

To trust or not to trust: an exploratory qualitative study of personal and community perceptions of vaccines amongst a group of young community healthcare workers in Soweto, South Africa

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Abstract

As South Africa debates the implementation of mandatory vaccination policies to address coronavirus disease 2019 (COVID-19) vaccine hesitancy, many adults remain unpersuaded of the need and benefits of vaccination. Several surveys suggest that this is particularly true for younger adults and for those living in low-income communities. Therefore, we sought the views of youth training to become community health workers (CHWs) as a youth group at the intersection of the community and the health system. This research was conducted in a township of South Africa, a country with a long history of political mistrust. Using semi-structured interviews and an interview guide, we explored young CHWs' perceptions ($n = 20$) of vaccine hesitancy for themselves, their peers and the community. Audio-recorded interviews were transcribed, and thematic analysis was undertaken. Findings suggest widespread COVID-19 vaccine hesitancy in this community, especially amongst young people. Reported reasons for this hesitancy appear linked to a complex interrelated network of factors, including 'uncertainty' about the outcome and effectiveness of the vaccines; 'fear' of the vaccines, driven by a myriad of rumours and conspiracy theories within the community; a 'lack of control' over other people's behaviour and a desire not to be controlled especially by the government but at the same time a resignation towards impending mandatory vaccine policies and a 'lack of trust' particularly in the government's intentions with vaccine roll-out and their health messaging. While mandatory vaccination policies in several organizations have shown success, with South Africa's complex social history and recent civil unrest, the roll-out of any mandatory vaccination policy will require careful health messaging with a focus on trust-building between communities, health systems and authorities through more personalized approaches that consider contextual nuances.

Keywords: COVID-19 vaccines, community health workers, South Africa, intention, uncertainty, perception

Key messages

- Findings suggest widespread coronavirus disease 2019 vaccine hesitancy in this community, especially amongst young people.
- Reported reasons for vaccine hesitancy appear linked to a complex interrelated network of factors.
- Health messaging regarding vaccines needs to focus on trust-building through more personalized approaches that consider contextual nuances.

Introduction

The coronavirus disease 2019 (COVID-19) pandemic has been a pressing global concern since the World Health Organization (WHO) declared it a global pandemic on 11 March 2020. In dealing with the pandemic, there have been urgent

large-scale national and international efforts for vaccine roll-out and uptake by the public. However, vaccine hesitancy amongst the general population has been a major stumbling block in ensuring vaccine uptake and public health safety around the world, both before and during the pandemic (Machingaidze and Wiysonge, 2021).

Vaccine hesitancy is defined as a delay in uptake or a reluctance or refusal to vaccinate despite vaccines being available (MacDonald, 2015). Reasons why people choose not to vaccinate are complex and may be linked to inconvenience or trouble with accessing vaccines, complacency or a lack of trust and confidence in the effectiveness and safety of a vaccine, the system of delivery and/or the health professionals and policymakers behind the vaccine (WHO, 2019). Vaccine refusal has been associated with outbreaks of various diseases pre-COVID (Salmon *et al.*, 2015). Studies conducted during the COVID-19 pandemic point to disparities in access and vaccine hesitancy as contributing to low vaccine uptake in some areas (Nguyen *et al.*, 2022)—in particular, limited trust in

the vaccine development process and concerns about vaccine safety and efficacy (Troiano and Nardi, 2021). Some authors argue that vaccine acceptance has played a decisive role in successfully controlling the pandemic (Sallam, 2021) and vaccine hesitancy is an important problem to address during the pandemic (Troiano and Nardi, 2021). Importantly, though, vaccine hesitancy during the pandemic has been shown to be changeable rather than a stable trait certainly at the individual level, and people may transition from hesitancy to acceptance of vaccines (Sieglar *et al.*, 2021).

South Africa has been no exception with a lack of vaccine uptake amongst the general population and a surplus of unused vaccines during the pandemic (Natrass and Seekings, 2021), despite major public campaigns, the availability of free and accessible COVID-19 vaccines and strong encouragement by the government, medical professionals and civil society leaders. Furthermore, vaccine hesitancy has been reported in this context well before the advent of COVID-19 (Cooper *et al.*, 2018; Machingaidze and Wiysonge, 2021).

Within South Africa, vaccination for healthcare workers started in March 2021 and in May 2021 for the general public. A survey of South African adults ($n = 1000$) conducted in June 2021 indicated that one in five respondents was unwilling and another one in five was still undecided to take a vaccine to prevent and reduce serious illness or death from COVID-19 (DSI-NRF Centre of Excellence in Human Development, 2021). Worryingly, refusal rates were the highest in younger adults and in those households with the least disposable income and the highest job insecurity, indicating the potential for continued socio-economic divides in health outcomes within the country.

