

Original Research Article

Awareness on COVID 19 vaccination among public: a questionnaire surveys

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ABSTRACT

Background: Coronavirus disease 2019 or Coronavirus disease 2019 (COVID-19) is caused by a newly discovered coronavirus, Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) become the major threat to public health. Several vaccines have been approved for use against coronavirus disease and distributed globally in different regions. Thus, the study aimed to assess the knowledge, attitudes and awareness towards COVID-19 vaccination among the general population in Chengalpet district, Tamil nadu.

Methods: A cross sectional study was conducted in the year of 2021 from department of Public Health Dentistry, among 274 participants who are residing in Chengalpet district. Study approval is being obtained from Institutional Scientific Review Board Asan Memorial Dental College and Hospital. People above 18 years of age were included in the study. Self administered validated questionnaire which consists of data on demographic profile followed by assessing COVID-19 related information, acceptance, attitude and awareness on COVID-19 vaccine were assessed.

Results: A questionnaire survey was conducted among N=274 adults, aged above 18 years, in the present study, n=142 (51.8%) were male and n=132 (48.2%) were female. The majority of n=225 (82.1%) participants showed good knowledge, awareness and attitude towards covid-19 vaccine and almost n=210 (76.6%) were willing to take the vaccine without hesitation. Although maximum respondents demonstrated a good level of knowledge and acceptance, significant differences were observed across gender.

Conclusions: The findings reflect satisfactory knowledge and positive attitudes towards COVID-19 vaccine among the general population. Awareness campaigns, feedback from vaccinated individuals about the safety will encourage the COVID-19 vaccine acceptance.

Keywords: COVID-19, Coronavirus, Vaccination, Pandemic

INTRODUCTION

The Coronavirus disease 2019 (COVID-19) pandemic the ongoing global pandemic became the greatest challenge of pandemic history, which humans have been ever faced. Severe acute respiratory syndrome corona virus 2 (SARS-CoV-2) is the causative virus for the corona virus disease 2019 (COVID-19). SARS-CoV-2 first emerged in late 2019 in Wuhan (Hubei, China) and hastily become a

global threat affecting entire global population. The virus had infected over 239.6 million people worldwide, and the number of deaths had toll more than 4.8 million (October 2021).

From various studies by epidemiologist, the virus will continue to rage further across the globe, raising the death tolls day by day. The ground strategy followed by most countries around the world was to reduce the

transmissibility of the disease, often by non-pharmaceutical interventions (NPIs), including enforcing masks policy, hands sanitization, social distancing, travel restrictions, schools closure, and partial or complete lockdowns.¹ People are desperate to get rid of this pandemic and mass vaccination seems to be a promising measure.

Vaccines are one of the most reliable and cost-effective public health intervention ever implemented that are saving millions of lives each year.¹ In such situations, acquiring immunity against the virus becomes essential. Immunity can be acquired in two ways, either naturally or through vaccine. In the current pandemic, the role of safe and effective COVID-19 vaccine will be very vital in the fight against COVID-19.²

More than 1000 million doses of COVID 19 Vaccines have been administered in India, Covishield and Covaxin have been administered more commonly in India. Despite immense efforts made to develop a safe and effective vaccine, people are hesitant to accept the vaccine. Arrival of any vaccine confronts plenty of issues. Vaccine acceptance is a social tool which plays an important role for advent, implementation and continuation of any vaccination programme.² The study is conducted with the objective to find the awareness about COVID-19 vaccine and acceptance among general population in Chengalpet district, Tamil Nadu.

METHODS

A cross sectional study was conducted in the year of 2021 from department of Public Health Dentistry, Asan

Memorial Dental College and Hospital. A total number of N=274 people are participated in the study. Sample size was estimated using Epi Info based on the vaccine acceptance data in the study conducted by Tarnam in Jordan.¹ Prior the start of study approval is being obtained from Institutional Scientific Review Board Asan Memorial Dental College and Hospital. The participants were general population who are residing at Chengalpet district. People above 18 years of age willing to participate were included in the study, people with mental disturbances were excluded.

Survey instrument consist of self administered validated questionnaire which consist of data on demographic profile followed by assessing COVID-19 related information, acceptance of COVID-19 vaccine, attitude towards COVID-19 vaccine and awareness on COVID-19 vaccine. The questionnaire was in the form of closed-ended questions with yes, no and not sure options.

Statistical analysis was carried out by Statistical package for social sciences (SPSS) version 23 to compute the frequencies and to compare the attitude towards the COVID-19 vaccine across the gender using chi-square test.

