Exploring the uptake of COVID-19 vaccination amongst respiratory therapists in Canada

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Introduction/background: COVID-19 vaccination uptake rates and responses by Canadian respiratory therapists (RTs) were investigated along with factors that may be shown to play a role in vaccination hesitancy.

Methods: An anonymous survey using SurveyMonkey® on vaccination uptake rates, responses and attitudes was made available to student RTs, graduate RTs and registered RTs in Canada from July to October of 2021. Pearson's chi-square tests were performed to evaluate association between vaccination status and the other categorical parameters evaluated.

Results: A total of 1013 surveys (8.0% of target population) were completed fully and included in the data analysis. Of the surveyed RT population, 90.42% received their vaccination as soon as it was made available compared to Canada's Ministry of Health's published rate at the time of 86.27% for all Canadian healthcare workers. There was a significant (p = 0.013) association between early vaccination and age and a significant (p = 0.036) association between vaccination status and a participant's response on whether or not they have a family member or know someone who has had COVID-19. There was also a significant (p < 0.001) association between vaccination status and attitudes towards trusting science to develop safe, effective, new vaccines and trusting the Ministry of Health to ensure that vaccines are safe. There was no significant association between vaccination status and gender, province/territory of residency/work, level of education and level of involvement with COVID-19 patients.

Conclusion: The results suggest that RT groups across Canada had higher early vaccination uptake rates than general healthcare worker groups and that age, relationship to people with COVID-19 and trust in science played a significant role in their vaccination uptake rates.

Key Words: *healthcare workers; immunizations; coronavirus; rates; attitudes; infection*

INTRODUCTION

The COVID-19 pandemic continues throughout the world causing morbidity and mortality. With communities in and out of lockdown numerous times, there is an economic and mental health crisis on top of the general COVID-19 health crisis. The development of COVID-19 vaccines was touted as the solution to this crisis, but vaccine effectiveness is dependent on the uptake by the world's population [1].

Creating the vaccines was the first step, but figuring out the logistics of getting the world vaccinated was a different one. Some countries were able to quickly acquire vaccines and get their vaccination procedures in place to begin rapid vaccination efforts as early as December 2020 (United Kingdom, United States of America and Canada). Many other countries were delayed by issues ranging from acquiring vaccines to political issues and storage/delivery issues (Australia) [2]. Adding to the already large challenge of vaccination globally was that some of the vaccines require certain conditions to be met during shipping and storage. For example, the vaccines from Pfizer and BioNTech require freezers and dry ice and must be stored at temperature conditions at around –70 °C [3]. This has affected certain countries more than others and likely plays a tremendous role in the varying vaccination rates across the globe. While vaccine availability poses one issue, the uptake of vaccination amongst the population is another concern. With new types of vaccines (messenger RNA) and rapid approval processes, many people across the globe have questioned the safety and validity of the vaccines. This concern led to a slower uptake in certain countries and populations than was expected, and many countries began to take steps to increase the uptake and vaccination rates. Italy was one of the first countries to step in and make vaccination mandatory for healthcare workers (HCWs), and now many others have followed suit [4].

With nearly 10% of the Canadian population (3.72 million) having had confirmed cases of COVID-19 as of April 2022, the countries healthcare system has been struggling [5]. To date there are six vaccines approved in Canada (Moderna Spikevax, Pfizer-BioNTech Comirnaty, Janssen Johnson and Johnson, Novavax Nuvaxovid and AstraZeneca Vaxzevria). While vaccinations began for some groups in mid-December 2020, by April 2022 over 88% of the Canadian population had received at least one dose of the vaccine [6]. Amongst those eligible, vaccination uptake rates were initially varied (13.34%–95.96%) with HCWs coming in lower at 47.81%–86.27% between March and October 2021 than other groups such as seniors in group living settings at 67.49%–95.96% during the same period [6]. With respiratory therapists (RTs) playing such an integral role in the treatment of the most critically ill COVID-19 patients, the vaccination rate amongst this group is of interest. However, there are no reports to date on this issue. Considering the lack of data, we conducted a survey across Canada to investigate vaccination uptake rates and attitudes in the RT group including factors involved in the decision to get vaccinated for COVID-19 and any reasons for vaccine hesitancy. This data can help by providing information on vaccination uptake rates amongst RTs compared to HCWs' and the general populations' rates in Canada.

