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Knowledge And Attitude Regarding COVID-19 Vaccination Among Adults In Suburban Areas Of Mumbai Metropolitan Region

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ABSTRACT

Background: A novel corona virus disease known as COVID-19 has been declared a pandemic and a global health emergency by the WHO. The COVID-19 vaccination was first administered in India on January 16, 2021. India's well-organized immunization program and high vaccination coverage are well-known internationally. **Aim:** To determine the level of knowledge with attitude regarding COVID-19 vaccination among adults in suburban areas of Mumbai Metropolitan Region**. Methodology:** This Non-experimental descriptive research design involved 359 adults using a self-structured questionnaire to assess knowledge and the standard VAX scale used to assess attitudes regarding COVID -19 vaccination. **Results**: A total of 359 adults participated in the study, out of the total participants 41% have average knowledge regarding COVID-19 vaccination (mean knowledge score= 14.39; SD=4.0), high knowledge scores associated with male gender, people who speak the local language and those who working as medical personnel at p-value <0.05 significance level. The study showed that 77.44% of participants have a positive attitude towards COVID-19 vaccination (mean attitude score=27.93; SD=5.67)and there is an association with demographical variables. **Conclusion:** The current study revealed that even though knowledge regarding COVID-19 vaccination is average, the majority of the participants have positive attitudes toward vaccination. This finding can help the Policymakers to make plans for the next initiatives to promote vaccination uptake that could eventually result in herd immunity against COVID-19 in the pandemic era.

Keywords: Knowledge, attitude, COVID-19vaccination

1. INTRODUCTION

The COVID-19 corona virus infection has been affecting millions of individuals in more than 144 nations. The public health system came under serious threat from the pandemic and presented financial consequences globally.[1] Preventive measure are heavily relied upon in the fight against the pandemic's effects and to limit its socioeconomic and health effects. As a result, tremendous effort was made by the scientific community and pharmaceutical sector, supported by governments, to create effective and secure SARS-CoV-2 vaccines.[2]

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The COVID-19 pandemic can be prevented from spreading in large part through vaccination. Understanding vaccine acceptance is essential for an enormous population, on the other hand the relatively significant vaccine hesitancy, low vaccination coverage, misinformation, and myths can spread swiftly online, particularly on social media is a major issue. Governments, public health organizations, and advocacy groups must be prepared to address vaccine anxiety and raise vaccine awareness to convince the public that immunization is necessary to combat life loss due to COVID-19. Anti-vaccination organizations are currently contesting the necessity for a vaccine in several countries, with some also disputing the existence of COVID-19.[3]

Magadmi, R.M., Kamel, F.O (2021) concluded that 55.3% of people said they would be reluctant to receive COVID-19 immunization, on the other hand 44.7% of individuals were accepting COVID-19 vaccination if available. The study indicated that the main obstacle to vaccine uptake was worried about adverse effects. Furthermore, if future trials found the vaccine to be safe and effective, the majority of those who have rejected it might change their opinions.[4]

Despite having little knowledge of the COVID-19 vaccination, the majority of responders were open to receiving it. Mohamed, Nurul Azmawati et al (2021) a web based study reveals that 64.5% of respondents were willing to receive the COVID-19 vaccine, but 62.0% had a poor understanding of the COVID-19 vaccine (mean knowledge score 4.65; SD = 2.32). High knowledge scores are linked to higher education levels, higher income brackets, and living among people who are more likely to suffer from severe COVID-19.[5]A cross-section study by El-Elimat, Tamam, et al (2021) in Jordan found that only 37.4% of the population approved of the COVID-19 vaccines.[6]

Mumbai, India's largest metropolis and the nation's commercial capital, contributed to 66% of the state's total cases and over 20% of all cases nationwide. [7]Through researcher experience and literature review, it is seen that the herd immunity threshold won't be reached until the COVID-19 wave when there will be enough vaccine doses accessible. Therefore, it is essential to investigate Indian community knowledge regarding COVID-19 vaccines as well as attitudes towards COVID-19 vaccines. The findings of the current study may help policymakers launch proactive campaigns and well-thought-out strategies by highlighting the value of immunization to the community and encouraging immunization uptake and acceptance, especially among suburban populations. Though many studies are focusing on knowledge and attitude of psychological, there is not much evidence from the suburban population of Maharashtra, India. Therefore, this study will provide data regarding knowledge and attitudes regarding COVID-19vaccinationamongadultsinsuburbanareasofMumbai Metropolitan Region. This data can help design suitable policies and interventions.

