Chettinad Health City Medical Journal
Volume 12, Issue 1 - 2023, Pg. No. 45-50
Peer Reviewed & Open Access Journal

Research Article

Knowledge and Acceptance of COVID-19 Vaccination among Women of Reproductive Age Group

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DOI: https://doi.org/10.24321/2278.2044.202308

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How to cite this article:
Nandhini S, Kandasamy V. Knowledge and Acceptance of COVID-19 Vaccination among Women of Reproductive Age Group. Chettinad Health City Med J. 2023;12(1):45-50.

Date of Submission: 2023-01-03
Date of Acceptance: 2023-01-20

A B S T R A C T

Background: The acceptability of COVID vaccine by reproductive age group women remains unknown. Hence the study was conducted to define the knowledge about the COVID-19 vaccine and its acceptance in a sample of women who were planning to get pregnant.

Method: This is a prospective study conducted at Chettinad Hospital and Research Institute, Chennai, India on 157 women of reproductive age group during August-September 2022. Data were collected using a face-to-face questionnaire administered to women who attended the Obstetrics and Gynaecology OPD. Data were analysed using SPSS.

Results: Of the 157 respondents, nearly half were in the age group of 20-32 years, and almost 72% of them were educated with the minimum qualification being higher secondary education. In the given study, 70.7% were urban and semi-urban residents and 29.3% were rural women. About 66% of them were employed and the rest were unemployed. Gravidity status showed no significant differences regarding awareness. Overall awareness was about 74.5% and acceptance was 70.7%.

Conclusion: Though women are aware of the vaccines, there is hesitancy prevailing. Literacy plays an important role in vaccine awareness and acceptance. Women of reproductive age should be made aware that the COVID vaccine is safe for use. The side effects, if any, will also be mostly minor. Although vaccine trials have not been conducted on pregnant women, the beneficial effects of vaccination far outweigh the negligible risk, if any, to the foetus and the women were made aware of this information.

Keywords: COVID Vaccine, Reproductive Age Group, Awareness

Introduction

Just over a year has passed since the first incidence of COVID-19-causing coronavirus, SARS-CoV-2, COVID-19, was discovered. When it comes to our understanding of the virus and how to treat it, a lot has evolved through this time. For everyone engaged, there has definitely been a high learning curve.[1] While most people's daily lives already include physical separation and other protective measures, the focus of this pandemic's recovery is on widespread COVID-19 immunisation. Although there are still difficulties in determining the efficacy of prospective SARS-CoV-2 vaccines, there are various vaccines that have

been approved as safe and efficacious by international regulatory organisations for medicines, and vaccine rollout is underway in a number of countries.[2-4] Additionally, at this time, other viral variations have been discovered and are raising serious concerns. Although vaccinations are available, global infection and mortality rates are quite high and there are problems with the supply chain.[5-7] The WHO regional director for Europe referred to this as the pandemic conundrum.[8]

The population's vaccination uptake must be as high as feasible once a successful population programme is in place in order to achieve herd immunity.[9,10] Vaccination hesitancy, which is defined as a delay in accepting or a refusal of vaccination despite the availability of vaccination services, may act as a barrier in this. It varies across time, place, and vaccinations and is intricate and context-sensitive. It is affected by things like complacency, ease, and confidence.[11] One of the top ten global health issues for 2019 is vaccine reluctance.[12] False information, which is facilitated by social media, is a crucial reason causing vaccine hesitancy in the current pandemic.[13] Finding and removing inaccurate content from social media platforms, according to one report, was not having the anticipated outcome.[14] Across a specially built social media platform, trained administrators may keep an eye on trends, rectify false information, and spread fact-based information through a variety of online and offline media channels.[15]

The likelihood that a person will engage in a certain health-related behaviour rises when they think that the behaviour has the power to alter their lives and when they think they have the choice of whether to engage in it or not. Hence this study was conducted to define the knowledge about the COVID-19 vaccine and its acceptance in a sample of pregnant women and women who were planning to get pregnant.

Method

This is a prospective cross-sectional study conducted at Chettinad Hospital and Research Institute, Kelambakkam, Chennai, India after obtaining institutional ethical committee approval. Hundred and fifty-seven women of the reproductive age group responded to the survey conducted between August and September 2022. Informed consent was taken from all participants. All reproductive age group women are included. Postmenopausal women and women under the age of 16 years were excluded from the study. Data were collected using a face-to-face questionnaire administered to women who attended the Obstetrics and Gynaecology OPD of the hospital. The questionnaire consisted of questions regarding socio-demographic characteristics, perception of risk related to the COVID-19 pandemic, vaccination history, impact of the COVID-19 pandemic, and acceptance and attitudes towards COVID vaccination. Statistical Package for Social Sciences (SPSS v-26) was used for statistical analysis. Basic descriptive statistics of mean and standard deviation were analysed to provide basic information about the data. Chi-square test was used to find the p value and, a value less than 0.05 was considered as the p value at 95% level of confidence interval.

