

# **A Study to Assess the Knowledge, Opinion, and Potential Acceptance of COVID - 19 Vaccines among the Public**

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## **ABSTRACT**

### **Background**

The pandemic of COVID-19 continues to grow all over the world. At present COVID – 19 vaccine provides the finest anticipation to control the pandemic of COVID- 19. Currently, different types of vaccines are available to control Caronavirus disease. Nevertheless, to check the effectiveness and accuracy of vaccines, people need to be accepted to take the vaccine. The objective of this study is to assess the awareness, opinion, and acceptance of the COVID – 19 disease vaccines.

### **Materials and methods**

An online-based cross-sectional design was conducted. The sample size was 156 who were aged above 18 years. These samples were chosen by using the snow ball sampling technique. The measurement scale was sent on WhatsApp of the participants by using google form. A total of 156 samples have responded to questionnaires. A panel of experts was involved for validation. The measurement scale had mainly evaluated the knowledge, opinion, and acceptance of the participants to the COVID -19 vaccine. The data was analyzed by checking the frequency and percentages, and standard deviation.

### **Results**

Approximately 58 % to 82% of participants were aware of actual symptoms of COVID -19, nearly 72 % to 90 % of participants answered that COVID -19 infection is transmitted by inhalation of respiratory droplets of an infected person and taking uncleaned food and water. In addition to the above results, the majority of the participants aware of wearing a mask, keeping social distance, and frequent sanitization can reduce the contraction of COVID -19 infection. Unpredictably 64.10 % of samples were not willing to take COVID - 19 vaccine while 42.95 % of subjects said they don't even suggest their friends and relatives take this vaccine.

### **Conclusion:**

The results of this study showed that people are having good knowledge about causes, symptoms, and mode of transmission of COVID - 19 infection. However, there are fewer chances for the uptake of the COVID -19 vaccine by people. The public needs to be educated about the working nature of the vaccine.

### **Keywords**

Knowledge, opinion, potential acceptance, COVID-19 vaccine.

## **Introduction**

Coronaviruses belong to a large family of viruses that causes various illness in humans ranging from the common cold to severe acute respiratory syndrome. It is transmitted from one person to another by small droplets from the nose or mouth, which are expelled by a person with COVID-19 coughs, sneezes, or speaks. These droplets are moderately thick, do not travel far, and quickly sink to the ground. As per the research statistics till now, comorbid patients are likely to be infected easily than other patients.<sup>1</sup>

In addition to the above, globally there is a huge impact on the economic burden all over the world. Due to this many employees lost their jobs. These impacts enforced the government to encourage pharmaceutical companies to produce the vaccine urgently. Currently, the vaccine against COVID-19 developed in several countries.<sup>2</sup>

The immunity developed by the COVID -19 vaccine helps people to reduce the risk of emergence of illness due to COVID - 19. This immunity is useful to protect the people in contracting with COVID - 19 infection, due to this, the spreading of infection to another individual will be reduced. The action of the COVID-19 vaccine is to make the immune system recognize and block the virus that is responsible to cause COVID - 19.<sup>3</sup>

For the development of the COVID -19 vaccines, WHO had ensured the quality, safety, and efficacy. WHO has provided permission to the pharmaceutical companies to release the vaccine only after ensuring the multi-stage testing comprising phase III trials which includes testing on 10000 people to recognize the usual side effects.<sup>4</sup>

A sequence of independent reviews of efficacy and safety is required to be conducted after clinical trials of COVID - 19. Nevertheless, people are uncertain about the efficacy and safety of the COVID - 19 vaccines as a few cases reported with COVID - 19 infection after vaccination, apart from this some people have developed side effects.<sup>5</sup>

Globally, the majority of the people are reluctant, show an unwillingness to take COVID - 19 vaccine. The reasons for vaccine refusal are doubtful about the efficacy of vaccine and fear about the side effects of vaccine-associated

with neurological problems, brain damage, autism, etc. To the best of investigators' knowledge, adequate studies are not conducted on the opinion and acceptance of the public for the COVID - 19 vaccine. The current study aims to assess the opinion and acceptance of the people regarding COVID - 19.<sup>6</sup>

## Materials and Methods

A web-based survey was conducted by adopting a cross-sectional research design. The sample enrolled in this study were from Pune and they are aged above 18 years. The tool was prepared by using google forms and links were shared with the subjects through WhatsApp. For the selection of samples, the snowball sampling technique was used. A total of 156 samples have responded to questionnaires. The subject's participation in this study was voluntary and confidentiality of the subjects was ensured by collecting the responses on the individual mail id of the investigator.

The evaluation questionnaire was developed based review of the literature. Content validity for this questionnaire was done by a panel of experts. This questionnaire was developed in Marathi and English languages. A pilot study was conducted on 15 samples to check the feasibility of the study. No major modifications were required in the tool after the conduct of the pilot study.

The tool consisted of three sections, section I included demographic information, such as age, educational qualification, occupation, religion, and income. While the second section included an opinion of the participants regarding the COVID - 19 vaccines and section three comprised the potential acceptance for the COVID - 19 vaccines.

## Calculation of Sample Size

The sample size was calculated using the Kish formula with a confidence interval level of 95% and a 4% margin for error. The expected sample was 156.

The data was analyzed by checking the frequency and percentages, and standard deviation.

