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Impact of COVID-19 on Migrants' Access to Primary Care and Implications for Vaccine Roll Out: A National Qualitative Study

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Abstract

Background

The COVID-19 pandemic has led to considerable changes in the delivery of primary care in the UK, including rapid digitalisation, yet the extent to which these have impacted on marginalised migrant groups – already facing existing barriers to NHS care – is unknown. Understanding the perspectives and experiences of health professionals and migrants will support initiatives to deliver more effective health services, including delivery of the COVID-19 vaccine, to marginalised groups.

Aim

To understand the impact of the COVID-19 pandemic on recently arrived migrants and their access to primary healthcare, and implications for COVID-19 vaccine roll out.

Design and Setting

Primary care professionals, administrative staff, and migrants (foreign born; >18 years; <10 years in UK), were recruited in three phases using purposive, convenience and snowball sampling from urban, suburban and rural settings.

Methods

In-depth semi-structured interviews were conducted by telephone. Data were analysed iteratively, informed by thematic analysis.

Results

64 clinicians were recruited in Phase 1 (25 GPs, 15 nurses, 7 HCAs, 1 Pharmacist); Phase 2 comprised administrative staff (11 PMs and 5 receptionists); and in Phase 3 we recruited 17 migrants (88% asylum seekers; 65% female; mean time in UK 4 years). PCPs and migrants concurred that digitalisation and virtual consultations (telephone, video, and online form-based) have amplified existing inequalities in access to healthcare for many migrants due to lack of digital literacy and access to technology, compounded by language barriers. PCPs were concerned that virtual consultations have resulted in challenges building trust and the risk of missing safeguarding cues. Both PCPs and migrants highlighted challenges around registering and accessing healthcare due to the physical closure of surgeries. PCPs and migrants alike reported indirect discrimination, language and communication barriers, and lack of access to targeted and tailored COVID-19 information or interventions. In addition, migrants reported a range of specific beliefs around COVID-19 and on potential COVID-19 vaccines, from acceptance to mistrust, often influenced by misinformation. PCPs

raised concerns that migrants may have increased risk factors for poor general health and to severe illness from COVID-19, in part due to their social and economic situation. Innovative opportunities were suggested to engage migrant groups through translated digital health advice using text templates and YouTube which merit further exploration.

Conclusion

Pandemic-related changes in primary care delivery may be here to stay, and some migrant groups are at risk of digital exclusion and may need targeted additional support to access services. Solutions are urgently needed to address vaccine hesitancy and barriers to vaccination in marginalised groups (including migrants) to ensure equitable uptake of the COVID-19 vaccine. As primary care networks operationalise the delivery of the COVID-19 vaccine, these findings provide critical information on specific strategies required to support migrant population to access primary care and overcome misinformation around COVID-19 and the COVID-19 vaccine.

Keywords: Primary Health Care, COVID-19 Vaccine, Delivery of Health Care. Service delivery, Transients and Migrants

How this fits in

The impact of pandemic-related shifts in primary care delivery on marginalised migrant groups, who may already face major disparities in accessing primary care, is poorly elucidated. We found that the rapid digitalisation of primary care services and physical closure of surgeries during the pandemic have amplified disparities in access to healthcare for specific migrant groups, with many lacking access to and capacity to use technology, compounded by language barriers. Migrants may be at increased risk of misinformation about COVID-19, and face barriers to vaccination, which merits further consideration as COVID-19 vaccine roll out begins. Improved outreach to local migrant community organisations and places of worship, alongside co-designing with migrants more inclusive delivery approaches and creative integration of migrant ambassadors into information-sharing campaigns are needed. Primary care can maximise the opportunities of digitalisation for migrants through flexible engagement by multiple modalities (e.g. text, email, letter and YouTube videos) to provide targeted, translated advice and information, virtual group consultations for

patients with a specific condition, and working with local leaders and NGOs to access and disseminate information through informal communication channels.

Introduction

Migrants to the UK– particularly more recent arrivals and marginalised groups including refugees and asylum seekers – may face barriers to accessing primary care (1). These include confusion about the NHS, language difficulties and discrimination, and, for some, restricted entitlement to healthcare due to their immigration status (2). Migrants are a diverse group, but are considered to be disproportionately impacted by infectious diseases compared to the host population and may be under-immunised, with implications for health systems on arrival (3). There are concerns that the COVID-19 pandemic has exacerbated these inequalities, with emerging data highlighting the differential impact of SARS CoV-2 on migrant groups and the wider ethnic minority population (4–6), but limited exploration thus far of the views of migrants themselves.

