EUROPEAN JOURNAL OF BIOMEDICAL AND PHARMACEUTICAL SCIENCES
http://www.ejbps.com

ISSN 2349-8870
Volume: 9
Issue: 11
303-324
Year: 2022

EXPLORING THE ATTITUDE OF THE UK DIVERSE ETHNIC COMMUNITIES TOWARDS COVID-19 PUBLIC HEALTH ANNOUNCEMENTS

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Article Received on 21/09/2022 **Article Revised on 11/10/2022** **Article Accepted on 01/11/2022**

ABSTRACT

Introduction: COVID-19 preventative guidance has been communicated to the public through multiple media channels and mostly in English. **Aim:** To gather students' opinions on how useful COVID-19 messages have been for them and their families and what can be done to make these better and more sensitive to people from different ethnicities, origins or sub-cultures. **Method:** This study is a mixed-method survey based, with university students being the target participants. The survey was online and anonymous, with two reminders sent out two weeks apart. **Results:** Of the 150 students only 112 completed or partially completed the survey, with 51 participants (46%) answering the demographics questions only. Of the 61 participants, 49% agreed that asking about race or ethnicity is acceptable and 44% agreed that it should continue to be collected, but 62% disagreed that the term BAME accurately described them or their families. Regarding the understandability of public health messages for their families and communities, 24.5% and 33% of participants selected 'no.' Social distancing was not strictly observed by 46% of the participants and 38% said that it was not observed in their communities. Regarding their personal approach to wearing a face covering, 88.5% selected 'yes', vs. 77% in the community they live in. Regarding public health messages about vaccination, being vaccinated and if the participants' families are vaccinated, the majority answered 'yes' (59-61%). Regarding testing availability and uptake, the majority answered 'yes' (59%). Finally, participants were asked to indicate if the pandemic had exerted a negative impact on them and their families; 61% selected 'yes'. **Conclusion:** In this study most participants indicated they consider the term BAME does not represent them. The most reported COVID-19 health impact was a decline of mental health, followed by physical health. Receiving false information, poor access and availability were factors shared by the participants for not being tested or vaccinated. Participants indicated that health sector needs to be more effective in discussing misinformation and disseminating health facts in accessible forms. Participants indicated early intervention as the major missed opportunity that might have protected their community from COVID-19 pandemic.

KEYWORDS: BAME, COVID-19, Public health messages, Vaccination, face covering.

INTRODUCTION

Mass media platforms have routinely been used to promote and raise awareness in health and public health practice with differing outcomes.[1-4] Since March 2020, the UK government has promoted awareness and knowledge of COVID-19, and measures to prevent infection, aiming to prime the public to adopt protective behaviours. COVID-19 preventative guidance has been communicated to the public through multiple media channels, but mostly in English. However, as the pandemic persisted into the second wave, it became clear that the risk of mortality for people of South-East Asian (SEA) ethnicity had remained higher, with Indian men reporting an age adjusted mortality of 124 per 100,000. In comparison, Black African (BA) men and Black Caribbean (BC) men reported 79.7 deaths per 100,000 with White British men reporting 77.8 deaths per 100,000.[5]

Race is based on human sub-species classifications, whereas ethnicity is based on origin (continent or country), but the two terms tend to be incorrectly used interchangeably.

Currently, there is insufficient knowledge regarding how the communities that have been grouped under the title Black, Asian and Minority Ethnic (BAME) engaged with information about COVID-19, or, more crucially, agencies have tended to treat BAME communities as an homogeneous group, ignoring the inherent cultural differences. In the cases where a lack of engagement was identified, the media and many reports tended to group all people from Asian races or Black races as one group of people who deal with information and life events similarly. An understanding of how BAME communities (which we pluralise to reflect the heterogeneous nature of the category) managed and mitigated risks during the pandemic is lacking. There is insufficient data to understand their lived experiences of sustaining family, working life and wellbeing; the challenges faced at work, impacts on support networks and impacts on service delivery. The SEA groups and Black groups are culturally, linguistically and religiously diverse. Around 4% of this population do not speak English as their main language at home.[6] The Black Country area of the UK West Midlands ('Black Country' here refers to industrial pollution, from the proliferation of early industries) is the 7th most deprived out of 38 Local Enterprise Partnerships in England, and also has the highest socio-economic deprivation across the West Midlands.[7]

The emerging evidence from prospective monitoring showed that hospital deaths due to COVID-19 was 3 times higher for Bangladeshi people, 2.8 times higher for Pakistanis and 1.5 times for Indians compared to the White population. Asian patients with COVID-19 were 3 times more likely to die in ICU than patients with other viral pneumonia; and 40% of BAME patients required renal support in ICU.[8] Local data found that SEA people were more likely to have greater disease severity on admission to hospital and more likely to need ICU support.[9,10] Local authority areas ranking higher for socio-economic deprivation have higher rates of COVID-19 related deaths.[11,12] Socio-economic status, housing challenges, occupational risk and public transportation use, were found to exacerbate the prevalence of COVID-19 in the BAME population, but information was needed from those communities to understand the challenges faced in order to develop appropriate interventions and enhancements for existing services. Public Health England (PHE) utilised the media in communicating, raising awareness and provide health promotion, however the engagement with faith leaders and communities to co-create and produce solutions tailored to their local communities were missed.[12,13] At the time of writing, no study had been found which investigated the effectiveness of public health campaigns from the perspective of the diverse ethnic communities in the UK.[14,15] This study aimed to address this gap.

Public Health England (PHE) emphasised community participatory research and culturally competent COVID-19 education.[13] This study applied the Fals-Borda participatory action research approach[16] to explore the communities' resilience and applicability of guidance to their needs. Information about health beliefs which people are able to use for prevention, help-seeking, diagnosis, treatment, and coping with illness.[17, 18] However, social structural differences and health inequalities mean that not everyone has equal access to, or ability to process and use the information.[19] To optimise health education and promotion through media, information on the needs and circumstances of the audience are pertinent to develop tailored communication and messages.[20-25] Understanding the cultural characteristics, experiences and coping strategies of a given group, culturally appropriate communication and messages can be developed.[15, 21, 26] Community involvement can provide access to understanding of their circumstances, experiences and attitudes, to develop appropriate and applicable communication and enhance services.[27] Previously, involvement of community organisations to communicate Ebola outbreak messages[28, 29] and culturally sensitive interventions to address non-communicable diseases and related activities have been successful.[30] Low health literacy is associated with worse outcomes and poor health.[18, 31] The COVID-19 pandemic has highlighted that poor health literacy is an underestimated public health issue.[22] In England, 43% of adults cannot understand or make use of everyday health information, and existing health information also did not match the literacy skills of the people.[32] We need to ascertain the health literacy of the population subcultures to develop messages that are matching with their literacy skills.

The behavioural responses to pandemic preventative guidance in general have been studied.[33-39] McGuire's communication-persuasion model is commonly used to plan and evaluate media communication and campaigns.[40] The model comprises of inputs (source, message, channel, receiver and destination) which influence the outputs i.e., the persuasive effectiveness. Applying this model, the communication-persuasion process of COVID-19 guidance can be measured at 3 points: exposure to messages; comprehension (knowledge and ability to correctly perform the measures); and compliance to measures. This project fits the WHO's Sustainable Development Goals number 3 (good health and well-being),10 (reduced inequalities) and 17 (partnerships for the goals).[41] According to 'Anxiety UK,' in 2013, 8.2 million cases of anxiety disorder were reported in the UK. Alarmingly after 20th of March 2020, 49.6% of people in UK reported "high" anxiety (6 out of 10), compared to the end of 2019 when 21% reported high levels of anxiety.[42]

Son et al.[43] investigated the effects of COVID-19 on college students' mental health in the United States of America (n=195) to determine the participants overall

stress in the previous month.[43] and whether the COVID-19 pandemic had increased, decreased, or maintained. The authors reported that 71% of participants experienced stress during the COVID-19 pandemic resulting from increased financial, social and health uncertainties. Furthermore, coping mechanisms such as exercise, were adopted by students to compensate for lack of social interaction and to improve concentration.[43] Choi at al.[44] investigated the impact of COVID-19 on final year medical students from 33 different medical schools (n=440) in the UK. They reported that 59% of students felt less prepared to start clinical work at hospitals. Seetan et al.[45] investigated the impact of COVID-19 on medical students' mental health and wellbeing in Jordan (n=553) and found that the majority of participants reported variable levels of stress and mental disorders during the COVID-19 peak due to lack of social interactions (50%) and due to family members contracting COVID-19 (66%), which manifested as unease and anxiety.

