



A Study of Perception and Acceptance of COVID 19 Vaccination by Pregnant Women in a Tertiary Health Centre in Delhi, India

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

The pandemic has led to a major change of focus in the healthcare system. The pandemic that started in December 2019 in Wuhan rapidly became a global health crisis. Pregnant women fall under the high risk category and the infection endangers two lives. Vaccination appeared as the only hope at the peak of pandemic.

Materials and Methods: 650 pregnant women at a tertiary care centre in New Delhi were interviewed objectively irrespective of gestational age and educational status.

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Results and Discussion: 383 women(58.9%) pregnant women were willing to get the vaccine. 267 (41.1%) were not willing to get the vaccine. 91.5 % women were aware that covid-19 vaccine is available for pregnant women. 90.3% women knew that covid 19 infection can be dangerous for pregnant women. Only 75.7 % women thought covid 19 infection can be dangerous for new born and children. Women who were aware that the infection can be dangerous for pregnant women and newborn were more willing to get the vaccine compared to women who were not aware. Women who thought the vaccine could be harmful for the fetus were reluctant to get the vaccine.

Conclusion: Increasing awareness and knowledge in the pregnant population would lead to better vaccine acceptability. Vaccination status among pregnant population is still poor and with better awareness drives we can improve the vaccination statistics. The results can be extrapolated for other health drives and health seeking behavior development.

Keywords: COVID 19; vaccination; interview; awareness.

1. INTRODUCTION

WHO has estimated more than 4.3 million deaths from Covid 19 pandemic worldwide and till 17th august 2021 4.5 million doses of vaccines have been administered [1]. Vaccination has emerged as the tool of prime importance in containing the deadly virus. Covid appropriate behavior, public lockdown and social distancing are crucial in restricting the spread but cannot be infinitely imposed, this has left vaccination to be the only exit [2,3].

The hesitancy in accepting the vaccination has prevailed but has gradually waned over the last year. Lack of knowledge and myths surrounding the vaccine have led to the delayed and guarded acceptance of vaccination. The pregnant population is deemed to be high risk for SARS COVID infection and depriving it of any protective measure from the virus would put double lives at stake [4,5]. According to RCOG, pregnant women have equal susceptibility to contract Covid 19 infection, as the general population, however the risk of developing severe illness is higher in the infection pregnant population [6]. This makes vaccination of the pregnant women an essential task. The inconsistency of data and concerns about fetal safety of the vaccine has led to confusion among pregnant women.

Before mass vaccination drives, we need to assess the attitude of pregnant women towards the vaccine and raise awareness.

Through this study we aimed at evaluating the attitude, awareness and acceptance of covid 19 vaccine in pregnant women in a tertiary centre in Delhi.

2. REVIEW OF LITERATURE

The studies carried out to investigate the relationship between the acceptance of covid 19 vaccination among pregnant are scarce worldwide. The late introduction of vaccination to pregnant population due to initial inadequate data on fetal safety is one of the reasons for lack of literature.

'COVID 19 vaccine acceptance in pregnant women' by Sule Goncu Ayhan et al, vividly analyzed the various aspects of maternal psychology regarding the acceptance of the vaccine [7]. A detailed questionnaire was used to study the attitude of pregnant women regarding the vaccine. The prospective study was conducted in Ankara city hospital in Turkey from January 1 2021 to February 1 2021. The data was collected based on face to face interview with 500 women visiting the prenatal care clinic.

300 women completed the trial, 111 of whom stated that they would receive the vaccine if recommended. There was no difference in acceptance between high risk and low risk pregnancy groups.

The main concern of the women declining the vaccine were 1) lack of data about the vaccine in pregnancy. 2) Concern about harm to fetus.

3. METHODOLOGY

The cross sectional study was conducted in Lady Hardinge Medical College antenatal clinic from September 2021 to December 2021.

