ELSEVIER

Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

regularly tested population and the untested remainder. The untested population can be monitored by testing population samples and by NHS number linkage to hospital diagnoses and general practitioner records. Complementary strategies, including contact tracing and telephone applications, will be crucial in the unscreened population and might enable testing to be done less frequently, as prevalence falls. Testing would be voluntary, but penalties for breaching quarantine after a positive test in a household could be considered. Helplines would be provided to support quarantined households with access to income compensation, mental health support, and food delivery.

National roll-out of this SARS-CoV-2 testing strategy would entail mobilisation of community assets. Public advisory groups and citizens supporting these efforts would be indispensable. A voluntary Dunkirk spirit would be the only way for 10 million tests to be done daily by collaborating university and commercial laboratories with the necessary quality-checked equipment (PCR machines). PCR reagents should be obtained from manufacturers, rather than clinical test companies, and exempt from regulatory requirements on medical testing to limit costs and ensure supplies. This might require emergency legislation.

*Julian Peto, *Nisreen A Alwan, Keith M Godfrey, Rochelle A Burgess, David J Hunter, Elio Riboli, Paul Romer, on behalf of 27 signatories
julian.peto@lshtm.ac.uk; n.a.alwan@soton.ac.uk

London School of Hygiene & Tropical Medicine, London WC1E 7HT, UK (JP); School of Primary Care, Population Sciences and Medical Education, Faculty of Medicine (NAA) and MRC Lifecourse Epidemiology Unit and NIHR Southampton Biomedical Research Centre (KMG), University of Southampton, Southampton SO16 6YD, UK;
University Hospital Southampton, NHS Foundation Trust, Southampton, UK (KMG); Institute for Global Health, University College London, London, UK (RAB); Nuffield Department of Population Health, University of Oxford, Oxford, UK (DJH); School of Public Health, Imperial College London, London, UK (ER); Imperial College Healthcare NHS Trust, London, UK (ER); and New York University, New York City, NY, USA (PR)

1   Scientific Advisory Group for Emergencies. SPI-M-O: consensus view on behavioural and social interventions. March 16, 2020. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/873729/06-spi-m-o-consensus-view-on-behavioural-and-social-interventions.pdf (accessed April 17, 2020).
2   Peto J. Covid-19 mass testing facilities could end the epidemic rapidly. BMJ 2020; 368: m1163.

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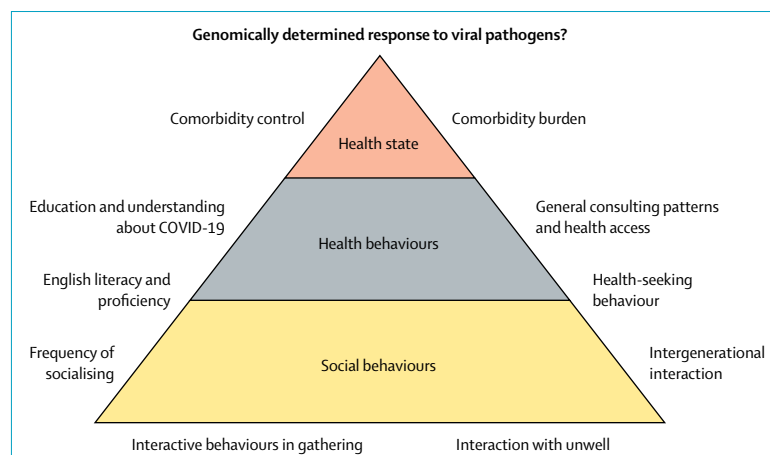
Figure: The potential interaction of ethnicity related factors on SARS-CoV-2 infection likelihood and COVID-19 outcomes
COVID-19=coronavirus disease 2019. SARS-CoV-2=severe acute respiratory syndrome coronavirus 2.

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.

*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)

1   Wu Z, McGoogan JM. Characteristics of and Important Lessons From the Coronavirus Disease 2019 (COVID-19) Outbreak in China: summary of a report of 72314 cases from the Chinese Center for Disease Control and Prevention. JAMA 2020; 323: 1239–42.

2   Lee C. "Race" and "ethnicity" in biomedical research: how do scientists construct and explain differences in health? Soc Sci Med 2008; 68: 1183–90.

3   Zhao H, Harris RJ, Ellis J, Pebody RG. Ethnicity, deprivation and mortality due to 2009 pandemic influenza A(H1N1) in England during the 2009/2010 pandemic and the first post-pandemic season. Epidemiol Infect 2015; 143: 3375–83.

4   Siddique H. UK government urged to investigate coronavirus deaths of BAME doctors. April 10, 2020. https://www.theguardian.com/society/2020/apr/10/uk-coronavirus-deaths-bame-doctors-bma (accessed April 20, 2020).

5   Croxford R. Coronavirus cases to be tracked by ethnicity. April 18, 2020. https://www.bbc.co.uk/news/health-52338101 (accessed April 20, 2020).

6   Intensive Care National Audit and Research Centre. ICNARC COVID-19 study case mix programme. London: Intensive Care National Audit and Research Centre, 2020.

7   Tillin T, Hughes AD, Mayet J, et al. The relationship between metabolic risk factors and incident cardiovascular disease in Europeans, South Asians, and African Caribbeans. J Am Coll Cardiol 2013; 61: 1777–86.

Department of Error

Hardy J, Baggott C, Fingleton J, et al. Budesonide-formoterol reliever therapy versus maintenance budesonide plus terbutaline reliever therapy in adults with mild to moderate asthma (PRACTICAL): a 52-week, open-label, multicentre, superiority, randomised controlled trial. Lancet 2019; 394: 919–28—The appendix of this Article has been corrected as of April 30, 2020.

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.