

Evidence on COVID-19-related health inequities by ethnicity and intersecting factors and key issues for equity in vaccination

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Areas to cover today...



COVID and ethnicity



**Healthcare workers
(HCWs)**



Reasons



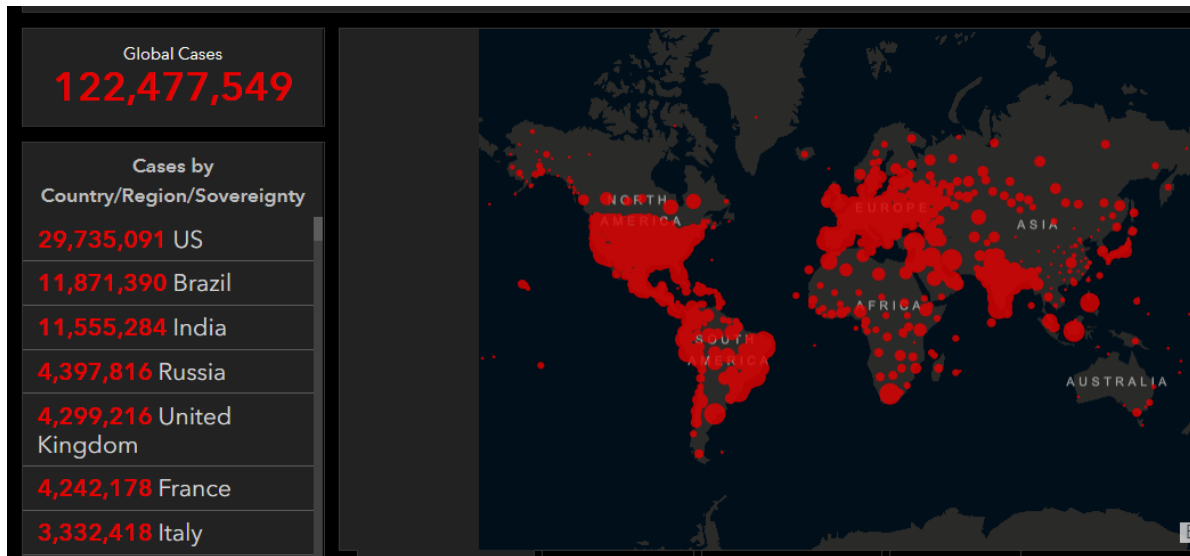
Vaccine

COVID and ethnicity

A pandemic

Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China

Chaolin Huang*, Yeming Wang*, Xingwang Li*, Lili Ren*, Jianping Zhao*, Yi Hu*, Li Zhang, Guohui Fan, Jiuyang Xu, Xiaoying Gu, Zhenshun Cheng, Ting Yu, Jiaan Xia, Yuan Wei, Wenjuan Wu, Xuelei Xie, Wen Yin, Hui Li, Min Liu, Yan Xiao, Hong Gao, Li Guo, Jungang Xie, Guangfa Wang, Rongmeng Jiang, Zhancheng Gao, Qi Jin, Jianwei Wang†, Bin Cao†



Ethnicity not an early feature

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Ethnicity was not included in early reports from China and Italy

Risk factors identified:

- **Older age**
- **Sex**
- **Cardiovascular disease (diabetes and hypertension)**
- **Obesity**

COVID and ethnicity: early signal

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

*Manish Pareek, Mansoor N Bangash,
Nilesh Pareek, Daniel Pan, Shirley Sze,
Jatinder S Minhas, Wasim Hanif,
Kamlesh Khunti

Is ethnicity linked to incidence or outcomes of covid-19?

Preliminary signals must be explored urgently

Kamlesh Khunti *professor of primary care diabetes and vascular medicine*¹, Awadhesh Kumar Singh *senior consultant*², Manish Pareek *associate clinical professor in infectious diseases*³, Wasim Hanif *professor of diabetes*⁴