Method and design

This study aimed to contribute to the current body of knowledge about the UK local population's public health knowledge and perception of public health messages, to inform future government-led public health communications with subcultures and communities, to ensure they are culturally appropriate and correctly interpreted to achieve the intended impact on health improvement, diseases prevention and service enhancement.

Using SurveyMonkey™ (Momentive.ai, San Mateo, USA), a survey was developed, and the link was distributed to all students from three higher education institutions which will be anonymously identified as HEI1, HEI2 and HEI3 in two large cities in the West Midlands with known population diversity. HEI1 has 18,875 students, HEI2 has 23,155 students and HEI3 has 3,000 students, a total of 45,030 students were invited to participate. The survey was opened for period of two months for each of the three participating HEIs and two online reminders, two weeks apart, were sent out to all potential participants. The invite, and reminders, were sent to students' bodies through the institutional students' communication platforms, not to the students' individual emails, to maintain the anonymity and voluntary participation principles. The link offered access to the participants' information sheet (PIS), a tick box consent to proceed with the questionnaire and then the questions. Participants were informed that they could omit questions which they do not wish to answer and that they will remain anonymous. Students were not required to enter details that could identify them (name or student number). Students were able to withdraw by not submitting their survey, but once submitted, their responses could no longer be removed.

There were no identified ethical issues other than time inconvenience, however, they were informed that if, while they are reflecting on COVID-19 experience, felt discriminated against or thinking about lost loved ones may bring emotional unease, they could stop and return later, or stop and not return to the survey whilst seeking support from their local GP or their institutional mental health and wellbeing support services. The topics covered were, the use of the term BAME and their understanding about social distance, isolation, shielding, and face covering. Also, the survey sought participants' opinion about vaccinations, testing, the availability of factual information and public health messages disseminated during daily briefs. The survey was estimated to take a maximum of 30 minutes to complete.

The following definitions were used in this study

Community: Community is defined as the immediate ethnic origin of the local population with whom the student and their family socialise, practise religion, and/or relate to.

Family: Family is defined as the family members who live in the same household as the student (i.e., close and/or extended family).

Public health message: This is limited to messages, announcements and guidelines issued by the UK government and local government, not the University where the student is

Findings

150 students consented to participate (0.4% return), however only 112 (75%) completed or partially completed the survey. There were 68% from HEI1, 23% from HEI2 and 9% from HEI3. 74% (n=83) of respondents were Undergraduate students (n=19, 17% in first year, n=26, 23% in second year, n=18, 16% in third year and n=20, 18% in fourth year) and 25% (n=28) postgraduate students (n=21, 75% in taught course and n=9, 25% in research courses) participated in the survey, and only one person did not specify. The majority of participants were in the age group 20-25 years old (45.5%, n=51) followed by 15% (n=17) in 31-35 years old, 13.5% (n=15) in those above the age of 40 years, then those under 20 years old (9%, n= 10), 26-30 years old (9%, n= 10) and the 36-40 years old (8%, n= 9). For the purpose of this study, data will be analysed for two age groups 25 years old and under (55%, n=61) and 26 years old and over (46%, n=51).

Participants were asked to self-report on country of birth and country of origin (Table 1), with the majority of participants being born in England (83%, n=93), though only 35% (n=39) identified as English in terms of ethnicity.

Participants were then asked to self-report on their religion and their parents' religion, with the majority of participants identifying as no religion (36%, n=40), Muslim (22%, n=25) or Christian (21%, n=23). Interestingly, parents' religion did not follow the same pattern (no religion 25%, n=28; Muslim 23%, n=26; and Christian 27%, n=30) and four people did not disclose.

Table 1: Self-reported country of birth, race, ethnicity and religions.

Country of birth	**Total**
China, Ghana, Hong Kong, Iran, Jamaica, Kurdistan, Poland, Russia, Scotland, Singapore, India (one person from each origin)	n=11
Pakistan, Wales (two persons from each origin)	n=4
Nigeria	n=4
England	n=93
Country/s of origin (Ethnicity)	
Afghan, Bangladeshi, Chinese, Egyptian, English/Chilean, English/Irish, Ghanaian, Hong Kong, Indian/Welsh, Iranian, Kurdish, Moroccan, Malaya/English/Welsh, Polish, Russian, Scottish, Singaporean, Jewish South African/Ashkenazi, Welsh/Norwegian/English (one person from each ethnicity)	n= 19
Welsh	n=2
Indian/English	n=3
Nigerian	n=5
Afro-Caribbean	n=10
Indian	n=14
Pakistani	n=20
English	n=39
Own religion	
Hindu, Jain, Jewish, Methodist, Protestant (one person from each religion)	n=5
Agnostic, Spiritual (two persons from each religion)	n=4
Atheism	n=4
Sikh	n=8
Christian	n=23
Muslim	n=25
None	n=40
Parents religion/s	
Agnostic, Christian /Atheist, Christian/Jewish, Jain, Jewish, Sikh/Christian (one person from each religion)	n=6
Hindu/Christian	n=2
Atheist	n=3
Hindu	n=5
Sikh	n=8
Muslim	n=26
None	n=28
Christian	n=30

Most participants lived with parents and siblings (39%, n=44) followed by those who lived with partners and children (20.5%, n=23) and 19% (n=21) who lived alone during term time. Only a few participants lived alone all the time (6%, n=7), with one other person (10%, n=11) or in household with six people of more (4.5%, n-5), and the majority of participants lived with another 2-5 people outside universities term time (85%, n=75) and 14 participants did not disclose (Figure 1).

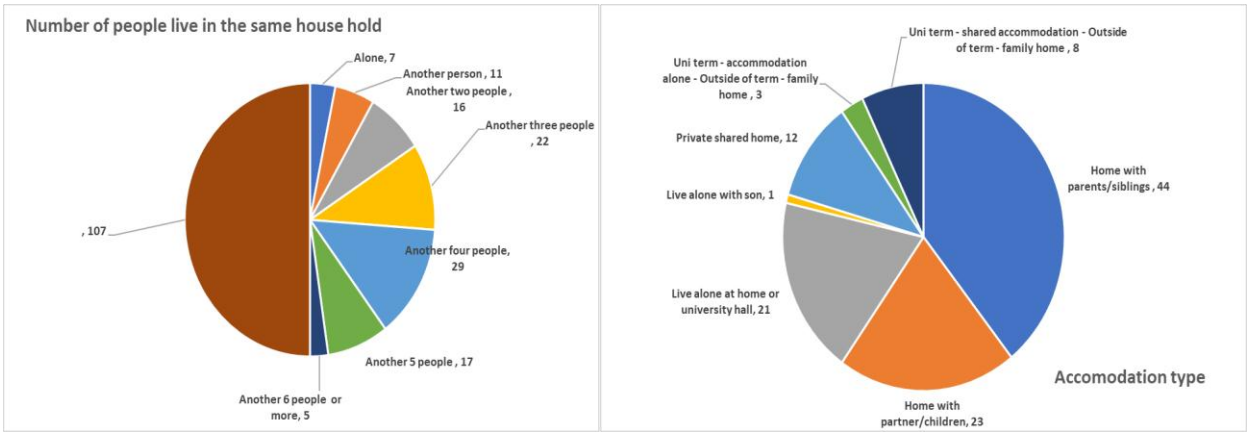


Figure 1: Accommodation.

Fifty one participants (46%) answered the demographics questions only but not the other qualitative questions (one of Afghan, Scottish, Chinese, Russian, Egyptian, Indian/Welsh, Kurdish, Malaya/English/Welsh, Moroccan, Singaporean and South African/Ashkenazi Jewish n=11, Afro Caribbean n=3, English n=19, Indian n=6, Nigerian n=3, Pakistan n=9). There were series of Yes/No questions. The first two questions were about the term BAME, its use and accuracy, and the impact of COVID-19 on participants and their families. While almost an equal number of participants agreed/disagreed on that the capture of race can happen (49% selected 'yes' and 51% selected 'no') and that data on race/ethnicity should continue to be collected (44% selected 'yes' and 52.5% selected 'no'), the majority of respondents (62%) stated that the term BAME does not accurately describe them (Figure 2).

