  |
| Tennessee              | 57.80 | 73.79 | 33.70    | 16.51 | 0.00  | 5.49  | 2.40       | 1.73 | 1.20       | 2.41 | 2.04 | 4/22/2020  |
| Indiana                | 66.70 | 78.95 | 18.90    | 9.26  | 0.00  | 7.10  | 0.40       | 2.27 | 8.50       | 2.37 | 2.04 | 4/17/2020  |
| Louisiana              | 30.24 | 58.82 | 59.29    | 31.64 | 0.00  | 5.08  | 1.05       | 1.61 | 0.71       | 2.84 | 1.87 | 4/18/2020  |
| North Carolina         | 58.00 | 62.86 | 38.00    | 20.86 | 0.00  | 9.58  | 1.00       | 3.00 | 3.00       | 3.69 | 1.82 | 4/18/2020  |
| Alabama                | 46.90 | 65.56 | 47.80    | 26.45 | 0.00  | 4.31  | 2.70       | 1.34 | 0.90       | 2.31 | 1.81 | 4/18/2020  |
| New Jersey             | 49.30 | 54.73 | 22.00    | 12.61 | 17.2  | 20.76 | 5.40       | 9.65 | 6.10       | 2.23 | 1.74 | 4/22/2020  |
| Virginia               | 51.16 | 61.53 | 32.17    | 18.57 | 0.00  | 9.53  | 0.00       | 6.61 | 7.75       | 3.76 | 1.73 | 4/18/2020  |
| Georgia                | 37.81 | 52.46 | 53.16    | 30.92 | 0.00  | 9.74  | 1.42       | 4.25 | 1.29       | 2.63 | 1.72 | 4/20/2020  |
| District of Columbia   | 12.00 | 36.65 | 77.00    | 44.90 | 9.00  | 11.32 | 2.00       | 3.55 | 0.00       | 3.37 | 1.71 | 4/16/2020  |
| Mississippi            | 36.00 | 56.73 | 64.00    | 37.67 | 0.00  | 2.82  | 0.00       | 0.88 | 0.00       | 1.85 | 1.70 | 4/18/2020  |
| New York               | 67.30 | 73.00 | 14.90    | 8.80  | 12.50 | 11.70 | 4.60       | 4.30 | 0.70       | 2.10 | 1.69 | 4/25/2020  |
| Kentucky               | 86.00 | 84.82 | 12.00    | 7.60  | 0.00  | 3.59  | 1.75       | 1.46 | 0.00       | 2.47 | 1.58 | 4/9/2020   |
| Connecticut            | 70.98 | 66.30 | 14.89    | 9.90  | 9.00  | 16.63 | 0.97       | 4.65 | 0.84       | 2.52 | 1.50 | 4/22/2020  |
| Florida                | 66.00 | 53.26 | 22.00    | 15.07 | 0.00  | 26.33 | 0.00       | 2.79 | 6.00       | 2.55 | 1.46 | 4/23/2020  |
| Maryland               | 35.08 | 50.31 | 40.12    | 29.30 | 5.04  | 10.46 | 4.26       | 6.38 | 3.10       | 3.52 | 1.37 | 4/20/2020  |
| Rhode Island           | 79.00 | 71.54 | 7.00     | 5.62  | 11.00 | 16.05 | 0.00       | 3.42 | 0.00       | 3.12 | 1.25 | 4/23/2020  |
| Ohio                   | 70.00 | 78.79 | 14.00    | 12.12 | 0.00  | 3.83  | 0.00       | 2.29 | 5.00       | 2.94 | 1.16 | 4/18/2020  |
| Pennsylvania           | 32.81 | 76.27 | 11.05    | 10.29 | 0.00  | 7.59  | 1.25       | 3.51 | 0.08       | 2.32 | 1.07 | 4/20/2020  |
| Texas                  | 33.60 | 41.42 | 10.90    | 11.60 | 15.50 | 39.84 | 0.80       | 5.03 | 0.00       | 2.11 | 0.94 | 4/22/2020  |

