














Research Article

Perceptions of COVID-19 Vaccines: Lessons from Selected Populations Who Experience Discrimination in the Australian Healthcare System

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COVID-19 vaccination is particularly challenging among populations who have experienced discrimination in healthcare settings. This paper presents qualitative findings from in-depth interviews about COVID-19 vaccination conducted in Australia between October 2020 and November 2021. Data from four different studies are presented; each population has unique experiences of discrimination within the healthcare system: Aboriginal people; people who inject drugs (PWID); people living with HIV (PLHIV); and gay and bisexual men (GBM). Analyses were guided by the behavioural and social determinants model that forms the basis of the World Health Organization's "data for action: achieving high uptake of COVID-19 vaccines" interim guidance. All populations viewed vaccination as necessary for community protection, although narratives of community care were most common among Aboriginal people. Concerns about vaccine safety were expressed by all participant groups, although participants living with HIV and GBM were more trusting of vaccines possibly because of their ongoing and usually positive past experiences with biomedical technologies for HIV management and sexual health. Aboriginal participants reported distrust of mainstream government and participants who inject drugs expressed a more generalised suspicion about COVID-19 and its origins. Practical problems related to transport, booking appointments for vaccination and so forth, were more common among participants living with HIV and GBM, possibly because these specific interviews were conducted throughout 2021 when vaccines were more available, whereas data for the other populations were collected before the vaccine rollout. Findings show that vaccine willingness is shaped by past experiences of discrimination in healthcare setting, but different histories of discrimination can differently impact vaccine willingness. Promotional messaging and delivery must take account of these important differences so to not treat these populations homogeneously.

1. Introduction

In Australia, COVID-19 vaccines became available in February 2021 [1], and early implementation by the Australian government focused on protecting “our most vulnerable Australians” [2]. While initial uptake varied between states and territories, unwillingness or hesitancy to be vaccinated for COVID-19 among adults aged 18 years or older declined substantially from 32% to 9% between February and December 2021 [3]. In December 2021, approximately, 8% of adults in the state of New South Wales (NSW), Australia’s most populous jurisdiction, were either hesitant (1.9%) or unwilling (6.2%) to receive a COVID-19 vaccine [3]. However, unwillingness or hesitancy is greater among some populations, including those who experience discrimination within the healthcare system [4–6].

Research exploring perspectives of COVID-19 vaccination among subgroups of the population is sparse, despite its necessity for ensuring equity in vaccine uptake. Populations who report difficult experiences with the healthcare system related to racism, prejudices about sexuality and gender diversity, and other forms of social intolerance, can experience poorer health outcomes and be less willing to take up new health technologies (such as vaccines). This is relevant to the populations we consider here. Gay and bisexual men (GBM) have been reported to routinely experience stigma and discrimination within healthcare systems as have people living with HIV (PLHIV) because of their association with stigmatised sex practices [7]. Likewise, for people who inject drugs (PWID) report discrimination associated with the criminal behaviour of illicit drug use [7]. Aboriginal and Torres Strait Islander Peoples (hereafter Aboriginal) have experienced the greatest levels of discrimination within the healthcare system, which is related to a history of colonisation and racist government policies of assimilation (including forced removal of children from parents). This historical and current context means that Aboriginal people can be highly distrusting of mainstream health services, preferring healthcare that is Aboriginal-led and culturally safe [8]. For all populations in our study, the experiences of discrimination and racism in the healthcare system play a central role in determining how willing they are to take up COVID-19 vaccination.

International literature exploring vaccine acceptability among PWID is minimal [9]. However, Australia’s annual surveillance Illicit Drug Reporting System (IDRS) has collected “vaccine intention” data from its injecting cohorts since the beginning of the pandemic [10, 11]. The 2021 IDRS, conducted early in the national COVID-19 vaccine rollout, revealed approximately half of participants to be “vaccine hesitant”, higher than the 22%–32% recorded among the general Australian population at the time [12]. Importantly, only a minority of participants indicated that their reluctance was underpinned by an antipathy towards vaccination. While this suggests that PWID would be amenable to targeted interventions, such efforts need to recognise the structural barriers injecting drug-using communities face, including high rates of socioeconomic marginalisation, stigma, and criminalisation [13].