RESULTS

A cross-sectional study was conducted to assess the knowledge and awareness towards COVID19 vaccination among adults in Chengalpet district. N=274 adults aged more than 18 years participated in the present study, n=142 (51.8%) were male and n=132 (48.2%) were female.

Table 1: Knowledge about COVID19 vaccination among the study population.

S. no.	Question	Yes*		No*	
		N	%	N	%
1	Is COVID-19 caused by Corona virus?	246	89.8	28	10.2
2	Did you know only above 18 years old are eligible to take vaccine?	225	82.1	49	17.9
3	Is Covishield and Covaxin are the only vaccines available in India for COVID-19?	150	54.7	124	45.3
4	Are fever, fatigue and muscle pain are the common side effects of COVID-19 vaccine?	234	85.4	40	14.6
5	Can a person recovered from COVID-19 are eligible to take vaccine?	227	82.8	47	17.2
6	Do I have choice to choose my vaccine?	192	70.1	82	29.9
7	Can a vaccinated person be freed from wearing mask and continuing safety measures?	83	30.3	191	69.7
8	Are you willing to take COVID-19 vaccine?	210	76.6	64	23.4

*- Chi-square test value – 131.46, (p<0.05 – statistically significant).

Table 1 shows the study population's overall knowledge of the COVID-19 vaccine. Around N=274 adults participated in the survey, out of which n=246 (89%) are aware that corona virus causes covid-19 disease. Approximately n=225 (82.1 %) of participants are aware that 18-year-olds are eligible to receive the vaccine and

n=150 (54.7%) people believe that the only vaccines available in India are Covishield and Covaxin. Whereas n=234 (84.5%) people know that COVID-19 vaccine will causes side effects, such as fever, fatigue, and muscle pain. Among all the participants, n=227 (82.8%) participants responded that COVID-19 vaccine can be

administered to COVID-19 recovered individuals, and n=194 (70.1%) of the participants believe they can choose their vaccine, while n=82 (29.9%) believe they don't have a choice of vaccines. A total of n=191 (69.7%) of those responded to the survey are aware that it is unsafe to

remove masks and also continue to follow the safety measures after receiving vaccination. Among all the participants of the survey n=210 (76.6%) are willing to administer the COVID-19 vaccine while n=64 (23.4%) shows hesitancy towards it.

Table 2: Attitude towards COVID 19 vaccination among the study population.

S. no	Question	Yes		No		Not Sure	
		N	%	N	%	N	%
1	Can COVID-19 vaccine prevent COVID-19 disease?	104	38	46	16.8	124	45.3
2	Are Covishield and Covaxin are equally effective?	127	46.4	38	13.9	109	39.8
3	Are you completely protected from COVID-19 after vaccination?	74	27	79	28.8	121	44.2
4	Is it safe to take COVID-19 vaccine if the person is COVID-19 currently positive?	30	10.9	113	41.2	131	47.8
5	Can COVID-19 spread from person who had taken vaccination?	108	39.4	42	15.3	124	45.3

*- Chi-square test value – 131.46, (p<0.05 – statistically significant)

Table 3: Comparison of knowledge about COVID-19 vaccination across gender.

Question	Gender*	Yes*		No*		Chi-square value	Df	P value
		N	%	N	%			
Is COVID-19 caused by Corona virus?	Male	136	95.8	6	4.2	11.54	1	0.001
	Female	110	83.3	22	16.7			
Did you know only above 18 years old are eligible to take vaccine?	Male	126	88.7	16	11.3	8.78		0.003
	Female	99	75.0	33	25.0			
Is Covishield and Covaxin are the only vaccines available in India for COVID-19?	Male	104	73.2	38	26.8	40.69		0.00
	Female	46	34.8	86	65.2			
Are fever, fatigue and muscle pain are the common side effects of COVID-19 vaccine?	Male	137	96.5	5	3.5	29.01		0.00
	Female	97	73.5	35	26.5			
Can a person recovered from COVID-19 are eligible to take vaccine?	Male	124	87.3	18	12.7	4.15	1	0.04
	Female	103	78.0	29	22.0			
Do I have choice to choose my vaccine?	Male	126	88.7	16	11.3	48.96		0.00
	Female	66	50	66	50			
Can a vaccinated person be freed from wearing mask and continuing safety measures?	Male	43	30.3	99	69.7	1.26		0.99
	Female	40	30.3	92	69.7			
Are you willing to take COVID-19 vaccine?	Male	118	83.1	24	16.9	6.86		0.009
	Female	92	69.7	40	30.3			

*- Chi-square test, (p<0.05 – statistically significant).

