

**Knowledge, awareness and acceptance of Covid 19 vaccine among dental professionals across Karnataka - A Questionnaire Based Survey**

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**Abstract**

**Introduction:** Coronavirus causes illness ranging from common cold to severe acute respiratory syndrome. Covid 19 was originated from a city in China and had a significant impact on the World. Vaccines have been developed and early knowledge about vaccines may help to reduce the risk of Covid 19 infection.

**Objective:** The objective of this study was to assess knowledge, awareness and acceptance about Covid 19 vaccine among Dental Professionals.

**Methods:** The survey was prepared on an online survey portal (Google Docs) and the link was circulated through social media and e-mail among the Dental Professionals of

Karnataka via smart phones. Results: Total 409 responses, 56.3% respondents aged between 20-25 years. The majority respondents were aware of laboratories in World, India and Storage units in Karnataka. 66% of responders thought it was mandatory to be vaccinated whereas 65.1% of responders have a belief that vaccine has a side effect. 62.3% respondents relied on social media for information. The overall acceptance was seen within dental professionals about the safety measures, confident in treating the patients after the arrival of vaccine and encourages their patients to be vaccinated. Conclusion: Dental professionals were well aware of the pandemic and the vaccines. Due to lack in the sufficient information

about the efficacy of vaccines some of them were in dilemma about being vaccinated. Impact of Covid 19 has exceeded the limits and virus has spread across the world. Early and appropriate knowledge about vaccine will aid in vaccination thereby reducing risk of getting infection.

**Keywords:** Knowledge, Awareness, Acceptance, Covid 19 Vaccine.

## Introduction

COVID -19 originated in one city of China in December 2019, but in a very short span of time, it had reached almost the entire globe (WHO, 2020b). The coronavirus pandemic is threatening the civilisation and livelihoods of nearly 216 countries around the world.<sup>[1]</sup> The severe acute respiratory syndrome coronavirus 2 is the cause of COVID-19 disease (SARS-CoV-2). Animal diseases caused by coronaviruses include avian infectious bronchitis caused by the infectious bronchitis virus (IBV) and porcine transmissible gastroenteritis caused by a coronavirus.<sup>[2]</sup>

The COVID -19 pandemic has had a significant impact on countries, with governments across the world enforcing travel restrictions and other measures such as mandatory face coverings or quarantine to prevent the virus from spreading.<sup>[3]</sup> Hopes of returning back to normal are governed by availability of vaccine. Vaccine trials have shown positive outcomes, suggesting that the COVID-19 vaccine is both safe and elicits a positive immune response.<sup>[4,5]</sup> However, the success of a vaccination program will depend on rates of uptake among the population. The worldwide endeavour to create a safe and effective Covid -19 vaccine is beginning to bear fruit. A handful of vaccines now have been authorised around the world. Common man and Covid warriors are in a dilemma about getting vaccinated as high stakes vaccine rollout under spotlight amid Challenges. Who needs to be vaccinated first? Though Dentist are not the front liners

but they are advised for vaccine since Dental professionals are also at higher risk of getting infected by COVID as they directly come in contact with the patients. Dental professionals are in dilemma due to unsatisfactory knowledge about the vaccine. So this survey is design to assess the knowledge, awareness and acceptance among the dental professionals about the COVID 19 vaccine.

## Methods and materials

### A. Inclusion criteria

Dental professionals of Karnataka

### B. Questionnaire design

Development of questionnaire was based on the knowledge, awareness and acceptance of Covid 19 vaccine. The proforma consisted of general information like age, gender and consisted of 15 questions in which question number 3-5 were related to awareness about the vaccine, question number 6-12 were related to the knowledge about the vaccine, and question number 13-15 were related to the acceptance of COVID -19 vaccine.

## Results

Total of 409 responses was collected through web link. Their characteristics and a summary of their responses to the survey questions are listed in Table 1 and Table 2. In total 409 responses, 56.3% respondents were between the age group 20-25 years. Female were 57.7% of the study populations whereas 42.3% of study population was Men (Fig 1).

Fig 1: Personal Characteristics

Sn.	Personal characteristics	Level	%
1	Age	20-25 Years	56.3%
		26-30 Years	32.3%
		Above 30 Years	11.4%
2	Sex	Male	42.3%
		Female	57.7%

When asked whether they “are aware of laboratories in World, India and Storage units in Karnataka” 65.1%, 70.3% and 63.1% were aware of laboratories respectively. When population were asked about the mandatories to take vaccine, 66% of responders think it is mandatory to be vaccinated, and 16.1% of responders somewhat disagreed whereas 17.9% of responders completely disagreed.

When asked about “the mode of information regarding COVID 19 vaccine” 62.3% respondents relied on social media for information whereas 22.1% and 15.6% respondents relied on Television and Ministry of Health for vaccine information respectively. About 73.6% of respondents claimed they had been registered for COVID 19 vaccine or had been completed their first dose. About 94.8% of respondents were aware of Injectable mode of administration of vaccine. About 65.1% of responders have a belief that the vaccine has a side effect and 75.6% of responders have a belief that they will be immunized after vaccination, whereas 80.4% responders were aware of free availability of vaccine. When asked about the safety measures, 86.6% of responders completely agree to follow the safety measures even after the arrival of covid-19 vaccine. About 80.6% of responders were confident in treating the patients after the arrival of vaccine and 90.6% of responders were ready to encourage their patients to be vaccinated against covid-19 before treating them(Fig 2).

Fig 2: Descriptive statistics for items measuring Knowledge, Awareness and Acceptance about COVID-19 vaccines.