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METHODOLOGY

In this cross-sectional study we surveyed student, graduate and registered RTs (SRTs, GRTs and RRTs, respectively) in Canada through an anonymous online survey using SurveyMonkey® from July 19 to October 12, 2021. This survey platform was selected for its ease of use, quality templates and affordability. We reached out to the approximately 12 650 members of the RT group across Canada through the provincial regulatory colleges, educational institutions and provincial and national societies through newsletters, social media posts and websites, inviting participants to take the survey in the French or English languages. Those interested could voluntarily link to the survey where they were provided with more information and a consent statement.

Anyone who was not currently an SRT, GRT or RRT in Canada, anyone under 18 years of age and anyone who could not read and understand English or French (all RTs in Canada are educated in one of these two official languages and anyone else must meet language equivalents to enter educational programs or practice) were excluded from the study. The sample size was determined as a range of 5%–10% (633–1265) of the eligible pool of SRTs, GRTs and RRTs in Canada as of July 2021.

All participants had to complete a consent form prior to gaining access to the actual survey. Information gathered in this study was anonymous and confidential. No identifiable information was collected. Ethics approval for the study was obtained on May 4, 2021, from Charles Sturt University Ethics Board (#H21087).

The survey was partially adapted from a tool used in a previous study [7] and was modified to pertain to the RT group's demographics and Canada-specific COVID-19 vaccine data. The survey was then pilot tested on a small cohort in the RT population in both English and French with further modifications to some of the wording and question choices made. The survey was divided into two sections. Part A contained all categorical questions, six questions on demographics, including healthcare role (SRT, GRT, RRT), gender, age, location, education level and length of experience. Part A also contained four questions pertaining to COVID-19 and vaccinations including previous history of general vaccination, allergies to COVID-19 vaccination, current status for COVID-19 vaccination as well as work and personal COVID-19 experiences. Part B of the survey contained five questions using a 7-point Likert scale from strongly agree to strongly disagree with statements regarding general vaccination attitudes and included questions about trust in science to develop safe vaccines, trust in the Ministry of Health to ensure vaccine safety, safety of vaccines developed in an emergency, beliefs in acquiring natural immunity and general concern for COVID-19. Part B was adapted from the previous study [7] and used its 7-point Likert scale as it had previously been validated and allowed for more choice in describing opinions around this difficult subject. The questions pertaining to vaccinations, COVID-19 and attitudes all included a comments section. The survey questions were concise and kept to a minimum to ensure that the survey only took approximately 5–10 min to complete (Appendix A).[1]

Vaccination rates amongst the surveyed RT group in Canada were compared to those rates amongst the various Canadian age groups and HCWs published by the Government of Canada at the time of the survey [6].

Survey respondents were then separated into two groups by their response to the question "At this time have you received your COVID-19 vaccine?" Those who received it right away were compared to those who delayed it or did not plan to get it, looking at their answers to all other questions to assess for any association. Pearson's chi-square tests were performed to evaluate association between vaccination status and the other categorical parameters evaluated in the study. All tests were two-sided, and a *p*-value < 0.05 was considered statistically significant. All statistics were performed using SPSS Statistics 28.0.1.

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[1]Supplementary materials are available at https://www.cjrt.ca/wp-content/uploads/Supplement-cjrt-2022-039.docx.

RESULTS

Did the respiratory therapy group have a higher vaccination rate than the posted rate at the time of survey for all HCWs in Canada?
A total of 1066 people (8.4% of target population) met the inclusion criteria, gave consent and started the survey (983 in English and 83 in French), and 8% (*n* = 1013) actually completed the survey in full between July 19 to October 12, 2021, and were included in the analysis.

