



## ***"I don't think there's a point for me to discuss it with my patients": exploring health care providers' views and behaviours regarding COVID-19 vaccination***

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## *"I don't think there's a point for me to discuss it with my patients": exploring health care providers' views and behaviours regarding COVID-19 vaccination*

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### ABSTRACT

**Background:** Health care providers' knowledge and attitudes about vaccines are important determinants of their own vaccine uptake, their intention to recommend vaccines, and their patients' vaccine uptake. This qualitative study's objective was to better understand health care providers' vaccination decisions, their views on barriers to COVID-19 vaccine acceptance and proposed solutions, their opinions on vaccine policies, and their perceived role in discussing COVID-19 vaccination with patients.

**Methods:** Semi-structured interviews on perceptions of COVID-19 vaccines were conducted with Canadian health care providers (N = 14) in spring 2021. A qualitative thematic analysis using NVivo was conducted.

**Results:** Participants had positive attitudes toward vaccination and were vaccinated against COVID-19 or intended to do so once eligible (two delayed their first dose). Only two were actively promoting COVID-19 vaccination to their patients; others either avoided discussing the topic or only provided answers when asked questions. Participants' proposed solutions to enhance COVID-19 vaccine uptake in the public were in relation to access to vaccination services, information in multiple languages, and community outreach. Most participants were in favor of mandatory vaccination policies and had mixed views on the potential impact of the Canadian vaccine-injury support program.

**Conclusions:** While health care providers are recognized as a key source of information regarding vaccines, participants in our study did not consider it their role to provide advice on COVID-19 vaccination. This is a missed opportunity that could be avoided by ensuring health care providers have the tools and training to feel confident in engaging in vaccine discussions with their patients.

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## Introduction

In Canada, the first COVID-19 vaccines were administered in December 2020 when vaccine supply was scarce. Because of vaccine shortages, vaccine roll-out followed a sequence of priority groups, with vaccination offered to those at higher risk of severe illness and death from COVID-19, due to advanced age and other risk conditions—including those whose working or living conditions put them at higher risk of infection. Health care workers were prioritized for COVID-19 vaccination, starting with health care workers providing care in long-term care facilities for seniors, frontline staff working with COVID-19 patients and health care providers involved in managing the COVID-19 response.<sup>1,2</sup>

As of 20 April 2022, 86% of Canadians aged 5 years and older were fully vaccinated against COVID-19.<sup>3</sup> Despite these high rates of vaccination, an important proportion of eligible Canadian adults are still unwilling to receive

a vaccine against COVID-19.<sup>4,5</sup> In addition, among Canadian parents of eligible children, only 63% reported that they would get their children vaccinated against COVID-19.<sup>6</sup> Studies looking at factors impacting COVID-19 vaccine uptake have shown that trust in health system, government, and health care providers is a key determinant of vaccine acceptance.<sup>7</sup> It is also well known that health care providers' knowledge and attitudes about vaccines are important determinants of their own vaccine uptake, their intention to recommend vaccines to their patients, and the vaccine uptake of their patients.<sup>8–12</sup> As a trusted source of information about vaccines, health care providers have a crucial role in building public trust about COVID-19 vaccines and addressing vaccine hesitancy among their patients.<sup>8,13</sup> However, to fill this role, health care providers need to be confident about the safety and usefulness of vaccines.

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Findings of a systematic literature review looking at COVID-19 vaccination intention in the first year of the pandemic showed significant variability in health care providers' willingness to be vaccinated against COVID-19 across countries and professions, with vaccination intention ranging from 28% to 93%. This review also highlighted that socio-demographic characteristics (being older and white, having a higher level of education), perceptions of being at a greater risk and feeling vulnerable to COVID-19, believing that COVID-19 vaccines are safe and effective as well as past history of vaccination (*i.e.*, against influenza) positively influenced vaccination intention among health care providers.<sup>14</sup> Surveys conducted prior to vaccine introduction or at the beginning of the COVID-19 vaccination campaign in Canada showed that a significant proportion of health care providers did not intend or refused to receive the COVID-19 vaccine due to vaccine hesitancy, defined by the World Health Organization (WHO) as "delay in acceptance or refusal of vaccines despite availability of vaccination services".<sup>15-17</sup> This qualitative study aimed to better understand the determinants of health care providers' vaccination decisions, their views on barriers to COVID-19 vaccine acceptance and proposed solutions, their opinions on vaccine policies, as well as their perceived role in discussing COVID-19 vaccination with patients.

