ABSTRACT

Objectives This review examined the factors influencing communication and engagement with ethnic and racial minority groups in Australia during the COVID-19 pandemic. It aimed to answer two main questions: (1) what communication problems faced by these communities typically faced during the pandemic? and (2) what strategies and recommendations were suggested to enhance communication and engagement for ethnic and racial minorities during the current COVID-19 pandemic and any similar events in the future?

Design Scoping review.

Data sources PubMed, EMBASE, Cochrane Library, PsycINFO and CINAHL. Grey literature was searched within organisations’ websites and a Google search of key terms.

Eligibility criteria for selecting studies We included original research, case studies, reports (including government and charity reports), systematic and scoping articles and literature reviews in English, published from January 2020 to August 2022.

Data extraction and synthesis Two researchers independently assessed the literature for eligibility and extracted data from the included literature. The selected papers were analysed and summarised into themes relevant to the research questions. The final review included 38 studies combining published academic papers and grey literature.

Results Key themes relating to communication and engagement issues included a lack of trust in authority, a lack of access to information and ineffective communication channels and a lack of timely and culturally responsive materials. To reduce the issues, the papers spoke about the key role of community organisations to provide local support and community leaders as trusted spokespersons. Lastly, key recommendations to reduce inequity and strengthen future pandemic responses focused on the need for collaborations and consultations, increasing the number of bilingual workers and supporting community-led communication efforts.

Conclusions The insights gained from the activities and experiences documented in this review during the COVID-19 pandemic should be incorporated into future decision-making and interventions to enhance communication and engagement strategies.

INTRODUCTION

As COVID-19 spread within countries, vulnerable and marginalised populations such as specific ethnic minorities and migrant or refugee groups have been unduly affected. Figures released by the Australian Bureau of Statistics in early 2022 indicated that the COVID-19-related death rate for people born overseas was 6.8 per 100 000, compared with 2.3 for those born in Australia. Further, the mortality rate for people born in the Middle East (29.3 deaths per 100 000) was 10 times that of those born in Australia. International data also suggest that compared with the white population majority, there has been a much greater risk of infection and adverse outcomes from COVID-19 among black, Asian, and minority ethnic groups, black Americans, Hispanics, Latinos, other people of colour and Indigenous groups.

There is a human rights obligation for governments to act on the needs of ethnic...
minority members during pandemics and other health crisis periods. This includes ensuring available resources and supporting community understanding and capacity to engage with recommendations. However, communication is still characterised by the large-scale exclusion of linguistic minorities from timely, high-quality information. These communities can also be left behind in their access to and understanding of recommendations, compounded by cultural discordance and mistrust of health institutions. For example, while public health information about COVID-19 mitigation measures and vaccination was available in multiple languages online, recent research has highlighted that COVID-19 information on Australian government websites did not cater to the health literacy levels of some people from racial and ethnic minority communities, nor did the communication efforts necessarily reach or engage the community members. Furthermore, even when official COVID-19 messages are translated in Australia, they have been criticised for their poor quality and visibility. These issues are heightened among the elderly, which can be attributed to their inability to search for health information online and a communication gap between older adults and the public health information dissemination system.

For the remainder of this paper, the term culturally and linguistically diverse (CaLD) will be used, as it is commonly used in Australia. CaLD communities include people born in non-English speaking countries and where English is not the primary language spoken at home (including second-generation family members). CaLD communities are distinct yet heterogenous groups with unique health delivery needs. The differences in disease risk between CaLD and non-CaLD communities, which have been apparent during the COVID-19 pandemic, were similarly observed in the 2009 H1N1 pandemic.

However, there has been a failure to update Australia’s pandemic plan to reflect the needs of CaLD communities during pandemics. A review of Australia’s COVID-19 pandemic plans at the regional, state and national level revealed that there were significant deficiencies in effectively involving immigrant or CaLD communities and responding to their actual health requirements and difficulties. The differences in disease risk between CaLD and non-CaLD communities, which have been apparent during the COVID-19 pandemic, were similarly observed in the 2009 H1N1 pandemic.

For this study, we define communication as ‘a mode of the imparting or exchanging of messages by speaking, writing or using some other medium’, which during a pandemic involves not only communicating information to individuals but also in a much broader context. We define engagement in a community context as the ‘involvement and participation of individuals, groups and structures within a parameter of a social boundary or catchment area of a community for decision-making, planning, design, governance and delivery of services’.