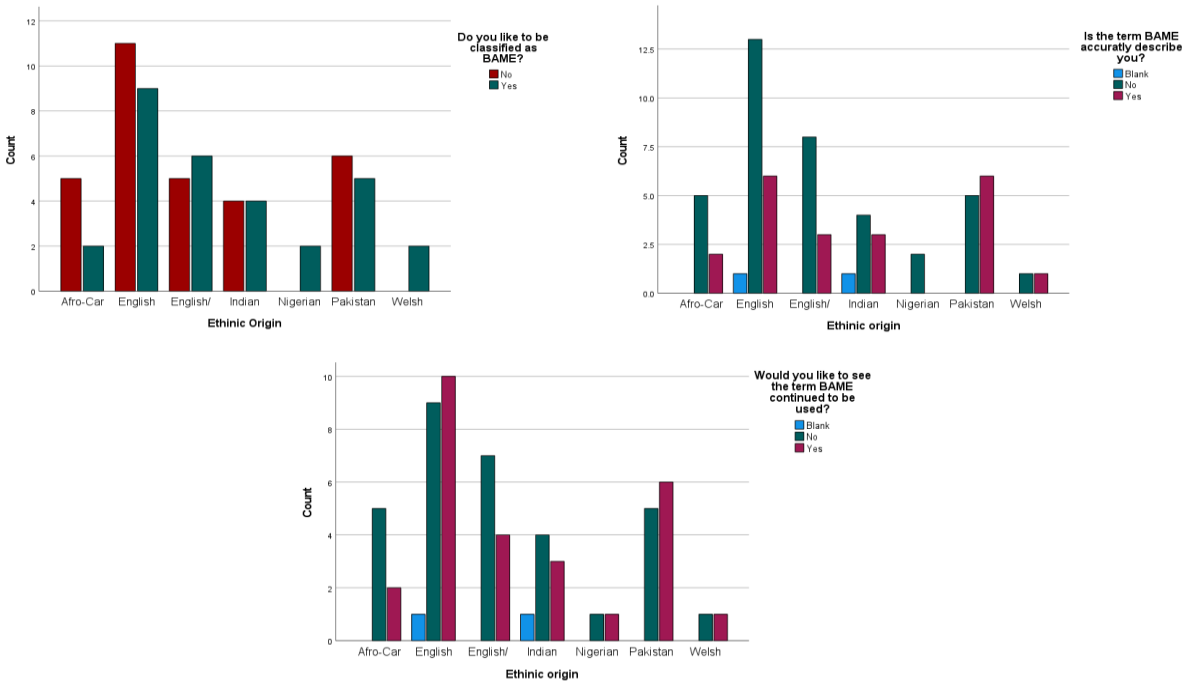
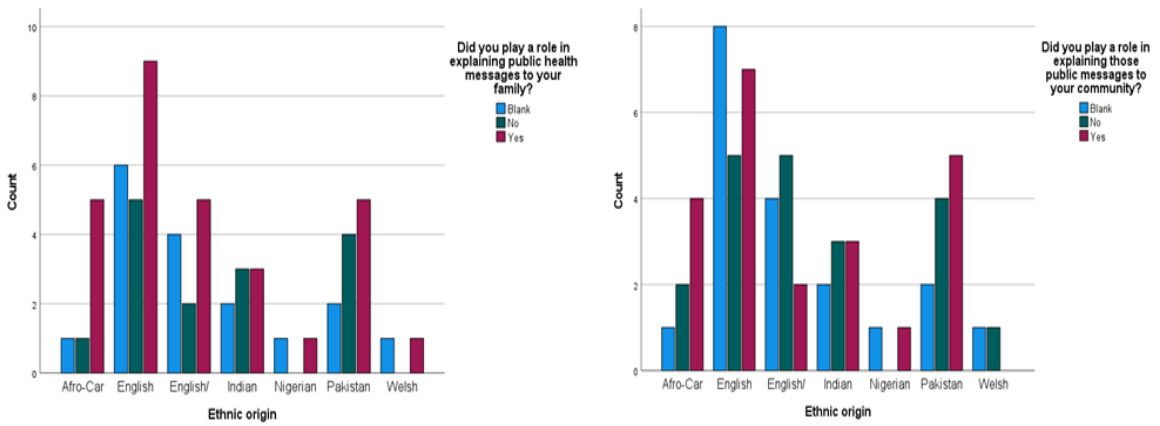


Figure 2: Use and accuracy of the term BAME.

Participants were then asked to indicate both their ability and their family's/community's ability to engage with government daily public health messages and follow guidance such as social distance, face covering and shielding/isolation during and after the lockdowns (Figure 3). Regarding public health messages understandability, 28% (n=17) and 31% (n=19) of participants omitted to answer the questions about family and community respectively, 24.5% (n=15) and 33% (n=20) of participants selected 'no' and 47.5% (n=29) and 36% (n=22) selected 'yes' respectively. An equal number of participants agreed/disagreed on being able to observe social distancing (49% selected 'yes' and 46% selected 'no'), however, when asked about the community they live in the majority selected 'yes' (72%). Regarding wear face covering, 88.5% stated they wore face covering, vs. 77% stating that members of their communities wore face covering. Only 28% of the participants and participants' families experienced shielding or isolation due to infection.



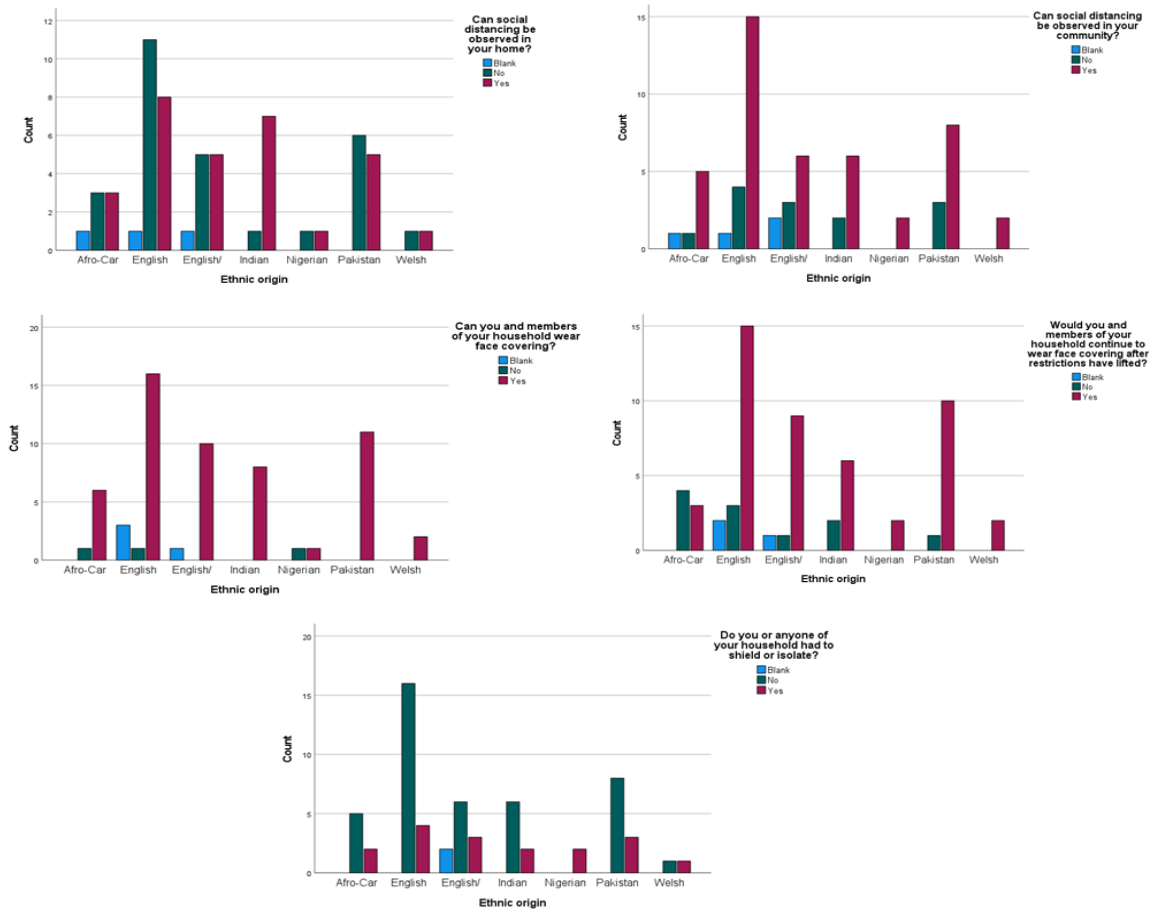


Figure 3: Observing social distance, wearing of face covering, shielding and isolation.

