Ethnicity and COVID-19: an urgent public health research priority

As the coronavirus disease 2019 (COVID-19) pandemic continues advancing globally, reporting of clinical outcomes and risk factors for intensive care unit admission and mortality are emerging. Early Chinese and Italian reports associated increasing age, male sex, smoking, and cardiometabolic comorbidity with adverse outcomes.[1] Striking differences between Chinese and Italian mortality indicate ethnicity might affect disease outcome, but there is little to no data to support or refute this.

Ethnicity is a complex entity composed of genetic make-up, social constructs, cultural identity, and behavioural patterns.[2] Ethnic classification systems have limitations but have been used to explore genetic and other population differences. Individuals from different ethnic backgrounds vary in behaviours, comorbidities, immune profiles, and risk of infection, as exemplified by the increased morbidity and mortality in black and minority ethnic (BME) communities in previous pandemics.[3]

As COVID-19 spreads to areas with large cosmopolitan populations, understanding how ethnicity affects COVID-19 outcomes is essential. We therefore reviewed published papers and national surveillance reports on notifications and outcomes of COVID-19 to ascertain ethnicity data reporting patterns, associations, and outcomes.

Only two (7%) of 29 publications reported ethnicity disaggregated data (both were case series without outcomes specific to ethnicity). We found that none of the ten highest COVID-19 case-notifying countries reported data related to ethnicity; UK mortality reporting, for example, does not require information on ethnicity. This omission seems stark given the disproportionate number of deaths

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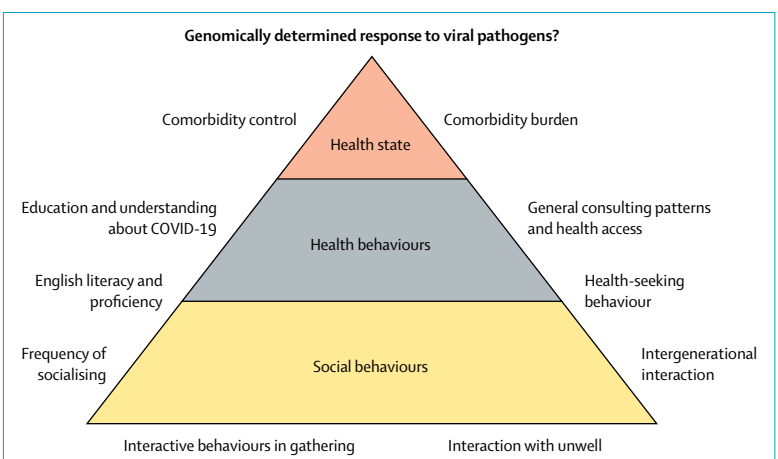

Figure: **The potential interaction of ethnicity related factors on SARS-CoV-2 infection likelihood and COVID-19 outcomes**
COVID-19=coronavirus disease 2019. SARS-CoV-2=severe acute respiratory syndrome coronavirus 2.

For the **full letter to the UK Government** see https://ephg-covid-19.org/

See Online for appendix

among health-care workers from BME backgrounds.[4,5] Recent UK data from intensive care units indicate that over a third of patients are from BME backgrounds.[6]

Given previous pandemic experience, it is imperative that policy makers urgently ensure ethnicity forms part of a minimum dataset. More importantly, ethnicity-disaggregated data must occur to permit identification of potential outcome risk factors through adjustment for recognised confounders.

BME communities might be at increased risk of acquisition, disease severity, and poor outcomes in COVID-19 for several reasons (figure). Specific ethnic groups, such as south Asians, have higher rates of some comorbidities, such as diabetes, hypertension, and cardiovascular diseases, which have been associated with severe disease and mortality in COVID-19.[7] Ethnicity could interplay with virus spread through cultural, behavioural, and societal differences including lower socioeconomic status, health-seeking behaviour, and intergenerational cohabitation. Disentangling the relative importance of these factors requires both prospective studies, focusing on quantifying absolute risks and outcomes, and qualitative studies of behaviours and responses to pandemic control messages.

If ethnicity is found to be associated with adverse COVID-19 outcomes, this must directly, and urgently, inform public health interventions globally.

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*Manish Pareek, Mansoor N Bangash, Nilesh Pareek, Daniel Pan, Shirley Sze, Jatinder S Minhas, Wasim Hanif, Kamlesh Khunti
mp426@le.ac.uk

Department of Respiratory Sciences (MP, DP), Department of Cardiovascular Sciences (SS, JSM), and Leicester Diabetes Centre (KK), University of Leicester, Leicester LE1 7RH, UK; Department of Infection and HIV Medicine, University Hospitals Leicester NHS Trust, Leicester, UK (MP, DP); Department of Intensive Care (MNB) and Department of Diabetes and Endocrinology (WH), University Hospitals Birmingham NHS Foundation Trust, Birmingham, UK; Institute of Clinical Sciences, University of Birmingham, Birmingham, UK (MNB); and School of Cardiovascular Medicine and Sciences, King's BHF Centre of Excellence, London, UK (NP)

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Chen S, Zhang Z, Yang J, et al. Fangcang shelter hospitals: a novel concept for responding to public health emergencies. Lancet *2020;* **395:** *1305–14*—In this Health Policy, in the fourth paragraph of the section describing five essential functions of Fangcang shelter hospitals, two of the clinical criteria for admission were incorrect. The second and third criteria should have been blood oxygen saturation of 93% or lower and a partial pressure of arterial oxygen to fraction of inspired oxygen ratio of 300 mm Hg or less, respectively. These corrections have been made to the online version as of April 17, 2020.

Black JRM, Bailey C, Przewrocka J, Dijkstra KK, Swanton C. COVID-19: the case for health-care worker screening to prevent hospital transmission. Lancet *2020;* **395:** *1418–20*—In this Correspondence, two authors, Joanna Przewrocka and Krijn K Dijkstra, were erroneously left out of the author byline. This correction has been made to the online version as of April 17, 2020, and the printed version is correct.

Zakham F, Vapalahti O, Lashuel HA. Education and research are essential for lasting peace in Yemen. Lancet *2020;* **395:** *1114*—In this Correspondence, the spelling of Hilal A Lashuel's name was incorrect. The correction has been made to the online version as of April 22, 2020.