## RESULTS

**Table 1. Distribution of the Participants Based on their Demographic Variables**

Demographic Variable	f	%
<b>Age</b>		
18-29	61	39.10
30-40	67	42.95
41-50	14	8.97
51-60	14	8.97
More than 60 years	0	0
<b>Gender</b>		
Male	86	55.13
Female	70	44.87
<b>Educational Qualification</b>		
Profession or Honours	56	35.90
Graduate or postgraduate	100	64.10
<b>Occupation</b>		
Profession	58	37.18
Semi-Profession	57	36.54
Clerical, Shop-owner, Farmer	17	10.90
Skilled worker	24	15.38
<b>Family Income per month</b>		
≥36017	140	89.74
18000-36016	16	10.26
<b>Religion</b>		
Hindu	90	57.69
Muslim	44	28.21
Christian	22	14.10
<b>Are you suffering from</b>		

<b>comorbid conditions?</b>		
Hypertension	24	15.38
Diabetes	36	23.08
Hypertension and Diabetes	34	21.79

**Table 2- Distribution of the samples on knowledge regarding COVID - 19:**

<b>What are the symptoms of COVID - 19 infection</b>	<b>f</b>	<b>%</b>
Cold and cough	89	57.05
Fever with chills	122	78.21
Diarrhea	60	38.46
Loss of smell and taste	128	82.05
<b>How is COVID - 19 infection is transmitted</b>		
Inhalation of respiratory droplets of an infected person	112	71.79
Drinking uncleaned water	133	85.26
Drinking uncleaned food	140	89.74
<b>What are the precautionary measures to prevent the contract of COVID - 19 infection</b>		
Wearing mask	132	84.62
Washing hands after each surface touch	144	92.31
Maintaining social distance	149	95.51
Frequent sanitization of hands	112	71.79

**Table 3- Opinion regarding COVID -19 vaccine**

<b>S.No</b>	<b>Opinion</b>		<b>f</b>	<b>%</b>
1.	COVID - 19 vaccine is clinically safe	Yes	54	34.62
		No	102	65.38
2.	COVID - 19 vaccine is clinically effective	Yes	34	21.79
		No	122	78.21
3.	Confused about the accuracy of the COVID - 19 vaccine	Yes	89	57.05
		No	67	42.95
4.	There is a low risk of contracting COVID - 19 infection if we take the vaccine	Yes	56	35.90
		No	100	64.10
5.	I am scared to take COVID - 19 vaccine due to its potential side effects.	Yes	93	59.62
		No	63	40.38
6.	The vaccine may cause fertility	Yes	82	52.56
		No	74	47.44
7.	I don't think my immune system can afford a vaccine	Yes	63	40.38
		No	93	59.62
8.	I don't require it because I believe in God	Yes	76	48.72
		No	80	51.28
9.	I don't take this vaccine because it acts like a foreign	Yes	76	48.72
		No	80	51.28
10.	This vaccine not trustworthy	Yes	32	20.51
		No	124	79.49
11.	This vaccine is produced quickly due to political pressure	Yes	78	50.00

		No	78	50.00
12.	I cannot believe the pharmaceutical companies who produced vaccine	Yes	87	55.77
		No	69	44.23
13.	If a vaccine is available to you, are you willing to take the vaccine	Yes	56	35.90
		No	100	64.10
14.	Would you suggest your friends take COVID - 19 vaccine	Yes	89	57.05
		No	67	42.95

## Discussion

The current study surveyed the knowledge, opinion, and acceptance of the general public for COVID -19 vaccine. About 60.26 % of participants have been suffering from comorbidities includes hypertension and diabetes

Approximately 58 % to 82% of participants were aware of symptoms of COVID -19, nearly 72 % to 90 % of participants answered that COVID - 19 infection is transmitted by inhalation of respiratory droplets of an infected person and taking uncleaned food and water. In addition to the above results, 72 % to 96 % of participants aware of wearing a mask, and keeping social distance and frequent sanitization can reduce the contraction of COVID - 19 infection. A study conducted by Mannan et al on Knowledge and attitude towards COVID-19 Vaccine. The results observed that around 85 % to 96 people of the subjects were known about the symptoms of COVID -19 while 89 % to 98 % of subjects aware of the factors responsible for the transfer of COVID- 19.<sup>7</sup>

In the current study, in the context of opinion and acceptance to COVID - 19 vaccine, 65% and 78 % of participants stated vaccine is clinically not safe and effective. While 89 % of subjects were confused about whether to take the vaccine or not. 40 % of the participants were scared to take the vaccine by assuming potential side effects of the vaccine. Surprisingly about 52.56 % of subjects mentioned that COVID - 19 vaccine might weaken fertility. Nearly 49 % of the sample stated that they don't want to take the vaccine because they think this vaccine produces foreign toxins in their body. Unexpectedly, 79.49 of participants believed that these vaccines are not trustworthy, while 78 % of subjects stated that this vaccine is produced quickly due to political pressures. Unpredictably 64.10 % of samples were not willing to take COVID - 19 vaccine while 42.95 % of subjects said they don't even suggest their friends and relatives take this vaccine. A study conducted by Qerem et al study results showed that nearly 83 % of the subjects were concerned about the efficacy and effect of the vaccine. About 37 % of the participants state that they never wanted to take the COVID- 19 vaccines.

## Conclusion

The results of this study showed that people are having good knowledge about causes, symptoms, and mode of transmission of COVID - 19 infection. However, there are fewer chances for the uptake of the COVID -19 vaccine by the participant. The causes for the subject's resistance to vaccines were concerns about the efficacy, side effects of the vaccine. Conducting various awareness programs for the public might be useful to provide adequate information about the working nature of the vaccine.

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**Conflict of Interest:** Nil

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