Digitalisation of primary care has been a key feature of the pandemic, with countries switching away from face-to-face to virtual consultations via telephone, video, and online form-based communications (including E-consult) and text communications (including accuRx) (7,8). A longitudinal mixed-methods study on the implementation of remote consulting in UK general practice demonstated a rapid change to 90% remote GP consulting (46% for nurses) by April 2020 and that text messaging increased more than three-fold (9). Digitalisation, however, can disproportionately disadvantage marginalised groups, amplifying existing structural inequalities through differential access and digital literacy, differential capacity to benefit, and differential motivation for use (10,11). A recent report on migrants living in vulnerable circumstances in England described an inability to register with a GP, digital exclusion and language barriers preventing access to health advice with COVID-19 symptoms (12). These barriers may have important implications for COVID-19 vaccine roll-out, with Public Health England suggesting flexible delivery models to reduce inequalities in vaccine uptake in at-risk BAME groups, (13) which includes some migrant populations.

In this study we aimed to seek the views of both a range of primary care professionals (PCPs) and recently- arrived migrants to the UK themselves to explore the specific impact of the pandemic on migrants and their access to primary care, implications for COVID-19 vaccination uptake, and to better understand potential solutions to inform the immediate public health response.

Methodology

Study Design

We completed an in-depth qualitative study of both recently-arrived migrants (residing in the UK <10 years) and PCPs. This semi-structured interview study involved three iterative, linked phases. Phase 1 consisted of interviews with clinical PCPs and informed data collection and analysis for phase 2 (interviews with administrative PCPs) and phase 3 (recently-arrived migrants: foreign-born; >18 years of age; <10 years in the UK). Topic guides were developed by the research team comprising FK and JC (GPs) and AD, SH, AC, SEH (academic researchers), and piloted with two GPs, with input from our migrant representative Project Board. Several migrant representatives offered ongoing feedback throughout the study. Separate topic guides were developed for each phase. PCPs were asked about their experience of providing healthcare to migrants (foreign-born individuals), the impact of the COVID-19 pandemic, and implications for COVID-19 vaccine roll-out. We sought views from migrants around their experiences during the pandemic, the impact on access to primary healthcare, and their views on the COVID-19 vaccine delivery within their communities. Further details can be found in *Table 1*.

Sampling and Recruitment

In Phase 1 and 2, PCPs were recruited using purposive sampling across urban, suburban, and rural settings across England. Further participants were identified by means of snowballing, with those recruited asked to contact colleagues. Recruitment packs were disseminated through 6 local Clinical Research Networks (Kent, Surrey and Sussex, South London, North London, North West London, West Midlands CRN and Greater Manchester CRN), and advertised on GP bulletins, newsletters and through practice manager mailing lists, with further participants recruited from Newcastle and Oxford through word of mouth.

In Phase 3, migrants were recruited using convenience and snowball sampling. Adverts for the study and participant information sheets in English were circulated to 20 migrant support groups, charities providing healthcare-related support to migrants and on social media across England. Further participants, including those who did not speak English were recruited by word of mouth. Verbal (by phone) explanation with an interpreter was offered to interested individuals, and translators were available for interviews as required.

Research Team and Reflexivity

The team comprised researchers from a range of professional backgrounds: FK and JC (GPs), SH, AC, SH (Academics), with specific input from a wider project board comprising migrant representatives. This diversity enabled robust discussion throughout design, collection and analysis stages, and the team attempted active reflexivity throughout. FK and JC attempted to overlook their profession before, during, and after the interviews with PCPs. Nonetheless, the key researchers leading the interviews were universally female, educated and Caucasian which may have affected perceptions of migrant interviewees in particular.

Ethics and informed consent

Ethics was granted by St George's, University of London Research Ethics Committee (REC2020.0058 and 2020.00630) and the Health Research Authority (REC 20/HRA/1674). For all 3 Phases participant information sheets were circulated, and signed informed consent was acquired prior to telephone interview. Participants consented to audio record interviews.

Data Collection and Analysis

In-depth semi-structured interviews were conducted by telephone (by JC, FK, AD, AC, SEH), lasting 30-90 minutes. 2 migrant interviews were conducted with translators. We used this approach because it enables targeted questioning, but also provides the opportunity for participants to explore in detail areas of importance to them. Participants were compensated with shopping vouchers (£20 for PCPs, £37 for migrants, due to longer interviews). Each interview was audio-recorded, transcribed verbatim, checked for accuracy and anonymised. Data collection ended when data saturation was reached in key themes across participant groups (14), when new data demonstrated redundancy to existing data (15), and was analysed inductively, informed by thematic analysis. This enables iterative analysis of collective experiences across a dataset (16). FK and JC undertook immersion (17). Transcripts were analysed using NVIVO 12. A comprehensive code list was developed by FK and agreed by JC, AD and SH with disagreements resolved through negotiated consensus; key themes were conceptualised through further discussion with the wider team.

