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Original Article

Knowledge, Attitude and Acceptance towards Coronavirus Disease 2019 (COVID-19) Vaccines among Healthcare Students of a Tertiary Care Teaching Hospital in South India: A Cross-sectional Study

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ABSTRACT

Background: Coronavirus disease 2019 (COVID-19) has imposed a serious health impact afflicting millions of people and halting global progress significantly. Albeit vaccines for COVID-19 emerged as a potent approach to overcome the morbidity, its suspicion had been persisting across diverse categories of people, including healthcare students. Since studies exploring the acceptance of vaccines among healthcare students from India were limited, this study has been formulated to evaluate the knowledge, attitude and acceptance of COVID-19 vaccines among healthcare students of a tertiary care hospital. **Materials and Methods:** This was a self-reporting questionnaire-based cross-sectional study conducted via online platforms. By convenience sampling method, participants were enrolled. Primary outcomes were expressed as frequency and Chi-square test was used for comparison between groups. **Results:** Out of 562 participants, there were 268 medical, 90 dental, 70 nursing and 134 allied health science students. Female participants (65.1%) were more compared to male participants (35.9%) and the mean age of participants was 19 years. Medical students had significantly better knowledge about vaccine doses (98.5%), route of administration (85.4%) and priority candidates for vaccines (95.9%) than students of other courses. Overall, 438 (77.9%) students were interested to receive COVID-19 vaccines. Fear of adverse effects (44.7%) was the major concern for vaccine administration among study participants. Medical course [Odds Ratio (OR) 3.95; 95% Confidence Interval (CI) 2.22-7.06] and family history of COVID-19 disease (OR 2.57; 95% C:1.28-5.17) positively influenced the willingness of students for vaccines. **Conclusion:** Maximum participants were convinced of COVID-19 vaccination and medical students exhibited better vaccine knowledge. This knowledge gap among healthcare students in diverse courses should be addressed via consistent vaccine sensitization programs.

Keywords: COVID-19, Vaccines, Knowledge, Attitude, Healthcare students.

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INTRODUCTION

Coronavirus disease 2019 (COVID-19) is stated as a pandemic infectious disease caused by novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and poses a serious burden of morbidity and mortality worldwide.[1] The World Health Organization declared COVID-19 as a Public Health Emergency of International Concern on February 9, 2021. The global database reported the prevalence of confirmed cases and deaths related to COVID-19 were 524 million and 6.2 million respectively as on 25 May 2022.[2]

Healthcare personnel like physicians, nurses and workers had become the major victims of COVID-19 disease. Social distancing, protection by mask, and personal hygiene are the most effective strategies to significantly circumvent the viral spread. Additionally, the medical sector has also initiated early detection and treatment to lessen the mortality rate. Vaccination against COVID-19 was considered an effective strategy to curtail the disease load across many countries. Immunization of a sizeable population promoting herd immunity acts as a strong defence mechanism against microbial disease outbreaks and epidemics.[3,4]

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Vaccine hesitancy due to inadequate trial data, misconception and lack of pharmaceutical trust were the major barriers to the acceptance of new COVID-19 vaccines and one of the top global health threats.[5,6]

The acceptance rate of novel vaccines by the people of different countries varies considerably. In a study among nurses in Hong Kong, the acceptance of vaccines was estimated as 40%, whereas in a multicentric study conducted among healthcare workers in the United States, the vaccine acceptance rate was only 36%.[7,8] In a survey among patients with respiratory disease in the United Kingdom demonstrated the willingness for COVID-19 vaccines as 86% probably due to fear of worsening underlying disease.[9] In general, the predominant reasons for vaccine acceptance would be the greater efficacy of vaccines, extended duration of protection and reduced potential for causing adverse effects.