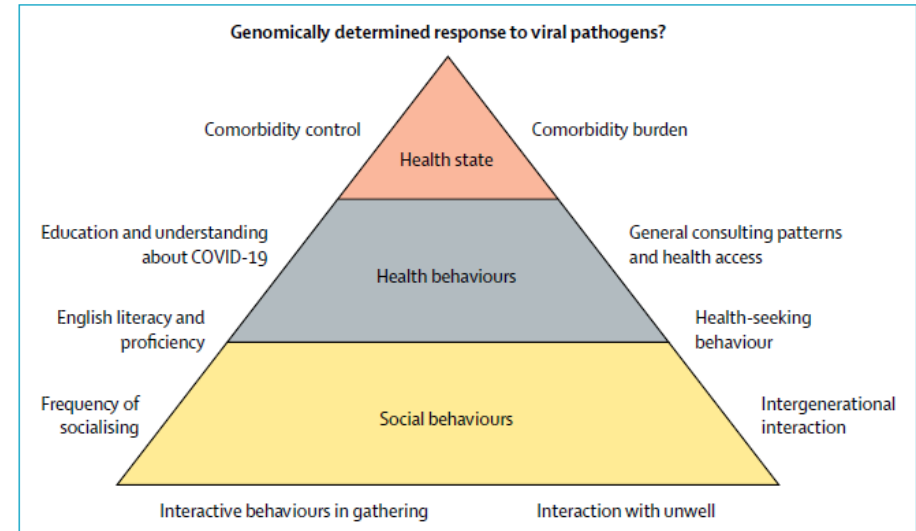


Figure: The potential interaction of ethnicity related factors on SARS-CoV-2 infection likelihood and COVID-19 outcomes

- Only 7% of 29 publications by early May reported ethnicity disaggregated
- ICNARC – 1/3 of ITU admissions were of an ethnic minority

Meta-analysis

Ethnicity and clinical outcomes in COVID-19: A systematic review and meta-analysis

[Shirley Sze](#) ¹ • [Daniel Pan](#) ¹ • [Clareece R. Nevill](#) ¹ • [Laura J. Gray](#) • [Christopher A. Martin](#) • [Joshua Nazareth](#) •

[Jatinder S. Minhas](#) • [Pip Divall](#) • [Kamlesh Khunti](#) • [Keith R. Abrams](#) • [Laura B. Nellums](#) ² • [Manish Pareek](#) ²   

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Patients from ethnic minority groups are disproportionately affected by Coronavirus disease (COVID-19). We performed a systematic review and meta-analysis, to summarize the existing evidence.



We searched academic databases (MEDLINE, EMBASE, PROSPERO, Cochrane library and MedRxiv [a preprint database]) up to 31st August 2020, for studies reporting COVID-19 data outcomes by ethnicity.

18,728,893

Over 18 million patients from 50 studies were identified.

RISK OF INFECTION

Asians were 1.5 times more likely to be infected with SARS-CoV-2 than White individuals. Those of Black ethnicity were twice as likely to be infected than White individuals.



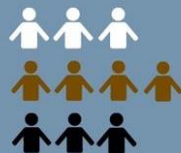
RISK OF ITU CARE

Asians were also twice as likely to be admitted to intensive care with COVID-19 than White individuals, but no study investigating this issue had been published as of 31st August 2020.



RISK OF DEATH

Asians may also be slightly more likely to die from COVID-19 compared to White individuals - but this increased risk is not as definitive as increased risk of infection.



CONCLUSIONS

- Individuals from Black and Asian ethnic groups are at increased risk of COVID-19 infection compared to White individuals
- Asians may be at higher risk of ITU admission and death

FOR THE FULL PAPER, PLEASE VISIT WWW.THELANCET.COM/JOURNALS/ECLINM/HOME

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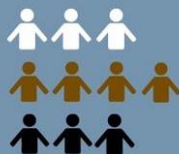
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Asian: 1.5x
Black: 2x

Increased risk of infection



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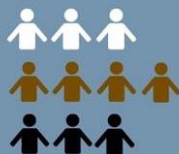
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Asian: 2x

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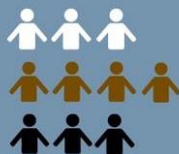
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Asian

Possibly increased risk of death

Healthcare workers

Healthcare workers and COVID-19: early concern



Doctors, nurses, porters, volunteers: the UK health workers who have died

Six in 10 UK health workers killed by Covid-19 are BAME

BAME healthcare workers are more likely to get Covid-19 than white medics, study reveals

HCWs: Increased risk of infection

Risk of COVID-19 among front-line health-care workers and the general community: a prospective cohort study

Long H Nguyen*, David A Drew*, Mark S Graham*, Amit D Joshi, Chuan-Guo Guo, Wenjie Ma, Raaj S Mehta, Erica T Warner, Daniel R Sikavi, Chun-Han Lo, Sohee Kwon, Mingyang Song, Lorelei A Mucci, Meir J Stampfer, Walter C Willett, A Heather Eliassen, Jaime E Hart, Jorge E Chavarro, Janet W Rich-Edwards, Richard Davies, Joan Capdevila, Karla A Lee, Mary Ni Lochlainn, Thomas Varsavsky, Carole H Sudre, M Jorge Cardoso, Jonathan Wolf, Tim D Spector, Sebastien Ourselin†, Claire J Steves†, Andrew T Chant†, on behalf of the Coronavirus Pandemic Epidemiology Consortium‡