To address the challenge of vaccine hesitancy, countries and organizations around the world are currently grappling with whether or how to make vaccination against COVID-19 mandatory. While several countries, companies and organizations have already made this shift, there have been lively debates on whether or how these moves infringe human rights (Aini and Widjaja, 2021). While some have argued that the South African constitution offers protection for citizens against mandated vaccination (Calitz, 2021), others have suggested that the government itself has a constitutional duty to impose vaccinations to protect the population (Moodley, 2021). Within South Africa, such debates occur amidst a long history of government and institutional mistrust that is transferred between generations to influence the perceptions and beliefs of even the youngest family members (Esau *et al.*, 2019).

On 28 November 2021, the South African president addressed the nation and suggested the possibility that mandatory vaccination policies would be implemented in response to the emerging new variant Omicron and resulting travel bans targeting Southern Africa. Several organizations in the country have already taken this route, resulting in significant improvements in vaccine uptake amongst employees, but the implementation of government mandates has left many divided opinions. For example, many felt that the stringent lockdown conditions signalled an overzealous response that did not serve to 'flatten the curve' and instead led to extreme economic fallout, particularly for those most vulnerable and marginalized in communities. In addition, restrictions and curfews were unenforceable, and the decision to shut schools had a particularly detrimental effect on the well-being

of children (Pitt, 2021; The Scientists Collective, 2021). Even for healthcare workers, where mandated policies have been most frequently applied to protect those most exposed, there have been arguments that such mandatory approaches break down trust between healthcare workers and their institutions (Gur-Arie *et al.*, 2021), and employers and the government (Woolf *et al.*, 2021).

In an effort to encourage broader debate and improved communication on COVID-19 vaccines, the South African government has proposed policies that pay greater attention to community engagement and exploration of current public health messaging. This strategy is particularly aimed at addressing community members' concerns, raising awareness, encouraging behaviour change, addressing misinformation and alleviating fears (National Research Foundation, 2021). One important aspect of community engagement is understanding healthcare workers' perceptions and concerns since they are key stakeholders in consulting with community members (Gesser-Edelsburg *et al.*, 2014). Healthcare workers are also able to provide insight into community perceptions based on their interactions with the general public.

In low-middle income countries where public healthcare resources are limited, community health workers (CHWs) form a critical part of health infrastructure and community engagement efforts. CHWs are predominantly members of local communities who hold no formal professional and tertiary education, but they provide vital support and links between communities and health facilities in delivering and advocating health services, raising awareness of national health priorities and assisting in implementing primary health interventions, including vaccination of preventable diseases (Languza *et al.*, 2011; Vouking *et al.*, 2017; Murphy *et al.*, 2021). CHWs have also been recognized by the WHO (2021) as a trusted and credible link between communities and health systems in supporting COVID-19 vaccine acceptance and uptake. However, how CHWs think about COVID-19 vaccines and how they discuss this with the communities they serve are likely to influence the uptake of the vaccination and the response to impending government mandates.

Therefore, our aim in this study was to investigate what CHWs think about COVID-19 vaccines and explore issues related to vaccine acceptance, hesitancy and mandatory vaccination policies amongst a group of youth trainee CHWs living and working within the historically disadvantaged township of Soweto, South Africa.

Methods

Design and participants

This exploratory study utilized a qualitative design and semi-structured interviews. The participant group was individuals living in Soweto between the ages of 21 and 30 years old (80% female) who were enrolled in a youth employment and training programme to become CHWs. As part of the programme, youth undertake a recognized CHW qualification (National Qualifications Framework Level 3 (NQF3)-level Health Promotion) while supporting the community with basic health screening and health promotion activities. Interviews were conducted with 20 participants selected via purposive sampling. All of the youth CHW trainees were invited to take part in the interviews, and it was made clear to the youth that this was on a voluntary basis. All agreed to take part and expressed

an interest to share their perceptions and experience of vaccine hesitancy from their own, their peers and their work within the community. At the time the interviews were conducted, the trainees had almost completed their training programme and had spent significant time working in the community and within local primary care clinics as part of primary care teams. Their opinions were informed by this work experience. However, all youth were also members of the community in which they worked and as such, their opinions and perspectives are from the position of youth CHWs, their experience working with other community members (through home visits, health promotion and screening events, and within clinics) and as community members themselves.

While Authors 3 and 4 have both worked with the participant group, delivering part of the training programme, Authors 1 and 2 had no familiarity with the participant group.