**Identification of studies**

The studies were identified using six medical and management databases, including Scopus, PubMed, EMBASE, Cochrane Library, PsychINFO and CINAHL. In addition, the grey literature was searched within the following organisation’s websites identified as being involved with ethnic minority communities as well as a Google search of key terms used in the database search strategy: Australian State and Federal Government Departments of Health, State and National social services, peak bodies and community-controlled organisations and councils (see online supplemental file 1 for the entire search strategy and summary of studies included in the review).
Inclusion and exclusion criteria
To include as many relevant studies as possible, this study included original research, case studies, reports (including government and charity reports), systematic and scoping review articles and literature reviews available in English. However, only studies published from January 2020 to August 2022 were included due to the availability of COVID-19-specific articles. This review encompasses several aspects of health communication, including investigations into exposure to various channels of health communication, information retrieval, language usage, message framing, digital and health literacy and trust in information sources. It is not restricted to a single element of health communication.

Exclusion criteria included articles published before January 2020, books, preprints, opinion pieces, commentaries, viewpoints, editorials and articles not in English.

Selection of studies
Searching the six databases and relevant grey literature websites resulted in 1012 studies. After removing all duplicates, 711 articles remained. After excluding articles by abstract and title, 152 articles remained. The full-text screening for relevance to the topic and research questions resulted in 38 retained for final inclusion in the scoping review. This study followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines (see online supplemental file 2). In addition, the included literature was evaluated for risk of bias and quality. The risk of bias was minimised by having two researchers involved in the review process.

Data analysis
In accordance with the instructions for conducting scoping reviews, PM gathered information from the included papers into a matrix before synthesising it. This matrix consisted of data such as the author’s name, year of publication, study design, purpose or objectives of the study, study population, methodology, sample characteristics, key concepts, outcomes and significant findings related to the objectives. Data synthesis was achieved through qualitative content analysis. The results relevant to the review questions were summarised, coded and categorised inductively into the main categories.

In the first instance, after the final stage of reviewing the full-text articles for eligibility and becoming familiar with the data, initial coding and themes were drawn from the full text. This was undertaken using an inductive approach by the corresponding author (PM), with segments of text from each eligible paper coded separately in common ideas before being discussed and revised with the primary author (HS), with some new codes being generated or existing codes being modified two times before organising the codes into broader themes, including the addition of subthemes, and then writing up the findings after the themes were discussed and agreed on by authors. The main categories described are presented descriptively within each category close to the original findings of the included studies.

Patient and public involvement
No patient was involved.

RESULTS
The final review included 38 studies combining published academic papers and grey literature (refer to online supplemental file 1). Of these, 8 were mixed method studies, 20 were qualitative, 1 was quantitative and the remaining were a combination of reports, briefs and submissions using a mix of research methods. All studies had a focus or strong mention of ethnic and racial minority communities and their experiences, impacts, engagement or communication during COVID-19. All studies and reports were based in Australia. The reviewed studies are organised based around the focus areas: (1) factors impacting the communities’ ability to access and act on public health messaging, (2) strategies implemented during COVID-19 and (3) recommendations for future crisis.

Factors impacting the communities’ ability to access and act on public health messaging
Lack of trust in authority
Multiple studies highlighted the impact in authority has on supporting community members to follow the provided advice and guidance during the pandemic. In addition, specific concerns were raised by authors about the impact that ongoing fear and mistrust in governments has had on vaccine uptake among Arabic-speaking and African communities, migrants more generally and refugee participants. The study authors also raised concerns about the impact of distrust in government sources and the link to the spread of misinformation from social media. Actions by the Australian government during lockdowns, especially the lack of communication and engagement with ethnic minority communities, were postulated to further increase fear, anxiety and mistrust. For example, among the community leaders interviewed concerns were expressed that the deployment of police to a residential area in Melbourne (which has a high proportion of ethnically diverse community members) during lockdown diminished the confidence of community members in following advice and guidance due to past experiences of oppression and insecurity. In addition, historical experiences of persecution and conflict in the home countries for some migrants were suggested by authors as contributing to instances of mistrust towards the government.