(Continued)
| State         | White | Black | Hispanic | Asian | Other | Ratio | Date          |
|--------------|-------|-------|----------|-------|-------|-------|---------------|
| Minnesota    | 75.00 | 6.00  | 0.00     | 5.39  | 1.00  | 4.73  | 3.73         | 0.92 | 4/22/2020    |
| Oklahoma     | 77.70 | 6.20  | 2.20     | 10.85 | 0.60  | 2.10  | 11.70        | 14.72| 0.88 | 4/23/2020    |
| Washington   | 74.00 | 3.00  | 8.00     | 12.89 | 11.00 | 9.46  | 4.00         | 6.06 | 0.82 | 4/22/2020    |
| Arizona      | 40.00 | 3.00  | 10.00    | 31.60 | 2.00  | 3.42  | 18.00        | 6.27 | 0.71 | 4/18/2020    |
| Massachusetts| 30.00 | 4.00  | 5.00     | 12.38 | 2.00  | 6.68  | 2.00         | 3.09 | 0.57 | 4/18/2020    |
| Idaho        | 94.44 | 0.00  | 0.00     | 12.65 | 5.56  | 1.59  | 0.00         | 3.21 | 0.00 | 4/18/2020    |
| Utah         | 73.70 | 0.00  | 10.50    | 14.11 | 10.50 | 3.20  | 0.00         | 3.58 | 0.00 | 4/14/2020    |
| Vermont      | 88.10 | 0.00  | 0.00     | 1.83  | 4.76  | 1.95  | 7.14         | 2.23 | 0.00 | 4/24/2020    |

Note: All races are non-Hispanic, unless otherwise noted. Asian includes Native Hawaiians and Pacific Islanders. Other includes American Indian/Alaska Natives and multiracial individuals. Data includes all states except Alaska, Delaware, Hawaii, Iowa, Maine, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Dakota, Oregon, South Dakota, West Virginia, and Wyoming.

aOf the total number of deaths, the prevalence of deaths belonging to a racial/ethnic group.
bOf the total state or U.S. population, the prevalence of individuals belonging to a racial/ethnic group.
cPercent COVID-19 deaths divided by percent unweighted population among Black non-Hispanics, sorted in descending order, with the exception of first row.
dDate at which COVID-19 death data was collected.
eDeath data aggregated from state health departments. Population data from 2018 American Community Survey.
fDeath and population data from CDC, National Vital Statistics System.
Within each state, we found mostly consistent patterns, with more substantial contrasts seen in states with denser NH Black populations (Supplemental Table 1). Most notably, in New York, more NH Blacks (10.02%) than NH Whites (1.73%) worked in health-care support. In Texas, 13.97% of NH Blacks worked in transportation and material moving versus 5.61% of NH Whites. In DC, 6.50% of NH Blacks versus 0.58% of NH Whites worked in protective services. In South Carolina, NH Blacks outnumbered NH Whites working in cleaning and maintenance of building and grounds (7.88% vs. 1.98%). In Michigan, NH Blacks (13.06%) were more likely than NH Whites (7.01%) to work in production occupations.
In Maryland, more NH Blacks (8.44%) than NH Whites (2.48%) worked in food preparation and serving. Finally, in Mississippi, more NH Blacks (5.50%) than NH Whites (1.88%) worked in personal care and service.

**Correlation Between Occupation and COVID-19 Deaths**

All occupational categories were significantly positively correlated with the percentage of COVID-19 deaths across all states and racial/ethnic groups (all \( p < .0001 \); Table 3). Spearman correlation coefficients ranged from a minimum of 0.52 in farming, fishing, and forestry occupations to a maximum of 0.90 in protective-service occupations. Other occupations with strong correlations to COVID-19 deaths included healthcare support (\( \rho = 0.87 \)) and transportation and material moving (\( \rho = 0.87 \)). By contrast, both computer and mathematical science occupations (\( \rho = 0.62 \)) and life, physical, and social science occupations (\( \rho = 0.65 \)) saw weaker correlations with COVID-19 deaths.

### Table 3. Spearman Correlations between Weighted Occupation Percentages and COVID-19 Death Percentages Across All States and Racial/Ethnic Groups