Results

We did 81 interviews (18/06 to 30/11 2020). In Phase 1 we did 48 interviews with PCPs including 25 General Practitioners (GPs), 15 practice nurses (PNs), 7 healthcare assistants (HCAs) and 1 clinical pharmacist. In Phase 2 we did interviews with 16 administrative staff (11 practice managers and 5 receptionists/ other). Characteristics are outlined in *Table 2* (mean age 45 years; 84.4% female; range of ethnicities including White British, Indian, Pakistani).

During Phase 3, we did 17 interviews with migrants; 15 (88%) asylum-seekers and 2 refugees (64% female; mean age 38 years (range 22-59 years); mean time in the UK 4 years (range 9 months-9 years). Participants originated from 14 countries across 5 WHO Regions (see *Table 3*).

Impacts of the COVID-19 pandemic on migrants' access to primary care

There was significant convergence on themes between participants, who reported multiple pandemic-related impacts, risk factors for contracting SARS-CoV-2 and to COVID-19 vaccine roll-out, but also a range of opportunities summarised below.

Implications of digitalisation for migrant groups

PCPs described a shift to digitalisation of registration, appointments, and giving of health information, and prescriptions by text, and largely agreed digitalisation was 'here to stay'. Many PCPs were concerned that lack of technology and challenges using it are barriers to access, though some disagreed. Digitalisation affected many migrants, who cited lack of ownership of technology or not knowing how to use, or afford to maintain it. Some PCPs reported reduced migrant registrations or attendances, due to increased fear of COVID-19 and a preference for home-remedies. Others perceived digitalisation had increased access for younger, fit patients, whilst exacerbating exclusion of marginalised patients.

MIGRANT 9 'They ask you to go onto the website, fill out the form, sign it, scan it, and then send it back to them, so they can register you. I mean, I don't have a scanner, I don't have printers, then how can I kind of download it, scan? Or, if I can do it online, like an electronic signature, most people don't know how to apply that. You need a computer. You can't do that on your phone. So, those forms, for example, are not accessible at all for many people.'

GP 8 'One of the things that's being pushed forward is remote consulting through e-Consult, for example…. If you build more roads, you increase the traffic. So you're not actually dealing with the demand in people who actually need the care. And a lot of migrant populations are absolutely fine with technology. But, again, the outreach of that technology, or how to access it, isn't known to them. And I feel the technology thing in the pandemic is going to widen [inequality of access].'

HCA 6 'Migrant patients did not want to come in. They tended to stay in the household… maybe they feel that at home, they're safe….they do home remedies.'

Other PCPs, particularly practice managers, reported technology has presented actual and potential solutions for migrant groups, such as translating texts into the patient's language, and targeted digital communications to encourage access, group video consultations, and YouTube videos to deliver health advice. These solutions are summarised in *Table 4.*

GP16 'Yes. I've been texting in Turkish. I answer all my Turkish patients and I just know enough Turkish to check I'm not saying complete gobbledegook with Google Translate.'

ADMIN 8 'We do an awful lot of stuff by text, as we find that works really well and across language barriers… migrant people really locked onto [YouTube] because you can see. It just works.'

HCA 6: 'We sent out some text messages, just saying, we're here, we are open, please come and see us… One of our receptionists is making phone calls to where we had very vulnerable migrant families. We also made some COVID leaflets out as well, that was in Somali language and different languages.'

<u>Social and Economic Factors Impacting Health Status and Access to Services</u>

Concerns were cited by both PCPs and migrants that migrants risked pandemic-related financial insecurity and may have faced increased exposure to SARS-CoV-2 due to front-facing jobs. Migrants often expressed that financial concerns, social-exclusion and poor living conditions, had a substantial negative impact on mental health. However, some PCPs reported increase support for access for marginalised groups during the pandemic.

MIGRANT 14 'It's [the pandemic and lockdown] just making the situation for people worse, in a way, because people will start having suicidal thoughts, starting to think about the country that you came here from, there's war, there's poverty.'

PN13 'Because of COVID, there's going to be a lot more job insecurity for these people, which is going to have more of an impact on their healthcare anyway. So I think we're going to see a lot of problems in terms of poverty and food banks and people who've got no recourse to public funds.'

Migrant participants highlighted being moved into cramped hotel or hostel accommodation, and raised concerns around additional costs resulting from the pandemic, for example needing to buy soap and masks when they are on very low budgets. They also reported a loss of access to support networks and community organisations during the pandemic, services that previously helped them to access healthcare and navigate the healthcare system.

MIGRANT 17 'We live on £5, £6 daily, so on top of this you have to buy soap and you have to buy disinfectant, you have to buy a mask, it adds a lot of pressure on your budget'.

MIGRANT 18 'Before the pandemic, you know, people who are British volunteers used to help us, speak to the refugees to apply for those [help with healthcare costs]. But now everything is closed'.