Studies among GBM in the US investigating COVID-19 vaccine acceptability have found generally high proportions (78%; mean score of 7 out of 10) of men intending to be or accepting vaccination [14, 15]. Lower acceptance was associated with social concerns and medical mistrust, whereas altruism [14], having a higher education, being HIV positive and viewing COVID-19 as serious [15] were associated with being more likely to vaccinate. Two Australian studies among GBM, both conducted in the first half of 2021, also found high proportions of men intending to be vaccinated (80–83.2%) [16, 17]. Although GBM have reported experiencing discrimination within the healthcare system [7], their willingness to be vaccinated for COVID-19 is high.

Studies of PLHIV in US and France conducted prior to the availability of COVID-19 vaccines found hesitancy was high at 29–32% [18, 19]. Hesitancy was associated with side-effects concerns, and beliefs about existing immunity to COVID-19 [19] as well as government mistrust [18]. Acceptance was associated with perceived vulnerability to COVID-19, including perceived increased risk due to chronic disease status [19]. COVID-19 vaccine attitudes among PLHIV also reflected attitudes to vaccines in general, including support for mandatory vaccination [19]. In Australia (in a survey conducted between March–May 2021), 81% of unvaccinated PLHIV reported they were “likely” to get vaccinated which was lower than 90% in the comparison group (who were GBM using HIV preexposure prophylaxis (PrEP)) [20].

Australian government data indicate that COVID-19 vaccination among Aboriginal Peoples varies across the country, reaching as high as 85–90% in some parts of New South Wales (NSW) and Victoria and as low as 70–75% in South Australia [21]. Overall, this coverage is lower than in the general Australian population where COVID-19 vaccination is ~95%. However, data on routinely administered childhood vaccinations (for example, for pertussis, diphtheria, and meningococcal) show high rates with 97% of Aboriginal children aged five years being fully vaccinated (Australian Institute of Health and Welfare, 2022), suggesting high acceptability of vaccination in Aboriginal communities. Early in the pandemic, Aboriginal leaders set up governance processes to ensure responses for Aboriginal Peoples were Aboriginal community-led and, wherever possible, delivered through Aboriginal health services [22], an approach that has been successful. Unlike other populations included in this paper, Aboriginal Peoples have experienced a long history of racism both within and outside of the healthcare system, leading to difference in their experiences. Systemic racism is known to heavily influence Aboriginal Peoples’ willingness to take up the new COVID-19 vaccines, something that has already been evidenced among First Nations populations in Canada [23].

While each of these populations have experienced discrimination within the healthcare system, the reasons for and experiences of discrimination are very different. Social intolerance about drug use and sexual behaviours produces the conditions of discrimination experienced by PWID, PLHIV, and GBM; and the long history of racism and

colonisation has produced different forms of discrimination for Aboriginal Peoples. Ensuring equity in vaccine rollout requires that these differences are noted and that any promotional efforts to increase uptake are targeted to the specific experiences of these populations.

In this paper we have two aims: (1) to investigate perspectives of COVID-19 vaccination among PWID, PLHIV, GBM, and Aboriginal Peoples and (2) to identify how perspectives align and differ. We work towards these aims with the objective to inform recommendations for how to carefully tailor COVID-19 vaccination promotion to these groups.

2. Methods

2.1. Data collection. The research data are drawn from four separate studies as follows.

2.1.1. People Who Inject Drugs in NSW

(1) *Study design.* Cross-sectional study design was used to collect one-off qualitative data.

(2) *Study site and population.* Interviews were conducted at four harm reduction services between October 2020 and February 2021, in NSW: two inner-Sydney services; an outer Sydney metropolitan service; and a needle and syringe program (NSP) plus alcohol and other drug (AOD) treatment service both in a regional NSW town.