The next set of questions regarded vaccination (Figure 4). A large number of participants omitted to answer the four questions pertaining to vaccination against COVID-19 (29-29.5%, n=17-18). To the first three questions (efficiency of public health messages about the vaccination programme, and whether they were vaccinated and whether their family were vaccinated) the majority answered 'yes' (59-61%, n=36-37). However, when participants were asked if they played a role in promoting vaccination, only 41% (n=25) selected 'yes'.

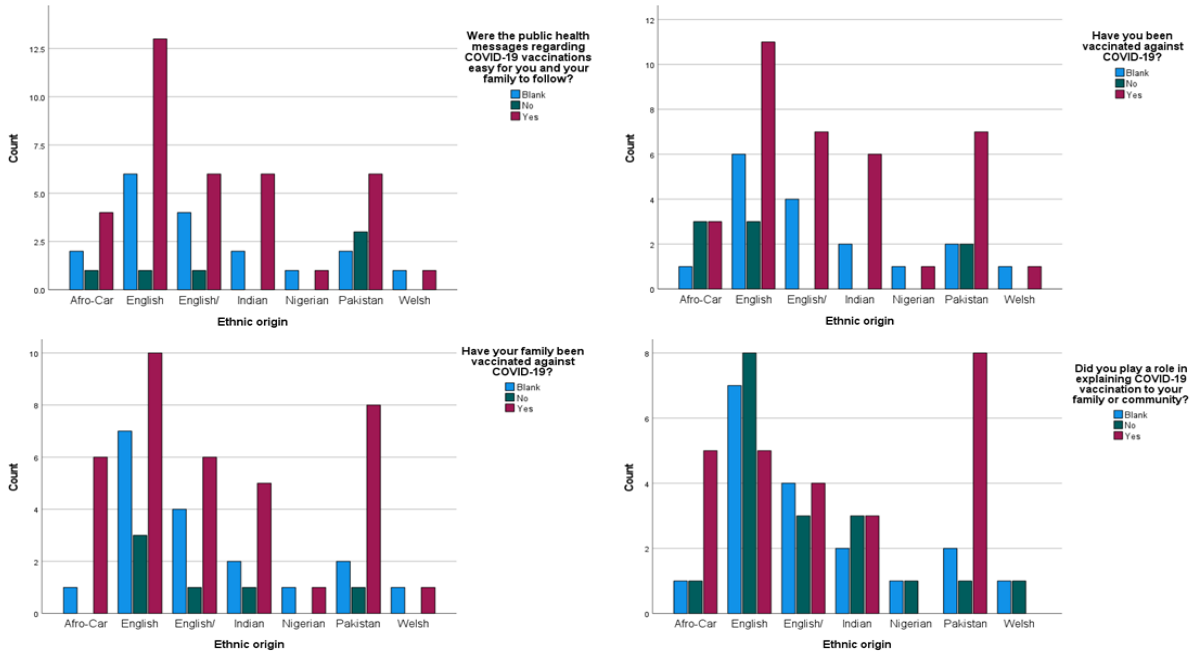


Figure 4: Vaccination uptake.

The next topic regarded testing availability (such as lateral flow tests and PCRs) and uptake (Figure 5). A large number of participants omitted to answer the two questions on this topic (29-29.5%, n=17-18). Regarding testing accessibility, the majority of respondents answered 'yes' (59%, n=36). However, when they were asked if they played a role in promoting testing, only 31% (n=19) selected 'yes'.

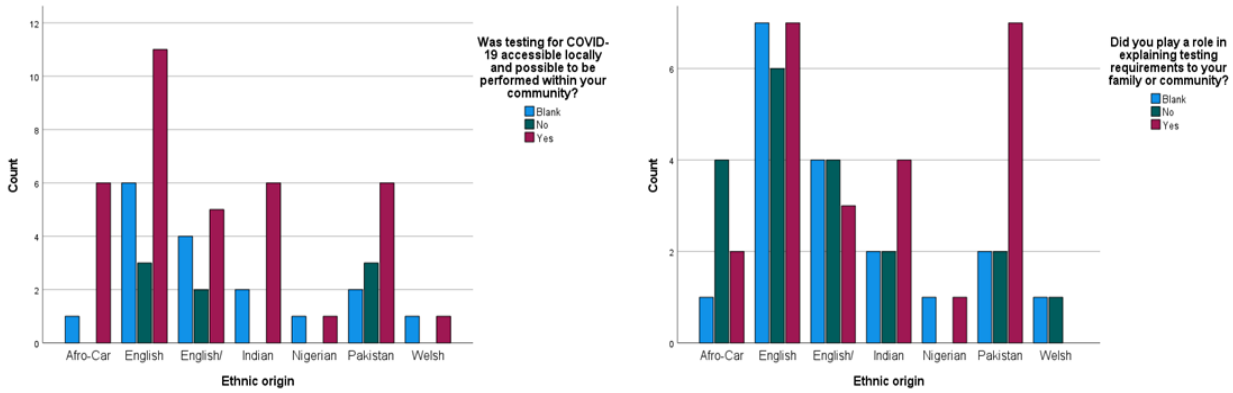


Figure 5: Testing accessibility and uptake.

Finally, participants were asked to indicate whether they thought the pandemic had had a negative impact on them and their families (Figure 6). 29.5% (n=18) omitted to answer this question, while 61% (n=37) selected 'yes'.

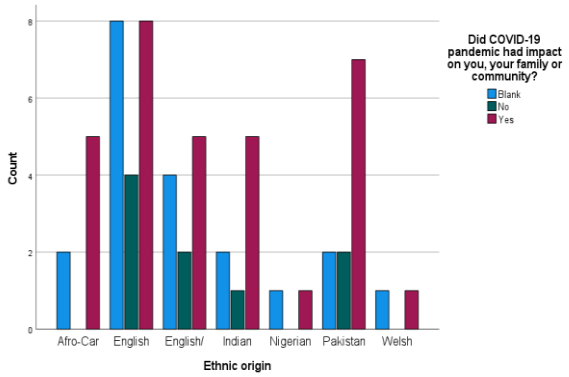


Figure 6: COVID-19 negative impact.

The was no statistically significant difference between 'yes' and 'no' selections in any of the questions, with all *p* values being >0.05 (*t*-test).

Thematic analysis and discussion

The survey included opportunities for respondents to leave comments, which were manually coded by two researchers independently. Codes were then confirmed using Wordstat® software. There were three free text boxes for questions relating to i) the use of the term BAME, ii) its accuracy and iii) whether they would like to use another term (Tables 2 and 3). Only 39% (n=44), 45% (n=50), 42% (n=47) and 34% (n=38) participants entered comments for the three questions respectively. When codes were weighted against positive, negative or neutral impact, all three questions about use and accuracy were skewed towards negative impact.

Table 2: Participants opinion regarding BAME use and accuracy.

Codes	Frequency	Positive	Neutral	Negative
Do you like to be classified as BAME?				
Race equals identity	16		35.6%	
Magnifies race, colour, and minority status	15			33%
It is inconclusive	7			15.6%
Important to identify health determinant	5	11%		
It is offensive	2			4.5%
Total events	45	11%	35.6%	**53%**
Is the term BAME accurately describe you?				
It is inconclusive	20			34%
It is conclusive	11	19%		
It is offensive	11			19%
Marginalise the non-white people	11			19%
It does not affect me	5		8.5%	
Important to identify health determinant	1	2%		
Total events	59	21%	8.5%	**72%**
Would you like to see the term BAME continued to be used?				
It does not affect me	13		24.5%	
It is inconclusive	12			23%

It is offensive	12			23%
Marginalise the non-white people	9			17%
It is conclusive	3	6%		
No term is required.	3		6%	
Important to describe people experience	1	2%		
Total events	53	8%	31%	**63%**

Most participants indicated that new terminology is not required (74%), 20.8% suggested replacements were made, with no one suggesting continuing using the current term.