According to Table 2, which assesses the study population's attitude toward COVID 19 vaccination, n=104 (38%) believe that the covid-19 vaccine can prevent covid-19 disease, while n=124 (45.3%) were unsure. According to n=127 (46.4 percent) the vaccines - Covishield and Covaxin are equally effective. From the study participants n=74 (27%) people believe that covid-19 vaccine will provide complete protection against covid-19 disease, while n=121 (44.2%) are unsure. Furthermore, n=131 (47.8%) of people are unsure whether it is safe to administer the covid-19 vaccine to an infected person. N=124 (45.3%) people are skeptical that COVID-19 can be transmitted from a vaccinated person.

Table 3 represents differences of opinions about covid-19 vaccines between men and women. When comparing the knowledge about the COVID-19 vaccines among males and females, male population shows more knowledge than females about the causation of disease, eligibility of vaccine, common side effects of vaccine, information about the administration of vaccine for a recovered person, about following safety measures after receiving vaccine and willingness towards vaccine. Whereas n=86 (65.2 %) females have a good knowledge about the availability of other vaccines in India comparing males n=38 (26.8%) which have poor knowledge. All the above findings showed statistically significant result.

Table 4: Comparison of attitude towards COVID 19 Vaccine across gender.

S. no.	Question	Gender*	Yes*		No*		Not Sure*		Chi-square value	Df	P value
			N	%	N	%	N	%			
1	Can COVID-19 vaccine prevent COVID-19 disease?	Male	65	45.8	20	14.1	57	40.1	7.73	2	0.021
		Female	39	29.5	26	19.7	67	50.8			
2	Are Covishield and Covaxin are equally effective?	Male	70	49.3	19	13.4	53	37.3	1.05	2	0.592
		Female	57	43.2	19	14.4	56	42.4			
3	Are you completely protected from COVID-19 after vaccination?	Male	43	30.3	50	35.2	49	34.5	11.55	2	0.003
		Female	31	23.5	29	22.0	72	54.5			
4	Is it safe to take COVID-19 vaccine if the person is COVID-19 currently positive?	Male	14	9.9	75	52.8	53	37.3	16.67	2	0.00
		Female	16	12.1	38	28.8	78	59.1			
5	Can COVID-19 spread from person who had taken vaccination?	Male	75	52.8	19	13.4	48	33.8	22.70	2	0.00
		Female	33	25.0	23	17.4	76	57.6			

*- Chi-square test, ($p < 0.05$ – statistically significant)

Table 4 represents the attitude towards the COVID-19 vaccine between genders. When comparing the attitude between males and females, male population showed more positive attitude than females towards COVID-19 vaccines while responding to COVID-19 vaccines ability to prevent the disease, immunity from COVID-19 vaccine, safety of taking vaccine for infected person and possibility of spreading the disease from vaccine recipient. All this above results showed statistically significant results. Both males and females showed positive attitude while asking the equal effectiveness between the variants of vaccines that are available now in India.

DISCUSSION

The success of COVID-19 vaccination drive depends on the acceptance of the vaccine among the general population. It is important to find the vaccine acceptance. Following a systematic methods, we have developed a self validated questionnaire to assess and evaluate. The questionnaire will enable us to interpret vaccine acceptance, assessing the knowledge and attitude related to the COVID-19 vaccine. In this questionnaire, the knowledge of people regarding the COVID-19 vaccine was assessed by asking various questions related to cause of disease, eligibility of different population groups and types of vaccine available, within which the vaccine could provide protective immunity against the virus. Along with this, the attitude of people towards the vaccine was assessed by interpreting their willingness to get vaccinated. The willingness among male and female population to receive vaccines are compared.

According to Kumari et al participants had a fair idea about the eligibility of different target groups for the vaccination as nearly three-fourths of the participants knew that adults aged over 18 years (78.11%) and recovered COVID patients (75.12%) were eligible for the

vaccine. Majority of the participants were willing to get vaccinated (59.21%) by comparing with our study $n=210$ (76.6%) willing to take vaccine and $n=227$ (82.8%) knew covid-19 recovered patients are eligible for the vaccine. Which shows the participants in our study also aware of vaccination eligibility and majority are willing to take the vaccine. This study conducted by Kumari et al support our study.⁶