## Methods

Many quantitative studies have assessed determinants of health care providers' COVID-19 vaccination decisions and perceived role in recommending COVID-19 to their patients.<sup>16-18-20</sup> To gain an in-depth understanding of these issues, an exploratory study involving qualitative thematic analysis of semi-structured interviews was used. The Consolidated Criteria for Reporting Qualitative Research (COREQ) associated with this study is available (see Supplementary File 1; Table S1).<sup>21</sup>

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## Recruitment

Participants were identified among respondents to a national online survey about COVID-19 and routine immunization who agreed to be re-contacted.<sup>6</sup> Of the 5,028 respondents who completed the survey, 110 identified as health care providers and agreed to be contacted for a follow-up interview. Respondents whose profession in health care did not involve direct patient care and those who were not among priority groups for COVID-19 vaccination were excluded (*e.g.*, managers, social workers), resulting in a sample of 70 potential participants.

We aimed to include diverse participants with regards to profession, work environment, gender, age, province, and area of residence (urban or rural). We also purposely invited health care providers who reported having regular contact with patients and those who identified as belonging to Black, Indigenous, and People of Color (BIPOC), as studies identified

lower COVID-19 vaccine acceptance among these groups.<sup>22-24</sup> Our sample was not restricted to health care providers actively involved in immunization programs, as studies have shown that all health care providers are a trusted source of information about COVID-19 vaccines.<sup>8,14</sup>

Our aim was to interview approximately 15 health care providers. Based on an estimated 50% acceptance rate, e-mail invitations were sent to 33 potential participants between March and May 2021 with different socioprofessional characteristics (*i.e.*, province, age, profession, number of years of practice, language). To minimize selection bias, the criteria, and the list of invites were discussed by the research team. Participants who accepted the invitation were directed to complete an online consent form in VOXCO software and were contacted for an interview over the Zoom online platform or by telephone. Interviews were conducted in either English or French by two research assistants from Laval University (FL and BM).

## Data collection

Interviews elicited participants' perceptions of COVID-19 and attitudes toward vaccination; opinions regarding the roll-out of the vaccination campaign; perceived barriers and facilitators of COVID-19 vaccination for themselves and their patients, and whether they discussed COVID-19 vaccination or not with their patients or their own family members. Interviewers also asked participants the content of these discussions and whether they frequently discussed this topic with their patients. A semi-structured interview guide was used to ensure consistency in data collection (see Supplementary File 2).

Interviews lasted between 30 to 60 minutes and were audio recorded with consent. To ensure consistency, after each interview, the interviewers discussed main findings and potential changes in the interview guide. Following the interview, participants received a \$40 gift card of their choice.

## Data analysis

English interviews were automatically transcribed using Otter.ai. These automated transcriptions were audio verified by a research assistant (BM). French interviews were manually transcribed. Thematic analysis was conducted with key themes derived from the interviews as the main units of analysis using NVivo 13 (QSR International, Burlington, MA). Conceptual categories were created inductively and concepts belonging to a similar dimension were grouped. These conceptual categories were updated and revised until no new properties, dimensions or relationships emerged during analysis.<sup>25</sup> Coding for data was performed by two authors (FL, BM). The coding scheme was discussed with and validated by another author (ED). Independent, dual coding of a subset of the data was performed and discrepancies were resolved by discussion.<sup>26</sup>

The University of Alberta Research Ethics Board approved the study protocol (Approbation #780-492-2615, Project #Pro00102401).

**Table 1.** Socioprofessional characteristics of participants.

Characteristics	Number of participants
Gender	
Man	4
Woman	10
Self-identification as BIPOC*	
Yes	9
No	5
Province of practice	
British Columbia	2
Prairies	6
Ontario	4
Quebec	1
Maritimes	1
Profession	
Nurse	8
Physician	1
Pharmacist	1
Other (i.e., community support worker, medical assistant, technologist, behavioral clinician)	4
Practice environment	
Hospital	7
Private medical clinic	1
Pharmacy	1
Long-term care facility	2
Community health center	3
Years of experience	
Less than 5 years	1
5–10 years	3
More than 10 years	8
Unknown	2

\*Black, Indigenous, and People of color.

