

COVID-19 Vaccination - A Cross Sectional Survey on Attitude and Belief of Nurses

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ABSTRACT

Background: Nurses are the largest part of health care workers involved in direct covid care. This study was intended to identify attitude and beliefs of nurses and nursing students towards covid vaccination immediately after the launch of vaccination drive for health care workers.

Materials and Methods: The study used a cross sectional survey among nurses and nursing students, studying/working in various institutions in Karnataka recruited through snowball sampling. Google survey questionnaire was sent through social media application, WhatsApp.

Results: Twenty per cent of the study participants had already received the first dose of vaccine. Among those who had not received the vaccine, majority of nurses were afraid of the side effects of the vaccine (35%) and 24% wanted to wait and watch. A large number of study participants (38%) expressed that they were 'not sure' of the protective effect of vaccine and 10 % believed that vaccine was not safe. Only 4% of the participants said that they would never take the vaccine. Involvement in direct care of patients' with covid infection was strongly associated with willingness to take the vaccine (0.001, P < 0.05).

Conclusions: The results of the study indicate that there is a need for robust information, education and counselling measures that need to be adopted focusing on nurses as frontline health care workers to convince them to take covid-19 vaccine.

Keywords: [COVID-19 vaccine, nurses, attitude, belief]

INTRODUCTION

In March 2020, the World Health Organization (WHO) declared the COVID-19 outbreak a pandemic.¹ From a few thousands confirmed COVID-19 cases in January 2020, cases continue to grow globally. As of 2nd July 2021, there have been 18,23,19,261 confirmed cases of COVID-19, including 39,54,324 deaths, reported to WHO. In India, 3,04,58,251 confirmed cases of COVID-19, including 4,00,312 deaths have been reported as of 2nd July 2021.² Many health care workers have been infected with COVID-19 and have lost their lives worldwide during the pandemic. A systematic review on Infection and mortality of healthcare workers worldwide from COVID-19 by Bandyopadhyay S et al, reveals that 38.6% (10706) nurses were affected by COVID-19 infection and 25.3% (259) deaths were reported among nurses.³ In many countries, nurses are the largest health worker group affected with COVID-19 infection. As of 31st January 2021, the cumulative number of reported COVID-19 deaths in nurses in 59 countries as per International Council of Nurses is 2,710.⁴ As per the data available from Trained Nurses Association, on 31st May 2021, the cumulative number of reported COVID-19 infections among nurses were 517 with 126 deaths.⁵

The Government of India launched COVID-19 vaccination drive on 16th January 2021 and the first beneficiaries were healthcare workers (HCW) across the

Nation as healthcare workers are part of the frontline in the fight against the pandemic.¹ Although the Government of India had announced to provide COVID-19 vaccine to Health care workers free of charge, many Health care workers showed unwillingness to take the vaccine and many were still hesitant to take the vaccine.

In 2015, the World Health Organization (WHO) Strategic Advisory Group of Experts on Immunization defined vaccine hesitancy as a 'delay in acceptance or refusal of vaccination despite availability of vaccination services. Concern about vaccine hesitancy is growing worldwide and WHO identified it as one of the top ten global health threats in 2019.⁶ According to WHO National Health Workforce Accounts (NHW) data Portal, in India, nurses have 47% of share within health workforce and the vaccine is yet to find acceptance among a part of healthcare workers including nurses.⁷

This study was intended to identify attitude and beliefs towards covid vaccination among nurses and nursing students immediately after the launch of vaccination drive for health care workers.

MATERIALS & METHODS

The study used a cross sectional survey to assess attitudes and beliefs of nurses towards covid vaccine. The survey was conducted from 18th January 2021 to 14th March, 2021. A Google survey questionnaire was created after reviewing relevant literature and consultation with subject experts. The questionnaire consisted of a total of 14 items. The initial nine items were intended to elicit socio-demographic information of the participant. The rest of the five items were focused on understanding attitudes and beliefs and willingness/hesitancy of participants for getting vaccinated. The last item sought information about side effects experienced by subjects who had already received their first dose of vaccine. The content validity of the tool was established by giving it to seven experts which included four senior

nurses and three doctors. The tool was assessed for its internal consistency using split half method and was found reliable ($r=0.9$, $P<0.05$). The ethical clearance for the study was obtained from the institution's ethical review board.