Since COVID-19 vaccines were approved as emergency authorisation with unveiled safety profiles, the acceptance for vaccines was diminished during the early phase of vaccine launch.[10] The probable reasons for hesitance towards COVID-19 vaccines were lack of belief in efficacy and safety, distorted faith in government and pharmaceutical industry, low socio-economic status and lack of education.[9,11,12] Apprehension and reluctance towards vaccination were more intense among the young population and non-medical people.[13] It is pivotal to establish the acceptance of COVID-19 vaccines among people to improve pandemic control measures.[14] The role of physicians is instrumental in strengthening the adherence to vaccine guidelines by the people.[15] In general, healthcare workers act as crucial players in the battle against COVID-19 and through their role-modelling behaviour, they would potentially bring about a great change in attitude towards COVID-19 vaccination in the community.[8] The health care students were also in a profound dilemma for vaccination because of increasing disease prevalence concurrent with the ambiguity for vaccine safety. Health belief models like knowledge attitude and practice study design helps in establishing the awareness and perceptions of individuals towards health-related policy changes. Hence, this study was planned to determine the knowledge, attitude and acceptance of COVID-19 vaccines among healthcare students who might play a potential role in the promotion of vaccination practices in the community.

MATERIALS AND METHODS

Study design and setting

A cross-sectional online questionnaire-based study was conducted among medical, dental, nursing and Allied Health Science (AHS) students of a tertiary care hospital in India from April 2021 to September 2021. The study commenced after obtaining the approval from Institutional Ethics Committee. (IEC No. 2864/IEC/2021)

Participants

Undergraduate healthcare students belonging to the health science courses like medical, dental, nursing and AHS and willing to participate were included in the study. Those students absent during the time of data collection were excluded. The participants were recruited after obtaining informed consent and assured about the confidentiality of their study participation.

Study Instrument

The authors developed a self-reporting electronic questionnaire for assessing the knowledge, attitude and acceptance of COVID-19 vaccines adopted from similar studies, which was modified and validated later.[8,10] Five subject experts were consulted to ascertain the suitability of individual items in the questionnaire. Each item of the questionnaire claimed a content-validity ratio of more than 0.99. The face validity of the study instrument was determined via pilot testing with 20 healthcare students to ensure its simplicity and comprehensive language. The questionnaire comprised 27 items divided into four major sections namely demographic details (6 items), knowledge (10 items), attitude (7 items) and acceptance (4 items). A combination of closed-ended (95%) and open-ended questions (5%) was included in the knowledge, attitude and acceptance sections. The attitude of participants towards COVID-19 vaccines was captured using the Likert scale comprised of five categories of response such as, strongly disagree, disagree, neutral, agree and strongly agree. All the items of the questionnaire were marked as required fields in the online form to avoid any incomplete data collection process.

Procedure

The study participants were enrolled via the convenience sampling method. An introductory session of the study protocol was informed to the students via online meeting. This was followed by sharing a unique link of the electronic knowledge attitude and acceptance questionnaire via the online messaging apps and the students were advised to respond individually at their discretion. The data reported in the electronic forms were imported to a Microsoft Excel sheet and subjected to statistical analysis.

Sample size calculation

Assuming the proportion of healthcare students with willingness for the COVID-19 vaccine as 86.1% based on previous studies, the confidence level of 95%, absolute precision of 5% and an alpha error of 5%, a minimum of 184 students was needed for the study.[16] After accounting for the 10% non-response rate, the final sample size calculated for the study was 203. The calculation for sample size was performed using Epi info software. As the number of students who desired to participate was considerably large, we recruited up to 562 students for this study.

Statistical analysis

Binomial outcomes of knowledge, attitude and acceptance of COVID-19 vaccines were presented as frequency and proportions. The difference in knowledge between medical, dental, nursing and AHS students was compared using the Chi-square test. The effect of knowledge on willingness for vaccines was analysed using the Chi-square test. Binary logistic regression analysis was used to determine the influence of independent variables such as gender, past and family history of COVID-19 disease on willingness for COVID-19 vaccination. An adjusted odds ratio with a 95% confidence interval was also determined. *P*-value <0.05 was considered statistically significant. Statistical analysis was performed using SPSS software version 24.