	Event/person-days	Incidence (30-day)	Age-adjusted hazard ratio (95% CI)	Multivariate-adjusted hazard ratio (95% CI)	Inverse probability-weighted hazard ratio (95% CI)
Overall (primary analysis)					
General community	3623/32 980 571	0.33%	1 (ref)	1 (ref)	1 (ref)
Front-line health-care worker	1922/1 454 701	3.96%	11.68 (10.99–12.40)	11.61 (10.93–12.33)	3.40 (3.37–3.43)
According to race or ethnic origin (post-hoc analysis)					
Non-Hispanic white, general community	1498/23 941 092	0.19%	1 (ref)	1 (ref)	1 (ref)
Black, Asian, and minority ethnic, general community	227/1 362 956	0.50%	2.49 (2.16–2.86)	2.51 (2.18–2.89)	1.74 (1.71–1.77)
Non-Hispanic white, front-line health-care worker	726/935 860	2.33%	12.47 (11.33–13.72)	12.58 (11.42–13.86)	3.52 (3.48–3.56)
Black, Asian, and minority ethnic, front-line health-care worker	98/72 556	4.05%	21.68 (17.61–26.68)	21.88 (17.78–26.94)	4.88 (4.76–5.01)

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Complex interaction

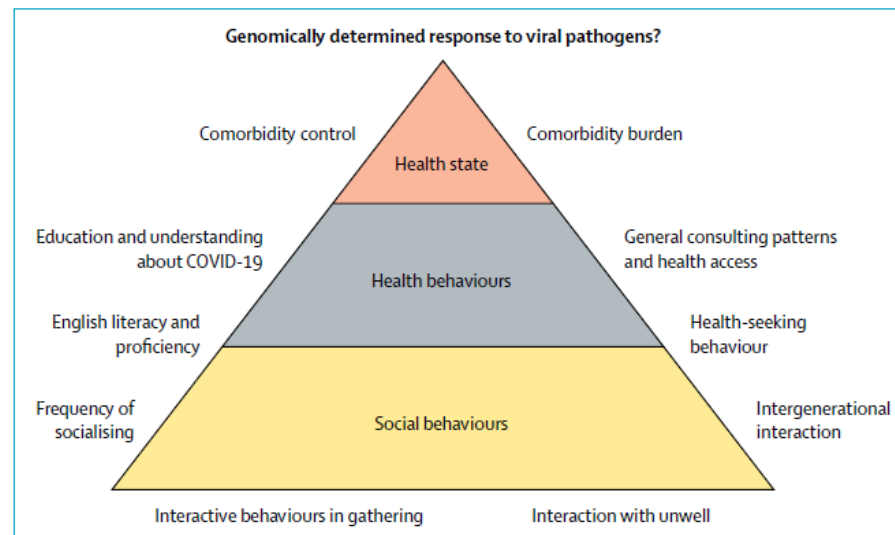


Figure: The potential interaction of ethnicity related factors on SARS-CoV-2 infection likelihood and COVID-19 outcomes

Exposure



Infection



Hospital/
ITU



Death

- **Household risk – multi-generational**
- **Occupational risk**
- **Deprivation**
- **Comorbidity profile**
- **Social networks**
- **Incomplete and inadequate public health messaging**
- **Discrimination**

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Exposure



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Hospital/
ITU



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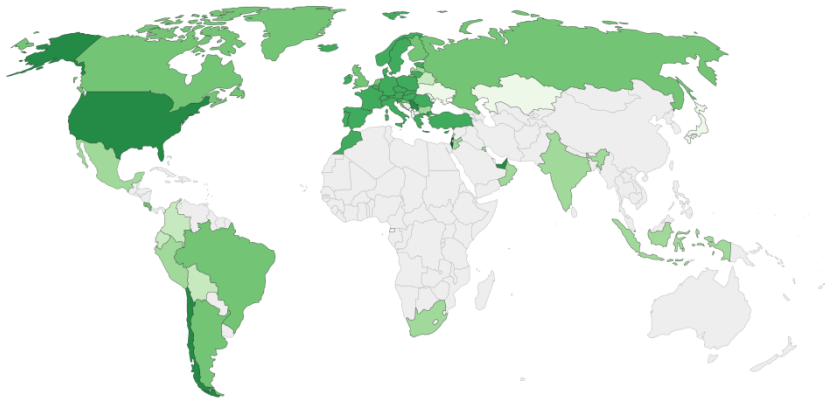
Clarifies the interventions

Vaccination

Global vaccination programme

Share of the population fully vaccinated against COVID-19, Mar 19, 2021
Share of the total population that have received all doses prescribed by the vaccination protocol. This data is only available for countries which report the breakdown of doses administered by first and second doses.

