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Research Article

Perception of covid-19 vaccine in pregnant women

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ABSTRACT

Background: Vaccine safety scares, whether factual or fabricated, can erode confidence and reduce coverage. Acceptance of vaccination during pregnancy is likely to raise specific questions and concerns among pregnant women. The effects of vaccination on the placenta and foetus and physiological changes in pregnancy make pregnant women a specific population that may respond differently to vaccination. These uncertainties must be considered in order to assess the benefit-risk balance and to make the most appropriate choice for pregnant patients at increased risk of severe COVID-19 [1]. Hence this study was conducted to study the prevalence of acceptance of COVID-19 vaccine in pregnant women and to find out hesitancy of COVID-19 vaccine in pregnant women. **Methods**: This Cross-sectional study was conducted among 83 Pregnant women by using Convenience Sampling method at Terna Medical Hospital. The questionnaire was prepared and validated. Participants were asked whether or not they would agree to be vaccinated against Covid 19 and why. Analysis was done by SPSS version (20.0) by applying chi square test. **Results**: 94% were aware about the existence of COVID 19 Vaccination and 93.9% accepted getting vaccinated against COVID 19. 6.1% didn't agree for vaccination. The top three reasons for pregnant women to decline COVID-19 vaccination during pregnancy even if the vaccine were safe and free were that: 1.Do not want to expose their developing baby to any possible harmful side effect 2.afraid of side effects to themselves 3. Had insufficient knowledge about vaccine. **Conclusion**: To increase vaccine acceptance, locally-specific vaccine programs are needed in population. Vaccine education campaigns should emphasize the pandemic as a whole and its impact on communities, rather than limiting to vaccine safety and effectiveness.

Key Words: *COVID-19; Pregnancy; Vaccination; Vaccine acceptance*

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INTRODUCTION:

After the World Health Organization (WHO) declared COVID-19 an international public health emergency (pandemic) on February 11, 2020, COVID-19 vaccines were produced within a year. COVID-19 vaccines were developed in the shortest time in vaccine history, due to remarkable determination in vaccine research, development, and manufacturing[1]. Vaccines against COVID-19 are considered very important to prevent and manage COVID-19 since vaccination is one of the most active and cost-effective health strategies for preventing infectious diseases[1].

Medications during pregnancy will have adverse pregnancy complications. Due to this scientific mythology, pregnant women are not volunteering to use the COVID-19 vaccine. There is are search question that needs covered timely "whether the magnitude of pregnant women who had perceived COVID-19 vaccination during pregnancy is a risk high or low and what are the factors associated with the perception of risk COVID-19 vaccination during pregnancy"?[2].

Vaccine safety scares, whether factual or fabricated, can erode confidence and reduce coverage. Acceptance of vaccination during pregnancy is likely to raise specific questions and concerns among pregnant women. The effects of vaccination on the placenta and fetus and physiological changes in pregnancy make pregnant women a specific population that may respond differently to vaccination. These uncertainties must be considered in order to assess the benefit-risk balance and to make the most appropriate choice for pregnant patients at increased risk of severe COVID-19[3].

Beyond the logistics of implementation of mass vaccination and in order to best protect at-risk populations, adherence of the population to vaccination is a key COVID-19 vaccine and their agreement to be vaccinated in the following study.

AIM:

To determine vaccine's perception toward corona virus disease 2019(COVID- 19) vaccines in pregnant women.

OBJECTIVE:

To find out acceptance of COVID-19 vaccine in pregnant women.

To find out hesitancy of COVID-19 vaccine in pregnant women and factors associated for hesitancy.

MATERIALS AND METHODOLOGY:

Study design: Cross Sectional Study.
Sampling method: Convenience Sampling.
Sample size: 105 Pregnant mothers attending NMMC and Terna Hospital
Study Tool: The questionnaire included questions on 1) Socio demographic Demographic information 2)Antenatal History3) Comorbidity4) Participants were asked whether or not they would agree to be vaccinated against COVID-19, and why.
Study Duration-15 December 2021-14 February 2022
Consent was obtained from patients at the beginning of Questionnaire. Data was analyzedin SPSS version 14 by applying multiple logistic regression and Chi Square Test.