Lack of access and ineffective communication channels
Many studies reported information access issues and limitations to COVID-19-specific information. This was attributed to language barriers, low digital or English literacy levels, lack of education, reliance on...
family and friends, and needing access to adequate digital devices. The communication gap between the public health dissemination system and older ethnic minority adults was highlighted to perpetuate the vulnerability of some populations, including the elderly’s inability to access information during the COVID-19 pandemic.26 29 Several studies reported that there was a sense that governments relied heavily on digital materials and platforms for communication.29 For example, Hamiduzzaman et al, in a survey of older ethnic minority adults in South Australia, reported common experiences of participants not being able to access online health information and found that community members aged 80 years old and above were in the worst position to access online health education.30 Similar experiences were noted in older Ezidi community members.24

**Low literacy levels and understanding**

The studies repeatedly reported low literacy, English proficiency and health literacy as impacting ethnic minority community member access and understanding of COVID-19 information, directly increasing the risk of these communities not receiving critical health messaging.6 24 26 30 32–36 There were also reports of information avoidance due to low English proficiency.32 There were other influences at play impacting members’ understanding. For example, Seale et al (2022b) reported that issues surrounding ‘technical jargon’ in COVID-19 resources potentially affect their understanding of information in those with low or health literacy levels. Lastly, past trauma and psychological issues were reported by the Ezidi community and service providers, which may have presented an additional challenge impacting refugees’ ability to understand and learn new information related to COVID-19.24

**Lack of timely and culturally responsive materials**

A significant criticism of the Australian government’s pandemic response by ethnic minority community leaders and service providers was the lack of timely translations into the languages spoken by these community members.24 29 37 Participants from the Ezidi, Arabic-speaking, Pasifika and Chinese-speaking communities reported that information was either not translated into their languages or it was difficult to find.26 32 Other key observations focused on the quality of translations and the lack of resources in minimal English for those in the community with low literacy levels.29 37 One author postulated that the lack of culturally responsive and tailored materials increased mistrust and misunderstanding among community members.30

**Poor quality of information**

Concerns were raised over the ‘information overload’ (also termed infodemic), where the overabundance of information from government sources lead to further confusion,27 29 and the related anxieties over community leaders filtering down or incorrect interpretation/translation of information.38 For example, Ezidi service providers reported difficulty finding accurate COVID-19-related information because of inconsistent messaging, despite having high literacy and being native English speakers.24 In relation to vaccine hesitancy, studies reported conflicting information, poor communication from trusted sources and an overall lack of information about the vaccine all contributed to COVID-19 vaccine hesitancy in ethnic minority communities.28 33 In addition, misinformation regarding the COVID-19 vaccine, symptom management and prevention was reported as typical in participants due to commonly experiencing information barriers and contributed to vaccine hesitancy and following health guidance.30 35 39

**Poor engagement and communication**

A lack of engagement and collaboration with ethnic minority communities, government advisory groups and community member voices within policy and decision-making was cited as a significant challenge to effectively communicating and engaging with communities during the COVID-19 pandemic.13 25 30 37 40 For example, a qualitative review of six pandemic plans in Australia found significant gaps in engaging with ethnic minority communities, specifically a lack of focus on the need for engagement activities in all the plans assessed.13

**Strategies implemented during COVID-19 to enhance communication and engagement efforts**

**Filling the void: community controlled organisations**

The findings from a study by Weng et al highlighted the significant role that community and religious organisations played in supporting community members and international students during COVID-19.31 In interviews with CEOs and other stakeholders from community organisations, it became clear that a broad spectrum of measures had been taken to address the digital divide that is evident among certain ethnic minority groups. This included lending or donating laptops and Wi-Fi dongles to their community members, offering online sessions to teach the use of Zoom, FaceTime and other online platforms and offering older community members weekly telephone calls.38

Further research revealed that this assistance extended beyond the practicalities of food and shelter to include emotional and financial support. This ensured that even those who were ineligible for social welfare had access to vital coping mechanisms during the pandemic.31

**Trusted gateways: community/religious leaders and bilingual health workers**

With trust being cited as fundamental to relationship building and information sharing, community members and multicultural stakeholders within many of the studies have repeatedly referenced the critical role that community leaders, service providers, community organisations, health professionals and young community members play in engagement and communication during the COVID-19 pandemic and beyond.24–26 30–33 35 38 41–45 Community and
religious leaders were frequently cited as necessary in supporting communities during the COVID-19 pandemic and being the trusted gateway to engagement and communication of critical information.26 41 42 This support included adapting information to ensure public health messages reached communities and those vulnerable to low literacy and digital literacy levels, such as the elderly.26 In some settings, community and religious leaders also set up support networks for their members, public information sessions, homework groups and online sessions focused on community-nominated topics.30 One study highlighted the types of support (including emotional) provided by a community leader during the Melbourne lockdown via this quote:

In early July 2020, in my capacity as a community leader, I assisted communities such as Vietnamese, Somalis, Middle Eastern communities and South Sudanese during the residential lockdown in North Melbourne and Flemington Estates. I coordinated culturally appropriate food delivery, including medicines. In addition, I provided Department of Health, and Human Services (DHHS) translated materials in various languages to assure and educate the residents about COVID-19 testing and safe social distancing practice. As a result, I was able to calm down the resident’s fear, anxiety, and depression related to the COVID-19 lockdown. (25, p.1707).