## Results

Fourteen health care providers were interviewed (2 in French and 12 in English). Participants represented different professions, work environments, provinces of practice, genders, ages, and cultural/ethnic backgrounds (see Table 1).

None of our interviewees were aware of having a past infection with COVID-19, although one – a registered nurse working in the intensive care unit—reported two exposures to COVID-19 cases without proper personal protection equipment (PPE) and two mentioned having relatives who had a past history of COVID-19 infection, including one who died from the disease. None of our interviewees were directly involved in providing COVID-19 vaccination or other routine vaccines.

### Perceptions of COVID-19 and vaccination intentions and decisions

Asked to describe COVID-19, “scary” was the word that most often came to mind for many participants. Many said they were worried about contracting COVID-19 before being vaccinated, particularly through their exposure at work. Others were more worried for relatives, whom they perceived at higher risk than themselves, due to their age or medical conditions (see Supplementary File 3; Table S2 for illustrative quotes).

Given that interviews occurred a few months into the vaccine roll-out, eight participants had already received one dose of the vaccine and five participants had received two doses. One participant, a pharmacist, intended to be vaccinated but was waiting to become eligible since pharmacists in Quebec were not among priority groups to receive vaccines at the time of the interview. Another two of our interviewees had delayed

their first dose of the vaccine. Zhang (a pulmonary assistant)<sup>a</sup> did so for three reasons. First, he considered the vaccine to be too new and experimental when it was first offered to him; he wanted to wait to see more “real life data”. Second, he felt at low risk of COVID-19 due to his age (55 years) and his health (no comorbidities). Finally, and most importantly, he was afraid that he would not be able to receive his second dose within the interval recommended by the manufacturer. He thought by delaying his first dose, the government “would have more distribution” so that he “could actually get [his] second shot closer, within the study guidelines”. After waiting three months, he felt “comfortable getting the shot”, mostly, as he noted, because if he “waited even longer, [the government] might even stretch that out even more”. Another interviewee, Harsa, delayed the first dose because she was breastfeeding, and felt that “there wasn’t clear data available and whether it was safe during breastfeeding either”. She waited a couple of weeks and was reassured by additional data regarding vaccine safety for breastfeeding women and their infants.

Reasons for accepting COVID-19 vaccination were varied, but the most frequently mentioned was personal protection (i.e., to avoid contracting the virus or to decrease severity of symptoms and risk of complications if infected). Those who acknowledged their greater potential for exposure due to their work environments were relieved when they could be vaccinated and feel safer performing their duties at work. Another important reason for vaccination mentioned by health care providers was to protect others, including their patients, their family, and their community.

All participants mentioned having positive attitudes toward vaccination in general, but many had concerns regarding the safety of the COVID-19 vaccines. These concerns were mostly linked to the novelty of the vaccines, their rapid development, and the use of mRNA technology. Some participants were also worried about the effectiveness of vaccination, especially as new variants were detected at the time of the interviews.

### Discussing COVID-19 vaccines with patients

Two participants noted that they had regular discussions about COVID-19 with their patients. A pharmacist reported having to answer the questions of patients who could not see their family physician and who were concerned about possible interactions between the vaccines and the drugs they were taking. Another participant, a respiratory therapist, mentioned that talking about COVID-19 vaccines was now routine with all his patients (see Table 2 for illustrative quotes).

Five participants explained that they did not talk about COVID-19 vaccines with their patients due to the particularities of their clientele (i.e., children with autism, people with dementia, patients under sedation, etc.). The rest of the participants said that they did not talk about COVID-19 vaccines unless questioned by their patients.

Two participants (Rachid, a pharmacist and Nicole, a registered nurse) felt that they were not properly trained to have these discussions, both in terms of knowledge about COVID-19 vaccines to adequately answer patients’ questions and of communication skills to reassure patients. They also

**Table 2.** Illustrative quotes on health care providers' approaches around communication about COVID-19 vaccines with patients.