RESULTS

Demographic Characteristics

In this study, 562 students provided consent for participation and completed the questionnaire for COVID-19 vaccination. The study participants included 268 medical, 90 dental, 70 nursing and 134 AHS students. The average age of the participants was 19 years. Female participants showed more interest in study participation than male students [366 (65%) Vs 196 (35%)]. It was observed that the majority of the parents of medical and dental students completed post-graduation and under-graduation courses respectively. The demographic characteristics of the study participants were represented in Table 1. Among healthcare students, a higher proportion of medical students reported history (12.3%) and family history (26.5%) of COVID-19 disease. Data on the source of information for COVID-19 vaccination was depicted in Figure 1. The internet was the major source of information for COVID-19 vaccines among medical, dental and AHS students.

Knowledge about COVID-19 Vaccines

The knowledge about COVID-19 vaccines of the study participants was represented in Table 2. Hundred per cent of medical and dental students were aware of the existence of COVID-19 vaccines. Among healthcare students, a greater proportion of medical students responded correctly to questions about the number of vaccine doses (98.5%), routes of administration (85.4%), priority candidates (95.9%) vaccine-related adverse effects (93.7%), and adherence to other safety precautions (99.6%). The proportion of participants who gave correct responses for vaccination of individuals with suspected COVID-19 infection was below 50%. A maximum (76.5%) number of medical students declared that vaccination for individuals with comorbidities was indicated. The majority of the medical students (44%) provided correct responses about the onset of protective levels of antibodies after vaccination compared to dental (27.8%), nursing (30.4%) and allied health science students (23%).

Table 1: Demographic characteristics of the study participants. (Total Participants = 562).

Demographic Details	Medical *n*=268	Dental *n*=90	Nursing *n*=70	AHS *s*=134	Total (Overall =562)
Age (Mean in Years)	19.80	20.06	19.35	19.55	
Gender-N (%)					
Male	112 (41.8)	25 (27.8)	13 (18.8)	46 (34.1)	196 (34.9)
Female	156 (58.2)	65 (72.2)	56 (81.2)	89 (65.9)	366 (65.1)
Father's Educational Status N (%)					
Illiterate	3 (1.1)	1 (1.1)	2 (2.9)	4 (3)	10 (1.8)
High School	38 (14.2)	7 (7.8)	36 (52.1)	56 (41.5)	137 (24.3)
Higher Secondary	11 (4.1)	4 (4.4)	10 (14.5)	15 (11.1)	40 (7.1)
Undergraduate	90 (33.6)	38 (42.2)	14 (20.3)	42 (31.1)	184 (32.7)
Postgraduate	126 (47)	40 (44.4)	7 (10.2)	18 (13.3)	191 (34)
Mother's Educational Status N (%)					
Illiterate	6 (2.2)	2 (2.2)	4 (5.8)	9 (6.7)	21 (3.8)
High School	39 (14.5)	14 (15.6)	41 (59.4)	63 (46.7)	157 (27.9)
Higher Secondary	13 (4.9)	5 (5.6)	12 (17.4)	21 (15.6)	51 (9.1)
Undergraduate	95 (35.4)	39 (43.3)	7 (10.2)	31 (22.9)	172 (30.6)
Postgraduate	115 (43)	30 (33.3)	5 (7.2)	11 (8.1)	161 (28.6)
Past history of COVID-19, N (%)	33 (12.3)	9 (0.1)	7 (10.1)	7 (5.2)	56 (10)
Family history of COVID-19, N (%)	71 (26.5)	22 (24.4)	1 (1.4)	25 (18.5)	119 (21.2)

AHS-Allied Health Sciences, N-Number of students

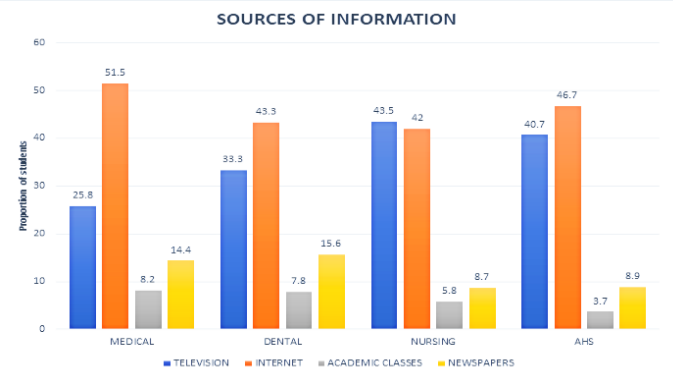

Figure 1: Sources of information about coronavirus disease 2019 (COVID-19) vaccines for healthcare students.
Number of students under each category: Medical-268, Dental-90, Nursing–70 and Allied Health Sciences-134.

