

PERCEPTION OF COVID-19 VACCINE AMONG DENTAL PROFESSIONALS IN PAKISTAN

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ORIGINAL ARTICLE

ABSTRACT

Objective: This study aimed to identify the perceptions regarding the COVID-19 vaccine among dental professionals in Pakistan. **Methodology:** A cross-sectional, web-based anonymous survey was commenced using an online questionnaire, which was distributed to dental professionals working at different hospitals throughout the country. The survey assessed the participant in two sections. The first section inquired about general information about the patient, including demographic background, self-perceived health status, and COVID-19 experience of the participants. Secondly, the questionnaire probed perceptions about COVID-19 and its vaccination, including their susceptibility to COVID-19, perceived severity of the infection, perceived barriers to getting vaccinated, and cues to action. Participants were also asked to rate their level of confidence in using the foreign-manufactured COVID-19 vaccine. **Results:** With a response rate of 72%, the results showed that of the total respondents, 38.96% agreed and 28.54% strongly agreed that they would take the COVID-19 vaccine if they were given adequate information

about it. Furthermore, the majority of respondents agreed to get vaccinated if their institution made it mandatory to get them vaccinated. Both males and females believed that the vaccine decreased their chances of getting infected. **Conclusion:** The results of the current study have demonstrated that a significant proportion of the study sample is willing to get vaccinated if they are given adequate information about the vaccine. Furthermore, numerous individuals raised concerns over the efficacy of vaccines and their potential immediate and late adverse effects. There is a fundamental need to raise consciousness at a mass level about the severity of the COVID-19 infection, the significance of vaccination, and its safety, effectiveness, and viability. The government should assemble religious and social elements to gain public trust and address the concerns of the population.

INTRODUCTION

The acceptance and success of a safe and efficacious COVID-19 vaccine will hinge on its widespread adoption. Limited uptake may occur if there are individuals who exhibit reluctance or unwillingness to be immunized.¹ The unwillingness or refusal to get a vaccination, especially in the presence of vaccinations against illnesses including measles, poliomyelitis, and pertussis, is known as vacc-

ine hesitancy.² When it comes to potential SARS-CoV-2 vaccines, vaccine hesitancy is becoming more and more of a hindrance to preventative measures meant to battle infectious illnesses.² The "3 Cs" approach, which emphasises elements like confidence, complacency, and convenience, might be responsible for this resistance.³ Leading factors contributing to vaccine hesitancy include lack of faith in vaccinations and medical professionals, a smug attitude about vaccination requir-

ements, and the inconvenience of vaccinations because of things like cost and accessibility. A closer look of vaccination reluctance exposes the impact of cultural, religious, or personal views. Conspiracy theories may also contribute to vaccination reluctance by encouraging suspicion of governments, medical professionals, and the pharmaceutical sector, which may have detrimental effects on people's health-related behaviours.¹

Pakistan is mostly a Muslim nation, hence religious objections to vaccination against a range of vaccine-preventable diseases have been common. Many people have claimed that the vaccinations' ingredients violate Sharia law and are therefore incompatible with their religious beliefs.⁴

The WHO has already acknowledged the significance of healthcare professionals serving as ardent supporters in the effort to eradicate vaccination hesitancy among vulnerable groups.⁵ According to recent research on this population subgroup, vaccine hesitancy among healthcare workers is frequently caused by a lack of knowledge about vaccines, a lack of confidence in one's ability to inform parents and other concerned family members about vaccines, distrust in the government agency administering the vaccine, and the influence of social media posts on one's decision-making process.^{4,6}

According to a survey conducted among all professions, dentistry is considered the most vulnerable profession for getting infections.⁷ As dental procedures produce aerosols and droplets contaminated by microorganisms, most of the patients come to dental OPD for their dental treatment are asymptomatic.⁸ Frequent exposure to salivary droplets or blood droplets from asymptomatic patients can

contribute in enhancing the chances of cross infection.⁹ Vaccination from COVID-19 can prevent dental professionals from getting infected and ensure their safety when performing treatments on patients who may be infected with coronavirus.¹⁰

The rationale of this study was to ascertain the perception of dental health care providers in Pakistan, regarding COVID-19 vaccine. The study results would enable us to identify the acceptability of the vaccine in our strata of the population. If the study population is found to be reluctant to get vaccinated for COVID-19, then measures would be devised through which the acceptance of the vaccine can be improved and result in an increased acceptance of vaccine among dental professionals

MATERIAL AND METHODS

Study Design: Online cross-sectional survey

Setting: Data collection was carried out nationwide through online survey and was analyzed at, Sindh Institute of Oral Health Sciences, JSMU.