<u>Language barriers compounding access issues</u>

Language barriers were repeatedly reported by migrants and PCPs alike and were perceived to have been increased due to digitalisation (e.g. surgeries closed necessitating reliance on virtual consultations; forms online only in English). Some migrants reported that lockdowns had reduced access to friends that had previously translated for them, and had had a negative impact on their ability to understand health information, appointment letters, and messaging around COVID-19.

GP15 'I think a face-to-face consultation between a recently arrived migrant, particularly the language barrier, is really, really difficult. And I think the phone conversations that I've had [because of the pandemic], have been significantly more so, to the point that, if there's going to be a language barrier, and I think it's a complex problem, I'll just book people in for a face-to-face.'

MIGRANT 4 'None of them speaks English so they were not aware about the restriction and what is the rules. So I advised them: Wearing face masks, washing their hands…if I don't speak English and I

get a letter, I could travel to go seek help from my friends and translate for me. But what if I don't speak English and there is a lockdown where I cannot go out?'

Some GPs expressed a lack of knowledge or desire to engage with virtual consultations involving an interpreter, whilst several GPs and PNs expressed concerns about confidentiality and their ability to detect cues and safeguarding concerns virtually.

GP3 'I think if there are language barriers, then absolutely [telephone consultations cause challenges for migrants]… I imagine that must be quite challenging because you've got to sort out how to do that three-way [interpreted consultation]. I don't know.'

GP18 'I mean confidentiality is another issue in terms of people's living situation and overcrowding and maybe they're sharing computers or obviously rooms and phone calls. We don't know who's in the background when we ring people… there are quite a lot of safeguarding issues.'

However, some PCPs reported improved ability to organise language support and improved access through digital consultations.

GP 1 'The E-consultation method has, surprisingly, shown how the migrant contacts with the surgery have actually increased, compared to pre-COVID…. And increased the reach towards patients who might have language barriers, because they have the ability now to take their time. Maybe use a translator when they're writing, and write down their concerns.'

<u>Trust, Authority and Information</u>

Both migrants and clinical PCPs, particularly HCAs, commented on a lack of information targeted and tailed towards migrants about access to healthcare, public health messages about COVID-19, and the vaccine itself. Migrants reported not understanding health service changes and considerable misinformation circulating among migrant communities about COVID-19, and the COVID-19 vaccine.

GP8 'I think the biggest problem [for COVID-19 vaccine uptake] is going to be language and culture…It's been very blustery from politicians. If English wasn't your language and you watched a press conference, it's quite hard to work out what is going on actually. And then the public health messaging, again, it's not always been very simplistic. It has been changing. It's only because organisations like Doctors of the World…The big issue, basically, is language getting out there to people who need it. The people that need it, it probably won't get to them because they're not

interacting with their health necessarily in the way that the healthcare system was built to do, if that makes sense. The healthcare system is mainly built for fairly tech literate, English literate people. And they're not always using the same channels.'

MIGRANT 6 'Some of the people, culturally, they don't believe that such a virus exists. They think that it's 5G or something else. They rely on other news, so, that's why, in order to change their minds and kind of make them believe, there should be an effective system of information'.

MIGRANT 15 'And we had several issues which were urgent, e.g., my husband, he couldn't move, he had a pain in his back. But we felt we can't go to the GP because of this COVID. I worried. I thought, what if it's very, very urgent, what do we do? Even now, I don't know. If something's urgent, is the emergency department working at the moment?'

Both migrants and PCPs stated that some migrant patients have low levels of health literacy and do not believe in, or trust, science, the UK health system or government, and tend to seek religious or peer input into decision-making. Several healthcare assistants and practice nurses commented on a possible politicisation of doctors and concerns around the link between healthcare and immigration status. These alternative sources of information, and lack of trust in UK-based authorities, were considered to have created particular confusion and mistrust during the pandemic among migrant communities. Several migrants and clinicians stated that trust of a specific practice or individual is essential and harder to build in the absence of face-to-face interaction resulting from the pandemic.

MIGRANT 8 '[Social media groups] were spreading a lot of information like don't go outside tonight because the government will be spreading the powder that will stop COVID. And the funny thing is people believe it because somebody sent them…Like I see in the Russian-speaking group on Facebook so much confusion, so much misunderstanding of the system…I think this is where people make decisions. They will not trust a GP. Even after 16 years in the country.'

GP1 'I think they follow advice, and healthcare advice, not necessarily from doctors but from, let's say, elders within their family society, local community places of worship.'

GP22 'I find that if you do spend a bit more time with people right at the beginning…that then makes future consultations much more straightforward. Because you've done the relationship-building bit of that, and I think that's much harder to do via telephone.'

Indirect discrimination against migrants through a 'one size fits all' approach

Several migrants suggested that pandemic-related changes in primary care have utilised a 'one size fits all' approach, and flexibility is essential to ensure equitable access. Practices' approaches to digitalisation often failed to consider marginalised groups' needs and took a rigid approach to not seeing patients face-to-face even if communication challenges would significantly affect consultation quality.