Our World
in Data



No data 0% 0.1% 0.3% 1% 3% 10% 30% 100%

Source: Official data collated by Our World in Data – Last updated 20 March, 08:37 (London time)

OurWorldinData.org/coronavirus • CC BY

- **Vaccine coverage varies hugely globally**
- **In countries vaccinating early sign of hesitancy**

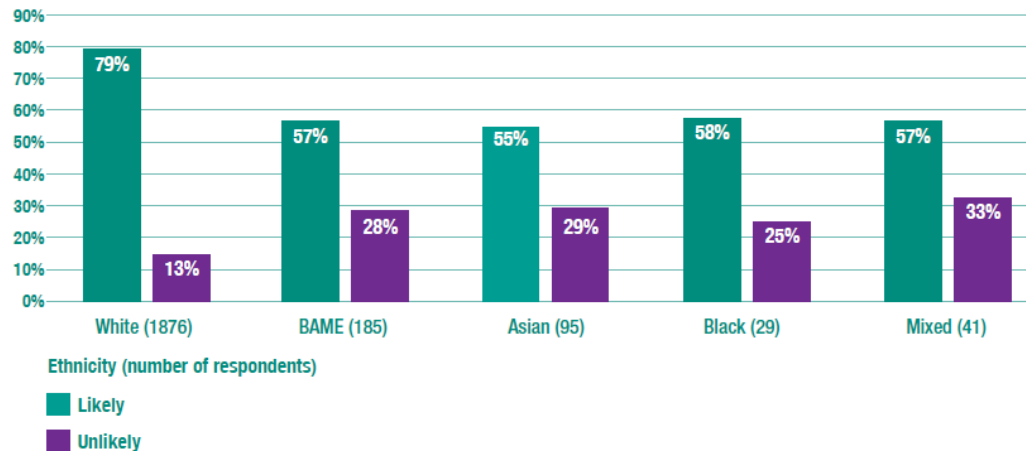
Increased vaccine hesitancy in certain groups

December 2020

Public attitudes to a Covid-19 vaccine, and their variations across ethnic and socioeconomic groups

RSPH
ROYAL SOCIETY FOR PUBLIC HEALTH
VISION, VOICE AND PRACTICE

“How likely or unlikely would you be to take a Covid-19 vaccine if you were advised by your GP or another health professional to take it?” (Net likely and net unlikely)



HCWs: Uptake variable

Association of demographic and occupational factors with SARS-CoV-2 vaccine uptake in a multi-ethnic UK healthcare workforce: a rapid real-world analysis

Christopher A. Martin^{a,b}, Colette Marshall^c, Prashanth Patel^{d,e}, Charles Goss^f, David R. Jenkins^g, Claire Ellwood^h, Linda Bartonⁱ, Arthur Price^j, Nigel J. Brunskill^{a,k}, Kamlesh Khunti^{l,m,n,o,p} and Manish Pareek^{a,b,n,o,p}

