



Research article

Acceptance of covid-19 vaccine by health care personnel: a cross sectional study from central India

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ABSTRACT

Background the worldwide pandemic SARS - CoV-2 causes Covid-19, a communicable disease. Because health care employees have a higher risk of contracting Covid-19 infection than the general population due to the frequency and duration of interaction with Covid-19 positive patients, protecting health care workers should be a top priority. Aims & objectives the goal of this study is to find out how often Covid-19 vaccination acceptance and reluctance are, as well as the socio-demographic and other factors that influence it. Material and Methods this two-month cross-sectional study was carried out at five tertiary healthcare centers in Central India. A Google form containing the study's structured questionnaire was distributed to health care employees through email, WhatsApp, and text message. Age, gender, occupation, income, marital status, h/o co-morbidities, desire, acceptance, hesitation, and reason for not obtaining the Covid-19 vaccine are all investigated. Results a total of 824 HCWs took part in the study and completed the questionnaire, with 470 (57%) males and 354 (43%) women. The majority of the participants were between the ages of 18 and 30. (50 percent). The majority of those who took part were doctors (77 percent). Covid 19 vaccination was given to about 68 percent of HCWs. Only 13% of HCWs had co-morbidities, with the remaining 87 percent having no co-morbidities. 19% of the HCWs had previously tested positive for Covid-19, whereas 81 percent had previously tested negative. HCWs with a family member who had Covid-19 accounted for 27% of the total. About 37% of HCWs strongly agreed that the vaccine will protect them from the sequelae of Covid-19 illness, while only 4% disagreed and 0.5 definitely disagreed. Nearly 48 percent of HCWs were entirely confident in utilizing locally manufactured Covid-19 vaccine, but just 23 percent were confident in using foreign (imported) vaccine. Approximately 46% of HCWs agreed that the vaccine would protect them from Covid-19 illness. Conclusion HCWs' attitudes toward the Covid-19 vaccination vary depending on their age, education, occupation, and income. HCWs' vaccine knowledge should be improved in order to boost immunization coverage among them and the general public.

Keywords: COVID-19 vaccine, healthcare workers, Central India.

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INTRODUCTION

SARS-CoV-2 causes Covid-19, a contagious disease. Because the disease spread so quickly over the world, WHO designated it a global pandemic on March 11, 2020. Because health care employees have a higher risk of contracting Covid-19 infection than the general population due to the frequency and duration of interaction with Covid-19 positive patients, protecting health care workers should be a top priority [1]. Many preventative strategies, such as hand sanitization, mask use, and social distancing, can assist to prevent the Covid-19 disease, but immunization is the most important public health strategy to reduce death and morbidity [2]. There are many myths and stories concerning routine immunization in underdeveloped countries like India, and because Covid-19 vaccines were licensed by the CENTRAL DRUG STANDARD CONTROL ORGANIZATION (CDSCO) as an emergency use

approval, there are more misconceptions about these vaccines. Vaccine aversion has become a key impediment in Covid-19 vaccination due to insufficient information and numerous rumors concerning vaccination on social media [3]. Identifying, understanding, and addressing vaccine acceptance (i.e., a position ranging from passive acceptance to active demand) as well as vaccine hesitancy and resistance (i.e., the positions where one is unsure about taking a vaccine or where one is absolutely against taking a vaccine) to a vaccine for COVID-19 is thus a potentially important step to ensure the rapid and required uptake of an e-vaccine [4]. Because healthcare personnel know more about the risks and side effects of new vaccines than the general public, there appears to be some vaccine apprehension among them. On March 3rd, 2020, the first human clinical trial of a COVID-19 vaccination began in the United

States. Vaccine hesitancy is defined as "a delay in accepting or refusing vaccination notwithstanding the availability of vaccination services," according to the Strategic Advisory Group of Experts on Immunization (SAGE) [5]. Complacency, convenience, and confidence are all factors that influence people's attitudes toward vaccination. As a result of the low perception of disease risk, vaccination is deemed unnecessary. Confidence relates to the belief in the safety and effectiveness of vaccinations, as well as the competency of healthcare systems [6,7]. Vaccines must be available, affordable, and delivered in a comfortable environment to be considered convenient [12,13].

Aims & objectives

The goal of this study is to find out how often Covid-19 vaccination acceptance and reluctance are, as well as the socio-demographic and other factors that influence it.