In the context of COVID-19 information gaps, local service providers, including health professionals, have been identified as playing a key role in communicating health information to the community,24 26 32 41 Health professionals were cited as a trusted source of COVID-19 communication for community members during COVID-19, as they have previously developed relationships based on rapport and interpersonal communication.26

Young people

Findings highlight the importance of young people during the COVID pandemic, specifically in supporting community needs in communication, mental health, racism, employment, income support and emergency relief.23 33 35 Although currently underrepresented, young ethnic minority young people have already been an essential resource in designing COVID-19 messaging to ensure cultural appropriateness during COVID-19.35 A great example of this is shown in a case study presented in a report by the NSW Council of Social Services, where the Illawarra Shoalhaven Local Health District co-designed a community engagement and education program, ‘Be a COVID Warrior’ where bicultural high school students were successfully provided with education aimed at increasing their health literacy. They, in turn, were encouraged to communicate with their families to raise health literacy and confidence in applying infection control measures.35 Further examples were shown in a study by Couch et al, where young refugee people reported creating video clips to share COVID-19-related information in their native languages, shared information through WhatsApp and went door-knocking to pass on COVID-19 information, accompanied by a nurse.43

Recommendations for future crisis

Collaboration and consultation

Collaboration and consultation were the most frequently cited recommendations for ensuring successful engagement and communication between government, government organisations, settlement agencies, charities and communities during COVID-19 and beyond.27 32 33 35 37 41 42 46–50 This includes collaboration and consultation with influential ethnic minority community members, advocates, community and religious leaders, and community organisations in governance and health service management.49 These partnerships could be harnessed to (1) support the development of public health campaigns and messaging50; (2) to ensure that service delivery approaches are culturally responsive41; support the implementation of research and the collection of relevant data37; support the development of policies and programmes41 and lastly to enhance online and social media communication efforts.47

The Victorian Government’s guidebook on ‘How to engage with CaLD communities in Victoria’42 recommends collaboration and consultation activities essential for community member engagement. First, consulting with stakeholders to determine communities’ locations is crucial in ensuring better results and a broader reach of engagement activities. This is similar to how the Priority Communities Engagement team consulted with community groups to determine the best locations for COVID-19 vaccinations.42 Second, it recommends approaching each community’s leaders before attempting to talk with the community. For example, rates of COVID-19 vaccination uptake in the Congolese community in Victoria were slow. By reaching out to the community’s religious leader, the Priority Communities Engagement team could address this group’s specific concerns in a tailored manner.

Outcomes from these collaborations and consultation processes might support agencies to address institutional racism,49 support vaccine acceptance and uptake,33 ensure appropriate cultural tones and delivery of public health messaging,35 improve information dissemination at the community level, and better community service delivery,42 enable health service use in patient’s preferred language,46 improve community trust in public health professionals,46 improve access to COVID-19 vaccination and testing clinics42 and the establishment of community reference groups to guide implementation of resources and communication.27 37

Representation in the workforce

An identified and identifiable bicultural workforce is needed on the front line to increase trust and confidence in health agencies within ethnic minority communities35 and to improve services’ cultural responsiveness in order.
to meet the needs of Australia’s multicultural population. This review identified several strategies that would support this, including:

- Harnessing cultural knowledge to communicate in the most culturally appropriate and efficient way.
- Creating an identified pool of workers and volunteers to consult in future.
- Increasing the number of ethnic minority community members who are engaged in formal health worker, social work and community development training and education.
- Increasing the number of bicultural workers within government, vaccine promotion and mainstream providers is needed to enhance vaccine acceptance, especially for individuals and groups with those of low literacy, low health literacy and low digital literacy.

Supporting community-led communication efforts

One of the key recommendations made by the authors (as well as by the stakeholders and community members interviewed in these studies) was to provide more opportunities for community members to participate in forums (face-to-face and online) and other outreach events. The authors emphasised the need to provide occasions for dialogue between health experts, community leaders, community stakeholders and members of the public.

