



COVID-19 and Ethnicity: What is the evidence?

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Background: Multiple studies have found a disproportionate impact of COVID-19 on ethnic minorities, but whether this is due to confounding factors or represents an increased risk is not yet clear. To assess this, a review was done in May 2020 and then updated in September.

Methods: Twenty databases and key websites were searched for relevant reviews, peer-reviewed publications and preprints on COVID-19 where ethnicity was an objective of the study. Ecological studies were excluded except for Canada where all studies were included. Data from relevant studies were extracted into evidence tables on risk of infection, severity of disease and mortality, and the evidence was summarized.

Results: Between May to September 7, 2020, 34 new studies and one new systematic review were identified for a total of 73 studies and two reviews. There were few Canadian studies. A cross-sectional survey reported a higher likelihood of COVID-19 among Black Canadians who also reported a higher frequency of risk factors such as taking public transportation and having a job that required face-to-face interactions. No Canadian data on ethnicity and hospitalizations, severity or mortality were identified. An ecological study found that a 1% increase in the proportion of Black Canadians in a health unit was associated with double the case count and a 2.1-fold increase in COVID-19 death rates. Most of the international studies were from the United States (US) and United Kingdom (UK).

- **Risk of infection:** Twenty US studies found a higher risk of infection among Blacks and Hispanics compared with Whites. Fourteen UK studies also found a higher risk of infection among Black, South Asian and Asian compared with Whites. The systematic review that assessed risk of infection concluded Blacks, Asians and Hispanics were more likely to test positive for COVID-19 compared to Whites.

- **Hospitalization:** In the US studies, Blacks were found to have a higher risk of hospitalization; for Asians and Hispanics there were mixed results. In the UK, Blacks and South Asians had a higher risk of hospitalization compared with Whites; for Asians and those of mixed ethnicity, the findings were inconsistent. One systematic review found increased risk for Blacks (over all countries) and for Asians (UK only), but the adjusted analyses (age, sex and comorbidities) found no statistically significant association.
- **ICU admission:** The more recent US studies had conflicting results regarding the risk of ICU admissions for Blacks and Hispanics compared with Whites. The UK studies showed a higher risk of ICU admission for Blacks and South Asians. The systematic review found Asians were over-represented in the ICU in UK studies but in the meta-analysis of adjusted results for Blacks and Hispanics, there was no significant association.
- **Mechanical ventilation:** A few recent studies examined the risk of ventilation by ethnicity. A US study reported no association for Blacks and Hispanics. A UK study found Blacks and Asians were more likely to need ventilation compared to Whites. The systematic review found no association for Blacks and Hispanics, however a higher risk of ventilation for Asians (four studies) persisted in an age and sex-adjusted analysis.
- **Mortality:** Among hospitalized patients, there were no associations with ethnicity and mortality. However, in studies that looked at the whole population, there was high heterogeneity across studies regarding ethnicity and mortality. The systematic reviews reported no positive association between mortality and being Black or Asian. There were three studies on ethnicity and Multisystem Inflammatory Syndrome in Children (MIS-C); all found a disproportionate number of MIS-C cases among non-White children.

Conclusion: The more recent large cohort studies have sufficient power to control for many confounding variables. Overall, it appears that Blacks, Asians and Hispanics may be at a higher risk of COVID-19 infection given that the confounding variables measured, such as socio-economic factors and co-morbidities, did not entirely account for this association.