



Coronavirus outbreak

Covid-19 impact on ethnic minorities linked to housing and air pollution

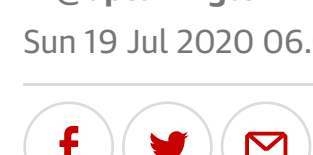
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Exclusive: Minority ethnic patients twice as likely to live in deprived environments and to be admitted to intensive care

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▲ The study followed 400 coronavirus patients admitted to a hospital in Birmingham, England. Photograph: Joe Giddens/PA

The severe impact of Covid-19 on people from minority ethnic groups has been linked to air pollution and overcrowded and poor-standard homes by a study of 400 hospital patients.

It found patients from ethnic minorities were twice as likely as white patients to live in areas of environmental and housing deprivation, and that people from these areas were twice as likely to arrive at hospital with more severe coronavirus symptoms and to be admitted to intensive care units (ITU).

Minority ethnic groups were known to be disproportionately affected by Covid-19: they account for **34% of critically ill Covid-19 patients** in the UK despite constituting 14% of the population. But the reasons for the disparity remain unclear.

The research is the first to examine the role of environmental and housing deprivation. Doctors praised the study but cautioned it has yet to be formally reviewed by other scientists and that additional, detailed studies in other areas are urgently needed.

The study also found patients from ethnic minorities were on average 10 years younger than the white patients, though the explanation for this is unknown. Age, frailty and underlying health conditions remain critical factors for all patients in determining the outcome of Covid-19.

Confirmed UK cases			
	New cases	UK deaths	
	297,146	45,554	
England	Scotland	Wales	NI
255,710	18,500	17,030	5,876

Data from Public Health England at 16:44 BST 23 Jul 2020. Note: the UK total given by PHE is not the sum of the totals for the individual countries. [About the data](#)

The study concluded: “Patients of black, Asian and minority ethnicity (BAME) are more likely to be admitted from regions of highest air pollution, housing quality and household overcrowding deprivation. This is likely to contribute an explanation towards the higher ITU admissions reported among Covid-19 BAME patients.”

David Thickett, professor of respiratory medicine at the University of Birmingham and one of the study team, said. “It’s no surprise that people living in poor areas and poor housing do badly in a pandemic. It’s been true since the Black Death and this reaffirms the importance of deprivation in influencing the pattern of disease.”

A [Public Health England report released in June](#) showed a link between overall deprivation and worse coronavirus outcomes, but did not examine specific types of deprivation. At the time, the equalities minister, Kemi Badenoch, [rejected claims that “systemic injustice”](#) was the reason for the disparities. There is also [“compelling” evidence of an association between dirty air and coronavirus](#) infections and deaths.

Thickett said the public health message of the new study was better targeting of social distancing and handwashing advice to people in deprived areas and particularly those living in large households. “I don’t think there was very good engagement with ethnically diverse populations, particularly in terms of language barriers,” he said.

“The limitation of this study is that it’s in a single centre.” Thickett said. “What you really want is data from several different areas.” This research is being planned.

Prof Stephen Holgate, the Royal College of Physicians’ special adviser on air quality, said: “This seems a strong study with appropriate methods used.” It suggests air pollution may be an important driver, he said.

Dr Aarash Saleh, an NHS respiratory doctor and member of the [Doctors Against Diesel](#) campaign said: “We need more research like this to understand how air pollution interacts with other societal injustices to exacerbate health inequities, including death from Covid-19. Strategic responses to air pollution are urgently needed and must acknowledge and address the socioeconomic and racial intersections of this public health crisis.”

The study, which has been submitted to a medical journal and [made available online](#), followed 400 Covid-19 patients admitted to the Queen Elizabeth hospital in Birmingham. Two-thirds of the patients listed their ethnicity as “white”, 21% as “Asian/Asian British” and 7% were “Black/African/Caribbean”.

The analysis used deprivation data from the [English Indices of Deprivation 2019 report](#) published by the government. This divides the country into 33,000 small areas, containing an average of 650 households. Among the seven measures of deprivation are “living environment”, which comprises air pollution, housing in poor condition and road traffic accidents.

Another measure is “barriers to housing and services”, including household overcrowding, distance to amenities such as schools and GPs, and housing affordability. The researchers found a “strongly suggestive” statistical link between those living in the bottom 20% of areas under these measures, being from an ethnic minority and Covid-19 outcomes, said Thickett.

Air pollution and household overcrowding were already known to be associated with higher rates of community-acquired pneumonia and the worst air pollution levels are in neighbourhoods with a high population of minority ethnic residents. Thickett said the research was unlikely to explain why a disproportionate number of NHS staff from ethnic minorities had died from Covid-19: “That can’t just be due to deprivation, because they are at least in employment.”

Prof Chris Griffiths, at Barts and the London School of Medicine, said: “This study suggests that markers of socio-economic and environment are linked to pneumonia and ITU admission with Covid-19. This is important, but the [deprivation] measures used are really too broad to be able to point the finger at a specific component of each of these markers. More work is urgently needed.”

“Teasing out the individual components is difficult,” said Prof Jonathan Grigg, of Queen Mary, University of London. He said the study was in line with [his research](#) showing exposure to air pollution increases the number of the ACE2 receptors that the coronavirus hijacks to enter the body.

Dr Gilles de Wildt, a Birmingham GP, said: “Though the study is not yet peer reviewed, this is such an important area of research. We have all felt the clean air in Birmingham during the lockdown and know that emissions need to be curbed drastically for all health’s sake, not just Covid-19.”

Thickett said: “For most diseases, there’s a relationship with deprivation, frailty, [underlying illnesses] and age – it’s not rocket science. What you’re looking for is things that you can modify, to make things better for the future.”

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