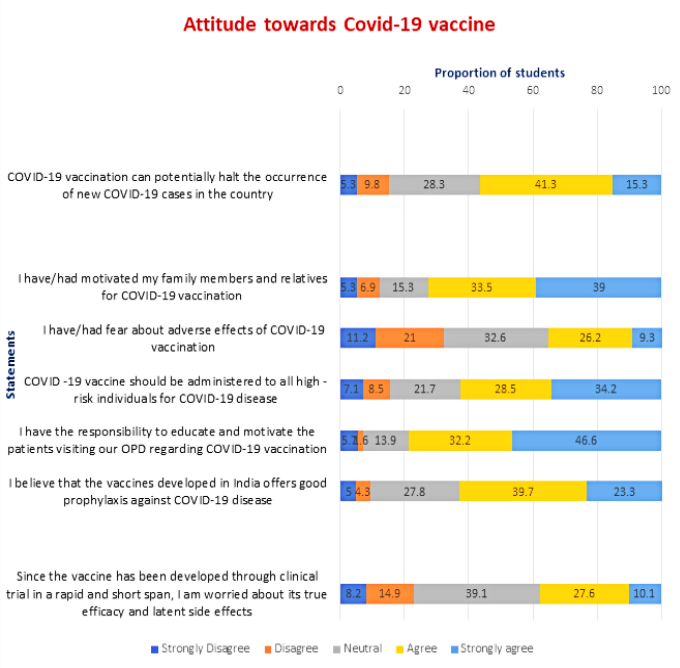

Figure 2: Attitude towards coronavirus disease 2019 (COVID-19) vaccination of the study participants. (Total Participants = 562).

Attitude towards COVID-19 vaccines

The attitude of healthcare students toward COVID-19 vaccines was represented in Figure 2. The majority of medical, nursing and AHS students agreed that COVID-19 vaccination could potentially halt the occurrence of new cases, while the dental students provided a neutral response. Regarding the motivation of family members for vaccination, medical, dental, nursing and AHS students declared major responses such as strongly agree, agree, neutral and agree respectively. A higher proportion of students provided neutral responses regarding their attitude about fear of adverse effects. The majority of medical, dental and AHS students strongly agreed for motivating the patients to receive COVID-19 vaccines. A large proportion of medical students agreed that vaccines developed in India would offer adequate protection against COVID-19 disease, unlike dental students who gave a neutral response. A greater percentage of students in all the courses revealed their neutral attitude towards scepticism regarding the efficacy and safety of vaccines due to the rapid phase of development.

Acceptance towards COVID-19 vaccines

The acceptance of healthcare students toward COVID-19 vaccines was denoted in Table 3. The proportion of medical, dental, nursing and AHS students who showed willingness for COVID-19 vaccines were 90.7%, 62.2%, 65.5% and 69.6% respectively. Most of the medical students (92.9%) were interested in reporting the adverse drug reaction after COVID-19 vaccination as compared to dental (77.8%), nursing (61.5%) and AHS (69.6%). The most common reason for the fear of the COVID-19 vaccine was the safety issue, among healthcare students.

Influence of baseline characteristics and knowledge on willingness for COVID-19 vaccination

The students in medical course and the presence of COVID-19 disease in the family showed higher willingness for the COVID-19 vaccine compared to others, which was highlighted in Table 4. Similarly, the knowledge about vaccination also positively influenced the willingness to vaccination (Table 5).

