

## COVID-19 VACCINE ACCEPTANCE AMONG HEALTH CARE WORKERS

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**ABSTRACT**

**Introduction:** Uptake of any COVID-19 vaccine is an important challenge to address. **Objective:** To study COVID-19 Vaccine Acceptance among Health Care Workers. **Methods:** A cross sectional study to assess the attitude of HCWs. **Results and Conclusion:** Immediate acceptance of a COVID-19 vaccine is low, with the majority of HCWs choosing to wait to review more data before deciding on personal vaccination. However, a very small percentage of respondents plan to refuse vaccination, suggesting the potential for high uptake. Overall attitudes toward vaccination were positive but specific concerns regarding COVID-19 vaccine are prevalent.

**KEYWORDS:** Covid-19; vaccine; healthcare workers.**INTRODUCTION**

COVID-19 has rapidly become a major public health crisis, affecting 86.4 million individuals, and causing 1.9 million deaths globally by January of 2021. The US has reported more than 21 million cases and 357,000 deaths as of 5 January 2021.<sup>[1]</sup> To curb this pandemic, apart from effective public health measures such as social distancing, wearing face masks, hand washing, and avoidance of crowded indoor spaces, educating the general population, efficacious vaccination is emerging as essential to mitigating disease and death.<sup>[2-6]</sup>

Uptake of any COVID-19 vaccine is an important challenge to address.<sup>[7]</sup> Clinicians are an important source of information for vaccines and physician communication can improve adherence to vaccination recommendations.<sup>[8-10]</sup> Thus, the role of healthcare workers (HCWs) becomes particularly important in advising patients and communities, and as well as through role modeling behavior. HCWs are prioritized among the high-risk groups who are considered as candidates for early vaccination. As such, it is important to consider HCW attitudes about COVID-19 vaccination to better address barriers to widespread vaccination.

**Aims and Objectives**

To study COVID-19 Vaccine Acceptance among Health Care Workers.

**MATERIAL AND METHODS****Study Design**

A cross sectional study using a questionnaire was conducted to assess the attitude of HCWs toward

COVID-19 vaccination was carried out in month of January 2021.

**Participants**

A group of health care workers of were selected. Informed consent was obtained prior to enrollment in the study. Incomplete responses were excluded from the analysis.

**RESULTS AND DISCUSSION**

**Self-perceived risk of COVID-19 was gauged by the question** "Do you think you are at risk of getting COVID-19 in the next 1 year?" The responses allowed for graded self-perceived risk ("No I am confident I won't get infected"; "Yes I am concerned that I will get mild symptoms which will probably not require hospitalization"; "Yes I am concerned that I will get moderate symptoms which will probably need hospitalization"; "Yes I am concerned that I will get severe symptom which will probably require admission to the intensive care unit"; "I believe I already have the disease and I am immune to it (not diagnosed by a test)"; "No, I already have recovered and won't get re-infected (diagnosed by a test)".

**Exposure to COVID-19 was assessed by the questions**

"Have you directly or indirectly taken care of the COVID-19 patients?" and "Have you, your family member or someone you know been diagnosed with COVID-19 (excluding your patients)?"

**Acceptance of COVID-19 vaccine was assessed by the question**

"When COVID-19 vaccination becomes

available, would you take it?" Participants could choose responses from among the options: "Yes, as soon as I can get it"; "Yes, only if it is required by employer"; "No, I will wait for 3 months to review safety profile"; "No, I will wait for 6 months to review safety profile"; "No, I will wait for at least 1 year to review safety profile"; "I will not get the vaccine"; "Not sure".

**Attitude** toward the vaccination was assessed by agreement with perception/concern statements as measured on a Likert scale. A five point Likert scale with options from Strongly disagree to strongly agree was used and respondents were instructed to select the option that best aligned with their views.

**General perception about vaccines were assessed by statements** "I do not believe vaccines work"; "I do not believe vaccines are safe"; "I do not get vaccinated for religious reasons"; "I do not get vaccinated for reasons of personal freedom/choice"; "I do not get vaccinated for a fear of needles/doctors/hospitals".