MIGRANT 4 'They should not use just one way of contact which is like via the phone …please find some way to help. Rather than just putting the blame on that patient…Not everybody has the same opportunity or access.'

MIGRANT 1 'I think that would be better if they would have a little bit GPs open so we could talk with them because normal GPs have access to the interpreters. But it was completely shut down [during the pandemic] which is also a terrible thing to do.'

Both migrants and PCPs recognised that the physical closure of surgeries during the pandemic led to indirect discrimination because migrants have lost practical support from receptionists, and may no longer receive signposting, screening services and new patient health checks.

GP18 'So although our registration seems easy, in COVID I expect it's really difficult for people, because they can't just walk in and get forms and do it in the waiting room. At least our receptionists speak a mixture of languages. They could help people fill in the forms.'

Risk Factors for COVID-19 and COVID-19 Vaccination Roll-Out

PCPs and migrants alike reported concerns that pre-existing distrust of vaccinationsand the NHS alongside low health literacy and widespread misinformation including the idea that COVID-19 is a hoax are likely to negatively affect uptake of a potential COVID-19 vaccine in some migrants. A number of migrants reported contradiction of information between different information sources, confusion or indecision with regards to whether to take the vaccine, and reported using social media, or sources of information from their country of origin to support decision-making. Migrants also reported a range of beliefs that COVID-19 is a 'Western disease', fear of discrimination or being used as 'guinea pigs', and a reliance on 'home remedies' was also thought to present challenges.

These issues are explored in *Table 4.*

Clinical PCPs were concerned about the increased risk factors in migrants making them vulnerable to contracting and suffering serious illness from COVID-19.

GP22 'The [migrant] population is a very high risk population, because of obesity and diabetes, ethnicity and other co-morbidities…we have seen a lot of people dying.'

Opportunities and Solutions

PCPs reported innovative solutions that could strengthen engagement with marginalised groups such as migrants, and has led to new ideas to inform service delivery beyond the pandemic. These included targeted, translated health advice and new community outreach approaches to faith and community leaders to access their communication networks and tackle misinformation (*Table 5*). New specialist services were reported, including specifically-funded services across multiple practices coordinating interpreting and volunteer services. There was consensus that to facilitate COVID-19 vaccine uptake in migrant groups, clear, concise and language-specific written and non-written resources needed to be developed, ideally centrally, for local distribution. Participants noted that Clinical Commissioning Groups (CCGs), GP practices and pharmacies must pro-actively reach out to migrant communities and their institutions to co-design solutions.

GP16 'There could be some great accuRx [text messaging] templates for new migrant patients…Have you recently arrived in the UK? Would you like to get some health screening?'

GP8 'Who are the faith leaders of those communities, who runs them, and how are they communicating at the moment? For example, if you look at people who are Muslim, they're not going to pray together… the information they're getting must be coming from their faith leaders. They must be having the call to prayer; there must be a communication network to do that.'

GP11 'I don't mean just written information [about the COVID-19 Vaccine], a lot of these people don't actually read the language that they speak…Perhaps, work with the population, maybe with the religious leaders.'

Discussion

Summary

We report perspectives of recently-arrived migrants and PCPs about the impact of COVID-19 on UK migrant communities, their access to healthcare, and views around COVID-19 vaccine roll-out. We found that digitalisation has exacerbated existing inequalities in access for specific migrant groups through lack of access to or knowledge of technology with concerns expressed about language barriers, difficulties building trust and the risk of missing safeguarding cues virtually. Physical closure of some surgeries has led to challenges in registering and accessing primary care.

Communication barriers, feeling left behind, and lack of access to information were widely raised by migrants. Additionally, migrants reported specific views around COVID-19 and the associated vaccination, ranging from acceptance to misinformation, often originating from social media or word of mouth. Some migrants experienced increased risk factors to their health and severe illness from COVID-19, partially resulting from their economic and social situations. However, PCPs reported that pandemic-related changes to healthcare delivery may be here to stay, and innovations in service delivery such as translated health advice using text templates and YouTube. *Table 5* provides a summary of the key findings. These findings may be of relevance for other marginalised groups such as those who are homeless, gypsy, Roma and traveller communities, and remote communities in the UK, as highlighted by recent rapid evidence reviews by the Royal College of GP's Health Inequalities Forum (18).

Strengths and Limitations

Our study has generated valuable insights into the experiences of migrants during the COVID-19 pandemic, with direct immediate relevance to the ongoing public health response. The scale of this study- the use of multiple phases, engagement of diverse voices including the migrants themselves and a range of different primary care professionals- enhanced validity. The similarities in perspectives between migrants and professionals were striking.