Table 3: Suggested future terms.

Replace BAME with…	Frequency	Replace the term	Neutral	No term is required	Continue to use
People should self identify their ethnicity	18			46%	
No term is required	11			28%	
Minority ethnic groups	3	8%			
Person of colour*	2	5%			
Both terms white and BAME are inaccurate	1		2.6%		
It does not affect me	1		2.6%		
Low socioeconomics	1	2.6%			
Non-English	1	2.6%			
Other than white*	1	2.6%			
Total comments	39	20.8%	5.2%	74%	0%

*Not all minority groups are non-white

The next free text questions were about social distancing and its terminology. When asked about social distancing at home and in the community, 60% and 61% indicated that they either did at all times or as required (Table 4). The majority agreed that the current terminology was easy to follow (48%), however, 47% suggested other terms which did not include the adjective 'social' (Table 4).

Table 4: Social distance possibility and term understandability.

Code - Social distancing at home	Frequency	Percentage
Not possible	18	36%
All times	16	32%
When required	14	28%
Not observed	2	4%
Code - Social distancing in community		
Most of time	17	39.5%
All times	9	21%
Not observed	8	18.5%
Lack of awareness	5	12%
Need to buy-in	3	7%
Believed it is only for non-white to follow	1	2%
Replace the term social distancing with…		
No change	20	48%
Personal space	5	12%
Remove social - Physical distancing	5	12%
The two meters rule	3	7%
Safe distance	2	5%
Socially aware	2	5%
Use of different languages	2	5%
Movement Awareness	1	2%
No mixing	1	2%
Stay apart	1	2%

Regarding masks/face covering (Table 5), most people understood the purpose of wearing one (90%), and complied with the guidelines (85% personal and families, 81% in the community). However, 5 participants disagreed with the

need to wear face covering and did not wear one.

Table 5: Face covering.

Code - Purpose of wearing face covering	Frequency	Percentage
Correct understanding	54	90%
Lack of understanding	6	10%
Code - Wearing mask - personal		
All times	10	29%
When required	8	23%
All family members without exemption	6	18%
Exempted	5	15%
Not observed	5	15%
Code - Wearing mask community		
Occasionally	21	44%
All times	18	37%
Not observed	9	19%

Meo et al.[46] explored the impact of the isolation periods and quarantine on studying and mental wellbeing of students (n=530) and concluded that 22.5% of students reported feeling desolate, 56.2% reported a reduction in time spent studying. The authors did address differences between responses recorded by male and female students, with females reporting physical exhaustion in comparison to males. When participants were asked to explain shielding the majority (52%) had the correct explanation (Table 6). However, 50% of participants indicated that it is impossible to observe in their household. Regarding the use of the two terms, 62% indicated that they were clear terms, it was interesting to see the comments made by 14% (n=4) that they wanted autonomy when making the decision to isolate or not and the provision of social services such as income and food were essential to be considered.

Table 6: Shielding and isolation.

Code - Shielding means..	Frequency	Percentage
Correct understanding	29	52%
Lack of understanding	27	48%
Code - Shielding or isolation feasibility		
Impossible	24	50%
Possible	24	50%
Code - What can replace isolation/Shielding		
No change	18	62%
Need social care support to be possible	3	10%
Allow autonomy to isolate or not	2	7%
Limited contact	2	7%
The term is hard to explain	1	3.5%
Keep yourself safe	1	3.5%
Testing	1	3.5%
Vaccination	1	3.5%

Participants were then asked about public health messages during the period of March 2020 to May 2021. Wordstat® was used to analyse repeated codes and words and their frequency (Table 7). Most repeated themes were '*the messages were clear'* in questions 1, 4 and 6 (49%, 35%, 62%) followed by 'confusing' (19%, 21%, 29%). Family support was the most offered type of support at 67% by participants. The most reported impact was on mental health as being decline (questions 2, 5 and 8 as 19%, 51%, 52%), stress (questions 1, 2, 4 and 5 as 7%, 16%, 14%, 29%) or loneliness (questions 2 and 7 as 4%, 14%).

Table 7: Codes for public health messages questions.

1. Ease to understand public health messages leading to the first lockdown (March 2020)	Frequency / % (n=53)	2. Ease to understand public health messages leading to the first lockdown	Frequency / % (n=68)	3. Your role in explaining health messages to your family and/or community	Frequency / % (n=18)	4. Ease to understand public health messages the daily messages and briefs	Frequency / % (n=43)	5. The impact of the daily public health messages on you and your family	Frequency / % (n=41)	6. Ease to understand public health messages during the second lockdown	Frequency / % (n=42)	7. The impact of the second lockdown on you and your family?	Frequency / % (n=51)	8. The ongoing impact of COVID-19 on you, your family or community	Frequency / % (n=59)
Clear	26, 49%	Stressful	11, 16%	Support - family	12, 67%	Clear	15, 35%	Negative mental health impact	21, 51%	Clear	26, 62%	No impact	18, 35%	Mental impact	26, 52%
Confusing	10, 19%	Decreased mental health	9, 13%	Support - patients	2, 11%	Confusing	9, 21%	No impact	14, 34%	Confusing	12, 29%	Frustrating	8, 16%	Social impact	13, 26%
Easy	5, 9%	No impact	9, 13%	Support - vaccination	2, 11%	Politically motivated	7, 16%	Information overload	2, 5%	Followed first lockdown guidelines	2, 5%	Stressful	15, 29%	Physical impact	8, 16%
Inaccurate	3, 7%	Became closer to family members	7, 10%	Support - elderly scheme	1, 6%	Information overload	6, 14%	Politically motivated	2, 5%	Politically Motivated	2, 5%	Loneliness	7, 14%	No impact	6, 12%
Stressful	3, 7%	Stressful for students	5, 7%	Support - food distribution	1, 6%	Stressful	6, 14%	Repetitive	2, 5%			Education impact	1, 2%	Resilient	3, 6%
Hard to follow exemptions rules	1, 2%	Stressful financially	5, 7%									Employment impact	1, 2%	Education impact	2, 4%
Hard to follow furlough scheme	1, 2%	Loss of work-life balance	4, 6%									Physical health impact	1, 2%	Awareness inequality	1, 2%
Information overload	1, 2%	Stressful for healthcare professionals	4, 6%												
Not accessible due to internet poverty	1, 2%	Hard for large families culturally and	3, 4%												

		religiously													
Politically motivated	1, 2%	Loneliness	3, 4%												
Understandable but not for older people from another cultures	1, 2%	Decreased physical health	2, 3%												
		Full of unknown	2, 3%												
		Life was on hold	2, 3%												
		Political mistrust	1, 1%												
		Media mistrust	1, 1%												

The clinical manifestation of COVID-19 varies in severity. A large proportion of the population are asymptomatic (estimated as 1 in 3). Alimohamadi et al.[47] conducted a meta-analysis that analysed 54 articles on the clinical characteristics of COVID-19. The most common symptoms were described as mild illness including fever (81.2%), cough (58.5%), fatigue (38.5%), dyspnoea (26.1%) and excessive sputum production (25.8%). Gastrointestinal symptoms such as nausea, vomiting, diarrhoea, abdominal pain was reported by 10% of the population.[48,49] Other commonly reported symptoms include anosmia, ageusia, myalgia, sore throat and headaches. In small subsets of severe cases, the disease rapidly progressed to respiratory failure, septic shock, multi-organ failure and death.[49] Long COVID-19 is an umbrella term used to describe the post-COVID-19 syndrome characterised by a group of signs and symptoms a patient develops during COVID-19 infection, and that lasts for more than 12 weeks, or the manifestation of emerging new symptoms after recovery.[50, 51] Long COVID-19 is difficult to define, and can persist indefinitely, long after the patient is declared non-infectious.[51] Further, there is considerable inter-patient variability in the signs and symptoms of long COVID-19 – in their severity, duration, frequency, and effect on quality of life. This includes, but is not limited to, fatigue, dyspnoea, brain fog, dizziness, joint pain, depression, anxiety, decreased appetite, insomnia, anosmia, tinnitus, and dizziness.[51] Factors that may affect the development and recovery times of long COVID-19 include the level of social isolation, altered lifestyle practices, reduced exercise, economic instability, and ethnic background.[50] Another study of over 1000 patients noted that gender can have a significant influence on the duration of experiencing COVID-19 symptoms.[52] Approximately 10% of patients indicated that symptoms persisted beyond three weeks after the initial infection, with a higher proportion of patients reporting malaise after acute COVID-19 infection.[53] The COVID-19 pandemic has negatively impacted the public's access to a range of necessary services, including mental health assistance, general healthcare support, and lifestyle advice.[54] For the 8 questions in table 7, 23 codes were repeated three times or more (n=137 total) and 13 words were repeated 12 times or more (n=426 total). Tables 10 and 11 show the most repeated codes and words. Mental health related cores (n=73, 53%) and words (n=89, 23%) were the most repeated by participants.

