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Original Research Article

Knowledge, Attitude, Practice and concerns Regarding COVID 19 Vaccine: A Cross Sectional Web-Based Survey

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Abstract

Background: India is one of the fastest vaccination drives in the world which is globally acknowledged for its well-structured immunization program with high vaccination coverage include technical guidance to the government of India in all areas of the pandemic response. This study determined the knowledge, attitudes, practice and concerns regarding COVID-19 vaccine and assess key areas for vaccination programme.
Method: A web based cross-sectional survey was conducted from 1st to 30 December 2021. The study sample size was estimated at 388 at 50% response distribution. A validated KAPC questionnaire set up via Google Forms and access link was then shared via online platforms. The volunteering participants in this survey submitted completed questionnaire and simple descriptive analyses, including frequencies and percentages were computed by using SPSS software version 21.
Results: The demographic findings of this study showed that major participants were from upper class (66.4%), graduated (76.9%) and from urban area (71.4%). About 17.6% respondents showed their fear about the fast progression of vaccine, while 79.6 % participants showed willingness to take vaccine and only 7.6% participants concerned about serious side effects after taking vaccination.
Conclusion: Community participation for effective vaccination programme can be possible with right knowledge for taking informed decision which includes clear, accurate, consistent strategic communication.

Keywords: Covid-19 vaccine, KAPC, Web-based

Introduction

The world has faced a pandemic caused by SARS-CoV-2, a strain of Corona viruses, which

affected people in several ways [1]. To fight the virus, vaccines were developed and vaccination was initiated. It began on January 16, 2021 and has continued to this day [2].
Significant variation among all the groups was found regarding acquisition of higher immunity following infection rather by preventive measure, safety, mandatory vaccination programme by government and public health protection following government guidelines [2]. The lack of knowledge and awareness about the vaccine are the factors preventing them from accepting the vaccine for their bodies [2]. Possible doubts that people face include adverse effects and the safety of vaccines. This is exaggerated more when misinformation/disinformation by various media creates confusion among people regarding their knowledge of CoVID-19 [3]. It is the prime duty of leaders to address these issues not only in India but also worldwide in order to cultivate the minds of people to accept this vaccine [4]. The government has made it easy for people to get vaccination centers by online registration on their apps like MyGov.in and CoWIN. After each vaccination is done, they get a certificate of vaccination. The fully vaccinated certificate is useful as a proof of CoVID-19 Vaccination [5].
A total of 11,811,627,599 (approximately 11.8 billion) vaccine doses are administered worldwide in 2022 [6]. In India, 64% of the population is fully vaccinated (taken 2 doses in a gap), 73.2% are partially vaccinated and 2.3% have taken the booster dose [7]. The commencement of this study will give an idea of the public's knowledge, acceptance, and perception regarding the CoVID-19 Vaccine in India [1]. The results of the study will be useful for the government in their efforts to vaccinate people and also for study purposes [1].

Methodology

This web based cross-sectional survey was conducted from Sangli district, Maharashtra, India for the period one month from 1st to 30 December 2021. The study sample size was estimated at a margin of error of 5%, a 95% confidence interval (CI) and a population size of 388 at a 50% response distribution. A KAPC questionnaire which was developed and validated from A Kumari *et al*. [8] and then set up via Google Forms. The access link was then shared via online platforms initiated by all project members without changing language and meaning of the questionnaire. The sharing was escalated by our family members, friends, colleagues, and acquaintances. The inclusion criteria for respondents include those more than 18 years old, and an understanding of English and Marathi language. The respondents were requested to take part in the survey by completing the questionnaire without any time restrictions. Reliability measurement was tested earlier on 50 respondents for both the English and Marathi version of the questionnaire.
The questionnaire consists of two sections: Section A on demographic and COVID-19 vaccine status and Section B on the knowledge, attitude, practice and concerns regarding COVID-19 vaccine. In section B participants were given three options: eligible, not eligible and do not know to judge the knowledge. Section B also consists of questions on the willingness to take the vaccine, reason, cost of the vaccine and factors influencing the decision which reflects attitude towards taking vaccine. In the last section of questionnaire, five options were given (strongly agree, agree, neutral, disagree and strongly disagree) for perceived susceptibility and barriers.
The subjects consented to participate in this survey by volunteering to complete and submitted the questionnaire. Simple descriptive analyses, including frequencies and percentages were computed by using SPSS software version 21.