Next steps would be to engage migrants from all dominant nationality groups in the UK and different types of migrants (e.g. labour, undocumented) to explore the culture-specific impacts of COVID-19, and age-related differences, particularly relevant to a COVID-19 vaccine targeting older groups. Although participants were recruited from many different counties across England, the structure and experience of Primary Care differ in the devolved nations which may limit the generalisability of the findings. Limitations include that the researchers' ethnicity, social background, and professional

training, may have influenced responses through perceived power differentials and social desirability bias.

Comparison with existing literature

Despite a growing body of research exploring the impact of COVID-19 on BAME groups, the specific impact on migrant groups had not been explored in depth. Migrants may have unique risk factors and vulnerabilities to COVID-19 (6) and face barriers to healthcare and poor health outcomes in the UK and Europe (3), which we found was exacerbated during the pandemic due to digitalisation, but digitalisation may negatively impact a range of marginalised groups in similar ways. A recent study of the impact of remote consulting in the UK similarly reported concerns by GPs that non-verbal cues are more important in migrant and other marginalised groups, and that 'SMS, e-consultations, and video would increase access for those with IT skills, and enforce already existing health inequities' (9). Doctors of the World UK (12) concur, reporting that individuals from a range of excluded groups lack access and skills to use technology, and face inability to pay for access to broadband or mobile data, as well as reporting that that migrants lacked access to key COVID-19 public health messages in their own language. This was a key theme in our study, which combined with low health literacy leaves these groups vulnerable to misinformation. This demonstrates the need for linguistically and culturally-appropriate health information; the Swedish 'corona lines' –phone services in various languages offering advice and COVID-19 triaging are one example of good practice (19).

Other studies pre-pandemic are conflicting, suggesting a digital divide in resources needed to participate in remote consultations (7), and that minority groups such as migrants are more likely to miss virtual appointments (20), but can also benefit more than majority groups if interventions are specifically designed with their needs and capabilities in mind (21). Leite, Hodgkinson & Gruber (2020) have highlighted that if barriers such as access and digital literacy can be overcome, then digitalisation provides a crucial way to ease the impact of the pandemic (22). This concurs with our study, which found that where migrants could access and use technology, translated texts and YouTube could provide health information and support access beyond the pandemic.

We demonstrate the need for flexible and adapted policies in order to minimise disparities (23), interventions to address structural inequalities (4,12) and to ensure availability of culturally and linguistically appropriate information about COVID-19 and the COVID-19 vaccine (24).

Our findings provide insight into factors likely to impact on COVID-19 vaccine roll-out in migrant communities, concurring with previous studies that migrants may trust social networks over medical

professionals (25) and that may be more likely than the general population to believe COVID-19 misinformation (26) and mistrust COVID-19 vaccine research (24). Specifically engaging diverse migrant groups in the UK, and co-designing interventions to facilitate COVID-19 vaccine uptake, is therefore a crucial next step.

Implications for practice and research

Practices should seek to ensure they can identify migrants, that they understand their needs through proactive engagement, and that they are providing language-specific advice about COVID-19 and changes in service provision in the pandemic through multiple modalities (e.g. text, email, letter and posters in local community hubs). As COVID-19 vaccines are rolled-out, our findings provide critical information about how to meet migrants' needs (*Table 5*). This includes use of patient participation groups and other local community groups to co-design of delivery approaches, ensuring availability of interpreters and translated culturally-appropriate vaccine advice, alongside integration of migrant ambassadors into vaccine centres, and information-sharing campaigns. Further research should compare and evaluate different virtual consultation approaches in marginalised groups, and the success of co-designed service delivery models in improving access to healthcare and strengthening COVID-19 vaccine uptake.

Conclusion

Increased digitalisation of primary care delivery may be here to stay. Our study demonstrates that migrant groups, who already face barriers to primary care, are at risk of digital exclusion and may need targeted additional support to access services, a finding which may be relevant for other marginalised groups. Migrants may also be at increased risk of misinformation about COVID-19, and face barriers to vaccination, and participants emphasised the need to reach out to local community groups and to provide clear, concise and language-specific written and non-written resources to facilitate COVID-19 vaccine uptake. As primary care networks adapt in the face of the COVID-19 pandemic, these findings provide critical information on specific strategies required to support migrant groups to access primary care and overcome misinformation around COVID-19 and the COVID-19 vaccines.