Duration: Study was completed in 3 months (1st April 2021 to 30th March 2022)

Sample Size: Sample size was calculated using OpenEpi keeping the population of interest at 100,000 with 95% confidence level giving us a sample size of 383. This was rounded off to 400. (Open Source Epidemiologic Statistics for Public Health, Version www.OpenEpi.com).

Sampling Technique: Non probability consecutive

Sample Selection:

Inclusion criteria

- Dental professionals, including Consultants, postgraduate trainees, undergraduates, dental students, hygienists and assistants.

Exclusion criteria

- Professionals who are unable to give consent.
- Participants on long leave or not practicing.

Data collection procedure

Following approval from the Institutional Review Board of Jinnah Sindh Medical University (Reference number: JSMU/IRB/2021/-457), we initiated a cross-sectional survey conducted anonymously via the internet using an online questionnaire that was distributed to dental professionals working at different hospitals throughout country.

Data was collected through google forms, during 1st April 2021 to 30th March 2022. The survey included questions aimed at evaluating demographic data, self-assessed status of health, and experience with COVID-19, COVID-19 perceptions and its vaccination, intention to receive a vaccine, as well as vaccine preferences and confidence.

DATA ANALYSIS

The analysis of data was performed utilizing SPSS version 23. Descriptive statistics, encompassing means with standard deviations (SDs) and percentage frequencies, were computed for both patient characteristics and survey responses. Chi-square test was applied, a significance threshold of $p < 0.05$ was considered as statistically significant.

RESULTS

Out of 530 dental professionals, 403 filled the questionnaire with their agreement to be a part of this study, giving us the response rate of 72%. Demographic data showed that, 125 (31%) of the respondents were males, 278 (69%) of the respondents were females. Among them 40 (9.9 %) of the respondents belongs to Intermediate, 148 (36.7 %) of the respondents belong to Undergraduate, 94

(23.3%) of the respondents belong to Postgraduate trainee, 107 (26.6 %) of the respondents belong to consultant, 14 (3.5%) of the respondents belong to Skill/professional course.

About the work-place 105 (26.1%) of the respondents belong to private practice 110 (27.3%) of the respondents belong to public OPD, 158 (39.2%) of the respondents belong to both (public and private), 26(6.5%) of the respondents belong to Studying, 4(1%) of the respondents were currently unemployed. On the basis of age, 51.86% were of age group 15 to 25 years, 31.76 % were of age group 26 to 35 years, 12.41 % were of age group to 36 to 45 years, and 3.97 % were of age group > 45. In the perception about the using foreign manufactured (imported) COVID-19 vaccine, 220 (54.6%) of the respondents were confident and 40(11.2%) were completely confident. [Table: 2] When queried about 'Would you be willing to receive a COVID-19 vaccine if it becomes available on the market?' 260 (64.5 %) of the respondents said 'Yes', 51(12.7%) of the respondents said 'No' and 92(22.8%) were 'Unsure'. Of total responders 157(38.96%) agreed and 115(28.54) strongly agreed when they were asked about that 'I would only consider receiving the COVID-19 vaccine if provided with sufficient information about its safety and efficacy.

Most Respondents agreed to get vaccinated if their institution mandated the vaccinated. Comparing the results on the basis of gender, females were more concerned about efficacy ($p=0.006$), safety ($p=0.000$) and possible side effects ($p=0.000$) of the vaccine. Both male and female believed that vaccine decreases their chances of getting infected with p value (0.084).

Table 1: Perception of dental professionals towards COVID-19 Vaccine

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	n (%)	n(%)	n (%)	n (%)	n (%)
Getting COVID-19 is currently a possibility for me	4 (0.99)	17 (4.2)	149 (36.9)	155 (36.4)	78 (19.3)
Vaccination decreases my chance of getting COVID-19 or its complications	25 (6.2)	36 (8.9)	147 (36.4)	171 (42.4)	24 (5.9)
I worry that the possible side-effects of COVID19 vaccination would interfere with my usual activities	13 (3.23)	74 (18.3)	118 (29.2)	135 (33.5)	63 (15.6)
I am concerned about the efficacy of the COVID-19 vaccination	19 (4.71)	23 (5.7)	145 (35.9)	157 (38.9)	59 (14.6)
I am concerned about the safety of the COVID-19 Vaccination	18 (4.47)	25 (6.2)	102 (25.3)	177 (43.9)	81 (20.1)
I am concerned of my affordability (high cost of the vaccine) of getting the COVID-19 vaccination	44 (10.92)	86 (21.3)	132 (32.7)	104 (25.8)	37 (9.1)
I will only take the COVID-19 vaccine if I was given adequate information about it	23 (5.71)	22 (5.4)	86 (21.3)	157 (38.9)	115 (28.5)
I will only take the COVID-19 vaccine if the vaccine is taken by many in the public	38 (9.43)	66 (16.3)	106 (26.3)	151 (37.4)	42 (10.4)
I will only take the vaccine if it is made mandatory by my employer/institute of employment	38 (9.43)	93 (23.0)	99 (24.5)	131 (32.5)	42 (10.4)