(3) *Sampling technique and size.* Interviews were conducted with $n = 32$ service users who volunteered to be interviewed.

(4) *Data collection method.* Most interviews were conducted face-to-face at participating services. Interviews in the regional town were conducted by phone or in public locations. Interviews followed a semistructured schedule, beginning with demographic, drug- and service-use details, before exploring a range of COVID-19 related questions. Reflecting the rapidly evolving nature of Australia's response to the virus, when this study began, the matter of COVID-19 vaccination was barely registered in public discourse. Consequently, questions regarding vaccines were only added to the interview schedule for outer metropolitan and regional town participants ($n = 21$).

(5) *Ethical considerations.* Ethical approval was granted by the Human Research Ethics Committee (HREC), University of New South Wales (UNSW) Sydney, and the Community Mental Health Drug and Alcohol Research Network. Participants provided written consent to be interviewed.

2.1.2. Aboriginal People Living in Western Sydney

(1) *Study Design.* A cross-sectional study design was used to collect one-off qualitative data.

(2) *Study site and population.* Data were collected in western Sydney in February 2021, prior to the widespread availability of vaccines. Interviews were conducted on Darug Country

using a peer-led interviewing method with local Aboriginal communities. All participants were aged 18 years or older and identified as Aboriginal people. At the time of data collection, Sydney was experiencing an outbreak of COVID-19 (December 2020–January 2021) and there were restrictions on the number of people that could participate in social gatherings. COVID-19 vaccination was not yet available to Aboriginal people.

(3) *Sampling Technique and size.* Findings are based on 36 in-depth interviews, which include 27 interviews conducted by peer interviewers and nine debrief interviews with eight peer interviewers, conducted by researchers.

(4) *Data Collection Method.* Data were collected using a peer-led interviewing method in which Aboriginal young people were trained to interview others in their community about experiences of and perspectives on COVID-19 prevention and health needs. The peer-led method also involved a debriefing stage in which peer interviewers were interviewed by the research team. This provided an opportunity for the research team to give feedback about interview skills and to monitor data quality. Peer interviewers were paid for their time at the UNSW student casual rate. Cultural practices were included in the research which strengthened the quality and relevance of the findings and improved the experience of the peer interviewers. Peer-led interviewing methods were used which allowed participants to be interviewed through the familiar cultural practice of yarning. Conceptualising the research interview as a yarning process established a safe space for the peer interviewers to conduct their interviews, and where interviewers and interviewees could engage in a familiar cultural practice.

(5) *Ethical Considerations.* Ethical approval was granted by The Aboriginal Health and Medical Research Council of NSW Ethics Committee, and the Nepean Blue Mountains Local Health District Committee. Participants provided verbal consent to be interviewed.

2.1.3. People Living with HIV in Australia

(1) *Study Design.* The study used an open longitudinal qualitative cohort design. Study site and population: participants were people recently diagnosed with HIV (i.e., since 2016). Data were collected between February and October 2021, during a time when vaccines were becoming more available in Australia.

(2) *Sampling and Sample Size.* 15 participants were recruited through community-based HIV organisations, sexual health centres, clinicians, and/or self-referral. All PLHIV were eligible for COVID-19 vaccination during Phase 1b of the rollout starting in late March 2021 [24]. However, the limited supply of vaccines at the time, and uncertainty around vaccination locations, meant that getting vaccinated was not straightforward; so, most participants had not yet been vaccinated at the time they were interviewed.

(3) *Data Collection Method.* Data were collected using semistructured in-depth interviews conducted by phone or online video conferencing.

(4) *Ethical Considerations.* Ethical approval was granted by the HREC, UNSW Sydney. Participants provided written consent to be interviewed.

2.1.4. Gay and Bisexual Men in Australia

(1) *Study Design.* Data are drawn from the longitudinal qualitative component of a national, online, prospective observational cohort study exploring the impacts of COVID-19 on Australian GBM.