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*"But nowadays, it's just, you know, chatting with people, it's almost like a social thing. It's not 'How are you doing?' It's like, 'Are you healthy? Have you got vaccinated yet?' That's almost like a routine social interaction amongst... when I see my patients."* Bruce, Physician, 25 years of practice, working in a hospital, self-identified as BIPOC, BC

*"Almost everybody is like, 'Oh, yeah, I've got it' or 'I'm on the waiting list' or 'I tried to get it' or 'I'm not eligible.'" Maggie, Registered Nurse, 18 years of practice, working in a hospital, self-identified as white, Prairies*

*"It's just this COVID vaccine has been the daily talk since last year. Like, I don't think there's a point for me to discuss it with my patients".* Yasmin, medical assistant, 10 years of practice, working in a private medical clinic, self-identified as BIPOC, Prairies

*"We don't really technically advise, because that's almost kind of giving them our own opinion. And my opinion is probably different than another nurse's opinion. So there is a need for universal training to be able to educate the general public. But I, myself, have not really spoken to anybody about the vaccine."* Aki, Registered Nurse, 5 years of practice, working in a hospital, self-identified as BIPOC, Prairies

*"And basically, my goal is to keep it simple. It's like 'well, about 75 of us that work in this department, 73 of us have had the vaccine and none of us have had any significant issues beyond headaches and sore arms so I'm confident'. [...] In my personal experience, I trust the vaccine and that's what I always say rather than trying to pull up data that might not be most up to date."* Maggie, Registered Nurse, 18 years of practice, working in a hospital, self-identified as white, Prairies

*"I do tell them that I got it myself and that I had some mild headache and a little bit of fatigue after the first vaccine, no side effects after the second, that I find it varies a little bit from person to person as to how much they get for side effects. And yeah, just to be... I think just them knowing that I got it myself is a big reassurance because like okay, well then obviously, she's not just saying that. She actually believes."* Fatima, Behavioral clinician, 3 years of practice, working in a community center for children with disabilities, self-identified as BIPOC, Ontario

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mentioned that, as information about COVID-19 vaccines safety and efficacy was constantly evolving, they felt it was difficult, if not impossible, to stay up to date to confidently provide information to patients. Rachid did mention, however, that he was waiting for online training on vaccination offered by Quebec's Ministry for Health and Social Services, and that afterward he would feel more comfortable answering patients' questions.

Joane, a registered nurse, stated that she referred patients to official sources (e.g., Alberta Health Services) when patients asked questions, but she did not feel that it was her "job to change people's mind". Additionally, Fatima, a behavioral scientist working with children with disabilities explained that she avoided discussing vaccination with patients and their relatives, and even with her colleagues, as she did not want to appear judgmental about their vaccination decision. "I'd rather just keep it minimal", she noted, "just in case it doesn't align with their own view".

Otherwise, many participants noted that patients rarely asked questions about COVID-19 vaccination. Most questions were related to eligibility for vaccination or, more rarely, potential side effects after vaccination. One participant, who did not initiate discussions with patients about vaccination, suggested that nurses do not have the technical knowledge to discuss vaccination with patients (Aki, Registered Nurse, 5 years of practice, working in a hospital, self-identified as BIPOC, Prairies).

When COVID-19 vaccines were discussed with patients, health care providers mentioned relying more on their personal experience with vaccination than only using scientific or

public health arguments. They felt that patients were more able to relate to their own experience, as health care providers who received the vaccine themselves, than simply on government Public Health facts or statistics, even if they were using their knowledge of science to ground their personal experience.

### Sources of information on COVID-19 vaccines

The primary source of information about COVID-19 vaccines noted by all participants was their provincial government website. Half of the interviewees also mentioned getting their information through the news (mainly TV news).

Other sources of information less frequently mentioned included e-mails or communications from their employer; blogs, Facebook pages or Twitter accounts of medical specialists; scientific articles and the websites of the US Center for Diseases Control (CDC) or of the WHO. Only three participants reported having received specific training on COVID-19 vaccines during webinars or conferences.

Only two interviewees said they gave resources on COVID-19 vaccines to their patients. One mentioned a factsheet tailored for people with severe cognitive problems which was given by the community services organization she works for. Another one said she referred patients to the website of their provincial health services.

