Exposure to coronavirus explains racial disparities in COVID-19 mortality rates

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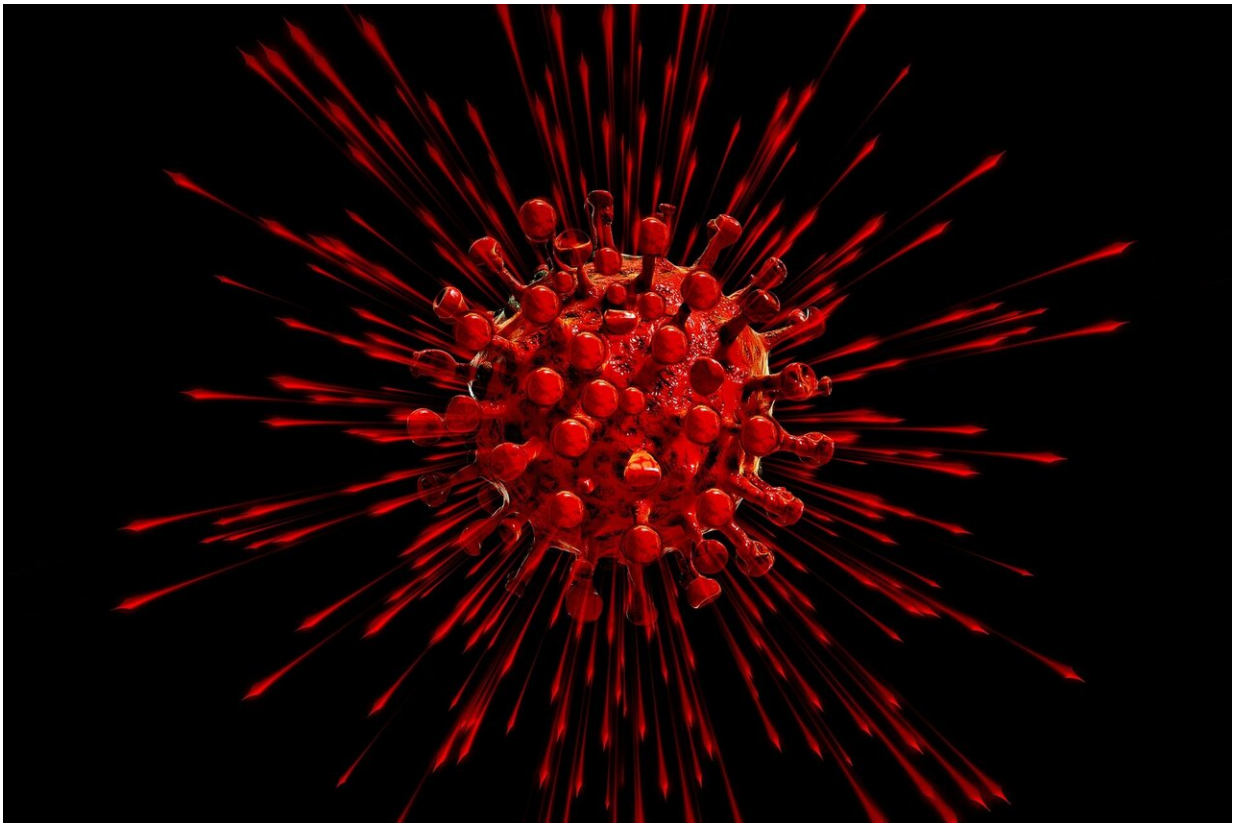

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Large variations in exposure at home, in the community and at work—rather than case-fatality rates—may explain the well-documented racial disparities in COVID-19 mortality during the first wave of the

pandemic last spring, according to a new University of Michigan study.

"Our results highlight yawning gaps in COVID-19 incidence and mortality in Michigan that cannot be explained away by differences in population age and sex composition," said lead author Jon Zelner, assistant professor of epidemiology. "When we consider disparities in mortality from COVID-19, it is critical to examine disparities in both the overall risk of infection as well as the risk of death once an individual is exposed. Each of these has very different implications for prevention.

"As we roll out the first vaccines, understanding the relative contributions of exposure versus case-fatality to disparities will be important for ensuring vaccines are distributed in a way that minimizes rather than exacerbates existing disparities."

Zelner said that while geographic, race/ethnic, age and socioeconomic disparities in mortality have been key features of the first, second, and ongoing third wave of the U.S. COVID-19 epidemic, the extent to which this differential mortality is driven by these disparities, or some combination thereof, remains unknown.

The study, published in Clinical Infectious Diseases, shows that while comorbidities explain in part the higher risk of infection among racial and ethnic minorities, structural factors that impact the ability of members of different race/ethnic and socioeconomic groups to avoid infection are also relevant.

Factors such as mass incarceration, residential segregation and wealth inequality also help explain these inequities.

Using the Michigan Disease Surveillance System from March to July 2020, Zelner and colleagues analyzed data from 49,701 people with a confirmed or probable COVID-19 infection, with known age, race or

ethnicity, state of residence, sex at birth and state prisoner status.

Their analysis shows that COVID-19 incidence and mortality rates among all nonwhite groups were substantially higher than whites, except for Native Americans. The incidence rate was 5.5 times higher for African Americans and three times higher for Latinos, while the death rate was nearly seven times higher for African Americans and twice as high for Latinos, compared to whites.

The average age of reported COVID-19 cases varied by race/ethnicity: 53 for whites, 51 for African Americans and 38 for Latinos. The average age of death from COVID-19 was 79 for whites, 71 for African Americans and 66 for Latinos.

"Our results suggest that the stark differences in crude and adjusted mortality between Black people and all other race/ethnic groups are driven in large part, but not exclusively, by disparities in infection risk at all ages, particularly an extremely high rate of COVID-19 infection among older Black individuals," Zelner said.

While case-fatalities for older Black people were similar to same-aged whites, reported infection rates were 6-8 times greater than their white counterparts.

"Some of this disparity is also driven by the higher case fatality rate among middle-aged Black people, as compared to same-aged whites, in combination with the 5-6 times greater risk of infection among middle-aged Blacks as compared to whites," Zelner said.

More information: Jon Zelner et al. Racial disparities in COVID-19 mortality are driven by unequal infection risks, *Clinical Infectious Diseases* (2020). DOI: 10.1093/cid/ciaa1723

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