(2) *Study site and population.* Participants were aged older than 18 years and identified as GBM.

(3) *Sampling Technique and Size.* 30 participants were recruited through the Flux study, investigating the impact of COVID-19 on the sexual health, sexual behaviour, mental health, and drug use among Australian GBM [25]. 26 of these participants answered questions about COVID-19 vaccines. Participants were selected from the broader study with a focus ensuring a diversity of demographics, including age, country of birth, living situation, and HIV status.

(4) *Data Collection Method.* Semistructured interviews were conducted by phone or online video conferencing between June 2021 and October 2021, at which time vaccines were becoming more widely available in Australia. Interviews investigated sexual behaviour, alcohol and other drugs use, experiences of COVID-19 restrictions and contact tracing technologies, and perspectives and experiences of COVID-19 vaccinations.

(5) *Ethical Considerations.* Ethical approval was granted by the HREC, UNSW Sydney. Participants provided verbal consent to be interviewed.

2.1.5. *COVID-19 Vaccine Interview Questions.* The authors developed questions about COVID-19 vaccination for the studies among Aboriginal people, PWID, and PLHIV in late 2020. Questions addressed participants' willingness, reasons, and need to be vaccinated, knowledge of COVID-19 vaccines, barriers, and enablers to vaccination (attitudinal and practical), and expected benefits of vaccination. Questions were adapted from The Behavioural and Social Determinants (BeSD) model (described below) for qualitative interviews about COVID-19 vaccines among adults [26]. These questions were adopted by author DS for the study among GBM in 2021.

2.2. *Analysis.* Data were analysed by members of each respective research team to identify themes related to COVID-19 vaccination. Analyses were framed by the BeSD COVID-19 model that forms the basis of the World Health Organization's data for action: achieving high uptake of COVID-19 vaccines' interim guidance [26]. This

model takes account of four domains for vaccine uptake: 'what people think and feel about vaccines; social processes that drive or inhibit vaccination; [. . .] motivations (or hesitancy) to seek vaccination; and practical factors involved in seeking and receiving a vaccination.' These domains were used to develop the headings presented in the results.

3. Results

Participant characteristics for each of the included studies are presented in Table 1.

3.1. *Perceived Risk of COVID.* All participant groups expressed concern about contracting COVID-19 and willingness to engage in risk reducing practices, such as physical distancing, hygiene practices, and vaccination. However, perceptions of risk were more pronounced among Aboriginal participants and PLHIV, because of existing health concerns.

Aboriginal participants identified underlying health issues in their communities which increased their concern about severe COVID-19 complications. Participants talked about "not surviving getting COVID" (Aboriginal woman, 30–49 years, February 2021) because of underlying conditions, and that getting vaccinated was a way to protect themselves and family members:

Cause one of my cousins who I interviewed lives or sometimes goes and visits his dad. Like he's old and I was like, "Oh," like, "would you get it for a family member?" and they were just like, "Yeah." (Aboriginal man, 16–29 years, February 2021)

PLHIV mostly interpreted their HIV status to mean they were 'immunocompromised,' which was the language used in Australian public messaging about COVID-19 risk [27] and the rollout of COVID-19 vaccines [28]. Therefore, there was a tendency among PLHIV to perceive themselves as being at high risk for any emerging infection, including severe COVID-19 infection, especially in the early period of the pandemic.

I can't speak for every [person living with HIV], but I mean, whenever something like this pops up, I guess you'd be stupid not to think about it in that way. (PLHIV, Male, 29 years, June 2020)

However, some PLHIV challenged this thinking, drawing on their immediate initiation of HIV antiretroviral therapy after diagnosis and therefore their immunological markers were strong.