Overall, 916 (90.42%) of the surveyed RT population in Canada received their vaccination right away. This number was considerably higher than the posted rate for all Canadian HCWs at that time (86.27%) [6]. Of the 1013 fully completed surveys, 916 (90.42%) received one or both doses of a COVID-19 vaccine as soon as they became eligible while 71 (7.0%) received one or both doses but delayed it after becoming eligible (Figure 1).

Is there an association between early vaccination and other surveyed parameters?
There was a significant (*p* = 0.013) association between early vaccination and age. Age groups < 25 years and 25–34 years had a higher percentage of late/never vaccinated participants than the other groups (Table 1).

Participants had a lower vaccination rate if they already had COVID-19, and they were more likely to get vaccinated as soon as they were eligible if someone in their family or someone they knew had COVID-19 (*p* = 0.036). Table 2 summarizes these responses for the two groups.

There was a significant association between vaccination status and attitudes towards trusting science to develop safe, effective, new vaccines (*p* < 0.001). As shown in Table 3, subjects who were reluctant to trust science to develop safe and effective new vaccines showed lower early vaccination rates than individuals who were more receptive to vaccine development and the science around it.

There was a significant association between vaccination status and attitudes towards trusting the Ministry of Health to ensure that vaccines are safe (*p* < 0.001). Individuals who expressed distrust in the Ministry of Health's assessment of vaccine safety were less likely to get vaccinated early (Table 4).

There was a significant association between vaccination status and the belief that it is preferable to acquiring immunity against infectious diseases naturally (*p* < 0.001). Individuals who believed that they should obtain immunity to COVID-19 by natural immunity were less likely to be vaccinated when they became eligible (Table 5).

There was a significant association between vaccination status and the belief that the safety of a vaccine developed in an emergency, during an epidemic, cannot be considered guaranteed (*p* < 0.001). Individuals who agreed that safety of a vaccine cannot be guaranteed in an emergency, during an epidemic, were more likely to get vaccinated later or not at all (Table 6).

There was a significant association between vaccination status and how seriously concerned an individual was about COVID-19 as a whole (*p* < 0.001). The more concerned individuals were more likely to get vaccinated as soon as they became eligible for the vaccine (Table 7).

There was no significant association between vaccination status and gender, province/territory of residency/work, level of education or level of involvement with caring after COVID-19 patients.

DISCUSSION

In the current study, we made the following observations: (*i*) the RT population in Canada had a higher vaccination rate than the general HCW population and (*ii*) age, COVID-19 infection in close friends/family, trust in science and Ministry of Health, vaccine safety as well as general concern for COVID-19 were associated with early vaccination. While there were many studies conducted prior to vaccine rollouts to look at views of possible vaccination there have only been minimal, qualitative studies looking at actual vaccination amongst the various HCW groups, and no studies have been performed looking specifically at vaccination rates amongst RTs [1, 3, 7, 8, 9, 10].

Findings in our study highlighted the importance of age when it came to COVID-19 vaccination decisions and showed that older participants were eager to get vaccinated right away compared to the under 35 years group. These results are consistent with the general vaccination statistics