The participants for this study included nurses and nursing students, studying/working in various institutions in Karnataka. The Google survey questionnaire was sent to 1500 subjects through social media application, Whatsapp. The snowball sampling was used to recruit participants for this study. The subjects were given brief information about purpose of the survey at the beginning of the Google form and were required to indicate their consent for taking up the survey before proceeding to answer it. A total of 904 participants responded to the survey. Among the survey forms received from subjects' four forms were found incomplete and were hence excluded for analysis.

RESULT

Most participants in this study were female nurses (79%), aged between 18-24 years (73%) with majority having General Nursing and Midwifery (41%) and B.Sc. Nursing (42%) being their educational qualification. Majority worked in private hospitals (89%) as interns (69.8%) and staff nurses (14.2%) with 23% involved in direct care of covid positive patients. Among the study participants 14% reported that they had been infected with covid and 7 % reported that at least one of their family members was infected with covid infection.

With regards to beliefs of nurses regarding potential protective effect of vaccine, 53% believed that the vaccine will protect them from the severe covid infection and only 9% felt that the vaccine is not capable of providing any protection. However, a large number of study participants (38%) expressed that they were 'not sure' of the protective effect of vaccine. Nearly half of the participants (52%) felt that the vaccine is safe and 38% participants were not sure of/neutral regarding the safety

aspects related to covid 19 vaccine. Only 10 % believed that it may not be safe to take this vaccine.

Only 20% of the study participants had already received the first dose of vaccine and another 28% were willing to take it immediately. A large number of participants (26%) wanted to wait and watch for some more time to make their decision about taking the vaccine. Only 4% (32) of

the participants said that they would never take the vaccine and 22% were not sure about their decision.

Among those who were not willing to take vaccine, majority of nurses said that they were afraid of the side effects of the vaccine (35%) and 24% said that they wanted to wait and watch. The other reasons cited by participants for not willing to take the vaccine are depicted in figure-1.

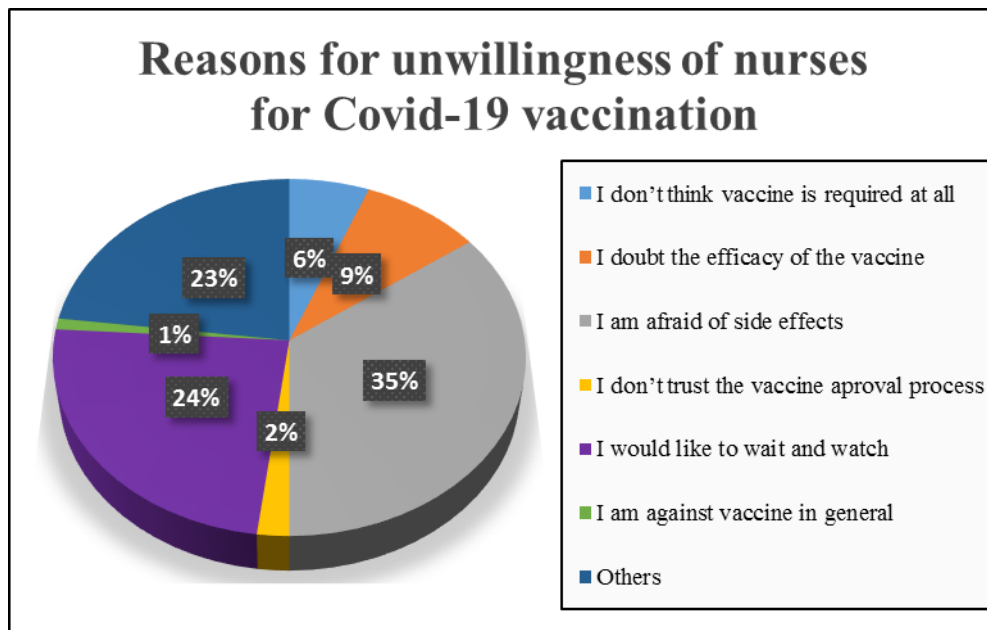


Figure-1: Reasons for unwillingness of nurses for Covid-19 vaccination

Among those who received the first dose of vaccine, pain at Injection site was the most reported side effects (103) followed by fever (83), tiredness/fatigue (65), headache (64), muscle pain (49), joint pain (34), giddiness (18), nausea (10), allergic reaction/rashes (2) and breathing difficulty (1).