While many community organisations reported running information sessions, especially early in the pandemic and at the start of the COVID-19 vaccination campaign, the organisers spoke about not having access to the technology or support to maximise these opportunities.

An important consideration when working with community/religious leaders and other community stakeholders in engaging communities and communicating crisis information is the need for training, reflected in sentiments from leaders and other stakeholders within the literature examined. This training should include education and tool kits for increasing health literacy, communicating about COVID-19, vaccinations and tackling misinformation.

Small grants schemes and sector funding

As a solution to the issues highlighted above, many of the reviewed documents proposed that the Australian Government needs to provide funding/small grants to local community organisations. Overall, increased funding was at the core of many suggested improvements, specifically in building sustainable funding models for projects and programmes delivered by community-based organisations. This included funding for bilingual caseworkers to provide COVID-19 information directly to community members and supporters. Importantly, given the level of uncertainty and change during pandemics, funding must be flexible and recognise the range of activities being provided by community-controlled organisations and the wider multicultural sector.

Translation and interpretation services

Improving the translation and interpretation of COVID-19 messaging and developing best-practice communication materials are commonly cited to strengthen communication and integrate ethnic minority communities in public health crisis management and communication. This means engaging translators and interpreters throughout a public health crisis, ensuring timely and accurate translations of televised broadcasts and other essential health information, increasing transparency and accessibility of translations on government health websites and collaborating with community ambassadors to ensure the translation is inappropriate dialects and address culturally specific misconceptions.

According to the studies, communication materials should be designed with minimal language and should prioritise accessibility for individuals with different levels of health literacy, assessed through the Patient Education Materials Assessment Tool. Additionally, official government messages should be presented in appropriate languages using visual aids and audio formats.

Culturally responsive communication strategies

Several studies have provided guidelines on how to effectively communicate with ethnic minority communities in times of public health crises such as COVID-19. It is crucial to consider all relevant languages and communities before developing public health messages, and this information should be easily accessible. Additionally, the messaging should be culturally sensitive, taking into account factors such as age, location, religion, technological proficiency and gender, to ensure that the communication is appropriate for the culture and to increase COVID-19 vaccine acceptance.

Pickles et al suggest involving young people in developing COVID-19 messaging by testing communications, running focus groups and ensuring representation within public health communication teams.

Many studies highlight the importance of considering multiple methods of communication dissemination to reach communities, especially those who may be more vulnerable to missing the information (eg, newly arrived migrants/refugees, the elderly). Public health messages require delivery using appropriate and accessible channels. This means considering the demographic mix and variation among different community groups by sharing public health information and other essential crisis communication on all platforms, including websites, emails, social media, streaming video, radio and print media, and through trusted sources, as discussed above.

DISCUSSION

This scoping review has provided an analysis and synthesis of data derived from 38 empirical studies and reports focused specifically on the issues linked with communication and engagement approaches in the context of the COVID-19 pandemic. In this review, we describe a range...
of reported experiences related to the CaLD population during COVID-19 and claims advanced in relation to these experiences. The results of this review largely align with global findings during emergencies like COVID-19. Kalocsányiová et al identified 11 studies worldwide that examined both the challenges of reaching disadvantaged populations and their messaging behaviours. In their review, similar issues were found, including a lack of access to COVID-19 information, translation barriers, government neglect of minority populations and a need for tailored communications for specific subgroups. Additionally, a study in the UK found that ethnic minorities faced language and health literacy barriers during COVID-19 communication. With respect to the first review focus area (ie, factors impacting the communities’ ability to access and act on public health messaging), the results largely focused on the inadequacy of the materials developed, the delays in translation, accessibility, as well as the ineffective communication channels used by the Australian Government. Potential strategies to address these issues often centre on ensuring that translated materials are available, that information is provided at appropriate readability levels, or introducing tailored social media campaigns. These strategies are essential but not enough and often fraught with issues. For example, while generic preparedness information may remain relevant for a long time and can therefore be made available in various languages ahead of disasters, it is not always possible to translate ‘live’ emergency information. The availability of information in language often depends on the language community. Speakers of languages with sizeable numbers of practitioners—Mandarin, Arabic, Vietnamese, Cantonese or Greek—may glean information from radio stations, national organisations, newspapers, etc. But other communities are classified as linguistic minorities, which do not have these local outreach services. Within Australia, there are certain communities which have been identified as ‘high need’ groups (ie, Rohingya, Afghan or Burmese communities). While established communities (often the high volume that is, Greek, Italian and Chinese communities) have the infrastructure in the form of community organisations, new and emerging communities may lack established networks, community structures and resources and may not be familiar with mainstream services. It is critical that research is undertaken to understand the factors that impacted on communication and engagement efforts with these groups, as well as those in regional and remote areas. One area of focus is around the role of community-led translation efforts and the role that community-controlled organisations and community stakeholders have in providing communication materials in the language.