Ethical considerations

Ethical clearance was obtained from the University's Institutional Review Board (clearance number M200941). Participants were provided with an information sheet, and all participants gave written consent. Participants were assured that their responses would remain anonymous.

Research site

Data were collected from participants living and working in Soweto, a large township south of Johannesburg, South Africa. It is home to a linguistically and culturally diverse group of 1.5 million people, is densely populated and has high levels of unemployment and poverty. Many communities living in Soweto face ongoing service delivery challenges (including in healthcare) and unreliable electricity supplies. In protest, recent local government elections saw a drastic dip in voter turnout in Soweto and significant changes in voter allegiances (Simelane and Banda, 2021).

Data were collected during September, October and November 2021, after COVID-19 wave 3 (June–July 2021) and before the onset of COVID-19 wave 4 (which started in early December 2021) in South Africa. At the end of November 2021, South African government statistics indicated that there were just >28 600 active cases in South Africa and 14.5 million people (24% of the population) had been fully vaccinated.

Data collection

Interviews were guided by a semi-structured interview guide focusing on the barriers and facilitators for vaccine uptake amongst youth and the broader community (Supplementary File 1). Questions were informed by the health belief model (focusing on perceived severity, susceptibility, benefits, barriers and cues to action; Rosenstock *et al.*, 1988) and then broadened to focus on perceptions around government actions and messaging. Interviews were conducted by Author 3 in a mixture of English and isiZulu, which is commonly spoken by Sowetans. Interviews were conducted in-person when possible (50%), at a local Academic Hospital Learning Centre, or by telephone (50%). Interviews were audio-recorded and lasted an average of 40 min.

Analysis

The interviews were transcribed by an independent transcription service, and where necessary, those parts of the interviews that were conducted in vernacular languages were translated. Author 3 checked the transcriptions and translations, and Authors 1 and 2 analysed the interviews using principles of reflexive thematic analysis (Braun *et al.*, 2019). They each analysed half of the data set, making summary notes on codes emerging from each interview. For some questions, especially those related to perceived susceptibility, coding was done on a question-by-question basis (i.e. comparing responses amongst participants). These codes were then organized into overarching themes that were confirmed via a consensus approach and discussed with the entire research team.

Trustworthiness

In this study, trustworthiness was achieved in several ways (guided by Shenton, 2004). Credibility was achieved through some team members' familiarity with the participant group before the study and peer debrief discussions conducted during the analysis process. Transferability was achieved through a purposive sampling of participants. Dependability was achieved by keeping a running account of the research process of the project. Confirmability was achieved via careful checking of analytic findings and an audit trail of decision-making amongst the research team. The Standards for Reporting Qualitative Research checklist was also followed.

Results

We identified several interrelated themes across participants' accounts, namely (1) uncertainty, (2) fear, (3) lack of control and (4) a lack of trust. Table 1 describes these main themes together with several sub-themes identified. We start this results section with a description of some general trends identified across participants' accounts.

Table 1. Themes identified in the data

| Main theme | Sub-theme |
|-----------------|---|
| Uncertainty | Uncertainty about COVID-19 diagnoses Outcomes of COVID-19 and vaccines Safety and efficacy of vaccines against COVID-19 |
| Fear | Conspiracy theories and rumours about vaccines Fear of outcomes of vaccines Things will not go back to 'normal' without mandatory vaccination |
| Lack of control | Not being able to control others' health behaviour Not wanting to be controlled by others Resignation towards mandatory vaccine policies |
| Lack of trust | Lack of trust in the government's intentions Lack of trust in healthcare services Lack of trust in the government's vaccine-related messaging Personal examples as more trustworthy sources of messaging |

General trends in participants' accounts

There was strong agreement amongst participants that everyone is at risk of contracting COVID-19 and the virus 'doesn't choose' (P10). Frontline workers, those who are immune-compromised, the youth, the elderly and unvaccinated people were mentioned as most at risk of becoming infected.

Most participants felt at risk for COVID-19 infection because they work in the community, use public transport (minibus taxis) and in some cases visit crowded or intimate spaces such as shopping malls or community members' homes. There was a sense amongst some participants that being vaccinated and following protocols do reduce the personal risk of contracting COVID-19.

In general, participants indicated that men, as well as younger people in their community, are more reluctant to get vaccinated and are also less likely to follow COVID-19 safety protocols. Men were depicted as not caring about their health or taking responsibility for their health as much as women do. Reasons cited for the reluctance of young people to get vaccinated ranged from them not being interested or not caring about their health, being fearful of the vaccine, not perceiving the risk of infection as serious or being influenced by peers and misinformation on social media.