DISCUSSION

This cross-sectional study was conducted among healthcare students between March 2021 and August 2021, especially during the second wave of COVID-19 disease in India. The COVID-19 vaccination program was implemented on 16 January 2021 and conducted in different phases in India. Around 20 million frontline workers such as soldiers, municipality staff and police officials and 270 million elderly people aged more than 50 years irrespective of comorbid conditions were vaccinated in the first and second phases of the vaccination programme respectively. Vaccination of people aged between 18 and 44 years was initiated on 1st May 2021. Thus, this study was planned before the government notification of eligibility of students for COVID-19 vaccines to determine their awareness, attitude and acceptance of COVID-19 vaccination. The observational studies evaluating the factors influencing vaccine hesitancy among healthcare students in India were very limited. The prevailing trend of novel viral disease outbreaks and the emergence of novel coronavirus variants every year would make healthcare professionals and students, become target candidates for multiple new vaccines. Hence, this study was conducted to assess their knowledge and acceptance towards novel vaccines like COVID-19 vaccines.

The major source of information about COVID-19 vaccines was the internet similar to other studies conducted in Bangladesh.[17] Online information was principally referred by healthcare

Table 2: Knowledge about coronavirus disease 2019 (COVID-19) vaccination of the study participants. (Total Participants = 562).

Knowledge items	Students answered with correct responses					
	Total (Overall =562) N (%)	Medical *n*=268 N (%)	Dental *n*=90 N (%)	Nursing *n*=70 N (%)	AHS *n*=134 N (%)	*P* value
Existence of vaccine	542 (96.4%)	268 (100)	90 (100)	61 (88.4)	123 (91.1)	0.001*
Number of vaccine doses	515 (91.6)	264 (98.5)	83 (92.2)	51 (73.9)	117 (86.7)	0.001*
Route of vaccine administration	413 (73.5)	229 (85.4)	68 (75.6)	49 (71)	67 (49.6)	0.001*
Priority candidates	469 (83.5)	257 (95.9)	80 (88.9)	41 (59.4)	91 (67.4)	0.001 *
Necessity for adherence to other safety precautions	537 (95.6)	267 (99.6)	85 (94.4)	60 (90.9)	125 (95.4)	0.002*
Common adverse effects related to vaccine	467 (83.1)	251 (93.7)	73 (81.1)	42 (60.9)	101 (74.8)	0.001*
Vaccination of COVID-19 suspected or confirmed patients	204 (36.3)	128 (47.8)	30 (33.3)	13 (18.8)	33 (24.4)	0.007*
Vaccination of patient recovered from COVID	299 (53.2)	145 (54.1)	36 (40)	43 (62.3)	75 (55.6)	0.001*
Vaccination of individuals with comorbidities	345 (61.4)	205 (76.5)	49 (54.4)	31 (44.4)	60 (44.4)	0.001*
The onset of protective levels of antibodies against COVID-19	195 (34.7)	118 (44)	25 (27.8)	21 (30.4)	31 (23)	0.001*
Overall knowledge	356 (63.4)	213 (79.6)	62 (68.8)	41 (58.9)	82 (61.3)	0.001*

AHS = Allied Health Sciences. * $p<0.05$ is considered statistically significant. Chi-square test was performed for comparison between groups.

students of different courses inconsistent with other studies.[18] Thus, the internet and other online social platforms could be effectively utilized for vaccination awareness programmes for spreading authentic information about vaccines.

Medical students with better knowledge had shown a higher preference for vaccination in concordance with other studies.[19] Proportion of students (63.4%) with good knowledge about COVID-19 vaccines in our study was more compared to studies done in Ethiopia (41.1%) and Bangladesh (58.4%).[17,20] Thus, the awareness of vaccines increased drastically with relentless constructive vaccine sensitization campaigns. Research on health behaviour had also confirmed the significant impact of educational background on health-related practices. The scientific knowledge of the participants also influenced their judgment toward evidence-based research.[21] Simultaneously, the disparity in knowledge between medical and other healthcare students in this study also strongly recommends the need for strengthening the existing vaccine awareness programs.