### Perceived barriers to vaccination and proposed solutions

Very few barriers were reported by participants in terms of their own vaccination. The majority easily accessed vaccines at their workplace before, during or after their shift and felt that this approach was very efficient, although one participant noted that the continued rescheduling because of lack of supply was irritating (see Table 3 for illustrative quotes).

In terms of their patients' vaccination, the main barrier noted by health care providers was the limited vaccine supply necessitating the prioritization strategy. Most felt that if vaccines were more widely available, and if vaccination could be accessible without appointment (or with a less unwieldy system<sup>b</sup>), most people would accept vaccination.

Language barriers in their communities to COVID-19 vaccination were frequently identified by self-identified BIPOC health care providers

Interviewees proposed several potential solutions to enhance vaccine acceptance and uptake among the population. Most of these were related to decreasing barriers to access vaccination services by facilitating vaccination scheduling (i.e., by implementing a centralized system for vaccine appointment); by having extended hours and days of operations; by offering transportation to mass vaccination sites or by offering home visits or mobile vaccination units to reach people living in remote communities, those with less mobility, or other equity-seeking groups (e.g., homeless people, migrant workers).

When it comes to increasing COVID-19 vaccine acceptance and uptake, three participants noted the importance of building trust with communities and creating tailored strategies based on barriers faced by groups at the local level, rather than a "one-size-fits-all" strategy (see Table 3 for illustrative

**Table 3.** Illustrative quotes on health care providers' perceived barriers to vaccination and proposed solutions.

Perceived barriers	Proposed solutions
<p>"And make it easy so we can get it while we're at work. You've got the vaccine or the storage, the special fridge with the storage right on site? We're there, like, catch us now! [...] Why do I need to . . . Why does my work have to replace me for an hour while I go to this other building to get it?" Maggie, Registered Nurse, 18 years of practice, working in a hospital, self-identified as white, Prairies</p> <p>"Well, and just getting rebooked each time too because they first had the . . . what was it? I can't remember the initial recommendation, was it three weeks or? And they kept sort of extending, I know it was rebooked twice. So that's why I had arranged childcare and they had delayed it." Cindy, Licensed practical nurse, 34 years of practice, working in a hospital, self-identified as white, Prairies</p> <p>"The main issue is that we don't have much vaccines yet." Claire, Licensed practical nurse, 30 years of practice, working in a hospital, self-identified as white, Maritimes</p> <p>"But it's, you know, I think, I mean, I think really, like 90% of the public I speak to, I mean, as soon as they're offered it, that they're going to get it." Zhang, Pulmonary function technologist, 20 years of practice, working in a hospital, self-identified as BIPOC, Ontario</p>	<p>"Well, actually, it's really patchwork in Alberta. You can also go through each individual pharmacy to try to book, and I've heard that some family doctors and such also are available. But you have to find this all by yourself. And that's also a lot of time. I have a friend who's retired, who spent seven hours booking hers, and was able to get it quite quickly after she spent that seven hours. She had to actually put herself on eight different waiting lists. And so there's not an easy way to do it. [...] That would be amazing if we had something more centralized. I think people would be much more likely . . . [...] I think they'd have better compliance if it was easier and quicker." Cindy, Licensed practical nurse, 34 years of practice, working in a hospital, self-identified as white, Prairies</p> <p>"There could also be a program where 'if you can't come to us, we'll come to you'. So like, nurses basically went to the personal care homes to vaccinate a bunch of our elderlies. That should still be the same for people who are in wheelchairs, who are like wheelchair bound, or they can't leave the house per se or home. So that shouldn't just happen for personal care homes. But there are definitely lots of nurses out there who are willing to help and work and help vaccinate." Aki, Registered Nurse, 5 years of practice, working in a hospital, self-identified as BIPOC, Prairies</p> <p>"We have a very big Nepali immigrant population in [City]. And most of them work at the meat processing factories and the poultry processing and now they're actually going . . . there's been some outbreaks there as well. [...] So I think that the big solution, which they're just starting to do this week, is going out and setting up mobile vaccination units on site and offering it to these people while they're working. So that they get vaccinated there." Maggie, Registered Nurse, 18 years of practice, working in a hospital, self-identified as white, Prairies</p> <p>"Here in [City], even people who are in [other City] who can't get to the [City] convention center on their own, they put them on some kind of shuttle, buses, etc." Rachid, Pharmacist, 17 years of practice, working in a pharmacy, self-identified as BIPOC, Quebec (Interview in French, our translation)</p> <p>"I think the point is that if you have a one size solution for every group, it's pretty difficult or try to generalize to all people. I mean, I think, you know, people have to be addressed on their own level, each person has their own separate concerns, or their belief systems." Bruce, Physician, 25 years of practice, working in a hospital, self-identified as BIPOC, BC</p> <p>"So let alone hiring people who might be able to speak other languages, other than English, that would be very, very helpful. That's the big improvement." Aki, Registered Nurse, 5 years of practice, working in a hospital, self-identified as BIPOC, Prairies</p> <p>"The education part of it somehow needs to happen. And that needs to be done in a simple way. But I think also it has to be sort of finding community leaders that are willing because they're not going to take the information from the government, they're not going to take the information from healthcare professionals at this point, they need to have pastors and people that are somewhat removed from the whole COVID pandemic management that understand and that believe in that and sort of provide accurate information to refute some of those theories, I think." Maggie, Registered Nurse, 18 years of practice, working in a hospital, self-identified as white, Prairies</p> <p>"So I think that it'd be beneficial for them to focus on translating the information about vaccines in different language-communities." Fatima, Behavioral clinician, 3 years of practice, working in a community center for children with disabilities, self-identified as BIPOC, Ontario</p>