The majority of participants, being younger members of the community, indicated that they had been vaccinated and, in many cases, so had their families. Only two participants reported that they have not yet been vaccinated. Most participants had not had any experience with vaccines as an adult, for example, influenza vaccines. This strong trend of COVID-19 vaccination amongst a young group of people in part relates to the participants' position as CHWs and the risks they face in their work, as well as frequent assertions in the data that healthcare workers need to set an example and get vaccinated.

A few respondents indicated that their decision to vaccinate had been influenced by a strong sense of responsibility to protect family members, especially elderly people:

I just wanted to protect my mom, my mom has a very weak immune system so I knew that if I got her sick she was going to get really sick. So that was the one reason I was like you know what, no matter what they say about the vaccine, it's fine. I'm going to get it because I want to make sure that my mom and my family is protected. (P5)

Participants reported generational differences in terms of opinions on vaccines and access to information, with elderly people in general seen as more willing to get vaccinated and taking greater responsibility for their health. Older generations access information from television, newspapers and the news. Word of mouth (e.g. conversations at church, sitting having tea with one another and on street corners) was mentioned as also playing a powerful role in the dissemination of information about COVID-19 and vaccines amongst older generations.

Social media, including WhatsApp groups, play a particularly strong role in young people's access to information about COVID-19 and vaccines. At times, this was mentioned as a potentially dangerous source, given the proliferation of misinformation and fake news:

Social media has positives and negativities so sometimes there are people who just have some explain their experience and say this is what happened after I got vaccinated. And then maybe I read that, and I now believe that this is going to happen to everyone else who gets vaccinated. (P7)

At the same time, however, social media can be used positively to encourage vaccination:

I think when it was a turn for the 20 something to 30 something to vaccinate. We had a high number of vaccinations. And I think that was because it was trending [on social media]. Everyone was on the trend that 'I'm going to vaccinate' and everyone was like they wanted to be a part of that. (P19)

There were mixed sentiments amongst participants regarding community members' knowledge and understanding of COVID-19, with some participants indicating that people are aware of COVID-19 yet do not understand it well—which may be influencing why some people choose not to get vaccinated. Almost all participants made it clear, however, that awareness of the need to vaccinate was not a challenge, nor was awareness of the availability of vaccine sites in the community (and by inference, access to vaccines). Participants spoke about mechanisms in their community to advertise vaccinations—for example, text messages from the government and advertising via a megaphone in communities to urge people to get vaccinated. Only one participant (P5) mentioned access-related issues due to limited vaccine sites in their particular area of the community. Vaccine hesitancy in the community in which the CHW live, therefore, does not seem to be linked to issues of access and awareness, but rather to other factors.

Uncertainty

We identified a strong theme of uncertainty in participants' responses regarding COVID-19 and vaccines. Several participants indicated that they were unsure if they had had the virus or not, with many indicating they had experienced COVID-19-like symptoms at some stage during the pandemic but had not sought a confirmatory test or else they had not received the test results. Some were uncertain about when they might have had COVID-19:

I have never [had COVID], no, I haven't. Unless maybe I did get it because there was a time when I had a hectic flu and it lasted for two weeks. I didn't get tested. Unless I got it and then I didn't even know that I had it. (P15)

Some participants spoke about uncertainty about the contents of the vaccine, linking this to vaccine hesitancy amongst community members. Many participants cited rumours in the community, which related chiefly to the safety of vaccines, specifically that the vaccines make people ill, shorten lifespan or lead to death:

Because they are like, you don't know what you are injecting into your immune system. That could be something dangerous and you have it, so some people are like I'm no longer getting that. They feel like it will harm their health or something. (P15)

Other than the side effects, I would say that I have heard a lot of them [community members] saying that now that they have vaccinated, they have a lifespan of something like two years. (P1)

Comments from participants about vaccines, both in relation to their own beliefs and to those of the community, seemed to focus more strongly on the issue of vaccine safety rather than on efficacy. As we outline in the following section, this may be as a result of fear underpinned by a plethora of rumours circulating in the community related to side effects from vaccines. Participants themselves, however, also seemed hesitant about vaccine safety and efficacy. When participants were asked whether they thought the vaccine was safe, some responded with hedged answers, indicating uncertainty about whether they fully trusted the sensitivity and specificity of the vaccine. For example, participants used language such as ‘I would like to think so’ (P5), ‘I guess it’s safe’ (P8), ‘I think it’s safe, I could be wrong though’ (P16) or ‘I don’t know’ (P18).