Table 8: Codes by frequency for question 1-8.

Codes	Frequency
Mental impact	23
Negative mental health impact	19
Politically motivated	12
Support family	12
Information overload	9
Isolating and stressful	7
Social impact	5
Stressful mentally and financially	5
Closer to my family	4
Confusing	4
Isolating and stressful	4
Mentally stressful	4
Stressful for healthcare professionals	4
Stressful	4
Closer to family	3
Decreased mental	3
Hard for large families	3
Information overload clear	3
Culturally and religiously	3
Physical health	3
Stressful and lonely	3

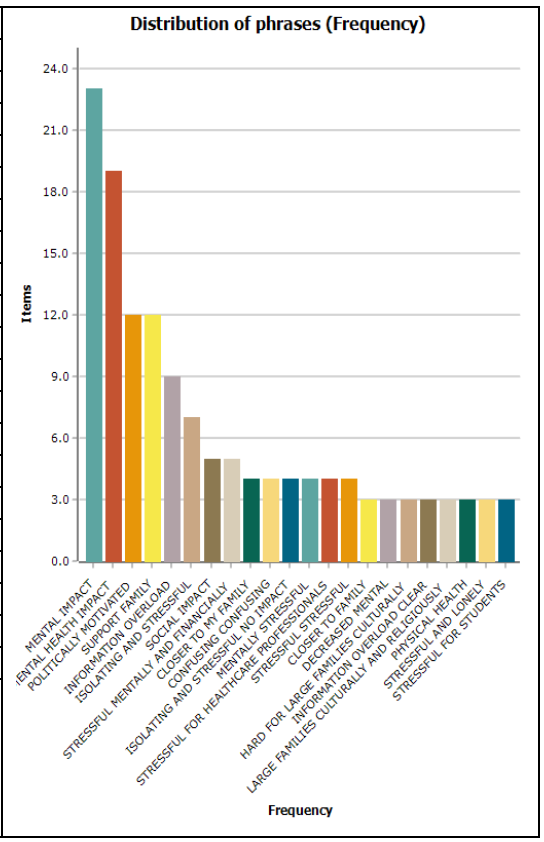
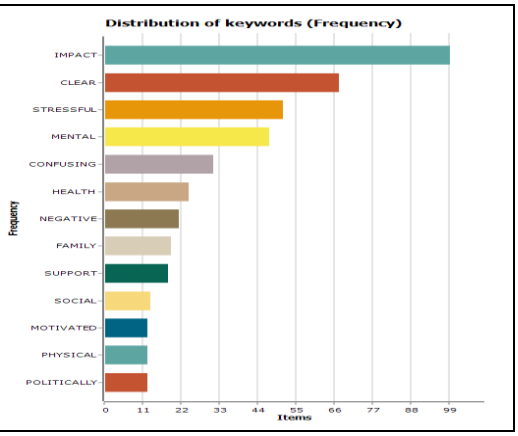


Table 9: Most repeated words for question 1-8.

Words	Frequency	% Shown	% Total
Impact	99	23.24%	13.77%
Clear	67	15.73%	9.32%
Stressful	51	11.97%	7.09%

Mental	47	11.03%	6.54%
Confusing	31	7.28%	4.31%
Health	24	5.63%	3.34%
Negative	21	4.93%	2.92%
Family	19	4.46%	2.64%
Support	18	4.23%	2.50%
Social	13	3.05%	1.81%
Motivated	12	2.82%	1.67%
Physical	12	2.82%	1.67%
Politically	12	2.82%	1.67%



Eight males (4 English, 2 Pakistani, 1 Indian and 1 Welsh ethnic origin) and 36 females (6 Afro-Caribbean, 10 English, 1 Bangladeshi, 1 English/Irish, 2 English/Indian, 5 Indian, 7 Pakistani, 1 Polish, 1 Iranian, 1 Nigerian and 1 Welsh/Norwegian/English) answered or partially answered the questions regarding testing and vaccinations (n=44, 39%). Eight participants indicated that testing was not available, at all, at the beginning of the pandemic or sometimes in their local area. Twenty one participants shared the personal or community reasons for not testing (Table 10).

"No, PCRs anywhere near me at home. Much easier in Birmingham."

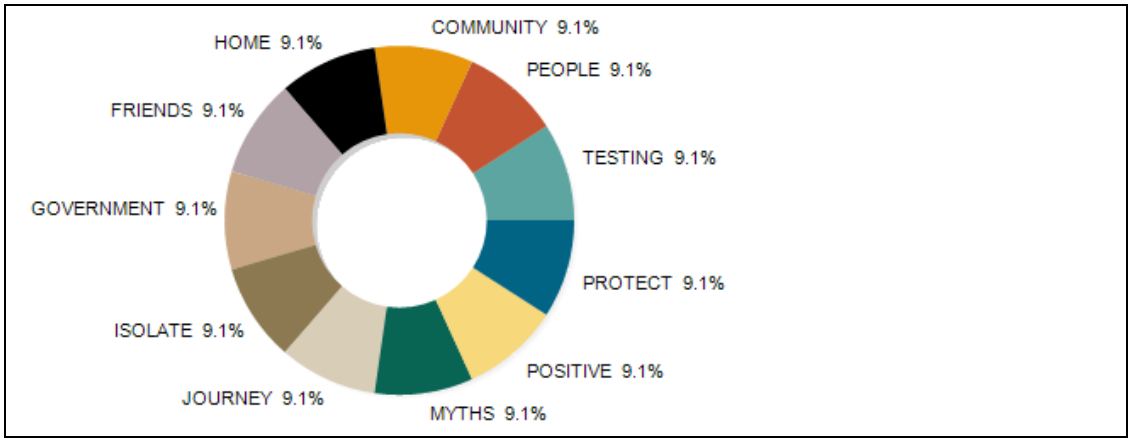
"Limited to start with and often crowded"

"Lateral flow yes, PCR no, I had to travel for a PCR."

"Not exactly, LFTs and PCRs weren't easy to find"

Table 10: Reason for poor COVID-19 testing local uptake.