FIGURE 1

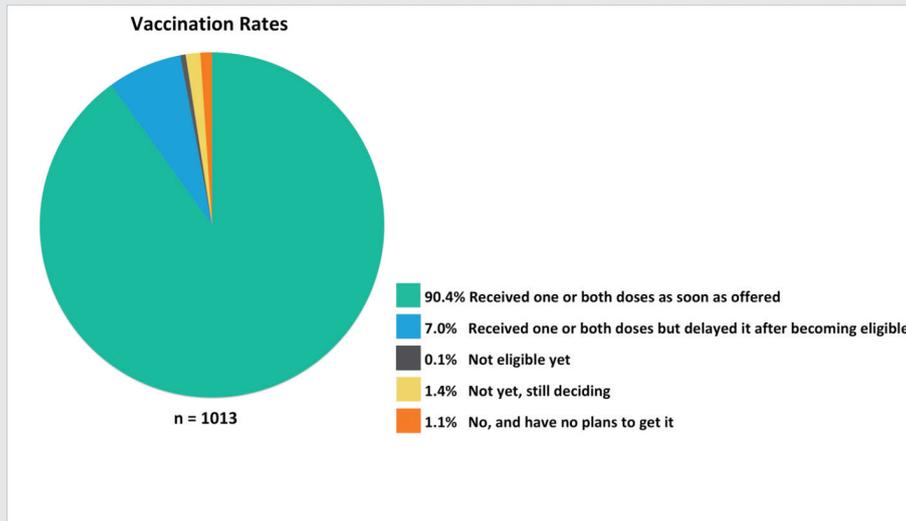**Vaccination rates for Canadian respiratory therapist group.**

Vaccination Rates

- 90.4% Received one or both doses as soon as offered
- 7.0% Received one or both doses but delayed it after becoming eligible
- 0.1% Not eligible yet
- 1.4% Not yet, still deciding
- 1.1% No, and have no plans to get it

n = 1013

TABLE 1

Vaccination status grouped by age

| | | Group | | |
		Vaccinated (%)	Late/Never vaccinated (%)	Total
Age (years)	A) <25	143 (88.8)	18 (11.2)	161
	B) 25–34	246 (86.0)	40 (14.0)	286
	C) 35–44	212 (91.0)	21 (9.0)	233
	D) 45–54	207 (95.0)	11 (5.0)	218
	E) 55–64	93 (93.0)	7 (7.0)	100
	F) 65 or over	15 (100)	0 (0)	15
Total		916	97	1013

TABLE 2

Vaccination status grouped by knowing someone with COVID-19

| | | Group | | |
		Vaccinated (%)	Late/Never vaccinated (%)	Total
Relationship to others with COVID-19	A) I was diagnosed with COVID-19	25 (80.6)	6 (19.4)	31
	B) Family was diagnosed with COVID-19	115 (90.6)	12 (9.4)	127
	C) Someone I personally know was diagnosed with COVID-19	421 (92.7)	33 (7.3)	454
	D) No one I personally know was diagnosed with COVID-19	350 (88.8)	44 (11.2)	394
	E) Other/prefer not to say	5 (71.4)	2 (28.6)	7
Total		916	97	1013

TABLE 3

Vaccination status grouped by trust in science

| | | Group | | |
		Vaccinated (%)	Late/Never vaccinated (%)	Total
Trusting science to develop safe, effective, new vaccines	Agree	335 (88.6)	43 (11.4)	378
	Disagree	1 (20.0)	4 (80.0)	5
	Neither agree nor disagree	6 (60.0)	4 (40.0)	10
	Somewhat agree	44 (72.1)	17 (27.9)	61
	Somewhat disagree	3 (42.9)	4 (57.1)	7
	Strongly agree	490 (96.6)	17 (3.4)	507
	Strongly disagree	37 (82.2)	8 (17.8)	45
Total		916	97	1013

TABLE 4

Vaccination status grouped by trust in the Ministry of Health

| | | Group | | |
		Vaccinated (%)	Late/Never vaccinated (%)	Total
Trusting the Ministry of Health to ensure that vaccines are safe	Agree	409 (92.7)	32 (7.3)	441
	Disagree	5 (38.5)	8 (61.5)	13
	Neither agree nor disagree	10 (47.6)	11 (52.4)	21
	Somewhat agree	106 (81.5)	24 (18.5)	130
	Somewhat disagree	11 (64.7)	6 (35.3)	17
	Strongly agree	346 (98.0)	7 (2.0)	353
	Strongly disagree	29 (76.3)	9 (23.7)	38
Total		916	97	1013