quotes).<sup>27</sup> For example, Cindy, a licensed practical nurse, mentioned that, as a member of a religious community, she was trusted in her community and received multiple calls and messages from within her community asking her about COVID-19 vaccination: "I think we [nurses] are trusted within the community, because they know we have grown up with them and understand their culture. You're not going to convince everybody by having big widespread discussions, but just slowly having conversations with people who are receptive".

Other proposed solutions were related to information or education strategies. For example, one participant noted that it would be good to invite health care providers with expertise in vaccination to discuss the vaccines on popular TV shows. Many interviewees noted the importance of having tools and services in different languages to reach persons with different cultural or ethnic backgrounds. One participant also noted that it would be good to offer individuals the possibility of one-on-one discussions about COVID-19 vaccines with trained health professionals (in person or via a call line).

Participants were prompted to comment about the perceived usefulness of two initiatives: a vaccine-injury support program<sup>c</sup> and mandatory vaccination policies (see Supplementary File 4; Table 3 for illustrative quotes). Only one provider had heard about the federal vaccine-injury support program prior to the interview. After having the program explained, most providers expressed

positive views of it. One participant was worried that people could try to prove that they had vaccine-related adverse events to get financial compensation while another believed that this program was not necessary considering the very small number of people who have severe reactions to vaccines. When asked if this program could have a positive impact on COVID-19 vaccines uptake rates, participants' views were mixed. Some noted that such a program could alleviate the anxiety that people have toward COVID-19 vaccine and encourage people to get vaccinated while others thought the opposite—once known, people may be more scared to be vaccinated, questioning why such a program is needed. Many considered that it could have both positive and negative impacts on vaccine acceptance.

The majority of participants were in favor of mandatory COVID-19 vaccination for health care providers—and even for the general population. Those who were in favor of mandatory vaccination for health care providers put forward the same argument: it is justified by the need to protect patients. Collective responsibility—or the importance of not putting others at risk by refusing vaccination if not contraindicated—was the main argument advanced by participants who supported mandatory vaccination for the public.

Finally, those who were not in favor of mandatory vaccination considered vaccination to be a personal decision and indicated that both health care providers and the public should

have the right to accept or refuse a vaccine. One participant mentioned that more education and information is needed before implementing constraining policies.