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2. METHODS AND MATERIALS

The study was conducted to assess the knowledge and attitudes toward COVID-19vaccinationamongadultsinsuburbanareasofMumbai Metropolitan Region. The researcher used Non-experimental descriptive research design. The population of the current study comprises a total of 359 participants using non-probability convenient sampling techniques. In the present study, the researcher used a self-reported questionnaire on demographic characteristics of respondents like age,gender,education,maritalstatus,occupation,familyincome,types of family. Section-II deals with 25 items of self-structured questionnaire to assess knowledge and the standard VAX scale used to assess attitude regarding COVID -19 vaccination. Through the use of questionnaires, data were gathered. The entire procedure, including consent, demographic information, and the depression scale, takes 15 to 20 minutes.

Inclusion criteria:

- All adult participants age range 18to45yrs, adults who can underst and Hindior Marathi, who are willing to participate in the study, and who are available at the time of the study.

Exclusioncriteria:

- People who refused to participate in the study and participated in similar kinds of study, who are deter mine dun healthy by medical history and physical examination, and who have recent or active suicidal psychiatric conditions were excluded from the study.

3. RESULTS

3.1 Sociodemographic profiles

The socio-demographic profiles of the study population are presented in table 1**.** As pertable 1, the majority of the participants (37.47%) were within 24-30 years of age group, 55.43% of the participants were male, 46.8% of participants were educated up to the primary, 49.02 % were married, 34.54% worked as labourer whereas 41.22 % of the participants were from nuclear families. 87.19% of participants spoke the local language and most of them 50.13 % have an income range from ₹6175-18496. The majority of participants (76.89%) belonged to no family member in the medical field. Where as the maximum number of participants(86.07%)were vaccinated and 88.3%of participants are non-medical personnel.

Table 1: Frequency and percentage distribution of Socio-demographic profile of participants n =359

Socio-Demographic characteristics	Frequency	Percentage
	f	(%)
Age (years)		
18-23	67	18.6
24-30	113	37.47
31 -37	82	22.48

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38-45	97	27.01
Gender		
Male	159	44.28
Female	199	55.43
Transgender	1	0.27
Education		
Primary	168	46.8
Secondary	128	35.65
Higher Secondary	45	12.53
Graduate and above	18	5.01
Marital status		
Married	176	49.02
Unmarried	121	33.7
Single	32	8.91
Widow	30	8.35
Occupation		
Self-employed	74	20.61
Unemployed	77	21.44
Laborer	124	34.54
Service	84	23.39
Family type		
Joint	148	41.22
Extended	114	31.75
Nuclear	93	25.9
Language		
Marathi	313	87.19
Hindi	40	11.14
English	1	0.27
Any other	5	1.39
Monthly Income in₹		
<6174	133	37.04
6175-18496	180	50.13
18497-30830	40	11.14
30831-46128	6	1.67
Medical personnel in the family		
Parents	18	5.01
Siblings	23	7.24
Friends/spouse	39	10.86

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None	276	76.89
Vaccinated		
Yes	309	86.07
No	50	13.93
Medical person		
Yes	42	11.7
No	317	88.3

3.2 Participants' knowledge regarding the COVID-19 Vaccination-

Participants were asked about knowledge about COVID-19 vaccination through self-structure questionnaires including general knowledge, indications of vaccination, pre-requisites for the vaccine, post-requisites, patient rights, and Potential side effects of COVID-19 vaccinations. Figure 1: showed 41% of participants have average knowledge, (39.28%) of participants have good knowledge,10(2.79%) have very good knowledge, 53(14.76%) participants have poor knowledge, while 8(2.23%) participants have very poor knowledge regardingCOVID-19vaccination(mean knowledge score= 14.39; SD=4.0) among adults residing in suburban areas.