MATERIAL AND METHODS

This was a cross-sectional observational research. The Google Form platform was used to create a structured questionnaire in English and in the local language (Marathi). This Google form was delivered to medical personnel via email, WhatsApp, or text message. The Institute Ethics Committee (IEC) granted permission. The study's aims were explained to all participants, and they were given the option of participating or not participating in the study. All participants were asked to sign a written informed consent form, which was delivered to them via Google forms. Respondent information was kept completely secret, and it was only utilised for research purposes. The questionnaires were divided into three pieces, with section A containing questions about socio-demographic profile, section B containing questions on Covid-19 vaccine acceptance, and section C containing questions about Covid-19 vaccine reluctance. The survey looked at the sociodemographic profile of Health Care Workers (HCWs), as well as their acceptance and resistance to the Covid-19 vaccination. Epi Info and MS Excel were used to tabulate and analyze the data. To describe socio-demographic variables, descriptive statistics (percentage, mean, standard deviation, minimum, and maximum) were utilised.

RESULTS

A total of 824 HCWs participated in this study and completed the questionnaire, with 470 (57%) males and 354 (43%) females (Table 1). The average age of the participants was 33.14 ± 12.2 years, with a range of 18 to 72 years. The majority of the participants (50 percent) were between the ages of 18 and 30. The majority of those who took part were doctors (77 percent). Covid-19 vaccination was given to approximately 68 percent of HCWs. Graduates accounted for 57% of all responses, while postgraduates accounted for 24%. Private practitioners accounted for 15% of all responses. Approximately 68 percent of HCWs received the Covid-

19 vaccination. A total of 104 (13%) of the 824 HCWs had one or more co-morbidities.

Table 1: Socio-demographic profile of study participants

Parameters	No. (n=824)	Percentage
Age (Yrs.)		
18-30	408	49.5%
31-40	154	18.7%
41-50	156	18.9%
51-60	102	12.3%
61-72	4	0.5%
Gender		
Male	470	57%
Female	354	43%
Marital status		
Married	426	52%
Unmarried	398	48.3%
Education		
Primary School and Below	4	0.5%
Secondary School	6	0.7%
High School	150	18.2%
Graduate	470	57%
Post Graduate	194	23.5%
Occupation		
UG Student	212	25.7%
Intern	94	11.4%
Resident Doctor	146	17.7%
Faculty	62	7.5%
Pvt Practitioner	122	14.8%
Pharmacist	58	7%
Nursing Staff	68	8%
Lab Technician	10	1%
Clerk	20	2%
Class 4 Worker/Ward Boy	20	2%
Income (Rs)		
<10,000	50	6%
10000-25000	64	7.8%
25000-50000	182	22.1%
50000-100000	326	39.6%
>100000	202	24.5%

A total of 160 HCWs (19%) had previously tested positive for Covid-19. Covid-19 had affected the family members of 220 (27%) HCWs. When asked to rate their own health, about 590 (72%) HCWs ranked their health as very good, while 98 (12%) HCWs rated their health as exceptional. When HCWs were asked about their acceptance of COVID vaccination-related questions/information, around 304 (37%) strongly agreed that the vaccine will protect them from Covid-19 illness consequences, whereas only 34 (4%) disagreed and 4 (0.5%) severely disagreed (Table 3).

Approximately 452 (55%) HCWs strongly agreed that vaccination is vital for the health of others in their community, and roughly 398 (48%) HCWs were entirely confident in using locally manufactured Covid 19 vaccine, while 192 (23%) HCWs were confident in using foreign (imported) vaccine. More than half of HCWs (51%) believe the vaccine was given too soon. About 29% of HCWs stated that they did not take the vaccine because they would rather wait and see how it affects others (table 4). Approximately 69 percent of HCWs disagreed that if they had already contracted Covid illness, they would not require vaccination. Almost 43% of HCWs disagreed that the Covid 19 vaccination would interfere with their normal duties. Approximately 46% of HCWs agreed that the vaccine

would protect them from Covid-19 illness.