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Results and discussion

Section A: Sociodemographic profile of the population under study

1. Socio-economic status	**Classes**	**People(n)**
	I (>22,000/-)	60.2% (234)
	II (11,000-22000/-)	9.3% (36)
	III (6,600-11,000/-)	11.1% (43)
	IV (3,300-6,600/-)	3.7% (14)
	V (<3,300/-)	15.7% (61)
2. Education	Education	People
	Secondary	1.8%(7)
	Higher Secondary	11.1% (43)
	Graduation	76.9% (298)
	Post-Graduation	10.2% (40)
3. Gender	Male	63.9%(247)
	Female	36.1%(141)
4. Residence	Urban	74.1%(287)
	Rural	25.9%(101)
Have you taken COVID-19 Vaccination?	**Responses**	
Yes (first dose)	4.6% (18)	
Yes (both doses)	94.4% (366)	
No	0.9% (4)	

Section B: KAPC Questionnaire

1.	**Is it legally mandatory to take covid 19 vaccine?**	**Responses(n)**		
	Yes (first dose)	30.1% (116)		
	Yes (both doses)	6.1% (24)		
	No	63.7% (248)		
2.	**Mark the correct eligibility group for taking covid 19 vaccination:**	**Eligible**	**Not Eligible**	**Don't know**
	2.1 Infant (<1years of age	5.6% (22)	77.8% (302)	16.7% (64)
	2.2 Children and adolescents (<18years of age)	63% (245)	27.8% (107)	9.3% (36)
	2.3 Adults (>= 18years of age)	94.4% (366)	0.9% (4)	4.6% (18)
	2.4 Pregnant ladies and lactating mothers	62% (241)	20.4% (79)	17.6% (68)
	2.5 Patients with chronic diseases like diabetes, hypertension and heart diseases	77.8% (301)	7.4% (29)	14.8% (58)
	2.6 Patients having active COVID-19 Infection	13.9% (54)	73.1% (284)	13% (50)
	2.7 Persons recovered from COVID-19 infection	86.1% (334)	8.3% (32)	5.6% (22)
	2.8 Persons allergic to food items/drugs	66.7% (259)	11.1% (43)	22.2% (86)
	2.9 Immunocompromised patients	54.6% (212)	25% (97)	20.4% (79)
3.	**Protective immunity against COVID-19 infection will be achieved after:**	**Responses**		
	First dose of vaccination	5.6% (22)		
	Second dose of vaccination	49.1% (190)		
	Fourteen days after first dose of vaccination	33.3% (129)		
	Don't know	12% (47)		

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4.	Source of Information	Insignificant effect	Somewhat significant effect	Very significant effect
	4.1 News from National TV/Radio.	13.9% (54)	52.8% (205)	33.3% (129)
	4.2 Government agencies.	12% (47)	53.7% (208)	34.3% (133)
	4.3 Social media (Facebook, Instagram and what's App).	23.1% (90)	42.6% (165)	34.3% (133)
	4.4 Discussion among friends and family.	13% (50)	54.6% (212)	32.4% (126)
	4.5 Healthcare provider.	5.6% (22)	28.7% (111)	65.7% (255)

	Questions	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
5.	When my turn of vaccination comes, I am willing to take COVID-19 Vaccine.	79.6% (309)	14.8% (57)	2.8% (11)	0	2.8% (11)
6.	I will prefer to acquire immunity against COVID-19 naturally (by having the disease/subclinical infection) rather than by vaccination.	9.3% (36)	10.2% (40)	14.8% (58)	26.9% (103)	38.9% (151)
7.	I am willing to get the COVID-19 Vaccine, even if I have to pay to get it.	43.5% (168)	30.6% (119)	20.4% (79)	2.8% (11)	2.8% (11)
8.	I will recommend my family and friends to get vaccinated against COVID-19.	76.9% (298)	15.7% (61)	4.6% (18)	0.9% (4)	1.9% (7)
9.	**I have taken/will take the COVID-19 vaccine because:**	**Strongly Agree**	**Agree**	**Neither Agree nor Disagree**	**Disagree**	**Strongly Disagree**
9.1	I think there is no harm in taking COVID-19 vaccine.	56.5% (220)	26.9% (103)	11.1% (43)	4.6% (18)	0.9% (4)
9.2	I believe COVID-19 vaccine will be useful in protecting me from the COVID-19 infection.	51.9% (202)	34.3% (132)	11.1% (43)	2.8% (11)	0
9.3	COVID-19 vaccine is available free of cost.	45.4% (176)	34.3% (133)	13.9% (54)	2.8% (11)	3.7% (14)
9.4	My healthcare professionals/ doctor has recommended me.	51.9% (202)	31.5% (122)	13.9% (53)	1.9% (7)	0.9% (4)
9.5	I feel the benefits of taking the COVID-19 vaccine outweighs the risks involved	50% (194)	33.3% (129)	13% (50)	2.8% (11)	0.9% (4)
9.6	I believe that taking the vaccine is a societal responsibility.	62% (240)	25.9% (101)	9.3% (36)	0.9% (4)	1.9% (7)
9.7	There is sufficient data regarding the vaccine's safety and efficacy related by the government.	31.5% (122)	40.7% (158)	18.5% (72)	8.3% (32)	0.9% (4)
9.8	Many people are taking the COVID-19 vaccine.	37% (144)	47.2% (183)	13% (50)	0.9% (4)	1.9% (7)
9.9	I think it will help in eradicating COVID-19 infection.	34.3% (133)	42.6% (165)	16.7% (65)	6.5% (25)	0
9.10	My role models/political leaders/senior doctor/scientists have taken COVID-19 vaccine.	39.8% (155)	40.7% (158)	11.1% (43)	6.5% (25)	1.9% (7)