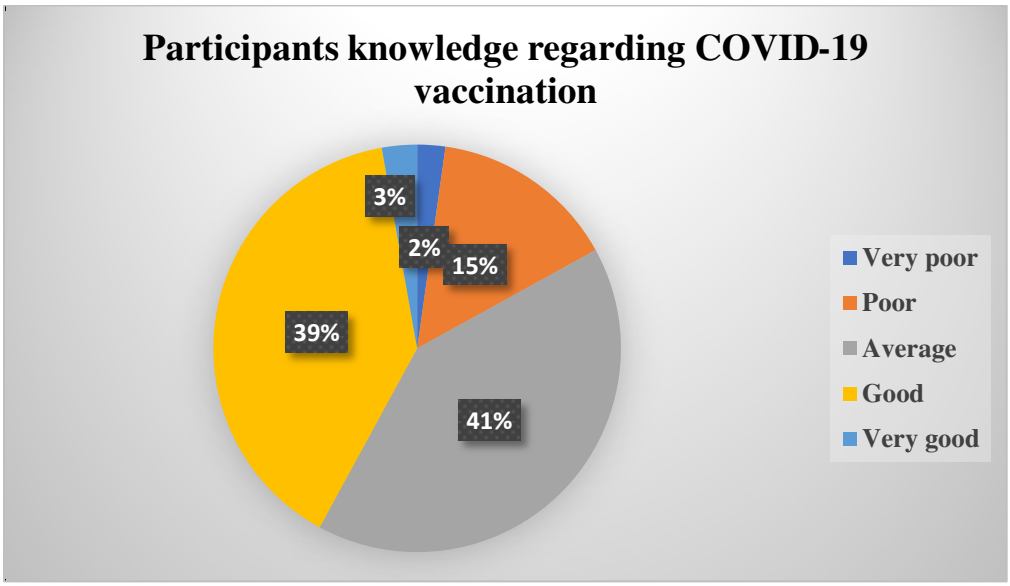

Figure 1: participants knowledge regarding COVID-19 vaccination (n=359)

3.3 Participants attitudes regarding the COVID-19 Vaccination

Figure 2 showed the attitude among adults regarding COVID-19 vaccination was assessed by using the standard VAX Scale [Vaccination Attitude Scale]. The maximum number of participants77.44%have a positive attitude where as 22.56%. participants have negative attitude (mean attitude score=27.93; SD=5.67) towardsCOVID-19vaccination.

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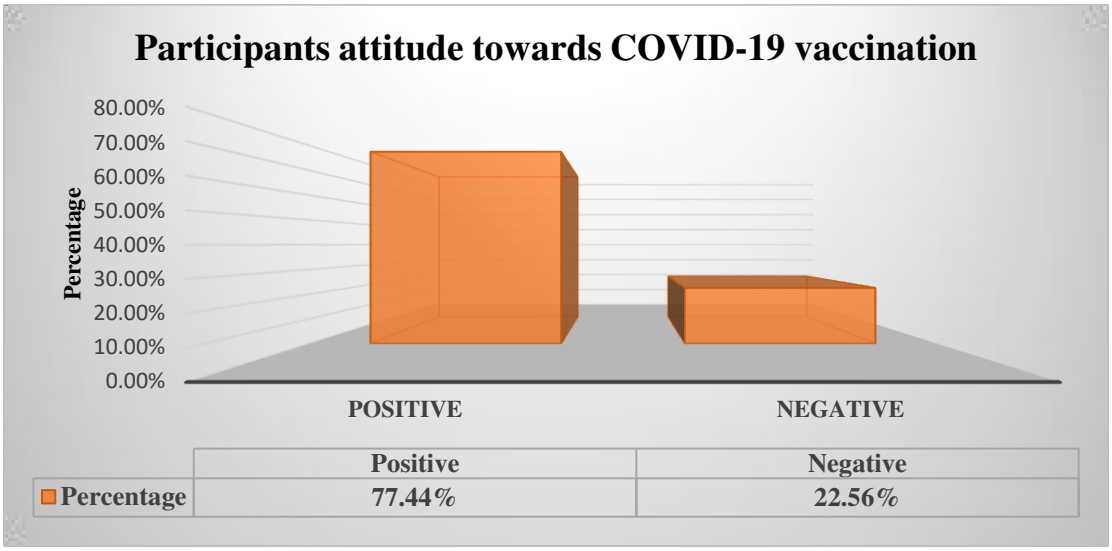

Figure 2: Participants attitude regarding COVID-19 vaccination (n=359)

TableNo2:Associationbetweenparticipants' knowledge with selected demographic variables

Demographic variables		Very good	Good	Average	Poor	Very good	Chi-square Value	p-value	Significance
Age in years	18-23	0	33	22	10	2	10.89	0.54	NS
	24-30	6	47	40	17	3			
	31-37	1	30	38	11	2			
	38-45	3	31	46	17	0			
Gender	Male	6	59	67	25	3	17.15	0.029	S
	Female	4	82	79	30	3			
	Transgender	0	0	0	0	1			
Education	Primary	6	57	78	24	3	8.74	0.73	NS
	Secondary	2	54	48	20	4			
	Higher Secondary	1	23	14	7	0			
	Graduate & above	1	7	6	4	0			
Occupation	Self-employee	4	31	28	10	1	12.15	0.43	NS
	Unemploye	2	26	33	15	1			