Overall, the study participants revealed a positive attitude towards vaccination. A contemporary study conducted among nursing students in China highlighted the change in attitude with the fall in the incidence rate of COVID-19 disease leading to declining disease concerns.[22] Alongside, this study in resemblance with other studies reported that the country of origin for the COVID-19 vaccine also significantly influenced their vaccine acceptance as it was indirectly reflecting the vaccine quality.[23]

In this study, the overall vaccine acceptance among healthcare students was 77.9% which was more than the studies conducted among university students in Qatar, Jordan, and France observed that the vaccine acceptance was 62.5%, 35% and 58% respectively.[24-26] The probable reasons for willingness for vaccination among healthcare students would be the prevention of disease occurrence by vaccines, susceptibility to infection from a teaching hospital, escalating incidence of COVID-cases and fear of dissemination of disease to family members. The proportion of medical students who showed vaccine acceptance in Egypt was 35% and 58% of dental students demonstrated willingness for

Table 3: Acceptance towards coronavirus disease 2019 (COVID-19) vaccination of the study participants. (Total Participants = 562).

Acceptance Domains	Total (Overall = 562) N (%)	Medical *n*=268, N (%)	Dental *n*=90 N (%)	Nursing *n*=70 N (%)	AHS *s*=134 N (%)
Students interested to receive COVID-19 vaccines.	438 (77.9)	243 (90.7)	56 (62.2)	45 (65.2)	94 (69.6)
Students interested to complete the whole vaccination regimen.	447 (79.5)	256 (95.5)	63 (70)	45 (65.2)	83 (61.5)
Students interested in reporting adverse drug reactions after COVID-19 vaccination.	450 (80.1)	249 (92.9)	70 (77.8)	48 (69.6)	83 (61.5)
Reasons for COVID-19 vaccine fear					
A. Uncertain efficacy	99 (17.6)	68 (25.3)	18 (20)	7 (10)	6 (4.5)
B. Fear of adverse effects	251 (44.7)	98 (36.6)	46 (51.1)	43 (61.4)	64 (47.8)
C. Standard of vaccines developed by local manufacturers	65(11.6)	29 (10.8)	9 (10)	9 (12.9)	18 (25.7)
D. Cost	10 (1.8)	3 (1.5)	0	1 (1.4)	6 (4.5)
E. No fear.	134 (23.8)	70 (34.5)	14 (15.5)	10 (14.3)	40 (57.1)

AHS = Allied Health Sciences.

Table 4: Influence of demographic characteristics on willingness for coronavirus disease 2019 (COVID-19) vaccine among the study participants.

Sl. No	Variables	Willingness for vaccine *n*=438	Not willing to vaccine *n*=128	Odds ratio (95% Confidence interval)	*P* value
1	Gender	Male=151 (77%) Female=287 (78.4%)	Male= 45 (23%) Female= 79 (21.6%)	1.376 (0.874-2.166)	0.168
2	Course[#]	Medical = 243 (90.7%) Dental= 56 (62.2%) Nursing= 46 (65.7%) AHS= 93 (69.4%)	Medical = 25 (9.3%) Dental= 34 (37.8%) Nursing= 24 (34.3%) AHS= 41 (30.6%)	3.958 (2.220-7.056)	0.001*
3	Past History of COVID-19 disease	Yes= 46 (82.1%) No= 392 (77.5%)	Yes= 10 (17.9%) No= 114 (22.5%)	0.728 (0.315-1.685)	0.728
4	History of COVID-19 disease in the family	Yes= 106 (89.1%) No= 332 (74.9%)	Yes= 13 (10.9%) No= 111 (25.1%)	2.574 (1.282-5.170)	0.008*

*$p<0.05$ is considered as statistically significant. Binary logistic regression was used for the analysis.[#]Multinomial logistic regression was used for analysis.

vaccines in Palestine. The unwillingness toward vaccines could be due to inaccurate information about their safety and efficacy and conspiracy beliefs such as post-vaccination genetic alterations.[27,28]

Many contemporary studies from other countries also brought into light the fact that unwillingness toward COVID-19 vaccines among students especially medical and other healthcare students was widely prevalent across the globe due to various reasons like the rapid phase of vaccine development, long-term detrimental effects, limited vaccine safety and substandard efficacy.[20,29] The study conducted by Issanov *et al.* in Kazakhstan reported the diverse reasons for vaccine hesitancy like the unique pathogenicity of the virus, political connections, and credibility of the vaccine manufacturers native to different geographical regions. In concordance with another study, the crucial concern on COVID-19 vaccines in this study was the indecisive adverse effects which could be potentially clarified by the healthcare stakeholders to circumvent the fabricated claims.[23]