## Discussion

Vaccination against COVID-19 is one of the key strategies to control the pandemic and return to some form of normalcy.<sup>28</sup> After scientific consensus on the benefits of vaccination became clear, negative discourses about the vaccines remained prominent online.<sup>29,30</sup> Vaccine hesitancy, along with access barriers to health and vaccination services, are important factors contributing to suboptimal COVID-19 vaccine uptake rates. In this context, the key role of health care providers in promoting vaccine acceptance is well recognized.<sup>13,31</sup> Health care provider discussions with patients, when tailored to the patient's own concerns using active listening and empathy, can effectively address vaccine hesitancy.<sup>8,13</sup>

In this qualitative study, all of the health care providers would be considered vaccine confident, although some expressed an expected hesitancy to being the first to receive the novel vaccines.<sup>18–32–34</sup> However, although all participants were either vaccinated or intended to be when eligible, many were not comfortable discussing COVID-19 vaccines with their patients or did not believe it was their role to do so. This discomfort may be partly explained by the primary mode of vaccination delivery in mass vaccination clinics under public health leadership instead of by the patients' usual primary care provider. Insufficient training or information about COVID-19 vaccines for health care providers not directly involved in immunization may also have contributed to the lack of confidence expressed by some participants. This is a missed opportunity to enhance COVID-19 vaccine acceptance and uptake in the public.<sup>8</sup> Many studies have illustrated that patients are looking for—and trusting—advice about vaccination from their regular care providers, even when they are not directly involved in delivering vaccines.<sup>35–37</sup> However, research conducted among health care providers indicates that many are not aware of the importance of their recommendations or do not feel equipped to discuss vaccination, especially with vaccine-hesitant patients.<sup>38–40</sup> Accordingly, our findings showed that health care providers—even when not directly involved in the immunization programs as our participants—should be supported in these vaccination conversations with tools and training tailored to their professional role. Of note, the codes of conduct for some professions (e.g., nurses, physicians, pharmacists) stipulate that, for all vaccines authorized for use in Canada, it is a professional responsibility to recommend vaccination to patients when indicated. However, how this responsibility is acted upon varies across professions.<sup>41</sup> Our findings have highlighted the spectrum of attitudes and perceived roles with regards to vaccination discussions and recommendations, from actively bringing the topic with all patients to completely avoiding these discussions. In this context, public health authorities and professional associations should provide timely communication and helpful material to all front-line providers, so they can speak knowledgeably and confidently about novel vaccines during public health emergencies.

The few participants who did proactively talk about COVID-19 with their patients relied on their own experience with vaccination, rather than on medical guidelines or scientific publications

alone. These providers explained that it was easier to do so due to the rapid pace at which information about COVID-19 evolves, but also because a personal story builds a relationship with their patients. Studies have shown that the use of personal stories to address vaccine concerns can have greater impact than scientific information alone.<sup>40–46</sup> However, if health care providers can have “vaccine anxieties” aligned with those in the population, sharing personal experiences can be detrimental and increase doubts and concerns about vaccines.<sup>47–49</sup>

Since the roll-out of the campaign in Canada, several studies have explored COVID-19 vaccine behaviors.<sup>18,33,34</sup> Interestingly, while many studies indicated that concerns regarding COVID-19 vaccine safety and effectiveness were key barriers to vaccination among the public, many health care providers interviewed in our study considered the lack of vaccine supply as the main driver of low uptake. Issues accessing vaccine doses and language barriers for members of equity-seeking groups were the two main barriers to COVID-19 vaccine acceptance identified by participants. The majority felt that if COVID-19 vaccines were easily accessible, most Canadians would accept vaccination. The high COVID-19 vaccine uptake rates in Canada observed after completion of data collection supports this assumption.<sup>3</sup> In line with this perception, most of the participants' proposed solutions to address barriers were related to increase in access to vaccination services (e.g., mobile vaccination clinics, extended vaccination hours, etc.). These interventions are recognized as effective strategies to increase vaccine uptake.<sup>50</sup> Of note, 12 out of 14 participants were in favor of mandating COVID-19 vaccination for both health care providers and the general population. These providers felt that vaccination was a very effective measure to prevent the spread of the disease and that it was a collective responsibility to be vaccinated and a duty, for health care providers, to avoid spreading the virus to vulnerable patients. The two participants who were not supportive of mandatory policies—a pharmacist and a nurse—felt that education was better than coercion to maintain vaccine confidence in the long run. This is congruent with findings from a recent systematic review and meta-analysis regarding health care providers' attitudes toward mandatory influenza vaccination which showed heterogeneity in support of mandatory vaccination policies across settings and profession, but that vaccinated health care providers were more supportive of mandatory vaccination than those who were unvaccinated.<sup>51</sup>