According to Marwa et al the majority of the participants (94%) agreed that the vaccine is not for people less than 18 years of age. The majority of the participants (86.5%) said that those recovering from corona virus can receive the vaccine after approximately 3 months. 91.9% knew that the current infection with corona virus is one of the main contraindications to vaccination. The majority of the participants (88%) answered that they will take the vaccine if available. 93% believed that the vaccine will eradicate the coronavirus pandemic and 96% answered that the vaccine is the best way to protect against the coronavirus and its complications. The majority of the participants (82.8%) knew that it is necessary to wear masks after taking the coronavirus vaccine. Comparing with our study $n=225$ (82.1%) knows vaccine is available above 18 year age. The average participants $n=104$ (38%) says covid-19 vaccination can prevent COVID-19 disease and $n=191$ (69.7%) knew that it is necessary to continue safety measure after taking vaccine. This study by Marwa et.al supports our study.⁷

According to Islam et al the majority of participants (78%) showed positive attitude towards COVID-19 vaccine. Knowledge regarding COVID-19 vaccinations was not significant in terms of participants' gender. The mean score of attitudes was significantly higher among participants, with an overall correct rate of 57%. Of particular interest is that only about a quarter of participants (26%) regard the current COVID-19 vaccine in Bangladesh as safe, almost 60% would have the

vaccine without hesitation. In addition, most participants believed that the newly discovered COVID-19 vaccine may have side effects (89%). Comparing our study knowledge regarding COVID-19 vaccination was significant in terms of participants' gender. The majority of 82% participants showed positive attitude towards COVID-19 vaccine and almost n=210 (76%) would have the vaccine without hesitation. These study by Islam et.al our study except the significance of knowledge regarding vaccine in terms of participants' gender.⁸

According to Suresh et al significant difference was documented for the knowledge level vis-à-vis the demographical variables of age, marital status, education status, and occupation category. Overall, two out of ten exhibited poor knowledge level. This was associated more with the participants of the feminine gender, young age (18–29), lesser education status, students' category and those dwelling in the rural area. Seven out of ten responded that they will take the COVID-19 vaccine, while one out of ten disagreed, and two out of ten chose neither. One fourth of the respondents chose neither to agree nor disagree about the safety of the vaccines. However, 65 % seconded that the vaccines were safe to use while 8% voiced the other way. Though 70% respondents agreed to get vaccinated, 20 % opted neither to agree nor disagree about taking the vaccine. The acceptance score significantly ($p < 0.05$) differed among the gender and state category, while the difference was insignificant across other variables. Around 9 out of 10 exhibited positive acceptance level. Comparatively greater negative acceptance level was evident among the females, more aged (30–49), married, highly educated (Ph.D.), healthcare workers, and urban area dwellers. Comparing with our study the negative response was more evident among female participants rather than males. Overall n=246 (89.8%) showed good level of knowledge towards COVID-19 vaccine and n=92 (69.7%) of female showed willingness to take vaccine where n=40 (30%) disagree about taking vaccine. About n=118 (83.2%) male agreed to take vaccine n=24 (16.9%) disagreed. Comparatively females showed greater negative response and attitude towards the vaccine than males. This study by Suresh et al supports our study when comparing the knowledge and acceptance of the vaccines across gender.⁹ According to Sharun et al, among the study population, 55% believed that the COVID-19 vaccination will be safe while only 46.2% believed that it will be effective. In addition to that, participants also expressed uncertainty regarding the safety (38.5%) and effectiveness (45%) of COVID-19 vaccination whenever available. However, the majority agreed (68.1%) to the fact that vaccination is the best way to avoid the complications of COVID-19. Among the study population, 86.3% were planning to get COVID-19 vaccination whenever it is available while the remaining participants (13.7%) were not intending to get vaccinated. Comparing our study n=104 (38%) believed the effectiveness of vaccine. Among n=124 (45.3%) are not sure about the safety and effectiveness of COVID-19

vaccine. About n=210 (76.6%) agreed to get COVID-19 vaccination. This study conducted by Sharun et.al supports our study.¹⁰

CONCLUSION

The COVID-19 pandemic continues to challenge the lives of global population; the COVID-19 vaccine seems to be a promising measure to eradicate the pandemic. The present study reveals that majority population showed satisfactory knowledge regarding coronavirus and its vaccine and 76% of participants showed acceptance and willingness of vaccine. Despite adequate knowledge and acceptance, more than 20% of participants showed hesitancy towards vaccine. Although maximum respondents demonstrated a good level of knowledge 82% and acceptance, significant differences were observed among gender where males showed more acceptance than females. The results suggest that more emphasis should be placed on people with lower socioeconomic status, less educated and women. Awareness campaigns, feedback from vaccinated individuals about the safety will encourage the covid-19 vaccine acceptance.

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