3.1 Sampling

All the women visiting the ANC clinic were invited to participate. A concise and non tedious

questionnaire was presented to the antenatal women while they are waiting for their turn in the ANC clinic.

650 random women were presented with questionnaire. The first 20 women in the queue for antenatal registration were recruited after written informed consent and were interviewed objectively. Women who refused participation or were previously vaccinated were excluded.

The answers were marked on separate Performa for each patient.

4. RESULTS

During assessment of knowledge it was observed that 91.5 % women were aware that covid-19 vaccine is available for pregnant women. 90.3% women knew that covid 19 infection can be dangerous for pregnant women. Only 75.7 % women thought covid 19 infection can be dangerous for new born and children. When asked when can the vaccine be administered only 13.8 %(90) knew the correct answer i.e, it can be administered anytime during pregnancy. 70.3% women did not know and rest of the women had incorrect idea about the timing of administration.

When questioned about source of information, 46.2% (300) women cited media as their source of information. 14.9%(97) said that awareness drives were their information source while 38.9%(253) cited peers and family.

43.4% women thought vaccine would be beneficial for their newborn. 39.5%(257) thought it would be harmful and 17.1% thought it would have no effect.

96.9 % pregnant women got their tetanus shots. 12 women did not get the vaccine as they thought it was unsafe for baby and 8 thought it wasn't necessary.

383 women(58.9%) pregnant women were willing to get the vaccine. 267 (41.1%) were not willing to the get the vaccine.

3.4%(9) women declined the vaccine due to concern about safety owing to comparatively recent development. Majority of decliners, viz 158 (59.2%) did not want the vaccine due to concern about safety of vaccine for the fetus. 18.7 % did not want the vaccine because they felt there was no longer a need for vaccination.

4.1%(11) women did not want the vaccine due to "sense of security due to young age and no comorbidities"

12%(32) said they were not willing to get the vaccine as they were unaware of the procedure for registration for vaccination.

2.2%(6) women did not get the vaccine due to fear of injection.

Among the women who were aware that the vaccine was available for pregnant woman 59.7% were willing to get the vaccine. Among the women who weren't aware that the vaccine was available for pregnant women 50.9% were ready to get the vaccine (if the same was made available.)

Among the women who knew Covid-19 infection can be dangerous for pregnant women 60.3% (354) women were willing to receive the vaccine while only 29 out of 63 (46%) women who did not know covid 19 infection can be dangerous for pregnant women were willing to accept the vaccine. With a p value of 0.029 the difference was significant. 315 (64%) of women who knew Covid 19 vaccine can be dangerous for new born and children were willing for vaccination. 68 out of 158(43%) who did not know that the infection can be dangerous for newborn and children were willing for vaccination. The difference between the two groups was significant with a p value< 0.001.

Women who had media and awareness drives as their source of information were more willing to accept the vaccine compared to women who had peers and family as their source of information. The difference between the two groups was significant with a p value of <0.001.

207 out of 282 (73.4%) women who thought the vaccine was beneficial for the newborn were willing to get the vaccine. 157 out of 257(61.1%) who thought vaccine could be dangerous for the baby were not willing for the vaccine.

5. DISCUSSION

Out of the 650 women who participated in the study 383 (58.9%) women were to get the covid 19 vaccine., while 267 (41.1%) were not. The most common reason for rejection was concern about safety for fetus. Other common causes for rejection were concern about efficacy and sense of security due to decreasing number of cases

and young age. Unawareness about procedure of registration was also one of the causes of rejection.

The awareness about effect of Covid 19 infection on pregnant women and newborn had significant effect on decision making.

Women who were aware that the infection can be dangerous for the pregnant women and the newborn had greater acceptability of the vaccine.

The women who had awareness drives and media as a source of information had better acceptability of the vaccine compared to women whose information was based on opinions of family and peers.

Majority of women who thought vaccine was good for the fetus were willing to get vaccinated and majority of women who thought vaccination was harmful for the fetus were not willing to get vaccinated.