Participants also indicated uncertainty regarding the efficacy of the vaccine—especially given such different immune responses both to the virus and to the vaccine. Again, we noted hesitancy in participants’ responses when asked about their personal beliefs regarding the efficacy of the vaccine, and in some instances, this hesitancy seemed linked to personal experience (or lack thereof) of the vaccine against COVID-19:

So far, I would like to believe [the vaccine is effective]. I would like to believe so because I’m not saying there are no people that die after taking the vaccine, we do know. We have heard that people still die after taking the vaccine, but I think the number is quite less than the number of people that are not vaccinated at all. (P1)

Yes I think its effective but I haven’t yet experienced, gotten COVID and seen how effective it is. But I think it’s effective. (P3)

Participants’ uncertainty seemed linked in part to the vaccine’s waning effectiveness over time—‘I feel the vaccine is going to be effective for a certain period and then after that period we go back to square one’ (P18)—as well as the medical community’s uncertainty about the vaccine’s efficacy. Some participants felt that this uncertainty about efficacy was a major driver of vaccine hesitancy amongst younger people in the Sowetan community: ‘most of the youth think the vaccine is not working’ (P19).

Fear

Participants indicated a significant amount of fear in the community regarding the side effects of vaccines, fuelled by rumours and conspiracy theories and linked in part to a lack of understanding of the vaccine:

I think from the people that I have spoken to it all boils down to just a fear of the unknown. (P2)

You know township information. It catches on that side effects are wrong, it is bad. So and so has died because of the vaccine. So now I think information, they are not well informed. (P4)

I think people are fearful of the vaccine because they don’t know anything about it, where it comes from and [they think] you get COVID [from the vaccine]. (P14)

The most commonly mentioned rumours related to the vaccines included the following: killing people (specifically Black or African people and that it was designed to reduce high population rates), making people ill (with COVID-19), changing the body or limiting life (‘it’s a slow poison’, P10). One participant (P19) alluded to historical experiences of foreign pharmaceuticals having bearing on the community’s hesitancy towards vaccines. Several comments referred to the vaccines being ‘foreign’:

They say that he [the president] is the one allowing people to bring this vaccine here. (P4)

They are trying to minimize the population, they are trying to kill the elderly people, they are trying to eliminate the Black race. (P16)

Other rumours related to the outcomes of vaccination included the following: the vaccines can make people magnetic, turn people into robots (linked to the fifth generation mobile network), turn people into vampires, turn people into zombies, alter a person’s DNA, change women’s menstrual cycles, make women’s breasts grow larger, cause infertility, cause seizures, cause skin lesions or cause paralysis. Some of these rumours were amplified by the circulation of videos depicting, for example, magnetic effects in the body from the vaccine:

In the community like news spread fast like you will find that its videos circulating. I once saw a video I think on Tik Tok like they put a coin and they believe that the vaccine has a magnet in. So it is such things like videos, things that people say like ‘I had the vaccine and it did this to me...’. (P6)

Other rumours related to the contents of the vaccine—specifically that they only contain water, they are made from aborted fetuses or they have a microchip inside them (the latter mirroring global rumour trends).

Linked to these rumours and conspiracy theories, participants related community concerns regarding the swift development of vaccines, particularly in comparison to more commonly understood viruses in this community such as HIV:

Some, they are saying why don’t we have [an] HIV vaccine, but the COVID vaccine just came so fast. (P13)

Although consensus was not available and responses in this regard were mixed, several participants spoke about rumours, fears and confusion related to a comparison of the side effects of the different types of vaccines currently available in South Africa (specifically, Pfizer-BioNTech vs J&J/Janssen vaccines):

They are saying that the Johnson and Johnson one is the one that kills people. (P2)

I was still confused as to which vaccine works? Is it Johnson and Johnson, is it Pfizer? (P4)

Side effects, J&J. That one has more effects from people that I know from people that I know [...] Pfizer doesn't have side effects. (P18)

Many participants related fears about what might happen in the future if the majority of the community does not vaccinate—that the country would ‘turn into Wuhan’ (P7), be ‘in [a] shambles’ (P12), get ‘side-lined’ by other countries (P18) and that people would die and lockdowns would continue. There was a strong sense in the data of the need to ‘get back to normal’, with concerns about the state of the country and the burden on the healthcare system and healthcare workers.