The second focus of this review was to identify strategies that have been implemented to reach, engage and communicate with CaLD communities. A theme across nearly all included studies was the role of community leaders in the development of communication materials or as trusted messengers. This is consistent in the literature including studies in low resource settings, where faith leaders and indigenous community leaders were key partners in using models and other stakeholder engagement approaches to strengthen public health systems and to message within multicultural communities. Beyond the focus on traditional leaders in the community, there was a strong recognition of the need to work with young people to support community participation in public health activities during pandemics and emergencies. Previous research has already started to highlight the role of young people, specifically the child–parent communication and behaviour intentions to health decisions around vaccinations and organ donations and more recently in the USA, with family communication from young people being the strongest predictor of COVID-19 vaccine intention. Research has only begun exploring further impacts of young people in broader health domains, with new insights from research in this review into the role of young people during COVID-19 about designing and communicating culturally appropriate messaging, and assisting healthcare workers with engagement efforts, highlighting an underutilised resource for communication and engagement within communities. Future research could evaluate the impacts of young people in strengthening communication and engagement efforts in ethnic minority communities.

Going forward and focused on the final focus area (recommendations for future crisis) is the need to address the gaps and strengthen pandemic efforts in the future. The WHO in their planning guidelines to support preparedness and response during pandemics highlights the need for countries to focus on community engagement. Despite this strong message from the WHO, most of the studies included in this review called out the absence of community voices within policy and decision-making during COVID. We have previously highlighted the gaps in Australia’s pandemic plan, prior to COVID-19 and the limited attention given to CaLD community members. Not only has there been limited recognition of the particular needs of these CaLD communities in regard to the development and dissemination of information, as well as social support, there was limited consideration about the need for community partnerships and input in government processes and policies. We are not the only group to identify this gap and the urgent need to address how we approach community engagement activities with people from CaLD backgrounds during emergency situations.

Limitations
This review has several limitations. First, our search strategy was restricted to studies published in English, and although this is the primary language spoken in Australia, we may need to include valuable literature. In addition, only studies conducted in Australia were included in this review; hence, our findings may not be directly transferable to ethnic minority groups in other countries and
would require further research. Further, this review also encompasses literature in the public domain which may have yet to be subject to prior peer review, including reports and preprints.

Similarly, although we aimed to minimise bias by having at least two researchers involved in the review process, preference and quality were not formally assessed due to the nature of scoping reviews not critically appraising a body of evidence. Finally, there may have also been additional articles (1) not available to the public, (2) taken down or replaced and (3) published after the data collection that should have been included, and therefore the themes identified may not fully cover the gaps in communication and engagement for these groups and solutions to these issues. Although the focus is on Australian literature, the information this review provides could be used by other countries, who may have experienced similar communication and engagement gaps with their ethnic minority groups, to explore the openings and solutions in a larger international context.

CONCLUSION

The COVID-19 pandemic has exposed significant communication and engagement deficits within ethnic minority communities. These problems have contributed to misinformation susceptibility, vaccination hesitancy, understanding of public health messaging and adherence to public health measures. To effectively address the inequalities experienced by these minority groups and improve future communication and engagement strategies, the experiences from the COVID-19 pandemic and proposed strategies reported on in this review should be reflected on and infused in future interventions and policy. These improvements will support community members to respond and adapt to events where complex health information and guidance change rapidly far beyond the current pandemic.

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Contributors HS conceived the study interpretation of the data and was involved with manuscript writing and had final oversight and also responsible for the overall content as the guarantor. PM conducted data collection, data analysis, and manuscript writing. BH-R and KM supported the interpretation and write-up of the findings. All authors read and approved the final manuscript.

Funding

The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests

None declared.

Patient and public involvement

Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

Patient consent for publication

Not applicable.

Ethics approval

Not applicable.

Provenance and peer review

Not commissioned; externally peer reviewed.

Data availability statement

Data are available upon reasonable request. The data used in this study are available upon request from the authors.

Supplemental material

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