



# Life expectancy by ethnic group in England

## A complex picture of disparities emerges from latest ONS analysis

Raghib Ali, Veena Raleigh,<sup>2</sup> Azeem Majeed,<sup>3</sup> Kamlesh Khunti<sup>4</sup>

<sup>1</sup> MRC Epidemiology Unit, University of Cambridge, Cambridge, UK

<sup>2</sup> Kings Fund, Health Policy, London, UK

<sup>3</sup> Imperial College, Primary Care, London, UK

<sup>4</sup> University of Leicester, Leicester, UK

Correspondence to: R Ali [raghib.ali@mrc-epid.cam.ac.uk](mailto:raghib.ali@mrc-epid.cam.ac.uk)

Cite this as: *BMJ* 2021;375:e068537 <http://dx.doi.org/10.1136/bmj-2021-068537>

Published: 09 November 2021

The disproportionate effect of covid-19 on ethnic minority populations led to a welcome and overdue focus on ethnic disparities in health.<sup>1</sup> Their higher covid-19 mortality was widely viewed as having exacerbated pre-existing health inequalities, particularly for Black and South Asian people.<sup>1,2</sup> Although previous evidence had shown a more mixed pattern of ethnic differences in health outcomes,<sup>3,4</sup> our knowledge and understanding have been limited by a lack of nationally representative data on mortality by ethnic group. The first Office for National Statistics (ONS) estimates of life expectancy and cause-specific mortality by ethnicity based on census data are therefore timely.<sup>5,6</sup>

These show that for the prepandemic period 2012-19, the White ethnic group had lower life expectancy and higher overall mortality than all ethnic minority groups except the Mixed group. For individual causes of death, the picture was more varied, with ethnic minority groups generally having lower mortality than the White group for half of the 30 leading causes of death (responsible for about 80% of all deaths). Potential reasons for this include the healthy migrant effect—particularly for more recent migrants—and lower rates of tobacco and alcohol use in certain ethnic minority groups.<sup>7,8</sup>

Although labelled as experimental statistics, the methods used by ONS linking census records to patient registers and death records are not new. ONS used the same data linkage and similar methods for their covid-19 mortality analyses, which have been so critical to our understanding of ethnic disparities in outcomes.<sup>9</sup> Similar methods were also used to estimate life expectancy and cause-specific mortality by ethnic group in Scotland.<sup>10-12</sup>

The latest analyses have some unavoidable limitations, including the differential likelihood of data linkage and loss to follow-up by ethnic group, which the ONS corrected for. For every ethnic group, the analysis achieved around 90% linkage between the census and the patient register; these records then linked to 88% of all deaths occurring during the study period.<sup>5,13</sup> Previous work based on ONS longitudinal study data suggests that these biases reduce the mortality advantage for ethnic minorities but do not reverse it.<sup>14</sup>

However, the ONS analyses also have unique advantages. Ethnicity recorded in the census is self-assigned and complete, whereas ethnicity coding in healthcare records may not be.<sup>15</sup> The whole population sample used by the ONS (over 50 million people with over 7 million from ethnic minorities) is much larger than previous studies, enabling analysis of cause-specific mortality by individual ethnic groups.

The results are consistent with previous evidence of ethnic differences in disease incidence and prevalence, including, for example, a higher risk of cardiovascular disease and diabetes and lower risk of many cancers and chronic respiratory disease in South Asian groups.<sup>3,4</sup> The analyses were also sensitive enough to detect differential mortality for uncommon causes of death, including HIV and tuberculosis.<sup>6</sup>

ONS findings for the prepandemic period are also consistent with other analyses showing lower mortality among ethnic minority groups than in the White group,<sup>16,17</sup> and the fact that “all cancers” are now the leading cause of death in England where rates are highest in the White group.<sup>5</sup>