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	d								
	Labourer	3	54	42	21	4			
	Service	1	30	43	9	1			
Medical personnel in family	Parents	0	9	7	1	1	9.21	0.68	NS
	Siblings	2	12	8	3	1			
	Spouse	1	18	15	4	1			
	None	7	102	116	47	4			
Vaccination status	Yes	9	117	132	45	6	4.38	0.36	NS
	No	1	24	14	10	1			
Medical personal	Yes	3	17	14	5	3	10.83	0.029	S
	No	7	124	132	50	4			

TableNo2 reveals the association between participants' knowledge with selected demographic variables. Males who speak the local language and those who work as medical personnel have a significant association with knowledge regarding COVID-19 vaccination at p-value <0.05 significance.

Table No 3: Association between participants' attitude with selected demographic variables

Demographic variables		Very good	Good	Chi-square Value	p-value	Significance
Age in years	18-23	55	12	0.15	0.98	NS
	24-30	93	20			
	31-37	69	13			
	38-45	80	17			
Gender	Male	132	28	1.54	0.46	NS
	Female	165	33			
	Transgender	0	1			
Education	Primary	141	27	0.77	0.86	NS
	Secondary	104	24			
	Higher Secondary	38	7			
	Graduate & above	14	4			
Occupation	Self-employee	63	11	2.87	0.41	NS
	Unemployed	61	16			
	Labourer	99	25			

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	Service	73	11			
Medical personnel in family	Parents	16	2	1.37	0.71	NS
	Siblings	22	4			
	Spouse	34	5			
	None	225	51			
Vaccination status	Yes	258	51	0.91	0.34	NS
	No	39	11			
Medical personal	Yes	34	8	0.11	0.75	NS
	No	263	54			

Table No 3 Concluded there is no association between participants' attitudes with selected demographic variables.

4. Discussion

Our findings illustrate that out of the total participants, the majority of 49.50 % of participants have average knowledge regarding COVID-19 vaccinations. 40.95% had good knowledge while 14.76% of participants have poor knowledge and 2.23% have very poor knowledge regarding COVID-19 vaccinations accordingly. A similar study finding showed by Bhartiya S et al. (2021)study in India. Nearly two-thirds (64.5%) of young adults between the ages of 18 and 40 were uninformed that the COVID-19 vaccine was available, followed by 56.4% of people between the ages of 40 and 60 and 46.2% of those over the age of 60.[8] A study done by Enitan SS, et al. (2020) showed that The majority of participants (80.2%) got their information about COVID-19 via social media. 39.0% of them had a negative opinion of the COVID-19 Vaccine.[9]

The present study concluded that the majority of participants77.44%havea positive attitude where as 22.56%. Participants have negati veattitudes towardsCOVID-19vaccination assessed by using the standard VAX Scale. Similar findings also showed by a meta-analysis research conducted in China by Luo, Chuxuan, et al (2021) revealed that 51% of participants were in favour of receiving the COVID-19 vaccine.[10] A cross-sectional study by Danabal, *et al.* (2021) revealed a positive opinion of the COVID-19 vaccines was expressed by more than 50% of the respondents. Younger people, women, people from rural areas, and low-income labourers have a strong fear of immunizations. The prevalence of vaccination reluctance was 40. 7% of those surveyed disagreed with vaccinations.[11]To completely understand the COVID-19 vaccination reluctance in urban and rural areas of India, future research should use a mixed methodologies approach that combines qualitative and quantitative approaches. Future studies may also shed more light on the mechanisms that contribute to variations in COVID-19 vaccine reluctance over time.

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CONCLUSION:

This study offers an early understanding of knowledge and attitude regarding COVID-19 vaccination amongadultsinsuburbanareasofMumbai Metropolitan Region. Based on this study, it is concludedthatthe majority of participantshaveaverage knowledgeregardingCOVID-19vaccination.While regarding attitude the majority of participants have a positive attitude towards COVID-19 vaccination. The study shows thatthere is a significant association between knowledge and demographic variables with gender,language, andparticipants as medical personnel have < 0.05 level of significance. The studyshows that there is no significant association found between attitude and selected demographicvariables. To transmit more transparent information on the safety and effectiveness of the vaccines, the health authorities should plan initiatives through healthcare providers, who the public has chosen as the most reliable source of information about the COVID-19 vaccines.

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