TABLE 5

Vaccination status grouped by belief of natural immunity

		Group		
		Vaccinated (%)	Late/Never vaccinated (%)	Total
It is preferable to acquire immunity against infectious diseases naturally.	Agree	10 (55.6)	8 (44.4)	18
	Disagree	309 (93.4)	22 (6.6)	331
	Neither agree nor disagree	92 (82.9)	19 (17.1)	111
	Somewhat agree	27 (62.8)	16 (37.2)	43
	Somewhat disagree	116 (87.9)	16 (12.1)	132
	Strongly agree	14 (63.6)	8 (36.4)	22
	Strongly disagree	348 (97.8)	8 (2.2)	356
Total		916	97	1013

TABLE 6

Vaccination status grouped by belief of vaccine safety during an epidemic

		Group		
		Vaccinated (%)	Late/Never vaccinated (%)	Total
The safety of a vaccine developed in an emergency, during an epidemic, cannot be considered guaranteed.	Agree	43 (74.1)	15 (25.9)	58
	Disagree	356 (96.2)	14 (3.8)	370
	Neither agree nor disagree	92 (86.8)	14 (13.2)	106
	Somewhat agree	114 (83.8)	22 (16.2)	136
	Somewhat disagree	124 (89.9)	14 (10.1)	138
	Strongly agree	9 (34.6)	17 (65.4)	26
	Strongly disagree	178 (99.4)	1 (0.6)	179
Total		916	97	1013

TABLE 7

Vaccination status grouped by concern of COVID-19

		Group		
		Vaccinated (%)	Late/Never vaccinated (%)	Total
How seriously concerned are you about COVID-19?	Extremely concerned	401 (95.0)	21 (5.0)	422
	Moderately concerned	384 (92.3)	32 (7.7)	416
	Not at all concerned	3 (23.1)	10 (76.9)	13
	Slightly concerned	37 (71.2)	15 (28.8)	52
	Somewhat concerned	91 (82.7)	19 (17.3)	110
Total		916	97	1013

generated protests. At a time when HCW shortages are at a high, it becomes an even bigger issue as those not vaccinated are put off work without pay or let go from their jobs. While the vaccination rates in Canada are higher in the HCW population currently than in the general population, they are still lower than in some populations such as the elderly [6].

The fact that our study showed that trusting in science and the Ministry of Health had a significant impact on the decision to get vaccinated promptly shows that simply mandating the vaccine is not necessarily the answer. Rather educating those who are being asked to get the vaccine such as HCWs can be of great benefit. Targeted plans should be used to ensure that the science behind the vaccine is shared specifically with the healthcare workers as they can evaluate and understand it and may then become advocates.

Vaccination rollouts need to be thought out and planned with a focus on the factors that come into play when the population is considering vaccination. A study by Thompson et al. [13] highlighted the 5 key factors when considering vaccination as access, affordability, awareness, acceptance and activation. Access relates to a person's ability to get to the vaccine. Affordability includes the possible cost of the vaccine and (or) time off work or travel to get the vaccine. Awareness includes knowledge of the need and the benefits and risks of the vaccine. Acceptance, hesitancy or refusal are important aspects that need to be known when targeting people for vaccination. Activation is how much people can be convinced or urged to get the vaccination [13]. These factors still play true today and are evident in the COVID-19 vaccination rollouts that we have seen be successful. Accessibility is key, and if you cannot get access to the vaccination due to shortages in your area or country, then none of the others matter. Many successful vaccination campaigns worked by bringing the vaccines, through mobile clinics as shown in the study by Murphy et al. [14], in order to catch the attention of those with lower vaccination rates.

