Disentangling the association of ethnicity and COVID-19: an urgent public health research priority

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As pandemic coronavirus disease 2019 (COVID-19) continues advancing globally, clinical outcome and risk factor reporting for intensive care unit (ICU) 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 rates indicate ethnicity may affect disease outcome, but there is little/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, 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 impacts on 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 2/28 (7%) of publications reported ethnicity disaggregated data (both case-series without ethnicity-specific outcomes). We found that none of the 10 highest COVID-19 case-notifying countries reported ethnicity-related data; UK mortality reporting does not require information on ethnicity. This omission seems stark given the disproportionate number of deaths amongst healthcare workers from BME backgrounds. Recent UK Intensive Care Unit data indicates that over a third of patients are from BME backgrounds.[4]

Given previous pandemic experience, it is imperative 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. Certain ethnic groups such as south Asians have higher rates of certain co-morbidities such as diabetes mellitus, hypertension and cardiovascular diseases which have been associated with severe disease and mortality in COVID-19.[5] Ethnicity could interplay with virus spread through cultural, behavioural and societal differences including lower socio-economic status, health-seeking behaviour and inter-generational co-habitation. 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 confirmed to be associated with adverse COVID-19 outcomes, this must directly, and urgently, inform public health interventions globally.

Competing interests

Dr. Pareek reports grants and personal fees from Gilead Sciences outside the submitted work. Dr. Minhas reports grants from National Institute for Health Research during the conduct of the study. Professor Hanif reports he is Trustee of the South Asian Health Foundation. Professor Khunti reports he is Director of the BME Centre, NIHR ARC East Midlands. All other authors have nothing to declare.

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Figure 1 Schematic diagram highlighting the potential interaction of ethnicity related factors on SARS-CoV-2 infection likelihood and COVID-19 outcomes