Disparities in Vulnerability to Severe Complications from COVID-19 in the United States

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The presence of preexisting health conditions increases vulnerability to severe complications from COVID-19. In the United States, vulnerability based on preexisting health conditions collides with long-standing disparities in health and mortality by race-ethnicity and socioeconomic status, especially in midlife. Outcome disparities manifest as higher hospitalization rates for Blacks and Latinos and staggeringly high mortality rates for Blacks. Despite an understanding of these well-known disparities, we lack a means of translating this knowledge into predictions about the risks of serious complications from COVID-19 across race-ethnicity and socioeconomic status.

Our paper provides the first nationally representative estimates of these risks based on the distribution of underlying health conditions in the population. It describes disparities in risks across race-ethnicity, education, and household income to provide insight into which Americans are more vulnerable to the devastating impact of the virus.

KEY FINDINGS

- Among middle-aged and older Americans, vulnerability to severe COVID-19 complications based on preexisting conditions is 2-3 times greater for those with low versus high income.

- Vulnerability is about 40% higher for middle-aged and older adults with a high school degree or less than adults with a four-year college degree.

- In every age group, Blacks are more vulnerable than Whites, but Hispanics are at lower risk based on fewer preexisting health conditions.

- Blacks, less-educated adults, and low-income individuals face potentially devastating effects of the coronavirus in localities, industries, and occupations with high rates of exposure.

Large Gaps in Vulnerability to COVID-19 across Race-Ethnicity, Education, and Income

In every age group, non-Hispanic Blacks have a higher risk of severe complications than non-Hispanic Whites. Among all adults age 25+, the difference in relative vulnerability between non-Hispanic Blacks and Whites is muted because a larger proportion of NH Whites than NH Blacks are in the oldest age group, 65+.[1,2] Hispanics are at a lower risk overall than NH Whites based on underlying health conditions.

Among all adults age 25+, the underlying health conditions of those with a high school degree or less put them at a 1.6 times higher risk of severe complications from COVID-19 than those with a bachelor's degree. Americans from the lowest household income quartile face nearly three times the risk of severe complications compared to those in the highest income quartile. See Figure 1.

Disparities in Vulnerability to COVID-19 Appear in Midlife

Substantial disparities in vulnerability, especially by race-ethnicity and income, emerge in midlife and remain present as populations age. Among adults age 45-64, NH Blacks are 86% more vulnerable that NH Whites, while Hispanics are 24% less vulnerable. Adults in midlife with only a high school degree are nearly 40% more vulnerable to severe complications than those with a college degree or more. Individuals in the lowest income quartile face over twice the risk of severe complications than those in the highest income quartile. See Figure 1.
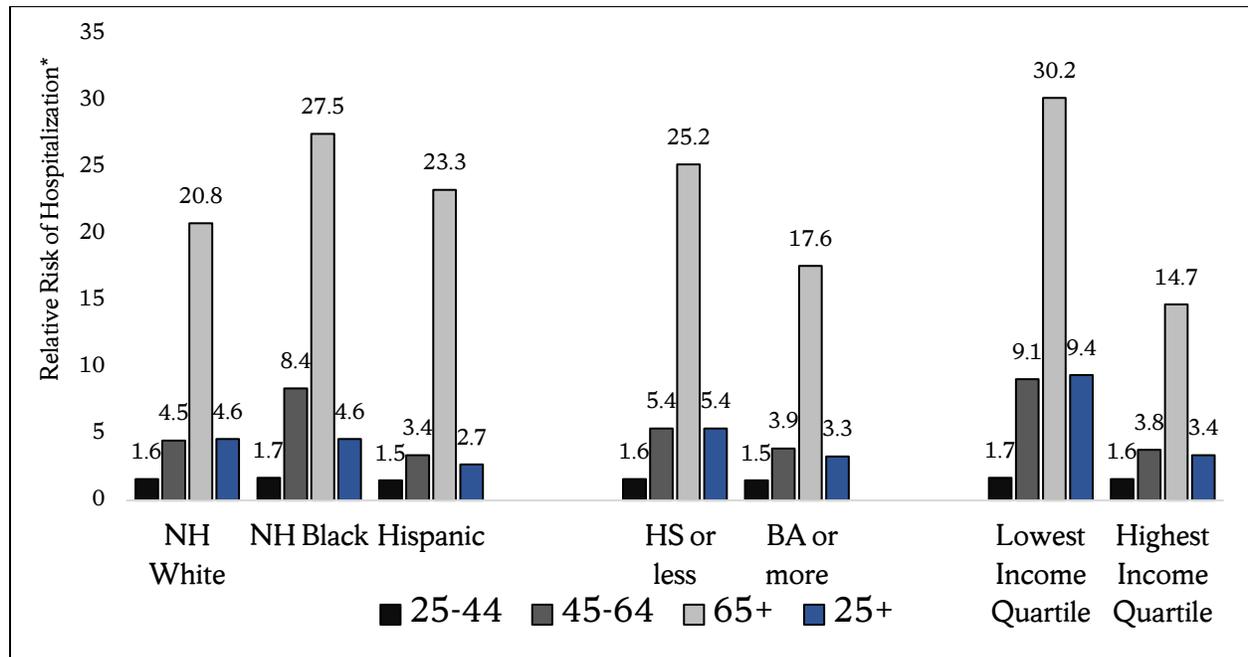

Figure 1. Adults with Low Education and Low Income Have the Highest Vulnerability to Severe Complications from COVID-19

Data Source: Sample is 13,150 household heads and spouses (or cohabiting partners) from the Panel Study of Income Dynamics (PSID). The y-axis shows the median risk of hospitalization from severe complications from a respiratory infection relative to that of a 30-year-old woman with zero underlying health conditions and is calculated using the survey model from DeCaprio et al. (2020)[3] applied to underlying health conditions reported in the PSID.*

Recommendations for Policy and/or Practice

Large gaps in vulnerability to severe complications from COVID-19 across race-ethnicity, education, and income emerge by midlife and remain high at older ages. States and municipalities should consider these risks, especially among NH Blacks, less-educated Americans, and those from low-income households, as they reopen businesses and public services.

Data and Methods

This study uses the Panel Study of Income Dynamics (PSID), a nationally representative dataset of adults in the United States, which includes measures of health, race-ethnicity, and socioeconomic status. We use the health conditions reported in the data to calculate an index of vulnerability to severe complications from respiratory illnesses for these adults.[3] We then calculate the median vulnerability relative to a 30-year old with no health conditions across age group, race-ethnicity, education, and household income. For more details about the data and methods, the full paper is available here.

References

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