Our study data highlighted that having general concern about COVID-19 led to increased vaccine uptake rates. A study by Underschultz et al. [15] on barriers to public health measures found that those who were more concerned about COVID-19 had a higher rate of following public health measures and higher rates of vaccination compared to those who were not very concerned. This highlights the importance of trusting government and public health officials when it comes to concern for the public and what they need to know. The Canadian study also found that factors associated with risky behaviours around COVID-19 public health measures included low COVID-19 knowledge, feeling not worried and feeling uninformed about the pandemic [15]. With many HCWs being in the "hot zone" of this crisis and seeing the effects daily we can expect that many lessons are learned and then shared. Research on public health messaging found that to optimize vaccine coverage "public health should focus on key messages around vaccine safety and benefit and leverage trusted practitioners for messaging" [8, p. 1]. These trusted practitioners are the HCWs who can share their knowledge, real-life stories and experiences for those members of the public who cannot see what is happening in the hospitals. One of the biggest issues throughout this pandemic has been the large amount of misinformation created and shared easily through media and social

across Canada and the rest of the world [1, 6, 8, 11]. Globally the COVID-19 hospitalization rates were lower for younger groups, which could have played a role in the vaccination delay amongst many younger people in general and in the RT population [11, 12]. Many of the under-35-year-old group also reported low levels of concern for COVID-19 in general. This could be due to the low numbers of hospitalizations and deaths in Canada throughout the pandemic for that same age range [5]. The older groups showed greater general concern for COVID-19 and had higher rates of hospitalizations and deaths across Canada and the globe [5, 11]. While vaccinations are important in preventing deaths, they are equally important in preventing the healthcare system from becoming overwhelmed, which we saw happen across the globe as this pandemic played out. Various provinces in Canada have been overwhelmed throughout this pandemic, with Ontario, Quebec, Alberta, Saskatchewan and Manitoba having experienced intensive care units overcapacity during multiple waves [5].

The results of the present study showed that trust in the vaccine and the Ministry of Health played a big factor in RTs getting vaccinated right away or having vaccine hesitancy. On the other hand, the study showed that those who believed that it is best to obtain natural immunity to COVID-19 showed a high rate of vaccine hesitancy and were less likely to get vaccinated right away, which is in line with what many others had found when studying HCWs globally [1, 3, 7, 8, 9].

While vaccination rates seemed to plateau across Canada by the end of July 2021, many changes to public health policies that came into effect in September and October 2021 across the country caused an increased uptake of vaccinations. Many provinces invoked mandatory vaccinations for workplaces, schools and indoor areas such as restaurants, gyms and theatres. The mandatory vaccination policy sparked controversy and distress and

media. It can be difficult for the non-scientific person to read the information and decide what is true and what to believe. If we had the same amount of correct information shared through social media by those HCWs, public health agencies and scientific-related sources we could help to educate those with questions, and we have seen this initiative start during the COVID-19 vaccination efforts [16].

Our study's results also showed that vaccines developed during an emergency raised concerns and hindered vaccination uptake, similar to findings from a ground-breaking 2022 review looking at vaccine hesitancy in HCWs ahead of vaccine approvals [17]. This information can assist when trying to educate certain groups and in understanding what knowledge is important to the uptake of vaccinations amongst them. When targeting HCWs, the focus should be on the approvals and safety aspects instead of going over basic information about the vaccine and disease course. With some countries introducing mandatory COVID-19 vaccination for certain groups such as HCWs, a difference of opinion has been generated amongst those who are vaccinated and those who are not. Some studies [4, 10, 11] debate that mandatory vaccinations violate human rights; however, a recent Canadian study [4] points out that not getting vaccinated and providing possibly unsafe care to patients could also violate the patient's right to safety. Our study showed a strong association between non-vaccination and those who believed that natural immunity was preferred. Mandatory vaccination for HCWs is not new, and the Centers for Disease Control and Prevention recommends this group to get vaccinated against many preventable diseases such as tuberculosis, chickenpox, measles, mumps, rubella and hepatitis B. This policy has been in place in many healthcare institutions globally for decades [4]. On the other hand, Rothstein et al. [18] argued that rigid mandatory workplace vaccination policies may not work and may only further push away those who question vaccination. They instead believe that education around the benefits and ease of vaccine access are the best tools to use when trying to convince someone to get vaccinated [18].