Table 2: Reasons for acceptance of Covid-19 vaccine among the study participants

Question	Strongly agree (%)	Agree (%)	Don't know (%)	Disagree (%)	Strongly disagree (%)
Do you believe that the Covid19 vaccine will protect you from COVID-19 complications?	304 (36.9%)	386 (46.8%)	96 (11.7%)	34 (4.1%)	4 (0.5%)
Vaccination is a good idea because I feel less worried about catching COVID-19	310 (37.6%)	390 (48.3%)	86 (10.4%)	30 (3.6%)	8 (1%)
Do you believe that getting vaccinated is crucial for my community's health?	452 (54.9%)	298 (36.2%)	50 (6.1%)	22 (2.7%)	2 (0.2%)
	Completely confident	Fairly confident	Somewhat confident	Slightly confident	Completely not confident
Do you have faith in the COVID-19 vaccination produced locally?	398 (48.3%)	260 (31.6%)	100 (12.1%)	60 (7.3%)	6 (0.7%)
Do you trust COVID-19 vaccination made in a foreign (imported) country?	192 (23.3%)	320 (38.8%)	154 (18.7%)	118 (14.3%)	40 (4.9%)

Table 3: Reasons for reluctance of Covid-19 vaccine among the study participants

Question	Strongly agree (%)	Agree (%)	Don't know (%)	Disagree (%)	Strongly disagree (%)
Do you believe the vaccine was launched too soon?	96 (11.7%)	328 (39.8%)	136 (16.5%)	240 (29.1%)	24 (2.9%)
Do you agree that the COVID-19 vaccine's potential side effects would interfere with my normal activities?	42 (5.1%)	224 (27.2%)	206 (25%)	310 (37.6%)	42 (5.1%)
Do you believe that Covid vaccine isn't necessary if you've already had Covid-19?	16 (1.9%)	82 (10%)	160 (19.4%)	440 (53.4%)	126 (15.3%)
Do you believe that Covid immunization is no longer necessary because the number of Covid 19 cases is declining?	14 (1.7%)	42 (5.1%)	62 (7.5%)	466 (56.6%)	240(29.1%)
Question	Don't know	Concerned about the short-term side effects (e.g. Fever etc.)	Concerned about possible long-term side effects	Concerned because i don't think the vaccine will be effective	Covid-19 vaccination will protect me from covid disease.
What are your thoughts on the COVID-19 vaccine?	44 (5.3%)	112 (13.6%)	178 (21.6%)	112 (13.6%)	378 (45.9%)
Question	Self-fear	Colleagues are not ready	Prefer to wait and watch	Any other	Blank
What is your rationale for not getting the Covid-19 vaccine?	32 (12.03%)	14 (5.3%)	78 (29.3%)	132 (49.6%)	10 (3.8%)

DISCUSSION

One of the most important public health interventions of the twenty-first century is vaccination. Horizon is working on a COVID-19 vaccine. Vaccination acceptance varies according to age, gender, socioeconomic background, and human behavior. A total of 824 HCWs replied to the survey. Despite the fact that there are few researches on the intention to take the Covid-19 vaccination, our findings are consistent with those of a study conducted in China and the United States⁸. According to Fu et al Chinese study, 72.5 percent of study participants want to take the vaccine, whereas the Covid-19 vaccine was accepted by 80 percent of study participants in the United States. In our study, 83.73 percent of participants felt that the vaccine will prevent Covid-19 problems. 79.85% of participants were confident in utilizing the Covid 19 vaccination, which was manufactured locally. Vaccination is also vital for community health, according to 91.01 percent of participants. Covid 19 immunization will protect individuals from Covid disease, according to 45.87 percent of participants. Vaccination against Covid-19 was also given to 67.72 percent of HCWs. Participants in this study who were apprehensive about the Covid 19 vaccination did so for two reasons: they believed the vaccine was released too soon without sufficient clinical testing, and they were concerned about the vaccine's potential

negative effects. This means they'll need some confidence before going through with the immunization programme. The study's strength is that it provides insight into the reasons for Covid-19 vaccination acceptance and hesitation^[9-11]. Our study has limitations as well, because it is a cross sectional study that shows the response at the time of the study. In addition, rather than conducting a direct face-to-face interview, the replies were recorded using self-administered Google forms survey forms.

CONCLUSION

HCWs' attitudes toward the Covid-19 vaccination vary depending on their age, education, occupation, and income. Vaccine apprehension is the most significant impediment to vaccination campaigns being implemented. HCWs' knowledge of the Covid-19 vaccine should be improved in order to increase immunization coverage among HCWs and the general public. Because HCWs are among the first to receive the vaccination, concerns about its safety should be addressed as soon as feasible. Various techniques for increasing vaccine uptake among HCWs should be designed and executed.

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