ONS analyses for 2020, however, show that covid-19 has reduced the mortality advantage of some ethnic groups and reversed it in the Bangladeshi and Pakistani groups as well as Black Caribbean males.<sup>18</sup> The difference in outcome between covid-19 and other major causes of death is perhaps unsurprising given differences in key risk factors. The higher covid-19 mortality in some ethnic minorities is primarily because of a higher risk of infection driven by a higher likelihood of living in densely populated urban areas; in larger and multigenerational households (especially among older Bangladeshi and Pakistani adults); and to work in public facing roles such as health and social care.<sup>19,20</sup>

In conclusion, despite a widely held perception of uniform ethnic minority disadvantage, ONS data show that ethnic differences in health outcomes are more complex and go in both directions. Although these analyses fill important gaps in our knowledge, further work is needed to understand the causes of large ethnic differences in many leading causes of death—including the higher mortality among white people from many cancers, dementia, and chronic respiratory disease—as well as exploring the paradox of why some ethnic groups have better mortality outcomes than others despite higher levels of deprivation. Ethnic disparities in maternal and infant mortality as well as in morbidity, focusing particularly on mental health, also need further investigation and action.

The new Office for Health Improvement and Disparities provides an ideal opportunity to do this, as well as tackling the large and longstanding health inequalities associated with deprivation and geography. A cross-government strategy, with the NHS and public health services working together, to reduce these inequalities is now required. The covid-19 pandemic has shown the agility with which government and public services can respond. Similar action is now required to reduce the gross health

## inequalities that have blighted our society for too long.

Competing interests: We have read and understood BMJ policy on declaration of interests and declare the following interests: KK is director of the University of Leicester Centre for Black Minority Ethnic Health, trustee of the South Asian Health Foundation, and chair of the ethnicity subgroup of the UK Scientific Advisory Group for Emergencies (SAGE). RA is an independent expert adviser on covid-19 and ethnicity to the Race Disparity Unit, Cabinet Office.

Provenance and peer review: Not commissioned; externally peer reviewed.