Results

Of the 157 respondents, nearly half were between the ages of 20 and 32 years (Figure 1), and almost 72% of them were educated, with the minimum qualification being higher secondary education. Twenty-eight per cent of them had not completed their elementary school education. The mean and standard deviation (range) for age was 27.88 ± 6.457 (17-43). In the given study, the population majority of 70.7% were urban and semi-urban residents and the rest were rural women. About 66% of them were employed and the rest were unemployed. In the aspect of gravid status, women were distributed as nulliparous, primiparous, and multiparous with percentages of 38.2%, 33.1%, and 28.7% respectively (Table 1). The overall awareness was about 74.5% and acceptance was 70.7% (Table 2). With these demographic data, majority of the women were either willing to conceive or were in their first pregnancy. Women who were 26-35 years of age were more aware of the COVID vaccine when compared to others with a percentage of 42.7% (Table 3). Through this study, we came to know that urban and employed women were more aware in comparison with rural and unemployed women. On basis of gravid status, there were no significant changes regarding awareness. The acceptance rate was high among multiparous women (n = 40, 36.0%) when compared to nulliparous (n = 34, 30.6%) and primiparous (n = 37, 33.3%) women (Table 4). It was also noted that literacy and urbanisation play an important role in vaccine awareness and acceptance in this study. Though the women were aware of the vaccines, they were hesitant to take them.

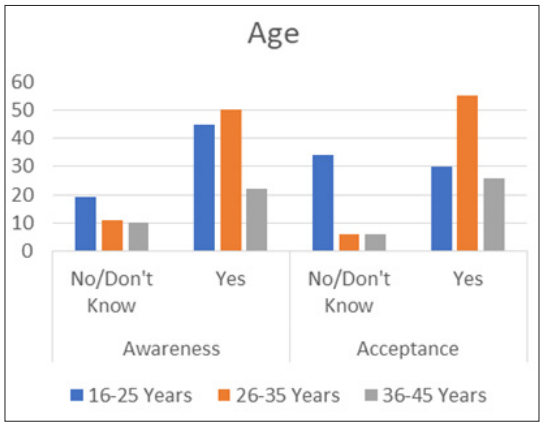

Figure 1.Age Distribution of Participants as per the Awareness and Acceptance of Vaccine

ISSN: 2278-2044
DOI: https://doi.org/10.24321/2278.2044.202308

Table 1.Demographic Profile of Participants

Variables		Frequency n	Percentage %
Age (years)	16-25	64	40.8
	26-35	61	38.9
	36-45	32	20.4
	Total	157	100.0
Mean ± Standard Deviation (Range) = 27.88 ± 6.457 (17-43)			
Marital status	No	28	17.8
	Yes	129	82.2
	Total	157	100.0
Residence	Rural	46	29.3
	Urban	111	70.7
	Total	157	100.0
Educational qualification	Uneducated	44	28.0
	Educated	113	72.0
	Total	157	100.0
Occupation	Non-employed	54	34.4
	Employed	103	65.6
	Total	157	100.0
Gravidity	Multipara	45	28.7
	Nullipara	60	38.2
	Primipara	52	33.1
	Total	157	100.0

Table 2.Awareness and Acceptance of COVID-19 Vaccine

Results	Awareness about COVID-19 Vaccine		Acceptance of COVID-19 Vaccine	
	Frequency	%	Frequency	%
No/ don't know	40	25.5	46	29.3
Yes	117	74.5	111	70.7
Total	157	100.0	157	100.0

Table 3.Association of Awareness regarding COVID-19 Vaccine with Sociodemographic Variables

Variables		No/ Don't Know	Yes	Chi-square	p Value
		Frequency n (Percentage %)			
Age (years)	16-25	19 (47.5)	45 (38.5)	2.940	0.230
	26-35	11 (27.5)	50 (42.7)		
	36-45	10 (25.0)	22 (18.8)		
	Total	40 (100.0)	117 (100.0)		
Marital status	No	7 (17.5)	21 (17.9)	0.004	0.949
	Yes	33 (82.5)	96 (82.1)		
	Total	40 (100.0)	117 (100.0)		

ISSN: 2278-2044
DOI: https://doi.org/10.24321/2278.2044.202308

Residence	Rural	19 (47.5)	27 (23.1)	8.584	0.003
	Urban	21 (52.5)	90 (76.9)		
	Total	40 (100.0)	117 (100.0)		
Educational qualification	Uneducated	17 (42.5)	27 (23.1)	5.575	0.018
	Educated	23 (57.5)	90 (76.9)		
	Total	40 (100.0)	117 (100.0)		
Occupation	Non-employed	12 (30.0)	42 (35.9)	0.459	0.498
	Employed	28 (70.0)	75 (64.1)		
	Total	40 (100.0)	117 (100.0)		
Gravidity	Multipara	8 (20.0)	37 (31.6)	8.456	0.015
	Nullipara	23 (57.5)	37 (31.6)		
	Primipara	9 (22.5)	43 (36.8)		
	Total	40 (100.0)	117 (100.0)		

