

# Social and racial inequalities as contributing factors to COVID-19 vulnerability in São Paulo, Brazil

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While COVID-19 has significantly impacted the health of populations worldwide, there is still little evidence regarding its differential health effects on disadvantaged population groups. Understanding the magnitude of such health inequities is particularly important for developing countries like Brazil, which is marked by one of the highest levels of social inequalities in the world. To address this knowledge gap, Li et al. (2021) (i) estimated the social and racial inequalities in the risk of hospitalisation and death by COVID-19, and (ii) showed how vulnerability to COVID-19 is shaped by pre-existing social and health inequities in São Paulo, Brazil's most populous state. This analysis focuses on severe cases of acute respiratory infection (SARI), which characterises COVID-19, reported from March to August 2020. High resolution data were drawn from epidemiological surveillance records, serological and household surveys, information on non-pharmaceutical interventions (NPI), and mobility data from mobile phone records.

Results show that between April and July 2020, people from the poorest 40 per cent of census tracts had an 8 per cent higher risk of hospitalisation and were 60 per cent more likely to die from COVID-19 throughout the study period. Black and *Pardo* (mixed ethnicity) individuals were 37 per cent and 21 per cent more likely to be hospitalised, respectively, and 14 per cent and 21 per cent more likely to die from COVID-19 relative to White individuals. Furthermore, patients in public hospitals were 40 per cent more likely to die from COVID-19 than those in private hospitals. Uneven access to health services helps explain some of the inequality in the risk of death from COVID-19, but not all.

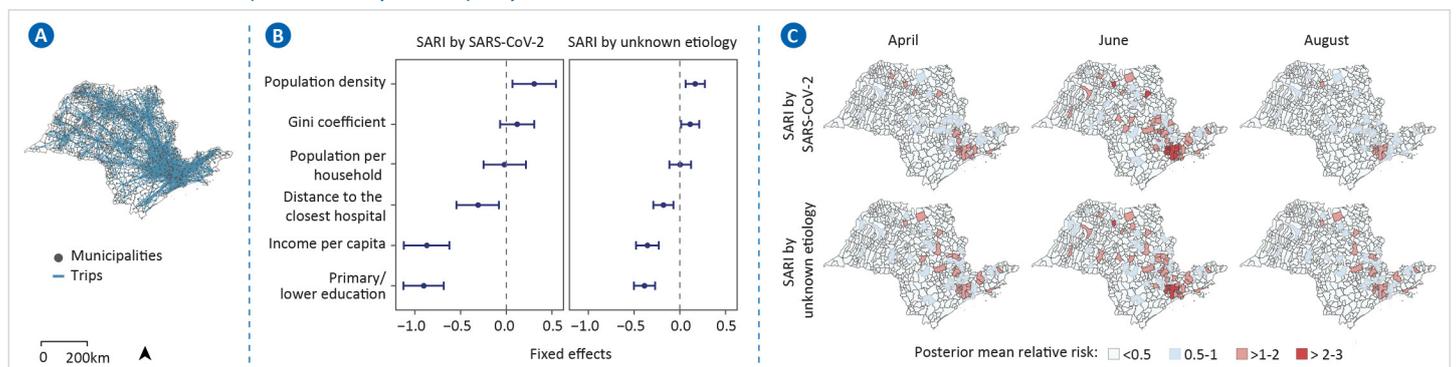
Similar results were also found when looking at mild cases. Serological data showed that anti-SARS-CoV-2 antibodies were highest in Black and *Pardo* blood

donors and those with low educational attainment in the city of São Paulo. Black and *Pardo* populations, as well as those with low educational attainment, have higher prevalence of multiple comorbidities, including chronic respiratory and heart conditions known to aggravate COVID-19 severity. These populations are also more likely to have no access to social security and to be employed in precarious job positions that require working in person, thus hindering their ability to follow social isolation recommendations. These findings indicate that vulnerability to COVID-19 is strongly influenced by pre-existing health inequities, comorbidities, access to health care and socioeconomic conditions.

When looking at daily mobility figures using mobile phone data for the metropolitan area of São Paulo (which comprises 70 per cent of all cases reported in the state), it was observed that individuals in wealthier neighbourhoods and in those with predominantly White residents isolated to a greater extent, did so earlier, and sustained that isolation for a longer period. Findings also indicate that the risk of COVID-19 hospitalisation is higher in cities with higher population exchange with the city of São Paulo. These cities also tend to have lower socioeconomic status (Figure 1).

The key takeaway from the study is that disadvantaged groups (alongside healthcare workers) should be given priority in COVID-19 vaccination campaigns. This would help slow down and prevent community transmission of SARS-CoV-2 and help reduce health inequities. Finally, the study's findings highlight the need to further investigate how mortality in different hospital settings is influenced by unequal access to quality care within both public and private health care facilities.

**FIGURE 1 — Risk of hospitalisation by municipality in the state of São Paulo**



Notes: (A) Human movement between municipalities based on anonymised mobile phone data retrieved between March and August 2020. (B) Relationship between socioeconomic covariates and SARI risk (fixed effects) from regression model. (C) Relative risk of SARI hospitalisation at the municipality level.

Source: Authors' elaboration.

**Reference:**

Li S. L. et al. 2021 "Higher Risk of Death from COVID-19 in Low-Income and Non-White Populations of São Paulo, Brazil." *BMJ Global Health* 6 (4): e004959. <<https://doi.org/10.1136/bmjgh-2021-004959>>. Accessed 3 May 2021.

**Notes:**

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