The Chi square test was used to find association between the willingness to take covid vaccine and selected socio-demographic variables (Table-1). Involvement in direct care of patients' with covid infection was found to be strongly associated with willingness to take the vaccine.

Table-1: Association between willingness of nurses to take covid vaccine and selected sociodemographic variables N=900

Demographic variables	Are you taking covid vaccine for yourself?			Total	Chi square (χ^2)	P-value
	Yes	No	I have already taken it			
Were you diagnosed with Covid?	Yes	40 32.8%	57 46.7%	25 20.5%	1.592	0.451 (NS)
	No	216 27.8%	407 52.3%	155 19.9%		
Did any of your family member test positive for COVID-19?	Yes	15 24.6%	30 49.2%	16 26.2%	1.683	0.431 (NS)
	No	241 28.7%	434 51.7%	164 19.5%		
Were you involved in direct care of Covid patients?	Yes	64 31.5%	83 40.9%	56 27.6%	14.206	0.001 (S)
	No	192 27.5%	381 54.7%	124 17.8%		
Total	256	464	180	900		

Significance at P < 0.05 (two tailed), df=2

DISCUSSION

Enrolment for phase III clinical trials for Covishield vaccine by Serum Institute of India (SII) in partnership with Indian Council for Medical Research (ICMR) was completed on 31st October as per the press release by ICMR dated 12th November 2020. The Government of India Authorized SII for emergency use of Covishield vaccine on 6th January 2021. The US trial data showed the vaccine's efficacy of 79% was achieved when two standard doses were given at an interval of four weeks, while data from UK trials showed an efficacy of 53% for interval of less than six weeks.⁸ The vaccine was made available at free of cost only for health care workers and frontline workers in the first phase of vaccine launch on 16th January 2021. We commenced our survey among nurses on 18th January 2021 and completed the data collection on 14th March 2021.

The study findings show that a large number of nurses wanted to wait and watch (26%) or were not sure of taking the vaccine immediately (22%) and 35% were concerned about the side effects of the vaccine. Safety issues related to vaccine and fear of vaccine side effects emerge to be predominant reasons for vaccine hesitancy among the participants. Several studies report these to be primary reasons of vaccine hesitancy among Health care workers (HCW).^{9,10} The process of development of covid vaccine was very rapid as compared to usual time taken to develop any vaccine. The vaccine was approved only for emergency use and the phase III trial of vaccine was still pending. This probably caused concerns among the nurses to make a decision to be vaccinated. However the acceptability of covid vaccine among nurses is not so different than the acceptability of hepatitis B vaccine which is also an essential vaccine recommended for all healthcare workers. Studies report that acceptability of hepatitis B vaccine ranges between 25-50 % among HCW.^{11,12} Perceived low susceptibility to infection, high cost of vaccine and fear of side effects

were some of the reported factors leading to non-acceptance of hepatitis B vaccine.^{11,13}

The National AEFI (Adverse Event Following Immunization) committee noted that as of 03 April 2021, 75,435,381 vaccine doses had been administered (Covishield-68,650,819; Covaxin-6,784,562). Of these, 65,944,106 were first doses and 9,491,275 were second dose. Since the COVID-19 vaccination drive was initiated, more than 23,000 adverse events were reported through the CO-WIN platform. And these were reported from 684 of the 753 districts of the country. Of these, only 700 cases (9.3 cases/million doses administered) were reported to be serious and severe nature.¹⁴

CONCLUSION

Nurses being the health care professionals, who are frontline workers, are at the highest risk for acquiring the infection and the vaccine hesitancy among the nurses that was found by the study is certainly a reason to worry. The results of the study indicate that there is a need for robust information, education and counselling measures that need to be adopted focusing on nurses as frontline health care workers to convince them to take covid-19 vaccine.

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