Lack of control

Linked to the concept of uncertainty were frequent references to not being able to control circumstances during the pandemic. There was a sense of futility in some of the responses, regardless of what an individual does or does not do in terms of prevention measures, that they could still contract COVID-19. Several participants indicated that although they had been vaccinated and were following protocols such as mask-wearing, sanitizing and social distancing, they had no control over what other people in their household and community choose to do in this regard, leaving them at risk for infection. Some people may not be able to adhere to COVID-19 restrictions such as social distancing because of their living conditions—for example, living with their family in a one-bedroomed dwelling:

People in my community say that whether you get vaccinated or not it doesn't matter because you can still get it. (P15)

Because I think with COVID, you can only do so much as a person and then the rest is out of your control. Things like taking public transport, being at the mall, those [things] that expose you to COVID-19 and you can easily catch that. Even if you sanitise and you are doing everything else, I think you are still [in] danger. (P19)

Participants indicated that they felt the reason why people in their community, especially young people, do not want to get vaccinated is that they do not wish to be told what to do or forced to vaccinate—particularly by the government. There was also a sense of young people feeling they do not have to follow government regulations related to lockdowns and COVID-19 prevention measures.

But there is little that you can do. You can give people information about how they use it. So it will be up to them if they take it or they don't take it. Because you can't force them to take the information if they don't want to. (P5)

Some responses further referred to rumours that the government will use the vaccines to control people:

I have also heard that there was this rumour [going] around that [the vaccine] was meant to make the government control people [...] People don't like to be forced into doing things. (P1)

They have put stuff into the vaccine, the government is going to be able to control how you feel, what you think. (P5)

Some have the belief that the government wants to kill them [...] some say it has chips in them so the government wants to track us. (P6)

We observed in some responses an underlying resignation towards the strong possibility of the implementation of widespread mandatory vaccine policies in the not too distant future—that life is going to become difficult for those people who do not accept these policies. The impending introduction of mandatory vaccine policies seemed to be a reported driver towards vaccination in some instances, particularly concerning employment opportunities:

I think eventually you are going to have to get vaccinated whether you like it or not, that's what I think. I feel like if you don't get vaccinated then life is going to get a bit difficult for you going forward. They have even started at workplaces to get people to vaccinate. (P5)

There is a rumour that you won't get employed if you are not vaccinated. I think that's why some of them go and get vaccinated. (P20)

Several participants mentioned that they felt able to gain some degree of control over the pandemic, or even over the government's proposed mandatory policies, by deciding to get vaccinated:

That was motivation enough for me that if I contract COVID-19 and die from it, can it be that I have done something about it and that was just something out of my control. Because I believe that getting vaccinated gives you control so that whatever happens is beyond your control, but this kind of control you have in your hands. (P16)

I decided to go vaccinate and then I was telling myself that come January [2022] people are going to be forced to vaccinate. And it's not a nice thing to be forced to do something, so I just decided so that later I don't feel forced to go vaccinate. (P18)

Lack of trust

The decision-making process regarding whether or not to get vaccinated seems mediated by several factors. Against a backdrop of deeply entrenched socio-political issues in South Africa and service delivery challenges in this particular community, several participants mentioned a lack of trust in the government's intentions and their desire to control people as a contributor to people's hesitations about vaccines. Particularly in the case of young people, some of the prominent conspiracy theories and rumours mentioned above are linked strongly to political agendas:

All the things that people don't want to hear [about COVID-19 and vaccines], they are hearing it from the government they don't want to believe in [...] you know how young minds are and how much they would want to make it a political thing, rather than a health thing. So whatever

they read, they believe. They take it all the way to politics, all the way to the bigger people in the world [...] and how they control everything, how it's about the economy. (P16)

Related to a lack of trust in the government's intentions regarding vaccine roll-out was a reported lack of trust in health messages during the COVID-19 pandemic. Some participants suggested that government messages make people more fearful of the vaccines. Current messages also encourage people to get vaccinated for the 'greater good of society and for altruistic reasons' rather than addressing the potential impact of vaccination on a personal level:

The messages for me are just so vague. They are not saying anything to the people. They are just like 'save yourself, do this, help the country'. No, what about me? They need to speak to the people. (P2)

Participants suggested that government messages about vaccines need to 'go deeper' (P14) to address fears about side effects from the vaccine, rather than merely urging people to get vaccinated. Some participants suggested using social media more effectively to appeal to younger people. Others suggested that an increase in household visits and personalized one-on-one discussions with individuals and families may be more effective in enabling community members to become informed and to trust government messaging:

There needs to be people who are going to households and doing talks. And just having those sit downs and ironing out whatever concerns that community members may have [...] Apart from just going in and giving them health checks, I think you must go in and have sit downs with people and just put them on the right track. (P2)

Many respondents felt strongly about the power of using personal examples as part of health messaging, starting with themselves. Hearing about someone's personal positive story of vaccination was seen as a potentially trustworthy source of health messaging rather than a generic directive from the government to vaccinate:

I think putting out people who haven't had bad experiences. Like having them to talk to the ones who have not been vaccinated that this thing is not as bad as you think it is. Or it doesn't do things that people think it does. (P6)

I always use myself as an example [...] I guess, maybe, if more people get vaccinated and no one dies practically, I guess that might encourage people. But like I say, I always make an example of myself and a few other people I know. (P16)

Participants indicated strongly that these examples need to come from healthcare workers and ordinary people in communities, not only from the government. One participant further mentioned that political leaders and senior members of government needed to do a better job of leading by example, particularly when it comes to the following COVID-19 safety protocols:

They [political parties] are saying the right things but the actions that they are doing is not the same. Because now

they are the ones who are doing these things [not following COVID-19 restrictions and safety measures]. (P6)

Many participants indicated that they had not been tested for COVID-19, nor had they sought treatment for COVID-19 at a public healthcare facility, even when they had displayed symptoms. While the reasons for the lack of testing were not specifically probed, responses indicated a lack of trust between the community and the healthcare services that they receive in public healthcare settings. One participant (P10) mentioned a story of their father who developed COVID-19 but decided to remain at home rather than seek medical assistance due to a fear of being 'locked up'. This participant also indicated that members of the community did not feel able to approach nurses at the local clinic with questions about COVID-19. Another participant (P15) related how some community members felt uncomfortable going to healthcare facilities to get vaccinated due to fear of contracting COVID-19 at the facility:

He [participant's father] was saying that I don't want to go to the clinic because they are going to lock me up at the hospital and that means you are not going to see me and I'm going to die. (P10)

Discussion

Our findings provide valuable insight into trainee CHW's perceptions in Soweto, South Africa. Although considering themselves to be role models in the community and largely being pro-vaccination, participants seemed to still harbour feelings of uncertainty regarding COVID-19 and vaccines—confirming that when risk is personally relevant, healthcare workers behave like anyone else, mixing objective thinking with subjective and emotive decision-making (Gesser-Edelsburg *et al.*, 2014).

According to the participants, vaccine hesitancy is driven by a complex network of interrelated factors. Issues related to access and availability of vaccines—certainly in this community—do not seem to be fuelling vaccine hesitancy, although the issue of access may well differ across the country and particularly in rural communities (Natrass and Seekings, 2021). Rather, findings suggest that particularly for young people, factors such as uncertainty, fear, misinformation, not wanting to be controlled and peer pressure are driving forces behind COVID-19 vaccine hesitancy. Historical legacies of racism in medicine and medical research also seem to play a role here. Particular contributors are a lack of trust in vaccine health messaging, a lack of personal relevance to these messages and not trusting the government sources behind these messages. Mandatory policies, while apparently necessary at this point in the pandemic, may further entrench a sense of mistrust in the government, particularly amongst young people. The link between mandatory policies and employment opportunities is an important one since unemployment amongst South African youth is at a current high, especially in township contexts, and is a major government priority (The Presidency of South Africa, 2021).

Similar findings have been noted in other countries. A recent survey of 5416 individuals from 34 African countries showed that only 63% of participants were willing to receive a COVID-19 vaccine, 79% were concerned about its side effects

and only 40% believed that vaccines should be mandatory (Anjorin *et al.*, 2021). The WHO has also previously indicated the importance of ‘confidence’ as a major factor in vaccine hesitancy—or trust in a vaccine’s safety, the healthcare system delivering the vaccine and the motives of policymakers (WHO, 2014). A sense of national identity, linked to trust in government, further determines the likelihood that people will follow COVID-19-related health directives such as wearing masks, sanitizing and social distancing (Van Bavel *et al.*, 2021). South Africa continues to embody a complex socio-historical-political landscape. Locally, the vaccine roll-out and people’s perceptions of vaccines have undoubtedly been impacted by broader political factors including a deepening mistrust and discontentment between communities and government over issues such as widespread corruption, a lack of provision of basic service delivery (including adequate healthcare services) and free education. The government’s initial response to the pandemic was harsh and overzealous with little social engagement, which had devastating socio-economic implications for communities across the country (Staunton *et al.*, 2020; Muller, 2021). Furthermore, while countries in the global north quickly scrambled to secure vaccines for their citizens as soon as these were developed, in South Africa there was no real vaccine plan initially (Van Den Heever *et al.*, 2022). When initial vaccines were eventually purchased, the government indicated hesitation about their efficacy and safety and subsequently sold them off to other countries prior to purchasing more. This procrastination and ambiguity by the government on vaccine safety and efficacy led to confusion and misinformation amongst the general public. At the same time, the roll-out of government health messaging during the pandemic has been negatively impacted by allegations of corruption and abuse of powers and funds (Natrass and Seekings, 2021), creating greater public mistrust and uncertainty. In addition, people’s fears around vaccines may arise from feeling excluded from debates and discussions around vaccines. ‘Vaccines are delivered by the state, and if people are marginalised from, excluded from, or don’t trust those state authorities, then they don’t trust that thing’ (Leach, in Stokel-Walker, 2021, p. 2). Thus, the theme of uncertainty we identified in our data appears to relate strongly to the notion of trust in the government and trust in the vaccine.