I believe some were afraid for their jobs, and others didn't care.
Religious reasons I assume.
Some believed it was a hoax until a friend or family got COVID-19.
Yes, they were scared, I live in a so called "deprived" area and people are set in their ways, very strong and old fashioned opinions on remedies and injections.
The tests were uncomfortable to do but were free and ok to do in the privacy of your own home. My daughter refused to test at school because of everyone watching her but did lateral flows at home.
Booking an appointment for testing in lockdown 1 could be problematic, friends of ours had a 2 hour drive to a testing facility. However, the situation rapidly improved.
Willing if had symptoms. Not willing if didn't see the point of being tested.
Time, journey time, journey cost, did not want to, everybody has a choice, some tests give wrong results, people can't afford to have time off work.
One of my friends wouldn't get tested because they didn't want to receive a positive result and have to isolate which affected our relationship as I didn't agree with this thinking or their morals.
A lot were not willing to take testing due to rumours spreading within the community.
Some people did trust the testing, others did not, or felt like they hadn't been anywhere so did not test.
Not only BAME community not willing to get tested, but also white minority and white people have the same problem. Lack of knowledge, failure to debunk the myths around vaccine, resistance to unlearning myths and relearning the truth.
Because they didn't want to know that they had COVID so that they could continue working.
Financial pressure of having to stay home if positive.
Because this kind of change never ever existed before in their life.
Thought it was fake/ drama.
COVID is a con and does not exist; God will protect me; vaccines are more dangerous than COVID.
Yes, owing to distrust in the government and that the scientific community was financially biased to agree with the government.
Were because they wanted to know they were safe and protect others, but were not because they did not want to isolate, and some couldn't order tests due to limited Wi-Fi access
Some did not believe in testing, some said they know what a cold feel like or feeling under the weather and that is what they were experiencing.
Because of controversy linked to the swabs causing "other" issues or the pandemic being blown out of proportion.
Codes



The World Health Organisation identifies older adults as having at higher risk of infectious diseases; therefore, vaccinations have been encouraged to provide immunisation as a preventative and effective measure of reducing this risk.[55] A Cochrane review by Glenton et al.[56] reviewed 11 studies to explore factors that influence vaccine uptake among older adults and identified key barriers such as lack of information, presence of misinformation and fears and concerns about the vaccines' development process and their side effects. Healthcare professionals believed it was essential to provide sufficient information on the vaccines and then leave it to the patient to make an informed decision. Others focused on explaining benefits such as an increase in compliance, vaccination rates and the financial benefits to patients.

Regarding COVID-19 vaccinations public health messages only seven participants shared their opinion (Table 11).

Table 11: Participants opinion about vaccines public health message.

It was hard to keep track of changes and confusing when the changes were announced but didn't come into effect straight away.
Me and my mum had them very early on as we are involved in the healthcare setting
Was very shocking to hear about the vaccine at first, think the messages were not very clear for individuals from the ethnic communities
I think they were and still are contradictory
Confusing at times especially for friends and neighbours for whom English is a second or third language
For some it was slightly more complex to understand how isolations changed depending on vaccination status. Should have been made clearer - perhaps where you can select your specific scenario and then it tells you what you need to do
Mixed messaging started to appear due to variation between areas
Codes ISOLATIONS INVOLVED ENGLISH ANNOUNCED ETHNIC COMMUNITIES CLEARER VARIATION MESSAGES MIXED TRACK SPECIFIC EARLY CONFUSING SHOCKING EFFECT UNDERSTAND CHANGED VACCINATION COMPLEX HARD CONTRADICTORY INDIVIDUALS LANGUAGE HEALTHCARE

Regarding personal choice about being vaccinated or not, only 37 participants shared their reasons (Table 12). It can be seen that the health sector needs to be more effective in discussing miss information and disseminating vaccinations facts.

Table 12: Reasons for vaccination or no vaccination uptake.

Fully vaccinated (n=28)
Important for work roles. Wish to protect other family members
I was part of the Oxford Trials so i had my vaccine in early 2020, but only found out in Jan 2021 that i had the vaccine as blind trials.
I have had both of my vaccines and now the Booster Jab. I am a student so was afraid that I wouldn't be allowed to go out on placement. Plus, I suffer from Asthma so weighed my pros and cons to have the vaccine
I think its up to the individual if you want to be vaccinated or not, personally I did it just so I can go on holiday
I was more than happy to be vaccinated
All 3 vaccines due to working on the front line. I saw the effects of COVID, 3 of my family died. Vaccines were the only way I could see normality resuming
I have received both doses and my booster dose. I feel it's the right things to do as it protects not only me, but those most vulnerable
I don't differentiate between the COVID vaccination and any other vaccinations I've received. Vaccinations are proven to limit the risk of serious illness
I am vaccinated due to own health. However, I can see why people are refusing when it feels like it's being forced on the public rather than as a choice
Only to avoid prejudice from those who were vaccine-Gods
I wanted to remain protected
I had to for NHS. Also just following the rules and protecting other people is more important to me than being selfish about my own health needs
Protecting my parents (especially my vulnerable mum), patients I would come into contact on clinic and the vulnerable people I may come into contact with.
It is best thing to do
If it can protect me and reduce the effects of me getting COVID-19 then I will get it.
I am fully vaccinated. as a pharmacy student, I know the knowledge behind vaccine and keep advising people to get vaccinated.
I need it as a future healthcare professional
I did after I was positive and had symptoms myself
I believe it is important to receive the initial two doses, however not as important to receive the booster Vaccination
Vaccination is helpful. They can lead to herd immunity which be really beneficial to people who can't get Vaccinated. It also helps your body to learn and make antibodies.
Triple vaccinated. No apparent threat to health, although no known long term side effects
I delayed it due to a genuine needle phobia. Had to get it in order to return to work after furlough
Important to have them to protect yourself and others
It's safer for me, my family and the world population
I believe no harm in doing so
No reason not to
Risk of vaccine less than risk of long term effects from covid.
To protect myself and others
Partially vaccinated (n=2)
I've been vaccinated once but won't have any more. I suffered side effects from the first one, so I don't trust the rest
I am double vaccinated, too depressed to worry about the side effects
Not vaccinated (n=7)
No still in clinical trials so I don't trust it
Not vaccinated, have caught covid and not willing to have constant vaccines with every mutation of covid 19
No, I have not been vaccinated, I would like a copy of exactly what is in the vaccine and also the stats from the yellow card scheme which show adverse affects to certain medicines. I appreciate this can be accessed but I wonder why this is not made knowledge on the news like all of the other stats we receive.
No, I do not have the flu jab and i do not intend of having the vaccine.
No, I would not get the vaccine and do not recommend personally due to side effects unless for people with comorbidities

No, owing to vaccine being created as a knee-jerk product and then immediately distrusted when Omicron was discovered. Not great selling techniques and feel that a bullying and coercive approach taken by government reinforces my decision.
I have not but will be getting them soon only because I want to go on holiday, I understand that covid is dangerous especially in the elderly and immunocompromised, I do not believe the vaccine is dangerous or does not work, however I think people should have a choice and it should not be enforced, although I have always said if I need to take the vaccine for example work/to go on holiday/university, then I would do so
Codes 

Participants were then asked if their family members vaccinated or not, only 12 participants expanded on their answers (Table 13).

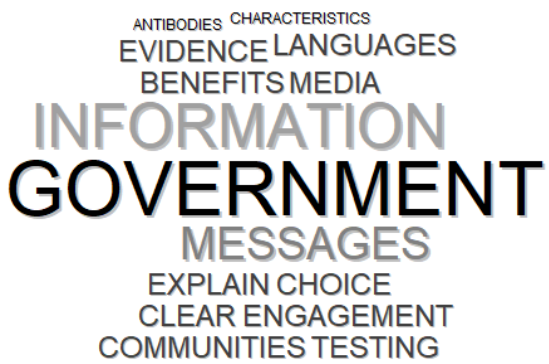
Table 13: Family vaccination status.

I have but my partner and children haven't, my husband believes many have died from complications with the vaccine's myocarditis being one of them.
Yes, except my youngest daughter. She is 13 and has refused to have it due to having the HPV vaccine this year. She doesn't want to have any more vaccines at the moment, and I do not want to force her when the evidence for her age bracket suggests it's more benefit to public health than her individual health.
Yes, they have. Their position is that not being vaccinated is socially irresponsible.
Husband hasn't as doesn't believe in it.
They all vaccinated against covid and already had their booster. Generally, first they were asking questions regards misconceptions and conspiracy but by my explanation all their doubt been resolved.
Yes, because they are healthcare professionals and work with patients all the time and my parents are quite old in age so need to be protected.
At the beginning children were hesitant to have the vaccine when first introduced but then gradually came to an understanding how important it is to protect themselves and others around them.
We did not want to have it as we had heard rumours that vaccines have bad side-effects and are made to decrease population and weaken your immune system. Some people we spoke to have the first jab only and got really ill or even died, so we were sceptical but then my brother had it first he was positive as he sat next to a guy at uni who had just recovered from been positive. My brother gave it to my dad gradually and then me and my sisters got it too. We got really bad symptoms and once it was over, we gave thought to the vaccine and then just followed our heart and had the first dose.
Mother has due to pressure from work. I do not approve of the lack of autonomy workers in public sector get. employers very pushy and threatening to get the vaccine.
Sister has phobia of needles so hasn't been vaccinated yet.
Mum and stepfather have but brother and partner have not bothered even though both are in at risk groups.
One member has not and seems to think being fit is enough.

