



# Covid-19: Known risk factors fail to explain the increased risk of death among people from ethnic minorities

Jacqui Wise

London, UK

People from Asian and black ethnic backgrounds are at increased risk of dying from covid-19 and, contrary to speculation, this can only be partly explained by comorbidity, deprivation, or other risk factors, according to data from the largest study to date.<sup>1</sup>

The pseudonymised health data of over 17.4 million adults in the UK, which included 5683 hospital deaths attributed to covid-19, was analysed using the OpenSAFELY analytics platform. The study, which is published as a preprint before peer review, covered the time from 1 February to 25 April 2020.

Academics from Oxford University and the London School of Hygiene and Tropical Medicine (LSHTM) working on behalf of NHS England and in partnership with NHSX confirmed that men are at increased risk from covid-19 death as well as older people and those with uncontrolled diabetes or obesity.

The study found that black people had more than double the risk of dying from covid-19 compared with those with ethnicity recorded as white (age-sex adjusted hazard ratio 2.17, 95% CI 1.84-2.57). After adjusting for deprivation and clinical risk factors the hazard ratio was still 1.71 (95% CI 1.44-2.02). For Asian people the age-sex adjusted hazard ratio was 1.95 (95% CI 1.73-2.18) which was reduced to 1.62 after full adjustment for other risk factors (95% CI 1.43-1.82).

Liam Smeeth, professor of clinical epidemiology at LSHTM and co-lead on the study, told a briefing organised by the Science Media Centre, “Underlying illnesses or deprivation explains only about a quarter of this increased risk.”

He said that more research was needed on whether some of the increased risk is from greater occupational exposure with proportionally more people from black and minority ethnic (BAME) backgrounds working in sectors such as healthcare or transport. Research is also needed into a range of factors throughout the disease pathway including access to testing, treatment, and intensive care.

The analysis also found a consistent pattern of increasing risk with greater deprivation, with the most deprived quintile having a hazard ratio of 1.75 compared with the least deprived. Again, very little of the increased risk associated with deprivation was explained by pre-existing disease or clinical risk factors.

The study found a marked gradient of increasing risk of in-hospital covid-19 death associated with increasing obesity,

from a hazard ratio of 1.27 for body mass index of 30-35 to 2.27 for a BMI over 40.

Uncontrolled diabetes—with a HbA1c >58 mmol/mol—was associated with more than double the risk of in-hospital covid-19 death (HR 2.36, 95% CI 2.18-2.56). Severe asthma was associated with an increase in risk (HR 1.27 for those patients with recent oral corticosteroid use) although not as great as has been seen with influenza. The results also confirmed that men are at increased risk from covid-19 death compared with women (HR 1.99, 95% CI 1.88-2.10).

Age was also a risk factor for death. People aged 60 to 70 had double the risk of dying as those aged 50 to 60, and those over 80 had 12 times the risk.

Ben Goldacre, director of the DataLab in the Nuffield Department of Primary Care Health Sciences at the University of Oxford and co-study lead, said that because they had access to anonymised primary care records they had very detailed information regarding demographics, medications, and comorbidities. “Very few other countries have this scale and quality of data,” he said.

The OpenSAFELY platform will be used for further analyses including investigations into the effect of specific drugs routinely prescribed in primary care—such as angiotensin converting enzyme inhibitors—on the risk of covid-19 hospitalisations, intensive care admissions, or deaths. The researchers are also looking at the risks for children and a range of underlying health conditions.

The study comes as latest data from the Office for National Statistics show that black people are more than four times more likely to die from covid-19 than white people.<sup>2</sup> The analysis looked at deaths occurring between 2 March and 10 April 2020, registered by 17 April. However, as ethnicity is not recorded on death certificates, deaths involving covid-19 were linked to the 2011 census.

When taking age into account, black males were 4.2 times more likely to die from covid-19 than white males and black women were 4.3 times more likely to die than white women. After adjusting for measures of self-reported health and disability and other sociodemographic characteristics from the 2011 census, black people were still almost twice as likely as white people to die a covid-19 related death.

Males in the Bangladeshi and Pakistani ethnic group were 1.8 times more likely to have a covid-19 related death than white males; for females the figure was 1.6 times more likely.

Commenting on the statistics, BMA council chair Chand Nagpaul said, "This is deeply worrying and highlights the importance of ensuring that urgent action is taken to protect members of the BAME community, those working on the front line, key workers, and indeed the wider community."

- 1 Williamson E, Walker A, Bhaskaran K, et al. OpenSAFELY: factors associated with covid-19 related hospital death in the linked electronic health records of 17 million adult NHS patients. 7 May 2020. <https://opensafely.org/outputs/2020/05/covid-risk-factors>.
- 2 Office for National Statistics. Coronavirus (covid-19) related deaths by ethnic group, England and Wales: 2 March 2020 to 10 April 2020. 7 May 2020. [www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/articles/coronavirusrelateddeathsbyethnicgroupenglandandwales/2march2020to10april2020](http://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/articles/coronavirusrelateddeathsbyethnicgroupenglandandwales/2march2020to10april2020).

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