The acceptance of tetanus vaccine among the participants was very high demonstrating positive health seeking behavior among the study population.

The above results could be a guiding light in formulation of awareness drives and planning of vaccination programs for pregnant women for a pandemic. The awareness and correct information about the disease, the vaccine and the process of registration can greatly influence the health seeking behavior.

6. CONCLUSION

The knowledge about the disease and effect of vaccine greatly influences the decision of vaccination in pregnant women. The knowledge and awareness about the effect of disease on fetus and pregnancy is lacking in the pregnant women even in the third tier city of Delhi. Better awareness drives can greatly increase the vaccination acceptability. The results can be extrapolated for other health drives and health seeking behavior development.

CONSENT

As per international standard or university standard, patient(s) written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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APPENDIX

Table 1. Knowledge questions

QUESTIONS	Frequency (yes)	Percentage
Do you know that COVID-19 vaccine is available for pregnant women?	595	91.5
Do you know that COVID 19 infection can be dangerous for pregnant women?	587	90.3
Do you know that COVID 19 infection can be dangerous for newborns and children?	492	75.7
When do you think covid-19 vaccine should be administered?		
First 3 months	24	3.7
3 months to 6 months	25	3.8
Last three months	54	8.3
Do not know	457	70.3
Any time	90	13.8
What is your source of information about covid 19 vaccine?		
Media	300	46.2
Awareness drive	97	14.9
Peers and family	253	38.9
What do you think is the effect of the vaccine on newborn?		
Beneficial	282	43.4
Harmful	257	39.5
No effect	111	17.1

Table 2. Attitude questions

Questions	Frequency (yes)	Percentage
Did you get the tetanus vaccine?	630	96.9
if no why? (n=20)		
Concern about effect on Baby	12	60.0
Did not think it was necessary	8	40.0
Are you willing to get the covid 19 vaccine	383	58.9
If no why (perception) (n=267)		
Newer vaccine so concern about effectiveness	9	3.4
Concern about safety for fetus	158	59.2
Very less cases at present	50	18.7
Sense of security due to your age and non comorbidities	11	4.1
Unawareness about procedure for registration for vaccination	32	12.0
Fear of injection	6	2.2
Limited access to health care facility	1	.4

Table 3. Acceptance of vaccine based on knowledge

Do you know that covid 19 infection can be dangerous for pregnant women?	Acceptance of covid 19 vaccine		Total	Chisquare test P value
	Yes	No		
Yes	354 60.3%	233 39.7%	587 100.0%	0.029
No	29 46.0%	34 54.0%	63 100.0%	
Total	383 58.9%	267 41.1%	650 100.0%	
Do you know that covid 19 infection can be dangerous for newborns and children?	Acceptance of covid 19 vaccine		Total	Chisquare test P value
	Yes	No		
Yes	315 64.0%	177 36.0%	492 100.0%	<0.001
No	68 43.0%	90 57.0%	158 100.0%	
Total	383 58.9%	267 41.1%	650 100.0%	

Table 4. Acceptance of vaccine based on source of information

What is your source of information about covid 19 vaccine?	Acceptance of covid 19 vaccine		Total	Chisquare test P value
	Yes	No		
Media	200 66.7%	100 33.3%	300 100.0%	<0.001
Awareness Drive	61 62.9%	36 37.1%	97 100.0%	
Peers and Family	122 48.2%	131 51.8%	253 100.0%	
Total	383 58.9%	267 41.1%	650 100.0%	

Table 5. Acceptance of vaccine based on concern about fetal safety

What do you think is the effect of the vaccine on newborn?	Acceptance of covid 19 vaccine		Total	Chisquare test P value
	Yes	No		
Beneficial	207 73.4%	75 26.6%	282 100.0%	<0.001
Maybe Harmful	100 38.9%	157 61.1%	257 100.0%	
No effect	76 68.5%	35 31.5%	111 100.0%	
Total	383 58.9%	267 41.1%	650 100.0%	

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