Additional Information

Table 1: Summary of Foci of Topic Guides

Focus	Aim	Example Question(s) for PCP	Example Question(s) for Migrant
Orientation	*To elicit the lived experience and context from which the participant was speaking about core topics in the interview*	Do you regularly see migrant patients as part of your daily practice? Have you had any training in relation to migrant health?	Can you tell me about your migration status? Do you have a permanent and full registration with a GP in the UK?
Pre-pandemic Barriers	*To provide comparison to the perspective of the participantonwhat has changed as a result of the pandemic*	What is your practice's approach to migrant patients? Why do you think this group is hard to reach?	How long after arriving in the UK did you first contact a GP or any other health care service, and what were your experiences/thoughts on this process?
The general impact of the pandemic	*To understand the perceived context of the pandemic on the specific topics of interest*	Has COVID-19 altered the way your practice functions?	How has the pandemic impacted the community around you?
The impact of the pandemic on access to primary care	*To explore how the participant perceives migrants' access to primary care has been affected, for what reasons, and any potential solutions to barriers identified*	What have been the challenges and opportunities of COVID-19 for the way your practice functions for migrant patients?	How do you think COVID-19 affected your ability to seek healthcare during the pandemic?
Uptake of the COVID-19 Vaccine in Migrants	*To explore the participant's perception on any vaccine hesitancy in migrant groups, the underlying reasons, and any potential solutions to this*	If COVID-19 vaccine is targeted at adults, do you think there will be any issues regarding uptake in migrant populations at your practice?	Are there any groups that may be more unlikely/less willing to be vaccinated with the Covid vaccine? Which ones? Why? Can you think of any barriers/facilitators specific to this vaccine for others around you?

Table 2: Characteristics of Primary Care Professionals Interviewed

	All participants	General Practitioner	Practice Nurse	Practice Manager/ Administration Team	Health Care Assistant / Clinical Pharmacist
Number of participants n (%)	64	25 (39.1%)	15 (23.4%)	16 (25.0%)	8 (12.5%)
Age (mean)	45 (SD 11.8)	44 (SD11.0)	45 (SD11.9)	48 (SD 11.6)	41 (SD 12.7)
Sex n (%)					
Female	54 (84.4%)	17 (26.6%)	15 (23.4%)	14 (21.9%)	8 (12.5%)
Male	10 (15.6%)	8 (12.5)	0	2 (3.1%)	0
Ethnicity n (%)					
African	4 (6.2%)	0	3 (4.7%)	0	1 (1.6%)
Other Asian background	2 (3.1%)	1 (1.6%)	1 (1.6%)	0	0
Other mixed background	3 (4.7%)	1 (1.6%)	0	1 (1.6%)	1 (1.6%)
Other white background	5 (7.8%)	1 (1.6%)	2 (3.1%)	1 (1.6%)	1 (1.6%)
Caribbean	1 (1.6%)	0	0	0	1 (1.6%)
Indian	11 (17.2%)	8 (12.5%)	0	3 (4.7%)	0
Pakistani	3 (4.7%)	2 (3.1%)	0	1 (1.6%)	0
White British	32 (50.0%)	12 (18.8%)	9 (14.1%)	9 (14.1%)	2 (3.1%)
White Irish	3 (4.7%)	0	0	1 (1.6%)	2 (3.1%)
Practice Size					
<5000	6 (9.4%)	1 (1.6%)	1 (1.6%)	2 (3.1%)	2 (3.1%)
5000-10,000	24 (37.5%)	10 (15.6%)	2 (3.1%)	9 (14.1%)	3 (4.7%)
10,000-15,000	10 (15.6%)	6 (9.4%)	2 (3.1%)	0	2 (3.1%)
15,000-20,000	15 (23.4%)	6 (9.4%)	4 (6.2%)	4 (6.2%)	1 (1.6%)
>20,000	9 (14.1%)	2 (3.1%)	6 (9.4%)	1 (1.6%)	0
Practice Location					

Rural	1 (1.6%)	1 (1.6%)	0	0	0
Suburb	13 (20.3%)	7 (10.9%)	2 (3.1%)	2 (3.1%)	2 (3.1%)
Urban	50 (78.1%)	17 (26.6%)	13 (20.3%)	14 (21.9%)	6 (9.4)

Table 3: Characteristics of Migrants Interviewed

Characteristic	N
Age (years)*, mean	**37.9 (SD: 8.4)**
< 35	5 (33.3%)
35-50	9 (60%)
>50	1 (6.7%)
Gender (%)	
Female	11 (64.7%)
Male	6 (35.3%)
WHO Region of Origin (%)	
African (Mauritius, Nigeria, Zimbabwe, other unstated)	4 (23.5%)
The Americas (Venezuela)	1 (5.9%)
Eastern Mediterranean (Afghanistan, Egypt, Iraq, Pakistan, Palestine)	5 (29.4%)
European (Kyrgyzstan, Turkey, Ukraine)	3 (17.6%)
South East Asian (Sri Lanka)	4 (23.5%)
Time since arrival in the UK (years), mean	**4.19 (SD: 2.7)**
<2	2 (11.8%)
2-5	9 (52.9%)
5-10	6 (35.3%)

*Age data missing for two participants

Table 4: Mistrust and Misinformation Relating to the COVID-19 Vaccine Among Migrant Communities