Kurtulus and Can [9] recently highlighted the need for a plan when rolling out vaccinations amongst HCWs as it was noted at the time that 50% were not sure about getting the vaccine and that this could be a major factor in the complete vaccination effort. Shekhar et al. [10] reported that 56% of HCWs were not sure about getting the COVID-19 vaccine or would wait for more data. The same authors also noted that vaccine acceptance increased with higher age, higher education and higher income level and that direct medical care providers had higher vaccine acceptance [10]. The data in our study from the RT group in Canada did not show an association between education and vaccination. This could partially be because most have very similar education levels but also could have highlighted other reasons for discrepancies in vaccination rates such as trust and safety. The most common concerns amongst the HCWs in Shekhar et al.'s study [10] were around safety, effectiveness and the speed of development/approval. Earlier research around vaccine uptake done by Dubé et al. [19] found that "one of the most impactful factors in a patient's vaccine decision is a vaccine recommendation by a healthcare professional" (pp. 1768–1769). This fact makes ensuring that HCWs are thoroughly educated and prepared to advise the public on vaccinations very important in the future of all diseases.

While our study did show that the vaccination rates were higher for the RT group than the published general HCW rates, surprisingly there was no association to the RT's work exposure to COVID-19 [6]. Dealing with the reported dangers of COVID-19 on a regular basis and seeing large numbers of people die did not influence the RT group's vaccination rate; yet, having themselves or someone close to them get COVID-19 did have an effect. This could be because they see themselves differently than the patients in the hospital but can identify with someone close to them [1, 4, 7, 9]. The high vaccination rate of RTs across Canada may have to do with the role they played during the pandemic. RTs, like other HCWs, have been on the frontlines of the COVID-19 pandemic in Canada. "While many people may not have heard of a[n] RT until the pandemic, they have been an integral member of the health care team for decades. They work with patients from newborn through hospice care, helping to manage patients with breathing and airway problems" [20, p. 1]. Many COVID-19 patients experience severe oxygenation issues that sometimes require airway and ventilation support from an RT [20]. Researchers have highlighted the dangers to specific members of the healthcare team who are present during COVID-19 high-risk aerosol-generating procedures such as RTs amongst others [21].

While the data in this study are the first of their kind, they highlight findings for only the RT group across Canada and could be done on a much larger scale to look at other healthcare groups across Canada and internationally. COVID-19 vaccination policies were also changing rapidly throughout the time of data collection across Canada. The vaccine mandates could have affected the rate of vaccination as in some areas employment depended on being vaccinated. This could have affected the vaccination rates shown in the study. While we did reach our target range for survey numbers and had over a thousand respondents, 8% is still only a small portion of the RT group across Canada, and we cannot be sure that the results would be duplicated with a different portion of the group represented. Both of these are possible areas for future studies that could be used to increase the knowledge in this area and help further global vaccination efforts.

CONCLUSION

COVID-19 vaccination has been shown to be imperative to ensure hospitals are not overwhelmed with critically ill COVID-19 patients and can maintain normal healthcare services. RTs appear to be great supporters of the COVID-19 vaccination efforts in Canada and can be used as an example when looking at targeted vaccine strategies. Establishing strategies that are honest and educate HCWs through scientific-based information are ones that will serve best when trying to encourage vaccine uptake in that population. It is imperative to have HCWs advocating for vaccination, and any approach that targets these groups will greatly benefit the overall efforts.

AUTHORS' DISCLOSURES

Contributors
Conception and design of the work (JB, TV, WK). Acquisition of the data (JB). Analysis and interpretation of the data (JB, TL). Drafting and commenting on the paper and approved final version (JB, TV, WK).

Competing interests
All authors have completed the ICMJE uniform disclosure form at www.icmje.org/coi_disclosure.pdf and declare no financial relationships with any organizations that might have an interest in the submitted work in the previous 3 years; no other relationships or activities that could appear to have influenced the submitted work.

Ethical approval
Informed consent was obtained from all participants. This study was approved by the CSU Ethics Board #H21087.

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