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10.	I am concerned that	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
10.1	COVID-19 Vaccine might not be easily available to me	10.2% (40)	16.7% (65)	26.9% (103)	34.3% (133)	12% (47)
10.2	I might have serious side effects after taking COVID-19 vaccine.	7.4% (29)	33.3% (130)	26.9% (103)	23.1% (90)	9.3% (36)
10.3	COVID-19 Vaccine may be faulty or fake.	7.4% (29)	11.1% (43)	16.7% (65)	43.5% (169)	21.3% (82)
10.4	COVID-19 Vaccine was rapidly developed and approved.	17.6% (68)	42.6% (166)	20.4% (78)	12% (47)	7.4% (29)
10.5	I might have some unforeseen future effects of the COVID-19 vaccine.	7.4% (29)	25% (96)	37% (144)	23.1% (90)	7.4% (29)
10.6	COVID-19 vaccine is being promoted for commercial gain of pharmaceutical companies.	10.2% (40)	13% (50)	25% (96)	32.4% (126)	19.4% (76)
11.	After getting vaccine, I don't need to follow preventive measures such as wearing a mask, sanitation and social distancing:	5.6% (22)	2.8% (11)	5.6% (22)	14.8% (57)	71.3% (276)

Findings depicted in the above-mentioned table from question number 1 to 4 showed that the participants had good information about the inclusion of various groups for the program of vaccination. About 94.4% of the respondents answered that persons aged 18 years or more, and 86.1% of the respondents answered that recovered COVID patients were eligible for the vaccine, however, 77.8% of the participants were oriented about the inclusion of people with associated chronic illnesses. On the other hand, 77.8% indicated that infants are non-eligible, and 73.1% reported that patients with active COVID-19 are non-eligible. Among the respondents 12% of didn't know the time of gaining the immunity following the vaccination, while 49.1% of the participants answered that the immunological protection following the vaccine could be gained 14 days after the 2nd dose of vaccination. Moreover, respondents were significantly influenced by various sources of information such as the doctors and healthcare workers (65.7%).

From question number 5 to 8 represent attitude towards vaccination, among which majority of the respondents had the desire to be vaccinated (79.6%) and would advise same to their friends and families (76.9%). Various strongly agreeing factors influencing them to get vaccinated include: the belief that there are no harmful effects of vaccines (56.5%), many people have taken the vaccine (37%), taking the vaccine is a social responsibility (62%), its benefits outweigh the risks involved (50%) and there is sufficient data regarding vaccine's safety and efficacy (31.5%).

On the other hand, there were concerns represented in question number 10 and above that 17.6% respondents showed their fear about the fast progression of vaccine manufacture. Among participants 7.4% reported their worries about the unknown future effects that might be associated with it and vaccine may be faulty or fake.

Discussion

The demographic findings of this study showed that the highest number of the participants (66.4%) were from class I socioeconomic status. A great majority of the participants were graduated (76.9%) and from urban area (74.1%). Similar results were found in Yakut et at studies (9) which showed a great majority of the participants were working (75.3%) and had a

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high level of education (72.2%). These groups consisted of individuals who had to work actively due to economic concerns such as financial difficulties and meeting basic needs, and therefore had the potential to come into direct contact with other people in the society. The risk of transmission of the disease to people in these groups was expected to be higher than the other groups. These individuals have access to the Internet and use social media was relatively higher which results into increase their response rate to the online survey.

The study conducted by Al-Marshoudi *et al*. [10] showed that 57% of our sample population were willing to take the vaccine against COVID-19, while in our study 94.4% had already completed both doses of vaccine. A study conducted by Malia *et al*. [11] in sixteen countries with the results for COVID 19 vaccine acceptance in India, Philippines and Latin America being above 60% among pregnant women while in our study knowledge regarding eligibility group for taking covid 19 vaccination for pregnant and lactating woman (62%) and knowledge regarding non-eligibility for infant (77.8%) showed good result. The acceptance was supported by a study conducted in 19 countries by Lazarus *et al*. [12], where 71.5% of responders reported that they would take a vaccine if it were proven to be safe and effective. Similarly, our study showed willingness to take vaccine by 79.6 % participants and only 7.6% participants concerned about serious side effects after taking vaccination. About 79.6% participants will recommend my family and friends to get vaccinated against COVID-19. This positive attitude among participants may be because of education level, place of residence and source of information collected from Healthcare provider by 65.7% of study population.

Conclusion

The Ministry of Health and family welfare spent a series of measures to prevent the spread of the COVID19 pandemic. The COVID 19 infodemic has been a constant challenge for the world and our country too. The importance of a strategic communication approach which includes clear, accurate, consistent communication which is responsive to people's need and influences behaviour. This communication strategy aims to empower people with right knowledge for taking informed decision about the vaccine where people's engagement and participation will be the centre point (3).

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