Sn.	Item	Level	%
3	Are you aware of laboratories in world that develops COVID -19 vaccines?	Yes	65.1%
		No	26%
		Maybe	8.9%

4	Are you aware of laboratories in India that works on COVID -19 vaccines?	Yes	70.3%
		No	21.3%
		Maybe	8.4%
5	Are you aware of storage units for COVID-19 vaccine in Karnataka?	Yes	63.1%
		No	27.2%
		Maybe	9.7%
6	Do you think it is mandatory to take vaccine?	Yes	66%
		No	17.9%
		Maybe	16.1%
7	What is your mode of information about covid-19 vaccine?	Television	22.1%
		Social media	62.3%
		Ministry of Health	15.6%
8	Have you registered for COVID -19 vaccinations or completed the first dose ?	Yes	73.6%
		No	26.4%
9	Do you know the mode of administration of Covid 19 vaccines?	Orally	-
		Injected	94.8%
		Nasal	-
		None	5.2%
10	Do you think there is side effect of Covid -19 vaccines?	Yes	65.1%
		No	19.7%
		Maybe	15.2%
11	Do you think you will be immunized after being vaccinated?	Yes	75.6%
		No	24.4%
12	Are you aware of availability of covid-19 vaccine?	Free	80.4%

## Discussion

WHO stated that vaccination is an easy, safe and effective way to protect people from harmful illnesses before they come into contact. It uses the body's natural defences to build resistance to certain infections and strengthen the immune system. The vaccine trains the immune system to produce antibodies, just as it does when exposed to illness. However, vaccines contain only dead or weakened forms of microorganisms, such as viruses and bacteria, so they do not induce disease or risk complications. The first vaccine against smallpox was developed by the British physician Edward Jenner in 1796, a disease that has killed millions of people for centuries. It was derived from the benign smallpox virus that provides immunity against smallpox. In 1980, after a historic global surveillance and vaccination campaign, the World Health Assembly declared the eradication of smallpox.<sup>[6]</sup> Following Jenner's model, scientists created new vaccines to combat a variety of deadly diseases in the nineteenth and twentieth centuries, including polio, whooping cough, measles, tetanus, yellow fever, typhus, rubella mumps, varicella, and hepatitis B, many others.<sup>[7]</sup> Dealing with the Covid 19 virus for more than past 1 year now the World is blessed with the vaccines. In India, Covaxin and Covisheild are on-going vaccines against the Covid 19 virus.

COVAXIN is the Bharat Biotech COVID-19 Vaccine; according to the company, it has been developed by using inactivated/killed virus along with the aforementioned chemicals. COVAXIN contains 6µg of whole-virion inactivated SARSCoV-2 antigen (Strain: NIV-2020-770), and the other inactive ingredients such as aluminum hydroxide gel (250 µg), TLR 7/8 agonist (imidazoquinolone) 15 µg, 2-phenoxyethanol 2.5 mg, and phosphate ® buffer saline up to 0.5 ml. COVISHIELD™ is developed under Serum Institute of India Pvt. Ltd. (SIPL); it is developed from weakened

version of chimpanzee's common cold virus called adenovirus- ChAdOx1, it has been modified to enable it to carry the Corona virus spike protein into the cells of humans. It contains L-Histidine, L-Histidine hydrochloride monohydrate, Magnesium chloride hexahydrate, Polysorbate 80, Ethanol, Sucrose, Sodium chloride, Disodium edetate dihydrate (EDTA), Water for injection. Media plays an important role in providing information about development and availability of vaccines as whenever there is an epidemic; people prefer to look to the media for updates. Media has provided information that pertains to WHO or CDC guidelines. It has encouraged and appreciated the workforces that are trying to fight against the disease.

In this survey the participants were well aware of the laboratories present in World as well as in India. Around 66% of responders thought that being vaccinated was mandatory whereas other disagreed due to lack of knowledge about the immunology of vaccine. This goes on the similar grounds with the study conducted by Ashwatha Pratha and Geetha on the awareness of Hepatitis-B vaccination among Dental students and observed that 45% of the students were vaccinated.<sup>[8]</sup> Also, Setia et al conducted a study in which 87% were aware of needle stick injury as a mode of transmission of Hepatitis-B in dentists and 88% of the dental students were vaccinated.<sup>[9]</sup>

About 62.3% respondents relied on social media for information. A study conducted by Biasio et al reported that sources of information about Covid 19 Vaccine was most frequently used by respondents were internet (72%), social media (47%), and TV (49%), followed by journal-newspapers (31%) and radio (11%).<sup>[10]</sup> As social media provided adequate information about the Covid 19 vaccines, as a result of which 73.6% of respondents have registered for COVID 19 vaccine or have received their

first dose. About 65.1% of responders have a belief that the vaccine has a side effect due to lack in the evidence of efficacy of vaccine whereas 75.6% of responders have a belief that they will be immunized after vaccination. Kreps et al conducted a survey study and found that a small but significant increases in vaccine acceptance was seen with increases in efficacy and reduced acceptance with increases in a serious adverse reaction.<sup>[11]</sup>

Being in dilemma about the effectiveness of vaccine, about 86.6% of responders completely agreed to follow the safety measures even after the arrival of covid-19 vaccine. About 80.6% of responders were confident in treating the patients after the arrival of vaccine and 90.6% of responders were ready to encourage their patients to be vaccinated against covid-19 before treating them.

### Conclusion

The impact of the COVID-19 pandemic has far exceeded the initial estimations. The virus has spread across the world, and the inflection point has yet to be reached, indicating that transmission will continue to occur unless the virus is firmly controlled. As the vaccines have been invented, it's better to get vaccinated. Post vaccination the recovery rate of Covid has increased and risk level has also gone down the scale. Vaccination awareness has been broaden through media across the world thereby educating people. Early knowledge about vaccine will aid in vaccination thereby reducing the risk of getting infected by Covid 19.

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