- 1 Public Health England. Beyond the data: understanding the impact of COVID-19 on BAME groups. 2020. <https://www.gov.uk/government/publications/covid-19-understanding-the-impact-on-bame-communities>
- 2 Razai MS, Kankam HKN, Majeed A, Esmail A, Williams DR. Mitigating ethnic disparities in covid-19 and beyond. *BMJ* 2021;372:m4921. doi: 10.1136/bmj.m4921 pmid: 33446485
- 3 King's Fund. The health of people from ethnic minority groups in England. 2021 <https://www.kingsfund.org.uk/publications/health-people-ethnic-minority-groups-england>
- 4 Ali R, Chowdhury A, Forouhi N, et al. Ethnic disparities in the major causes of mortality and their risk factors – a rapid review. 2021. <https://www.gov.uk/government/publications/the-report-of-the-commission-on-race-and-ethnic-disparities-supporting-research/ethnic-disparities-in-the-major-causes-of-mortality-and-their-risk-factors-by-dr-raghib-ali-et-al>
- 5 Office for National Statistics. Ethnic differences in life expectancy and mortality from selected causes in England and Wales: 2011 to 2014. 2021. <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/lifeexpectancies/articles/ethnicdifferencesinlifeexpectancyandmortalityfromselectedcausesinenglandandwales/2011to2014>
- 6 Office for National Statistics. Mortality from leading causes of death by ethnic group, England and Wales: 2012 to 2019. 2021. <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/articles/mortalityfromleadingcausesofdeathbyethnicgroupenglandandwales/2012to2019>
- 7 Office for National Statistics. Advancing knowledge on ethnic differences in health. 2021. <https://blog.ons.gov.uk/2021/08/19/advancing-knowledge-on-ethnic-differences-in-health/>
- 8 Raleigh V. Ethnic differences in life expectancy in England and Wales: the unexpected? 2021 <https://blogs.bmj.com/bmj/2021/08/20/ethnic-differences-in-life-expectancy-in-england-and-wales-the-unexpected/>
- 9 Ayoubkhani D, Nafilyan V, White C, et al. Ethnic-minority groups in England and Wales – factors associated with the size and timing of elevated COVID-19 mortality: a retrospective cohort study linking census and death records. *Int J Epidemiol* 2021;49:1951-62. doi: 10.1093/ije/dyaa208 pmid: 33349855
- 10 Gruer L, Cézard G, Clark E, et al. Life expectancy of different ethnic groups using death records linked to population census data for 4.62 million people in Scotland. *J Epidemiol Community Health* 2016;70:1251-4. doi: 10.1136/jech-2016-207426 pmid: 27473157
- 11 Bhopal R, Fischbacher C, Povey C, et al. Cohort profile: Scottish health and ethnicity linkage study of 4.65 million people exploring ethnic variations in disease in Scotland. *Int J Epidemiol* 2011;40:1168-75. doi: 10.1093/ije/dyq118 pmid: 20657021
- 12 Bhopal RS, Gruer L, Cezard G, et al. Mortality, ethnicity, and country of birth on a national scale, 2001-2013: A retrospective cohort (Scottish Health and Ethnicity Linkage Study). *PLoS Med* 2018;15:e1002515. doi: 10.1371/journal.pmed.1002515 pmid: 29494587
- 13 Office for National Statistics. Percentage of males and females enumerated at 2011 Census which linked to patient register between 2011 to 2013 by ethnic group: England and Wales 2011. <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/lifeexpectancies/adhocs/13894percentageofmalesandfemalesenumeratedat2011censuswhichlinkedtopatientregisterbetween2011to2013byethnicgroupenglandandwales2011>
- 14 Wallace M. Low migrant death rates: actual or artefactual? 2019 <https://www.niussp.org/migration-and-foreigners/low-migrant-death-rates-actual-or-artefactual-mortalite-des-immigres-realite-ou-artefact/>
- 15 Nuffield Trust. Ethnicity coding in English health service datasets. 2021 <https://www.nuffield-trust.org.uk/research/ethnicity-coding-in-english-health-service-datasets>
- 16 Public Health England. Disparities in the risk and outcomes of COVID-19. 2020. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/908434/Disparities\\_in\\_the\\_risk\\_and\\_outcomes\\_of\\_COVID\\_August\\_2020\\_update.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/908434/Disparities_in_the_risk_and_outcomes_of_COVID_August_2020_update.pdf)
- 17 Bhaskaran K, Bacon S, Evans SJ, et al. Factors associated with deaths due to COVID-19 versus other causes: population-based cohort analysis of UK primary care data and linked national death registrations within the OpenSAFELY platform. *Lancet Reg Health Eur* 2021;6:100109. doi: 10.1016/j.lanpe.2021.100109 pmid: 33997835
- 18 Office for National Statistics. Provisional age-standardised mortality rates for all-cause mortality, deaths due to COVID-19, and deaths due to other causes by ethnic group, sex, and Index of Multiple Deprivation (IMD) quintile, England: 1 January 2020 to 31 December 2020. 2021 <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/adhocs/13360provisionalagestandardisedmortalityratesforallcaus mortalitydeathsduetocovid19anddeathsduetoothercasesbyethnicgroupsexandindexofmultipledeprivationimdqintileengland1january2020to31december2020>
- 19 Office for National Statistics. Updating ethnic contrasts in deaths involving the coronavirus (COVID-19), England: 24 January 2020 to 31 March 2021. 2021 <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/articles/updatingethniccontrastsindeaths involvingthecoronaviruscovid19englandandwales/24january2020to31march2021>
- 20 Mathur R, Rentsch CT, Morton CE, et al. OpenSAFELY Collaborative. Ethnic differences in SARS-CoV-2 infection and COVID-19-related hospitalisation, intensive care unit admission, and death in 17 million adults in England: an observational cohort study using the OpenSAFELY platform. *Lancet* 2021;397:1711-24. doi: 10.1016/S0140-6736(21)00634-6 pmid: 33939953