| Occupation category                                      | \( n \) | \( \rho^* \) |
|----------------------------------------------------------|--------|-------------|
| Protective service                                       | 97     | 0.90        |
| Healthcare support                                       | 118    | 0.87        |
| Transportation and material moving                       | 133    | 0.87        |
| Office and administrative support                        | 142    | 0.87        |
| Personal care and service                                | 132    | 0.85        |
| Food preparation and serving                             | 136    | 0.84        |
| Education, training, and library                         | 133    | 0.84        |
| Community and social service                              | 115    | 0.83        |
| Sales                                                    | 141    | 0.82        |
| Management operations                                    | 139    | 0.82        |
| Installation, maintenance, and repair                    | 116    | 0.81        |
| Health-care practitioner and other technical             | 134    | 0.81        |
| Building and grounds cleaning and maintenance            | 125    | 0.81        |
| Production                                               | 138    | 0.81        |
| Arts, design, entertainment, sports, and media           | 108    | 0.80        |
| Legal                                                    | 97     | 0.79        |
| Business and financial operations                         | 129    | 0.77        |
| Construction and extraction                              | 120    | 0.77        |
| Architecture and engineering                             | 116    | 0.70        |
| Life, physical, and social science                       | 101    | 0.65        |
| Computer and mathematical science                         | 128    | 0.62        |
| Farming, fishing, and forestry                           | 71     | 0.52        |

*Correlation coefficient \( \rho \) sorted in descending order by coefficient size; \( p < .0001 \) for all correlations.

Note: Data includes all states and the District of Columbia except Alaska, Delaware, Hawaii, Iowa, Maine, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Dakota, Oregon, South Dakota, West Virginia, and Wyoming. Armed forces occupation was excluded due to limited sample sizes.
Discussion

In one of the first descriptive studies to examine racial disparities in COVID-19 mortality among essential workers in the United States, we identified a disproportionate number of deaths among NH Blacks relative to their distribution in state populations. For example, NH Blacks comprised 36.49% of COVID-19 deaths in Wisconsin despite making up only 6.17% of the state’s population. With similar trends observed nationwide, our findings contribute to the existing knowledge base concerning health status and outcome inequalities in the United States for NH Blacks compared with NH Whites (Farmer & Ferraro, 2005; Hatzenbuehler, Phelan, & Link, 2013).

NH Blacks were more likely than NH Whites to hold occupations considered essential (e.g., in transportation, health care, food preparation, and cleaning services). NH Blacks disproportionately occupied the top nine occupations that placed them at high risk for contracting COVID-19 and for potentially infecting their households. In March 2020, disaggregated occupational data from Amazon emerged that corroborate our findings, revealing that workers at 10 Amazon warehouses nationwide tested positive for COVID-19 (Greene, 2020). December 2019 workforce data showed that 26.5% of Amazon workers identified as NH Black and 18.5% as Hispanic (About Amazon Staff, 2019). This compares with an overall representation in the U.S. population of 13.4% for NH Blacks and 18.3% for Hispanics (U.S. Census Bureau, 2019d).

Our findings confirmed our central hypothesis that COVID-19 mortality was highest among NH Blacks compared with NH Whites due to NH Blacks holding more essential-worker positions. Although our findings revealed state-specific occupational differences in states with denser NH Black populations, they consistently showed that disparities in NH Black–White mortality were high not only in COVID-19 hotspots but also nearly everywhere across the United States.

Chambers (2020) and Schumaker (2020) report that varied COVID-19 exposure and transmission levels in communities of color stem from a lack of personal protective equipment (PPE) and inability to fully practice social distancing. Nearly half of all urban NH Blacks in the United States live under conditions of hyper-segregation and concentrated poverty (Massey, 2004). NH Black essential workers living in high-density housing may be unable to practice social distancing at home, rendering those they live with disproportionately vulnerable to COVID-19 exposure.

We found that NH Blacks residing in the Midwest—specifically, Wisconsin, Kansas, Missouri, Michigan, and Illinois—have been the hardest hit by COVID-19, with mortality rates ranging from nearly three to six times higher than those of NH Whites. While many Midwestern cities are often designated among the “best places to live” in America (Mishkin, Bhardwaj, Raimonde, & Wilt, 2019; US News & World Report, 2020), for NH Blacks they are among the worst places to call home due to well-documented racial disparities in education, incarceration, employment, income, health, medical care, homeownership, voting access, wages, and numerous
other socioeconomic factors (Boen, 2016; Council on Ethical and Judicial Affairs, 1990; Geruso, 2012; Stebbins & Comen, 2018; Williams & Jackson, 2005).

Despite historical pandemics such as HIV and H1N1 serving as potential guides for early intervention and improved response (Andrulis, Siddiqui, Purtle, & Cooper, 2012; Denning & DiNenno, 2010; Quinn et al., 2011), our findings reveal a lack of progress toward health equity in pandemic response efforts in the United States. The 1985 Heckler report highlighted how NH Black Americans experienced significantly worse health outcomes than their NH White counterparts (Nickens, 1986). Over three decades later, our study magnifies how occupational disparities contribute to the persistence of racialized health inequities. Existing structural injustices will continue to shape racial disparities in this pandemic if essential workers are treated as expendable, and unless companies and governmental leaders prioritize workplace safety and protection as a matter of public health.