Domain	Key Finding	Example Quote
Decision-making about whether to have the vaccine	Mistrust of UK Doctors, government, or around immigration status	HCA 6 'We're going to have major issues, because I think there's, as I said before, there's a huge distrust around the government.'
	Making decisions on advice from peers, social media or religious leaders	MIGRANT 8 '[On WhatsApp] they were spreading a lot of information like don't go outside tonight because the government will be spreading the powder that will stop COVID. And the funny thing is people believe it because somebody sent them.'
	Seeking Information from country of origin	PN2 'Or the country that you have left, you are still very closely linked to and therefore in that country they may have very strong views about things. You might still be swayed by those views rather than what's in the mainstream of the countries that you've moved to. I see that as a problem.'
	General distrust of vaccinations	PN3 'Especially with the migrant patients, they're not very accepting of other vaccinations… it would be very hard…The ones that probably are coming…they have a flu, I think we might be able to convince them.'
	Contradictions between information sources and Indecision	MIGRANT 15 'Our church leaders, they're all saying to us not to be vaccinated. And, to be honest, I have no right correct answer, I'm confused. I'm not 100% sure that this is actually connected with demonic people who are trying, how can I say, to put their power on people. '
Beliefs about COVID-19	It is a hoax	MIGRANT 9 'Some of the people, culturally, they don't believe that such a virus exists. They think that it's 5G or something else.'
	It is a 'Western disease'	PN13: 'In a lot of ethnic countries, COVID hasn't had the same impact as it has especially within Western Europe and America, and I think it's being seen as very much a European infection. It doesn't impact on BAME communities as much as they say…. There's racial connotations to it as well, but any vaccine that they bought will be similar to the AIDS infection in Africa and people bringing infections to new countries.'
	Natural remedies will protect you	MIGRANT 3 'You just give one teaspoon honey with seven flaxseeds every morning just give them, just to protect from viral.'
Beliefs about the COVID –	Migrant communities have not been included in trials	MIGRANT 18 'The main problem is that we not having the same community participating too much in the trials'

19 Vaccine	Migrants will be used as guinea pigs	MIGRANT 9 'If I go there they might be using me as a guinea pig or I don't know. They might be using me for their own things. I don't trust them.'
	Migrants will be discriminated against in receiving the vaccine	MIGRANT 16: 'We have that feeling we'd be the last to have the vaccination. Yes, we have that'
	The vaccine will not work, or not be safe, or result in contracting COVID-19	PN11 'They fear catching the vaccine and they would fear that it is a mass immunisation programme, that there could be lots of people around.'
	The vaccine will control or microchip people	GP16:' He said, a doctor? So glad, you can tell me. Is it true, the vaccine for this virus, that it's going to be microchip in it and track me around?'

Table 5: Key Findings and Solutions Identified

Domain	Key Finding	Solutions for Primary Care
New and Exacerbated Barriers to Health Care	Increased Use of Technology	Use multiple modes of translated communications in combination e.g. text, email and leaflets Facilitation of virtual group consultations for patients with a specific condition, with a translator Option for the patient to send a written message requesting a consultation and interpreter and GP to contact to follow-up within 24 hours (e.g. using E-consult)
	Socioeconomic Challenges	Use social prescribers and broad multi-disciplinary working including third sector Targeted access slots e.g. saved on the day appointments for marginalised patients or shift workers Service information or location sharing e.g. vouchers for food bank, virtual leaflets
	Communication Barriers	Funding of translators and migrant community volunteers and champions Working with local media and communication hubs to deliver COVID-19 health information
	Trust, Authority and Information	Relationship-building from registration e.g. a new migrant patient health check Targeted information through local leaders, social media and traditional means about the NHS, links between health and immigration, COVID-19 and pandemic-related system changes
	'One Size Fits All' Approach	Be flexible in bringing patients in if no other method of communication is possible or effective Widespread diversity training and 'migrant friendly' practices e.g. using Safe Surgeries scheme
Key Risk Factors for Health and Vaccine Roll-Out	Challenges Identifying Migrants	Effective coding of country of origin, language and ethnicity to enable identification
	Migrants have more risk factors for COVID-19	Integrated 'one stop shop' screening and new patient migrant health checks
	Decision-making about the vaccine	Outreach to local leaders to support community decision-making around the vaccine

	Beliefs about the COVID-19 and the COVID-19 Vaccine	Seek to understand the perspective of local migrant communities e.g. patient champions, through patient participation groups and distribute accurate, translated information
Opportunities and Solutions	New technology for service delivery	New models such as virtual group consultations, use of tailored translated texts and text templates (e.g. using AccuRx) to encourage access from marginalised groups, such as screening invites
	Co-design of new models	Encourage involvement throughout service design including proportionate representation in patient participation groups, trials and information campaigns
	Specialist input across a group of practices	Clinical Commissioning Group or Primary Care Network Funding of specialist support service e.g. through a Locally Enhanced Service

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Competing Interests

All authors report having nothing to declare.

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