The difference in educational background significantly influenced the attitude and willingness for vaccines. Healthcare professionals' knowledge and practice would influence vaccination practices in the community to a greater extent.[30] The awareness of healthcare students about COVID-19 vaccination could favour the development of various strategies for organizing vaccine sensitization programmes including booster vaccinations in the country, ultimately paving way for the containment of COVID-19 disease. Future studies could explore the impact of educational intervention on vaccine awareness, perception and challenges of booster vaccination among healthcare professionals including students and at the community level.

Table 5: Effect of knowledge on willingness for coronavirus disease 2019 (COVID-19) vaccine among the study participants.

Sl. No	Knowledge questions	Willingness for vaccine *n*=438	Not willing to vaccine *n*=128	Odds ratio (95% Confidence interval)	*P*-value
1	Existence of vaccine.	430	112	5.75 (2.29-14.42)	0.001*
2	Number of vaccine doses.	415	100	4.33 (2.34-7.98)	0.001*
3	Route of vaccine administration.	332	81	1.66 (1.08-2.55)	0.02*
4	Priority candidates.	386	83	3.67 (2.28-5.88)	0.001*
5	Necessity for adherence to other safety precautions.	429	111	9.02 (2.29-35.43)	0.001*
6	Common adverse effects related to vaccine.	377	90	2.33 (1.44-3.76)	0.001*
7	Vaccination of COVID-19 suspected or confirmed patients.	261	97	2.44 (1.52-3.88)	0.001*
8	Vaccination of patients recovered from COVID.	250	49	2.04 (1.35-1.68)	0.001*
9	Vaccination of individuals with comorbidities.	93	34	0.71 (0.45-1.12)	0.147
10	The onset of protective levels of antibodies against COVID-19.	167	28	2.11 (1.33-3.35)	0.001*

*$p<0.05$ is considered statistically significant. Binary logistic regression was used for the analysis.

Limitations and Strength

Since this study was conducted at a single institution, the generalisability of the results would be restricted to a certain extent. Data collection from an online platform might have prevented the qualitative interview session which would help in better understanding participants' attitudes and the reasons for vaccine hesitancy. Convenience sampling adopted in this study could affect the representation of the target group. This study had a major strength of adequate sample size and achieved sufficient power for determining the study objectives effectively.

CONCLUSION

The majority of the study participants revealed their positive attitude and willingness to COVID-19 vaccination. A significant difference in knowledge was observed among healthcare students in different courses and a higher proportion of medical students exhibited good knowledge about COVID-19 vaccines. Thus, this knowledge gap should be addressed through rigorous vaccine sensitization programmes both at the institutional as well as national levels. Since these healthcare students are in proximity to the general population, their knowledge could be potentially disseminated to upgrade the awareness of the general population about COVID-19 vaccines.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

AUTHORS CONTRIBUTIONS

Indumathi Prabath contributed by formulating the study protocol, collecting data and writing the manuscript. Porkodi Ayyar and Radhika Krishnan were involved in the data collection and review of the manuscript. Vivekraj Navabalan contributed to the study by performing statistical analysis, and writing and reviewing the manuscript.

ABBREVIATIONS

COVID-19: Coronavirus Disease 2019; **OR:** Odds Ratio; **CI:** Confidence Interval; **SARS-CoV-2:** Severe Acute Respiratory Syndrome Coronavirus 2; **AHS:** Allied Health Science.

SUMMARY

- Higher proportion of medical students had good knowledge about COVID-19 vaccine doses and administration than other healthcare students.
- Majority of the healthcare students were also interested to motivate the patients for receiving COVID-19 vaccines.
- A maximum number of healthcare students expressed their willingness to COVID-19 vaccines.

- Educational background of healthcare students strongly influenced their willingness to COVID-19 vaccines.
- The existing knowledge gap about COVID-19 vaccines among medical and other healthcare courses could be potentially addressed through vaccine sensitization programmes for facilitating vaccine awareness among students and the community.

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