**Concerns regarding COVID-19 vaccine were evaluated by statements** "I am worried about the safety/adverse effects of COVID-19 vaccine"; "I am worried about effectiveness of COVID-19 vaccine"; "I am concerned about adverse effect of vaccine on my pre-existing conditions"; "I do not need the vaccine for my risk level"; "I am worried about the rapidity of the development and approval of COVID-19 vaccine". Agreement was measured on a Likert scale from strongly disagree to strongly agree.

The primary outcome of the survey was whether HCWs are willing to take the COVID-19 vaccine or not. Responses were collected against willingness to "take it as soon as it becomes available" and "yes but only if it is required by employer" (grouped into one as yes responses), "wait for safety data review for 3 months", "wait for safety data review for 6 months" or "wait for safety data review for a year" or "not sure" (grouped into one response "wait for review"), and "not willing" to take it.

A total of two hundred health workers (HCWs) participated in the study.

Since the announcement of efforts to develop a COVID-19 vaccine, several surveys have been conducted to gauge public perception and acceptance of the vaccine through 2020.<sup>[7]</sup> HCWs are among the first subgroups to have access to the vaccine. HCWs are also likely to be an important source of information about the vaccine for the general population. As such, it is crucial to assess predictors of vaccine acceptance among HCWs which will help institutions and policy-makers target resources to maximize the uptake.

In our survey, only one-third of respondents were amenable to COVID-19 vaccination immediately, while

more than half of respondents preferred to defer their decision until reviewing more data. The high percentage of respondents waiting to review more data in our study is expected as HCWs are more likely to base healthcare decisions on published scientific literature of efficacy and safety which was underway during the time of our survey. This also highlights the importance of publication and dissemination of scientific data regarding the vaccine which will be a crucial factor to determine eventual uptake of the vaccine among HCWs. Overall, only 8% respondents said they would refuse the COVID-19 vaccine which shows a potential high uptake of the vaccine among HCWs. Increasing vaccination acceptance has substantial benefits. To eventually slow down the spread of COVID-19 and its mortality, it is imperative to achieve herd immunity by vaccination before immunity by natural infection.

The threshold herd immunity for COVID-19 will be achieved by immunizing at least 70% of the population assuming the vaccine is 100% effective [8]. With recent Emergency Use Authorizations by the central government to have almost 95% effectiveness in phase III clinical trials, this number could be even higher. Thus, it is imperative to vaccinate a maximum number of HCWs to prevent the infection among HCWs and loss of critical workforce. Studies have shown that vaccination of HCWs with influenza vaccine decreases patient mortality and staff absenteeism [9]. It would be reasonable to expect a similar benefit with COVID-19 vaccination.

It is important to note that 90% of HCWs in our survey had received an influenza vaccine in the previous year indicating a generally favorable perception of vaccination. The low initial acceptance of COVID-19 vaccine among HCWs could also have broader consequences. Studies have shown that HCWs who are vaccinated are more likely to recommend vaccines to friends, family, and their patients.<sup>[10]</sup> This has also been borne out in our study where we see a strong association among HCWs who plan to be vaccinated and plan to recommend the vaccine to friends and family. To understand the factors driving vaccine uptake, we assessed HCWs' attitude toward vaccination and toward COVID-19 vaccine. Concerns regarding vaccination in general were low in our study, consistent with other studies that show generally positive attitudes of healthcare workers toward vaccination. However, concerns specific to COVID-19 vaccination were prevalent. We found frequent concerns regarding the vaccine efficacy, adverse effects, and rapidity of development. This was particularly noted among HCWs who do not plan to take the COVID-19 vaccine. Of note, while HCWs who did not want to be vaccinated reported poor trust in regulatory authorities and government, their trust in medical professionals prescribing the vaccine was somewhat higher. This could suggest an important role for dissemination of information through medical

agencies and professional societies to increase the uptake among HCWs.

### CONCLUSIONS

Immediate acceptance of a COVID-19 vaccine is low, with the majority of HCWs choosing to wait to review more data before deciding on personal vaccination. However, a very small percentage of respondents plan to refuse vaccination, suggesting the potential for high uptake. Overall attitudes toward vaccination were positive but specific concerns regarding COVID-19 vaccine are prevalent.

**Conflict of Interest: None**

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