The South African government has recognized errors in their early response to the pandemic and prioritized public engagement in their future response to COVID-19 and vaccine roll-out so as to ensure public buy-in and social cohesion (Della Togna *et al.*, 2021). We agree with this updated strategy since involving communities in health decision-making and providing transparency in governmental plans and messaging (including COVID-19) are imperative for community participation, building trusting relationships, justice and allowing citizens to feel in control of their health and decision-making (Mosam *et al.*, 2020; Cooper *et al.*, 2021).

The government’s COVID-19 communication strategy thus far has been diverse and multilingual, including traditional formats such as radio and television facilitated by the South African Broadcasting Commission, posters, loud-hailers and digital media platforms, for example, Twitter and Facebook (Della Togna *et al.*, 2021; National Research Foundation, 2021). However, our findings further highlight the importance of ensuring that health messages are personally relevant,

rather than mass-produced. Communities and particularly young people seem more likely to respond to vaccine information when the information has personal meaning and when they have opportunities to engage and ask questions. Furthermore, as participants in our study indicated, engagement on an individual basis may also assist in addressing and correcting misinformation. Goldstein (2021) aptly highlights the point that despite having world-class scientists and virologists guiding us in this pandemic, being a scientific expert does not make one able to promote social behaviour change. As the pandemic continues to unfold and mandatory vaccine policies are inevitably rolled out, future research should continue to monitor community responses. It would be useful, for example, to track the perspectives of this same group of CHWs in this regard.

This study is based on a small sample of participants. Nevertheless, the findings offer rich, detailed insights into both personal and community-driven perspectives on COVID-19 vaccine-related issues. The timing of data collection limited our ability to probe further participants’ views on issues such as mandatory vaccine policies which—at the time of writing in December 2021—have been proposed by the South African president as likely to come into law. We interviewed a group of young people who, by virtue of their status as CHWs, may not share the same views as other young people in their community, even though we asked about community as well as personal perspectives in this study; nonetheless, this should be acknowledged as a limitation to transferability of the findings. Furthermore, as the young people were both living and working within the community, their understanding of the community may be greater but their perspectives may be different from healthcare workers who reside outside of the communities that they serve. Finally, while our intention was to investigate vaccine hesitancy to better understand the poor vaccine uptake within South Africa, it should be noted that hesitancy to vaccinate does not always result in a refusal to vaccinate. As indicated in our introduction, the reasons why people do not vaccinate are complex. However, research from before the pandemic with other vaccines has shown that greater hesitancy is generally associated with lower uptake (Quinn *et al.*, 2019). Future studies would benefit from longitudinal assessment of participants to determine actual vaccine uptake.

Providing reliable and easy-to-understand messaging, engaging with the public and assisting ordinary people to navigate the enormous amount of reliable, and not so reliable, information available to them during this ‘infodemic’ (Naeem *et al.*, 2021) are imperative to ensure that the public is informed, interested and reassured. Promoting national solidarity will need to be a collective effort from various experts, stakeholders and researchers in various fields. CHWs can assist in this task by being community champions for vaccine uptake, since adequate communication and engagement are not only needed at a national level, but importantly, and perhaps most critically, at the grassroots level too.

Supplementary data

Supplementary data is available at *Health Policy and Planning* online.

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Author contributions

L.W., L.K., J.W. and M.S. participated in the conception or design of the work.

L.W. and L.K. participated in the data collection.

J.W. and M.S. participated in the data analysis and interpretation.

J.W., M.S., L.W. and L.K. participated in the drafting of the article.

J.W., M.S., L.W. and L.K. participated in the critical revision of the article.

J.W., M.S., L.W. and L.K. participated in the final approval of the version to be submitted—all named authors should approve the paper prior to submission.

Reflexivity statement

The authors include three females and one male and span multiple levels of seniority. While two of the authors specialize in health communication in South Africa, the third is a health scientist with expertise in health psychology and health behaviour. The fourth author is a postgraduate student in governance, specializing in public policy. All authors have extensive experience conducting qualitative fieldwork in South Africa, especially in historically disadvantaged regions.

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Conflict of interest statement. None declared.

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