I haven't really been concerned about it purely because I got onto medication really quickly and my CD4 [immune system] is perfectly fine, and I'm not any more susceptible to anything than anybody else, normally. (PLHIV, Female, 30 years, June 2020)

TABLE 1: Study and participant characteristics.

| | People who inject drugs | Aboriginal people | People living with HIV* | Gay and bisexual men |
|---|--|---|--|---|
| Location/Geographic reach of data collection | New South Wales | Sydney's western suburbs | Australia | Australia |
| Total no. of people interviewed (% male) | 21 (52%) | 35 (37%) | 15 (100%) | 26 (96%)** |
| Age range | 31–58 | 16–64 | 23–60 | 24–78 |
| Relevant health status | 90% receiving/ed opioid agonist treatment (current or previous) | N/A | All participants living with HIV | 27% living with HIV |
| Australian first nations (nation indicated where available)/Overseas born | First nations (<i>n</i> = 7) Overseas born (<i>n</i> = 2) (Oceania and western Europe) | First nations (<i>n</i> = 35) 11 nations identified, most common: Kamilaroi (<i>n</i> = 14) Wiradjuri (<i>n</i> = 10) Dughutti (<i>n</i> = 6) | Overseas born (<i>n</i> = 3) (Southeast Asia and western Europe) | Overseas born (<i>n</i> = 7) (Asia and Europe) |
| Sexuality† | | | Gay (<i>n</i> = 10) bisexual (<i>n</i> = 3) heterosexual (<i>n</i> = 2) | Gay (<i>n</i> = 24) Bisexual (<i>n</i> = 1) Pansexual (<i>n</i> = 1) |

*PLHIV had been included in phase 1b of Australia's vaccine rollout which commenced 22 March 2021. **One participant identified as nonbinary. †Most (60%) were aged 16–29 years reflecting the young age distribution of Aboriginal communities in Australia. Sexuality demographics were not captured for people who inject drugs and Aboriginal people.

PWID participants identified how geographic location shaped their perceptions of COVID-19 risk. Some lived in regional locations where there were very few, if any, COVID-19 outbreaks, and consequently felt there was minimal risk and little need for vaccination:

I don't think I need a vaccine, because I don't think there are many people [with COVID-19 infection] around this area ... I've never heard of anybody having it here. (PWID, Female, 52 years, December 2020).

3.2. Vaccine Benefits

3.2.1. Protecting Self and Others. Participants in all groups shared the view that vaccines were important to protect one's health and that there was an obligation to be vaccinated to protect others. Concern for others mostly included immediate family, partners, or other loved ones with underlying health conditions [29]. This view was particularly strong among Aboriginal participants where collective care is a strong cultural value, and where there is an emphasis on protecting older people:

If I had to get it for my dad or my mum, or my aunties or uncles, I would get it for them. (Aboriginal man, 16–30 years, February 2021)

Participants in other groups also talked about protecting others and, in this way, to a certain extent shared in the belief of a communal obligation to get vaccinated:

I'll get it straightaway. I've got no problem. I would rather the healthcare workers and hospital people and that should get it all done before and the elderly in aged care ... they should be covered first. (PWID, Female, 54 years, December 2020)

There's just an obligation, a moral obligation, to do what we've got to do to make sure that we're prepared, not just take care of ourselves, but that we're not a danger to someone else. (PLHIV, Male, 55 years, April 2021)

[...] because [in my job] I do have so much contact with the public, I wasn't so much worried for myself, but because I was seeing my friends and my parents [...] I was aware that I was exposing them to the risk. (GBM, 25 years, August 2021) [29].

Thus, motivations to get vaccinated rested on a sense of shared responsibility but were more important in some populations, such as Aboriginal communities, suggesting that promotional messages using notions of community responsibility could have more traction in some communities than others.