DISCUSSION

For more than a year, most of the dental OPDs were not fully functional, and universities taught students online rather than demonstrations and practical learning.¹¹ Based on current evidence, vaccine seems the only solution to cope with this hazardous situation called "COVID-19 pandemic" and to get back on life track.¹² All dental professionals are at a high risk of being infected and thus should get vaccinated to be able to resume dental practice with peace of mind. Hesitancy to avoid getting vaccine would further delay resuming practice and providing patient care. In this study, a significant proportion of respondents expressed concerns regarding vaccine efficacy, potential side effects, and overall safety. This was largely attributed to a lack of adequate information about the COVID-19 vaccine. It is imperative for government agencies, institutions, and public health organizations in Pakistan to employ effective strategies aimed at enhancing awareness among the population, particularly healthcare professionals, regarding COVID-19 vaccination. By addressing vaccine hesitancy through increased education and awareness efforts, it will be possible to facilitate the resumption of essential services and educational processes. The dentistry profession, according to a survey of all professions, is the most susceptible to infection.¹³ Because dental treatments produce microorganism-contaminated aerosols and droplets, the majority of patients who visit the dental OPD for treatment are asymptomatic. Frequent contact with salivary or blood droplets from asymptomatic individuals can significantly raise the risk of cross infection. Vaccination against the COVID-19 virus can protect dental practitioners from infection and increase the efficiency and effectiveness of dental care and education of dental students.¹⁴

Vaccine do not only protect the immunized persons but can also care for the whole community by attaining masses immunity.¹⁵ Vaccinating the majority of healthy people within a community can have an indirect protective effect on those who are unable to receive vaccinations due to health issues, such as immunocompromised individuals. However, this level of effect is only possible when majority of individuals will get vaccinated. On the basis of presently accessible data, scientists predict that if 71% of the population gets vaccinated against COVID-19, herd immunity may be achieved. Most respondents were agreed to get vaccinated if their institution made mandatory to get them vaccinated. But proper information about Covid 19 vaccine should be provided rather than forced implementation of vaccine. There are several strategies available to improve COVID-19 vaccination uptake. A few of these include highlighting the seriousness of the illness, disseminating trustworthy information, teaching people about the need and effectiveness of vaccinations, and addressing and resolving doubts and incorrect beliefs. By implementing various media initiatives and employing and monitoring media properly, these goals may be quickly attained.

In a study by A Malik et al, also shows that vaccine hesitancy in healthcare workers is due to of lack of information concerning the vaccines, lack of assurance in communicating facts and information about vaccines.¹⁶

As far as we are aware, this is the first study that tried to find out how Pakistani dentists felt about the COVID-19 vaccine. The big sample size and people participation from various age groups in different living districts are the study's potential strengths. The fact that this

study was carried out at the same time as Pakistan's government began offering free COVID-19 vaccinations to the public is another benefit. The availability of vaccines indicates a more accurate and genuine view of the public's approval of the immunization program. The current study does, however, contain certain restrictions. Since a non-probability convenience sampling technique was employed in this cross-sectional study, the results cannot be applied to the full population

CONCLUSION

The present study's findings have shown that, given sufficient knowledge about the vaccine, a sizable fraction of the study group is ready to receive the vaccinated. In addition, several individuals expressed worries about the effectiveness of the vaccination and its possible side effects, both immediate and long-term. Raising public awareness of the seriousness of COVID-19, the importance of immunization, and its feasibility, safety, and efficacy is imperative. The government ought to bring together social and religious groups in order to win over the people and solve the worries of the populace. Unfortunately, not doing so will cause the herd immunization pro-gram to fail.

AUTHORS CONTRIBUTION

LK: Conception, design of work, data collection, literature review, analysis interpretation of data for work, drafting the work.

SYAA: Literature review, analysis, interpretation of data for work, drafting the work, reviewing, final approval, agreement to be accountable.

MML: Conception design of work, data collection, literature review, analysis, interpretation of data for work, reviewing.
SA: Conception, design for work, acquisition,

data collection, literature review, analysis, interpretation of data for work, drafting the work, reviewing, final approval, agreed to be accountable.

JA: Design of work, data collection analysis, interpretation of data for work, drafting the work, reviewing.

STZ: design of work, data collection, analysis, interpretation of data for work, drafting the work, reviewing

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