A central moral dilemma of the COVID-19 pandemic revolves around “restarting America” to save the economy. We suggest that policymakers must first recognize the economic harms that structural racism has caused for NH Black families across the country. Historical evidence confirms that reallocating medical expenditures to social programs and public health interventions can be of greater benefit to the nation’s economy and health than cutting public health budgets (Correia, Luck, & Verner, 2020; Masters, Anwar, Collins, Cookson, & Capewell, 2017; Tran, Zimmerman, & Fielding, 2017). Delays in implementing pandemic mitigation interventions (e.g., stay-at-home orders, ramp-up of domestic PPE production) interacting with structural racism may explain the high COVID-19 mortality among NH Blacks in the Midwest, but ethical questions surrounding structural inequities in the health-care system require additional interrogation as data on racial disparities in cases and deaths continue to emerge.

**Conclusions and Policy Implications**

While it is evident that COVID-19 does not discriminate, the same cannot be said about the U.S. health-care system. Although we were unable to confirm this for the current study due to a lack of COVID-19–specific provider-level data, overwhelming evidence exists that racial/ethnic minority patients continue to receive worse health care than NH White patients (Agency for Healthcare Research and Quality, 2020; Satcher et al., 2005; Smedley, Stith, & Nelson, 2003). Moreover, when accounting for patient-level factors, health-care providers have been found to exhibit significant implicit bias against NH Blacks (Maina, Belton, Ginzberg, Singh, & Johnson, 2018). The need for policy addressing mandatory provider implicit bias training married to rapid progress toward universal health coverage has been amplified due to COVID-19. Future research should consider modeling the cost-effectiveness role of universal health coverage and public health interventions in overcoming COVID-19.

We conclude from our study that structural disparities, not biology, continue to increase COVID-19–related racial inequalities. In agreement with the findings of
Laster Pirtle (2020) and Milam et al. (2020), our study reveals the need for interventions to address social inequality among groups most at risk for unfair or unequal treatment. The racial disparities among essential workers in the United States that we highlight are a byproduct of longstanding systemic racism and structural inequalities, combined with a lack of public policy aimed at protecting the lives of essential workers who risk their lives daily to protect and/or provide for others. Complementing recommendations by Gross et al. (2020), increased vigilance around policy development and comprehensive strategies requiring the timely collection and public dispersal of state- and county-level data disaggregated by race and ethnicity are critical to enable timely adjustments to response practices during public health crises.

Limitations and Bias

This investigation is not without limitations. First, we used unweighted population distributions of racial/ethnic groups without adjusting for regional or county-level geographical differences in race/ethnicity. Accordingly, disproportionate trends in reported COVID-19 mortality among NH Blacks may not reflect local differences in race/ethnicity. However, we employed this technique explicitly to examine state-level disparities in COVID-19 mortality by race/ethnicity. Next, COVID-19 deaths in the United States are undercounted and incomplete due to lengthy national data-gathering strategies and inconsistent counting methods between states. We did not account for these complex coding discrepancies as doing so may have biased our findings. Third, this study was purely descriptive, as we did not directly test for the causal association between increased essential occupations among NH Blacks and their increased COVID-19 mortality. Yet, it was beyond the scope of this study to account for or investigate the connections between race/ethnicity and other health conditions and how these associations may interact with the impact of occupation on COVID-19 mortality. Fourth, although the CDC provided guidance in April 2020 for certifying deaths due to COVID-19 (National Center for Health Statistics, 2020), many states and the CDC recently confirmed they conflated the results of two different types of test (viral and antibody) for coronavirus. Although testing of active cases was not the focus of our investigation, this compromising practice limits the ability of the United States to precisely determine how testing for this infectious disease has improved, and the COVID-19 incidence we report from the CDC in our introduction should be digested with caution. Last, the impact of COVID-19 on different states at different times results from the rapid evolution of the novel virus as well as from states adopting different social distancing policies at various times. Although success in “flattening the curve” was not necessary for the aim of this study, future research should determine the effects of physical distancing policies on COVID-19 mortality.
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Notes

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