3.2.2. A Return to "Normal Life". Even among participants who expressed hesitancy about COVID-19 vaccines there was a view that vaccination would be needed to regain

freedom from COVID-related restrictions. A return to "normal life," as participants described it, meant different things across and within groups. Among older Aboriginal participants, a return to "normal life" was about work obligations and living longer and healthier lives, whilst for younger Aboriginal participants this was about returning to travel and other social activities:

By contrast, for PWID, expressions of wanting to return to "normal life" were less prevalent as they often reflected that their lives had not changed substantially because of COVID-19 restrictions and by consequence they did not immediately need to be vaccinated:

I would give [my vaccine dose] to someone else that needed it. Someone else more than me. I don't go out that much. I don't put myself in a high risk [...] There's only limited doses so I can wait. (PWID, Male, 44 years, February 2021)

For several PWID, daily life with COVID-19 restrictions felt quite similar to prepandemic life, because they were on social support benefits and by consequence did not often travel for work for recreation. In this way, motivations to be vaccinated were not high because vaccination did not incur extra benefits (of freer work or travel conditions), and when vaccines were scarce (as they were at the time of their interviews) PWID were willing to put others with seemingly high need ahead of themselves.

3.3. Vaccine Safety

3.3.1. Speed of Vaccine Development. Aboriginal participants and PWID were apprehensive about the speed in which COVID-19 vaccines were developed, believing that this led to compromised safety. Both groups expressed views that "good quality" scientific technologies take years to perfect:

I'm not anti it, I just don't think at this stage unless I have to, I would do it. [...] I think in reality they test these things for years and years and years before they know if it works and if they've only just made it how do you know what they are doing. (PWID, Male, 55 years, December 2020)

It took one year to create a vaccine. I think that's crazy. I don't trust it. We've probably gotta wait for another country to see the side effects. Because I'm just scared of what may happen. (Aboriginal man, 16–29 years, February 2021)

However, these concerns did not necessarily translate to an unwillingness to be vaccinated. By contrast, concerns about the speed of COVID-19 vaccine development did not feature to the same extent among PLHIV or GBM [29], possibly related to their familiarity with, and trust in, biomedical technologies related to HIV.

3.3.2. Not Enough Information about Vaccines. Participants from all groups expressed concern over the lack of information about vaccines, although this was more

evident in the narratives of Aboriginal participants and PWID than PLHIV or GBM [29]. The kind of information desired was well-described by Aboriginal participants, including more information about vaccine content, scientific development processes (including scientific rigour), possible immune responses after vaccination, and side-effects and their causes. Given the perceived lack of information about vaccines, Aboriginal and PWID participants were hesitant to be early adopters of COVID-19 vaccines:

I personally do not want to be a part of the first strain of a vaccine. (Aboriginal woman, 16–29 years, February 2021)

I will let other people do it first before I do it [. . .] It might be good. Let other people have it first and see what happens with that. (PWID, Male, 43 years, December 2020)

While PLHIV were not as concerned about the scientific development processes, they were concerned about the potential impact of COVID-19 vaccines on their immune system, or how vaccines might interact with HIV treatments. In this regard, they wanted more information about what impact COVID-19 vaccines might have on immunological markers, and whether PLHIV had been included in clinical trials of COVID-19 vaccines.

I received the flu' vax two years ago and my CD4 was eaten away. [. . .] The ingredients that are in the COVID vaccine, are they going to do the same thing as the flu vaccine? (PLHIV, Male, 43 years, April 2021)

3.4. Social Processes

3.4.1. Distrust of Government and Healthcare Authority. Distrust of government and healthcare authorities was an important driver among participants who were hesitant about COVID-19 vaccines. Aboriginal participants and PWID expressed greater distrust in mainstream healthcare authorities, while PLHIV and GBM were generally more trusting. Moreover, while Aboriginal participants and PWID were distrusting, the nature of the distrust was different. For Aboriginal participants, distrust was directed specifically at mainstream healthcare authorities and governments and Aboriginal Health Services were seen to be much safer. The distrust rested in poor treatment by the mainstream healthcare system, which has occurred across multiple generations and is a shared experience and perspective across families and communities. This deep distrust is well-represented in this quote, where the prioritisation of Aboriginal people in early-stage vaccine rollout as a strategy was interpreted as a way to “test out” the vaccines on Aboriginal people.