Only one participant had heard about the federal vaccine-injury support program prior to the interview. Participants' views regarding the potential impact of this program in relation with vaccine confidence were mixed. Vaccine-injury support programs are justified for various reasons. Biological reasons (i.e., vaccinations are extremely safe, but the possibility of harm in rare instances exists such as seen with post-COVID vaccination thrombocytopenia); ethical reasons (i.e., vaccination benefits the whole society through community immunity engaging principles of solidarity, reciprocity, fairness and justice support to compensate the few individuals who are harmed by vaccines) or legal reasons (i.e., in a rights-based society, claims for redress when physical integrity is damaged are justified) can support the implementation of vaccine-injury support programs.<sup>52–55</sup> Some of our participants raised concerns regarding the potential vaccine-injury support program to increase hesitancy in the population. To date, the potential impact of vaccine-injury support program on vaccine

hesitancy has not been formally evaluated and the concern that these programs can decrease public trust in vaccines is a frequent argument against their implementation.<sup>52,56</sup>

### Weaknesses and strengths

Our study is not without limitations. First, our findings are specific to time of data collection (spring 2021) and place (Canada). The COVID-19 pandemic is evolving rapidly, and the interviews were conducted in the first months of the vaccination campaign, at a time when vaccine availability for the general population was still limited and when there were still many unknowns regarding vaccine efficacy and safety. At the end of 2021, more than 90% of health care providers were vaccinated against COVID-19 across different Canadian provinces which indicate that this group is largely supportive of vaccination.<sup>57,58</sup> Also, although we aimed for a diverse sample of health care providers in terms of profession, provinces of practice and number of years of experience, we were not able to recruit anyone directly involved in vaccine administration with first-hand experience of the roll-out of the campaign. Finally, a selection bias is expected as our participants responded to an online web-panel survey and agreed to be re-contacted. Although we reached data saturation with regards to the main objective, it was difficult to make comparisons between participants' views because of the diversity in their profiles.

Our study strengths include the use of different approaches to ensure the trustworthiness of our data. All transcripts were audio-checked to ensure accuracy, data was coded and analyzed by two research assistants and results and interpretation were discussed within team members. We used the COREQ checklist to further reduce bias (see Supplementary File 1; Table S1). Finally, we recruited for diversity to explore different points of view regarding COVID-19 vaccination.

### Conclusions

Health care providers have a key role in promoting vaccine acceptance; their hesitation can contribute to the public's distrust of vaccination. In this qualitative study, all participants were supportive of COVID-19 vaccination, but many did not think it was their role to promote the vaccines to their colleagues, their patients or within their communities. In the current pandemic context, it is crucial to make sure that, on the one hand, health care providers receive clear information on vaccination while, on the other hand, they feel confident talking about vaccines with their patients, since health care providers attitudes toward vaccination have a great deal of influence.<sup>59</sup> Enhancing health care providers' knowledge on vaccination and vaccine communication skills is key for vaccine acceptance in the public. In the long-term, increasing the content about immunology, vaccinology and communication strategies in formal academic training of health care providers would also be beneficial. In the short-term, the use of motivational interviewing techniques in vaccination counseling has been shown effective in decreasing vaccine hesitancy and increasing vaccine uptake.<sup>13</sup> However, training in how to use these communication techniques is intensive and often limited to health care providers directly involved in vaccine delivery. Our findings indicate that all health care providers could benefit from this training.

### Notes

- [1] Pseudonyms are used to ensure confidentiality.
- [2] In provinces with an online appointment system, many participants mentioned that this was complex to use for non-digital natives or that many technical/informatic bugs occurred. In other provinces with a call-in appointment system, many noted that the line was always busy or that long waiting time was needed before being able to book an appointment. Other participants mentioned 'chasing' vaccines as they were slowly distributed across different points of services.
- [3] The Vaccine Injury Support Program (VISP) is a new federal program to ensure that all people in Canada who experienced serious and permanent injury from vaccination have access to financial support (<https://vaccineinjurysupport.ca/en>).

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