Table 4.Association of Acceptance of COVID-19 Vaccine with Sociodemographic Variables

Variables		No/ Don't Know	Yes	Chi-square	p value
		Frequency n (Percent %)			
Age (years)	16-25	34 (73.9)	30 (27.0)	30.413	0.000
	26-35	6 (13.0)	55 (49.5)		
	36-45	6 (13.0)	26 (23.4)		
	Total	46 (100.0)	111 (100.0)		
Marital status	No	11 (23.9)	17 (15.3)	1.641	0.200
	Yes	35 (76.1)	94 (84.7)		
	Total	46 (100.0)	111 (100.0)		
Residence	Rural	20 (43.5)	26 (23.4)	6.314	0.012
	Urban	26 (56.5)	85 (76.6)		
	Total	46 (100.0)	111 (100.0)		
Educational qualification	Uneducated	5 (10.9)	39 (35.1)	9.494	0.002
	Educated	41 (89.1)	72 (64.9)		
	Total	46 (100.0)	111 (100.0)		
Occupation	Non-Employed	14 (30.4)	40 (36.0)	0.452	0.501
	Employed	32 (69.6)	71 (64.0)		
	Total	46 (100.0)	111 (100.0)		
Gravidity	Multipara	5 (10.9)	40 (36.0)	12.896	0.002
	Nullipara	26 (56.5)	34 (30.6)		
	Primipara	15 (32.6)	37 (33.3)		
	Total	46 (100.0)	111 (100.0)		

Discussion

In a study by Cordina et al., it was found that more than 50% of the participants were willing to receive the vaccination with men being more willing than women.[16] The reason for this was the opinion of close friends, family, colleagues and medical professionals. In the study population, there was vaccine hesitation, with 32.6% and 15.6% being frankly sceptical about receiving the vaccine. Women were found

ISSN: 2278-2044
DOI: https://doi.org/10.24321/2278.2044.202308

to be more uncertain. Justification as per the authors regarding findings for refusing to receive the vaccine was a lack of awareness regarding vaccine safety.

In India, knowledge and attitudes concerning the COVID-19 vaccine were evaluated by Bhartiya et al.[17] 1342 people were included in their study. Nearly two-thirds (64.5%) of young adults between the ages of 18 and 40 years were uninformed that the COVID-19 vaccine was available, followed by 56.4% of people between the ages of 40 and 60 years and 46.2% of those over the age of 60 years. In comparison, in our present study, 29.3% of women were apprehensive to take the vaccination.

A study carried out by Mose et al.[18] in Ethiopia on pregnant women visiting prenatal care clinics found a 70.7% acceptance rate for the COVID-19 vaccination. This study showed that the acceptance of the COVID-19 vaccine was influenced by the mother's age (34-41 years), her level of elementary education, her understanding of COVID-19 and its preventive measures, and her behaviour during pregnancy. The present study found the same acceptance rate of nearly 71%.

According to a study conducted by Mannan et al.,[19] two-thirds of respondents were at least moderately concerned about a widespread COVID-19 outbreak, Rates of acceptance varied from about 93% to less than 43%, whereas in our study, nearly 71% of women were willing to take the vaccine or were already vaccinated.

In a study conducted by Del Riccio et al.,[20] prior to the rollout of COVID-19 vaccines, the authors found that 81.9% were inclined to get immunised. Our present study was conducted after the rollout of the vaccine and showed a slightly lower acceptance rate due to fear of the complications and negative effects on their reproductive outcome and impact on the already conceived foetus.

Almost 75% of the participants in this study were aware of the COVID-19 vaccine, however, only 71% of them were willing to receive or had already received the COVID vaccine. Twenty-five per cent were not completely aware of the vaccine; though they were aware of the rollout of the vaccine, they were not well-informed about the availability, benefits, and anticipated minor side effects. Hence about 29% of women were hesitant to take the vaccine.

Conclusion

Though women are aware of the vaccines, hesitancy in taking them prevails. It is noted that literacy and urbanisation play an important role in vaccine awareness and acceptance in this study. Women of reproductive age should be made aware that the COVID vaccine is safe for use. They should be told that the side effects, if any, will also be mostly minor. Although vaccine trials have not been conducted on pregnant women, the beneficial effects of vaccination far outweigh the negligible risk, if any, to the foetus and the women should be made aware of this information.

Source of Funding: Self

Conflict of Interest: None

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ISSN: 2278-2044
DOI: https://doi.org/10.24321/2278.2044.202308