Finally, participants were asked about what could have been done better to increase COVID-19 vaccination uptake, 27 participants shared their opinion (Table 14).

Table 14: Participants opinion about other actions could have improved the vaccination uptake.

Realistic statistics on characteristics/ case studies of those who had the virus and possible contributing factors for those at higher risk.
Further testing and more honesty about the possibility u can still get COVID.
Give us all the information, the good and the bad. We have a right to know, and you can't tell me

that everyone has had a good reaction.
Not to take my human rights away, the government are using it to control me, which is a personal trigger i have from my past.
Make it all walk ins! People were waiting for GPs to ring them when vaccines were going spare!
I only personally know 2 people who have refused vaccination, both as a result of reading information found on the internet which appears to indicate a) the vaccines are unsafe, and b) covid isn't real. Sadly, some people are …. and no amount of positive reinforcement of genuine health messages will change that.
Explain the benefits and give people choice.
I don't think it is as simple to accept and promote the vaccine. Even with all the knowledge about the vaccine, people still have the right to decline it, just how people do with all the other vaccines.
More evidence.
Better trust of the government. Education in school? - not sure how much that was done.
Maybe a animated video explaining how the vaccine produces protective antibodies and something about the long term effects which a lot of people were unsure about.
More confidence with the media to show it was safe, media played a big role to scare many people
More information available on it would help.
More testing, and more Side effect evidence. The spread of negativity was draining and confusing.
Debunk conspiracy theories, teaching them how the vaccine has already helped us for years.
More information, trials etc.
The message was very clear only for certain communities. Health professionals were coming on national TV to deliver messages about the vaccine only in English language at first, that wasn't the right way to go. Then when not enough people from other backgrounds didn't or weren't coming to have their vaccinations then things changed. Health professionals started to deliver messages inn the preferred languages and so on to get the message across loud and clear to people from other communities to come forward.
I think more engagement, more reassurance, things explain in different languages and more engagement where they can put their uncertainties across and get answers that they need.
More choice. stop propaganda and force.
Perhaps get more religious/community leaders involved.
Highlight the benefits and help reduce the stupid misconceptions.
Very little I think as they had made their minds up.
Apart from being mandatory I can't think of anything else.
Perhaps the government ought to let the health professionals that know people such as your GP. The government also need to know that mandating has the opposite to the desired effect. For example, listening to two BAME built describing how they would deal with someone that challenged them regarding a lack of face covering was worrying as someone innocent may have got hurt by government policy.
More local vaccination centres.
Dispel common myths regarding the vaccine - show key figures getting the vaccine on tv. Tougher sanctions and restrictions on those who don't get vaccine.
Stop the spread of fake news, don't mandate it and make it more readily available.
Codes 

In the final part of the survey, participants were asked about what could have been done better to protect their community from COVID-19, 26 words were repeated 91 times. With early intervention was the most used word (Table 15).

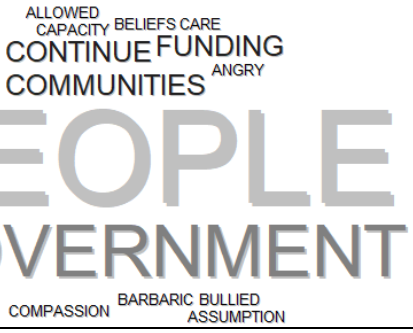
Table 15: Participants opinion about other actions could have better protected them from COVID-19.

Words	Frequency	% Shown	% Total
Early	8	6.40%	5.67%
Introduction	7	5.60%	4.96%
Measures	7	5.60%	4.96%
Prevention	7	5.60%	4.96%
Rules	6	4.80%	4.26%
Are	5	4.00%	3.55%
Better	5	4.00%	3.55%
Ensuring	5	4.00%	3.55%
Followed	5	4.00%	3.55%
Messages	4	3.20%	2.84%
About	3	2.40%	2.13%
Use	3	2.40%	2.13%
Vaccines	3	2.40%	2.13%
Availability	2	1.60%	1.42%
Awareness	2	1.60%	1.42%
Cultures	2	1.60%	1.42%
Definitive	2	1.60%	1.42%
Facts	2	1.60%	1.42%
Free	2	1.60%	1.42%
Masks	2	1.60%	1.42%
Suitable	2	1.60%	1.42%
Support	2	1.60%	1.42%
Testing	2	1.60%	1.42%
Care	1	0.80%	0.71%
Communication	1	0.80%	0.71%
Consistent	1	0.80%	0.71%

Three phrases emerged from the Wordstat® analysis, "lead by example" (44%, n=10), "support each other" (30%, n=7) and "promote facts" (26%, n=6). Eleven participants shared further comments (Table 16).

Table 16: Final comments.

Even though it was a rough year or so I am in a much happier place now and have made a lot more friends at uni. I think the social isolation is what really affected me, but I was able to reflect inwards and learn who I was as a person which I think is an important thing to do.
There is the assumption that people from diverse ethnic communities cannot understand the language of "white" people. And that it needs to be tailored which only serves to perpetuate indirect discrimination. Information in different languages is a standard. Use of real people and not the politicians would improve reality.
The government need to stop assuming people's intelligence based upon their post code.
I feel the government have blown COVID-19 out of proportion to help their friends make money and control the population. I feel vaccination passports are barbaric and the government have not a clue what they are doing.
I am deeply saddened to learn that in a small community I lost 12 family members.
Feel absolutely scammed and angry. I was on the verge of doing something silly initially, but luckily, I feel that I woke up and realised the game. I feel bullied and pressurised by the government and a liken them to terrorists that will make your safety dependent on following their demands.
We need to learn to live with covid, but some things still aren't right. People died alone and continue to die alone. People continue to battle cancer, get bad news and have babies alone. Covid removes care and compassion and dignity. It made me question my core beliefs and leave the NHS. It has changed humanity in society and bought out the worst in government. We need to re connect and be allowed to find community capacity again.
Messages should be clear and encourage communities rather than feel like it is being forced/mandated as this leads to suspicion thus preventing people from accepting vaccines.
For some individuals COVID is just one more thing to be sceptical about (along with 9/11 and many other things). Take up of and access to medical services continues to have a racialised discriminatory element. Although white, I live in a predominately Muslim (Pakistani/Somali/Middle Eastern area) and noticed that my Pakistani friends were much less likely to believe any of it than Iraqis or Libyans.

The fact there is a survey about yet another new term for race and ethnic minorities just shows how downhill the world is going. No one cares, not everything is racist. It is perfectly to ask someone if they consider themselves an ethnic minority. Race shouldn't even be a thing anymore; it is 2021 people are people.
More funding for the NHS please, less funding for boys' clubs in Downing Street.
Codes 

CONCLUSION

In this study most participants indicated that neither BAME or new terminology is required, and it should not continue to be used. The majority observed social distancing, wore face covering and isolated when required. Most participants indicated that the public health messages during the pandemic were clear. The most reported impact was the decline of mental health, followed by physical health. False information, access and availability were the factors shared by the participants for not being tested. Regarding personal choice about being vaccinated, participants indicated that health sector needs to be more effective in discussing misinformation and disseminating vaccinations facts. Early intervention was the main theme participants indicated as missed opportunity which might protected their community from COVID-19 pandemic.

Ethics approval: The study received ethical clearance from the University of Wolverhampton ethics committee (LSEC/202021/HM/106, 25/11/2021) and reciprocally approved by the university of Birmingham (UoB, 26/01/2022) and Aston University (Aston University, 11/2/2022).

Authors declaration: The manuscript has been read and approved by all the authors, the requirements for authorship as stated earlier in this document have been met, and each author believes that the manuscript represents honest work and authors alone are responsible for the content and writing of the paper.

Availability of data and material: anonymised data can be made available on request.

Conflict of interest: No conflict of interest to report.

Funding: No external funding.

Authors' contributions: Hana Morrissey: substantial contributions to research design, data collection, initial analysis and drafting the manuscript, all other authors: substantial contributions to drafting the manuscript.

ACKNOWLEDGEMENT: The authors would like to thank all students who took part in the survey. We also than Mrs Rachel Manning for facilitating the survey distribution.

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