You know, the Aboriginal communities will be one of the first ones that will be trying the vaccine. What, again, are we just the guinea pigs for 'em? So, I'm not happy with that. Like, give it to a bunch of white fellas first and let's see if them fellas live from it. (Aboriginal woman, >50 years, February 2021)

In comparison, PWID's poor experiences with the mainstream healthcare system were typically based on individual past experiences [30], rather than shared, multi-generational experiences. In addition, a few PWID participants expressed a more generalised suspicion or conspiratorial thinking. For example, a belief that the virus had been released through an organised act of a foreign government:

I'm not taking it. [. . .] I just don't trust the virus or where it comes from. [. . .] As for the vaccine, I know the Chinese are not making it, but they might already know what you need to put in a vaccine. (PWID, Male, 43 years, December 2020)

Most PLHIV expressed high levels of trust in biomedicine, due being diagnosed with HIV in the contemporary era (i.e., since 2016) and having benefited significantly from medical advancements in the field of HIV. They tended to also be highly engaged with mainstream healthcare services, which in turn engendered trust in medical advice.

When the vaccine came out, I was like, “yay, I'm a 1B [vaccination priority group],” because HIV was classified as a 1B. And I was like, “Yep, I'm going to be the first person I know to get fully vaccinated. (PLHIV, Male, 47 years, August 2021)

For PLHIV, the idea of not getting vaccinated was generally more worrying since they were at greater risk of significant illness from COVID-19, were in a priority vaccination group, and some also perceived potential disapproval from doctors if they refused vaccination.

Concerns about *not being* vaccinated were also dominant among GBM participants who valued vaccination as way to keep themselves and their community safe:

I think for me, it was I just wanted to feel a bit safer [. . .] but I felt that while I was doing this for myself, [. . .] I was doing good for others and sort of the community and being able to get us moving again. (GBM, 46 years, September 2021)

Very few GBM participants talked about distrust of the healthcare system and vaccines; however, many voiced their distrust in governments' management of the pandemic, particularly the Australian government.

3.4.2. Stigma Attached to Antivaccination Sentiments. Across all groups, most participants were supportive of vaccination and were willing for themselves and their families to be vaccinated. However, the very few who were unwilling to be vaccinated identified the stigma attached to their position as not willing:

It's the attitude of the vaccinated that is a potential issue because if they want to spout up and carry on and create a scene, then they've got numbers on their side. Whether

or not other people around them support their view or their behaviour is a different story, but it is a definite risk. (GBM, Male, 54 years, October 2021)

Being unwilling to vaccinate therefore came with potential social risks, including needing to explain their position to seemingly zealous vaccine advocates. Here, vaccine refusal might increase stigma and perpetuate views of them as noncompliant.

3.5. Accessing a COVID-19 Vaccine

3.5.1. Practical factors. Considerations of the practical factors of vaccination were more prominent among PLHIV and GBM than Aboriginal people and PWID. This difference could be related to the periods of data collection wherein Aboriginal people and PWID were not eligible for vaccination when they were interviewed. PLHIV and GBM who had been vaccinated, or attempting to get vaccinated, reported uncertainty around the process of determining eligibility, obtaining a referral, and booking an appointment:

I didn't have a GP [general practitioner] and nobody was telling me what to do and where to go. [...] I said to [my HIV] specialist, [...] "Well, someone's got to tell me what to do because I don't know where to go, what am I going to take, where to take it, I don't have a car, I can't go and get tested, I can't do this. It's much more difficult for me." (GBM, Male, 58 years, October 2021)

3.5.2. Access to a Trusted Healthcare Provider. Most participants across all groups were connected to a health service that they trusted (e.g., Aboriginal medical service, primary needle and syringe program, HIV clinical care, or general practice) and felt confident their vaccine needs would be handled by their health provider upon becoming eligible.