Uptake **lower in certain groups of healthcare workers**

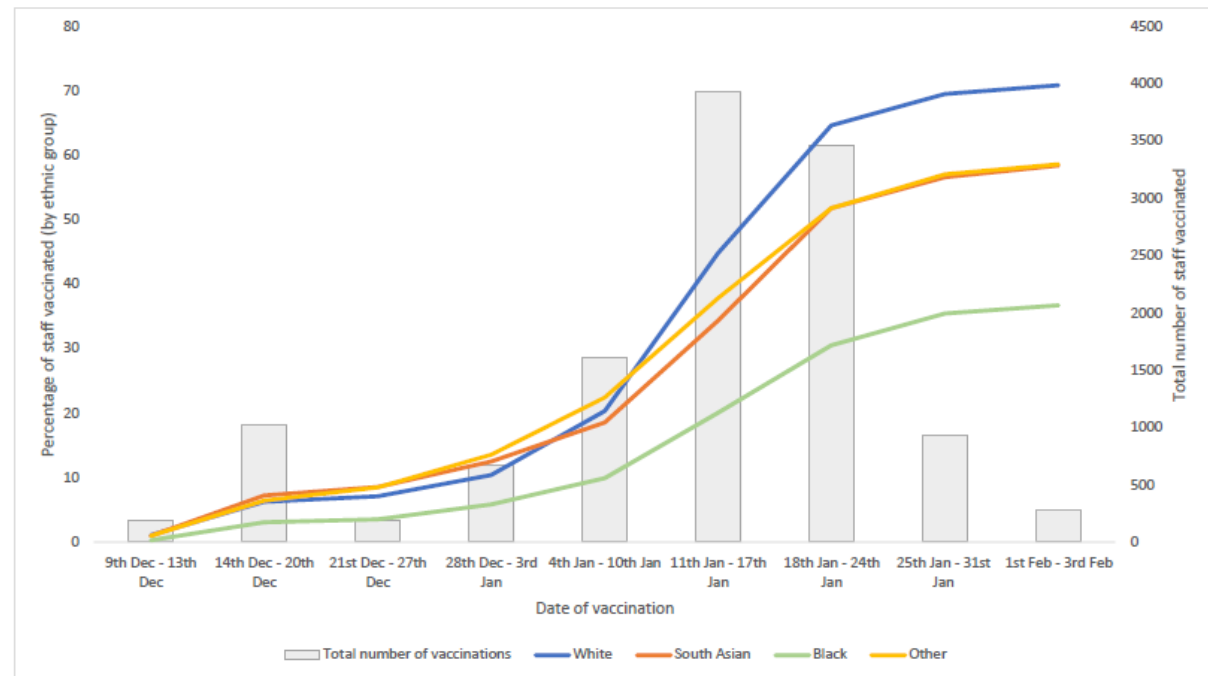
- **Younger**
- **Female**
- **Asian and Black ethnicity**
- **More deprived**
- **Certain job roles**
- **Previous COVID infection**

HCWs: Uptake variable

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Fig 1. Number and percentage of staff vaccinated over time by ethnic group

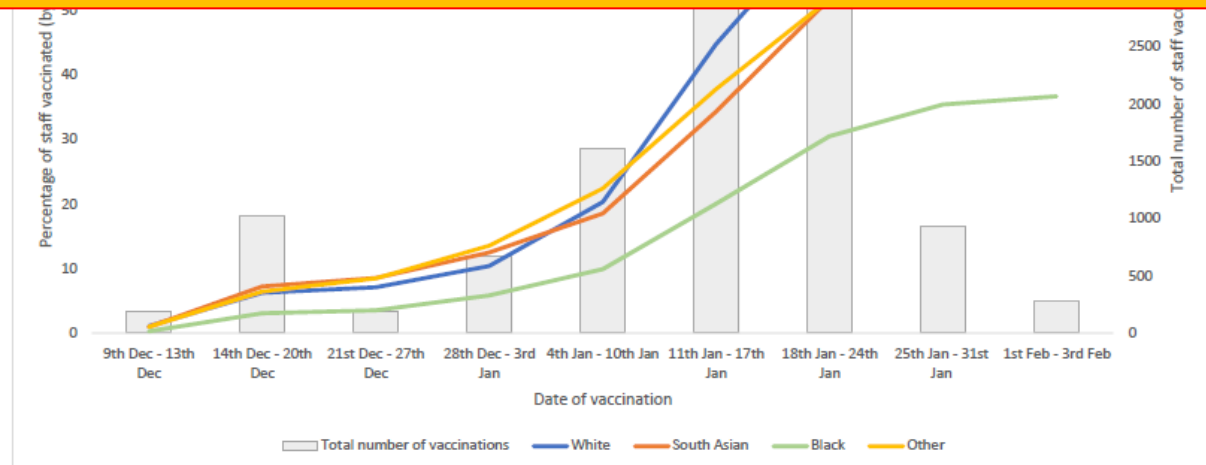


Uptake may differ in certain groups

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Need to understand reasons and work with communities to build trust





United Kingdom Research study into Ethnicity and COVID-19 outcomes in Healthcare workers

Summary

- **COVID has identified and amplified inequalities**
- **Ethnic minorities disproportionately affected**
 - Healthcare workers are particularly at risk
- **Reasons are complex and multifactorial**
- **Little evidence of interventions**
 - Modelling, financial support, public health messaging
- **Differential vaccine uptake risks exacerbating inequalities**
- **Work with communities to develop interventions**

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David Jenkins

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Keith Abrams
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Kamlesh Khunti
Ibrahim Abubakar
Prashanth Patel
Amit Gupta

Martin Tobin
David Ford
Chris Orton

Laura Nellums
Edward Dove
Chris McManus

Kath Woolf
Rob Free
Catherine John
Anna Guyatt