Aboriginal medical centre or, if there's no Aboriginal medical centre in your area, probably go to the local doctor's or to the doctor that you've been to for years, you've been taking your family for years. Like a doctor that you know and trust. (Aboriginal man, 16–29 years, February 2021)

To be honest, I'd be getting it through my [HIV specialist], only because I would not want to deal with the normal medical community asking those types of questions. There definitely is a fear of being discriminated against in the normal, general medical community. (PLHIV, Male, 27 years, February 2021)

Some participants indicated communication issues with healthcare staff about the vaccine process, including about risk of adverse reactions and vaccine availability.

4. Discussion

Similar to Newman et al.'s [31] work among marginalised populations in the U.S. and Canada, our data have shown that COVID-19 vaccines have different meanings among our study populations connected to their specific histories of discrimination. All groups viewed vaccination as necessary for community protection, although narratives of community care were more common among Aboriginal people. PLHIV and GBM were generally more trusting of vaccines possibly because of their positive past experiences with biomedical technologies. In line with other Australian research among GBM [16, 17], a minority of GBM may be resistant to or sceptical of new biomedicine; however, most appear to welcome COVID-19 vaccines and actively seek them out. Mosby and Swidrovich [32], in their study among First Nations people in Canada and the U.S., found that these groups have experienced a long history of injustice with mainstream healthcare institutions and governments, were less trusting, which we also found among Aboriginal Peoples.

From these findings, COVID-19 vaccine messaging should avoid assuming that the improving vaccine "literacy" is the sole solution to hesitancy or refusal among target populations. This kind of response trivialises concerns and past experiences of populations who experience discrimination, by seeking to bring their views in line with dominant, normative perspectives about vaccines. The general approach of public health officials to managing the pandemic in Australia has prioritised normative perspectives which can alienate populations outside of these norms; for example, COVID-19 restrictions did not adequately account for kinship systems of GBM and other queer people [33, 34], or housing arrangements in Aboriginal communities where it is common to live in large extended families [35]. Not recognising differences in experiences and values of communities who experience discrimination can reproduce distrust in governments, as seen in responses from Aboriginal participants and PWID. Ensuring COVID-19 vaccine equity among populations who experience discrimination requires that promotional messages account for setting-specific understandings of each group, using language and values that matter to them, and engaging trusted care providers [36, 37].

In addition, efforts to increase vaccine uptake should take account of how vaccine refusal could further perpetuate social marginalisation for some populations, since vaccine refusal can be interpreted as irrational, uncooperative, and noncompliant. Vaccine refusal may increase stigma for already stigmatised groups because of drug use, health status or sexuality, or because of a long history of racist and colonial policies. Vaccine refusal for marginalised groups will almost certainly mean further exclusion from social participation, especially in jurisdictions with vaccine mandates (e.g., certain employment settings). If healthcare providers refuse to engage with the possibility of vaccine refusal, it makes discussions about concerns difficult for people and may damage already precarious relationships between marginalised people and healthcare providers.

5. Conclusion

Histories of discrimination in the healthcare system impact perceptions and attitudes towards COVID-19 vaccination and vaccination programs could further entrench marginalisation unless equity issues are fully addressed. Addressing equity needs to take misgivings about vaccination seriously, how these differ across populations, and how they emerge from their unique histories of discrimination in the healthcare system.

6. Recommendations

Recommendations for COVID-19 and future viral vaccine messaging have been outlined with considerations of promoting capability, opportunity, and motivation [38] and modified here to address the vulnerabilities of marginalised groups.

- (i) Formulate appropriate messaging unique to the specific values and experiences in different marginalised communities
- (ii) Where possible, avoid (COVID-19) vaccine mandates as they can further entrench stigma, exclusion from society and mistrust in the healthcare system
- (iii) Integrate risk communication tools that are specific to communities and support understanding of both (COVID-19) infection and vaccine risk among marginalised populations, this could include decision aids
- (iv) Identify trusted and accessible locations for vaccine delivery

Data Availability

The data that support the findings of this study are available from the corresponding author/s upon reasonable request.

Conflicts of Interest

The authors declare that there are no conflicts of interest.

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