Results and Discussion

Table1: Socio demographic Characteristic of study Participants (n=105)

Age group	Number of people	Percentage
<20	7	8.4
20-25	40	36.14
26-30	37	32.53
31-35	19	20.4
>35	2	2.4
Occupation		
Vendor	12	11.4
House wife	66	62.85
Office work	6	5.71
Teacher	4	3.81
Health worker	17	16.19
Education		
Graduate	7	6.67
Intermediate Diploma	9	8.57
Higher Secondary	11	10.48
Secondary	13	12.38
Primary	38	36.19
Illiterate	27	25.71
Socioeconomic Status (Kuppuswami Classification)		
Upper class (I)	4	3.81
Upper middle class(II)	14	13.33
Lower middle class(III)	43	40.95
Upper lower class(IV)	25	23.81
Lowerclass(V)	19	18.09

Table1 reveals socio demographic distribution of pregnant females. In this study 40(36%) females belong to20-25 age group followed by 37(32%) belong to 26-30 age group rest of them 19(20.4%), 7(8.4%), 2(2.4%) belong to 31-35,<20,>35 years of age group respectively. Around 66(62%) females are housewife, followed by 17(16.19%) were health workers. 12(11.4%) were Vendors and 6(5.71%), 4(3.8%) were office worker and teacher respectively 78

(78.28%) females educated till secondary level whereas only 27(25.72%) are educated from higher secondary to graduate. As per Kuppuswami classification 43(41%) females belong to lower middle class followed by 25(23.81%) belong to upper lower class. 19 (18.09%) belong to lower class whereas14(13.33%),4(3.81%)belong to upper middle class and upper class respectively.

Table2-Distribution of Study Subjects on Antenatal History

Gravida	**No Of Participants**	**Percentage**
1-2	78	74.28
3-4	27	25.71
>4	3	2.86
Type of Pregnancy		
Unplanned	36	34.28
Planned	69	65.71
Bad obstetric History		
Yes	11	10.48
No	94	89.52
Type of bad obstetric history(n=11)		
Still birth	2	18.18
Abortion	5	45.45
Others	4	36.36
Number Of antenatal Visits		
1-2	76	72.38
3 & above	29	27.62
Comorbidity		
Yes	26	24.76
No	78	74.28
(n=27)		
Hypertension	6	22.22
Tuberculosis	1	3.70
Diabetes	5	18.51
Other	14	51.85

Table 2 shows that among 105 participants 78(74.28%) of respondents were gravida 1–2, followed by27(25.7%), 3(2.86%) respondents were 3-4,>4 gravida respectively,69(65.71%) had planned pregnancy and 36 (34.28%) had unplanned pregnancy. 11(10.48%) of the participants had bad obstetric history like still birth, abortionetc.76(72.38%) did ANC visit 1-2 times whereas only 29(27.62%) females did ANC visit more than 3 times. Among all study participants 26 (24.76%) had co morbid conditions.

Table-3 Distribution Of study subjects for vaccine perception

Acceptance or Rejection	No. of Participants	Percentage
Accepted	78	74.28
Rejected	27	25.72

Table-3 shows that 78(74.28%) pregnant females accepted to take vaccine whereas 27 (25.72%) rejected.

Table-4 Rejection of covid-19 vaccine and why

Reason for rejection(n=27)	No of participants	Percentage
Afraid of side effects on fetus	10	37.0
Afraid of side effects on oneself	3	11.1
Insufficient data on efficacy of vaccine	6	22.2
Insufficient time for feedback of side effects	2	7.4
Depends of type of vaccine	4	14.8
Insufficient knowledge about vaccine	2	7.4

Table 4 shows reason for rejection to take COVID 19 vaccine. 10(37%) females rejected because they feel it will cause side effects on fetus. Followed by 6(22.2%) things that efficacy of vaccine is not known yet. 4(14.8%) rejected because the vaccine they wanted was not there. 3(11.1%) were afraid of side effects on oneself. Rest thing that insufficient time for feedback of side effects, Insufficient knowledge about vaccine.

Table -5 Association between vaccine Acceptance with socio demographic factors and antenatal history

Variables	COVID-19 Vaccine Acceptance		OR(95% CI)	P-Value
	Yes(78)	No(27)		
Age				
≤25(47)	30	17	1	
26–30(37)	31	6	2.720(1.101-8.721)	0.027
31andabove(21)	17	4	1.602(0.467-5.68)	0.435
Education				
Illiterate(27)	13	14	1	
Primary(38)	28	10	5.385(2.059-14.084)	0.000
Higher Secondary and above (40)	37	3	7.220(2.008-25.008)	0.001
Occupation				
Not working	48	15	1	
Working	30	12	0.781(0.322-1.894)	0.584
Gravida				
1-2(76)	62	14	1	
3and above (29)	16	13	0.278(0.109-0.707)	0.006
Socioeconomic Status				
Lower class(IV, V)(44)	26	18	1	
Middle class and above(I,II,III)(61)	52	9	4.00(1.581-10.121)	0.002
ANC Visit				
1-2(76)	60	16	1	
3and above(29)	18	11	0.436(0.172-1.107)	0.077
Comorbidity				
No(79)	56	23	1	
Yes (26)	22	4	2.259(0.701-7.284)	0.165

Table 5 reveals association between vaccine acceptance and socio demographic factors, the multivariate analysis showed that maternal age(<25years), maternal educational status, and, socio economic status and co morbid conditions during pregnancy were significantly associated with acceptance of the COVID-19 vaccine. The odds of acceptability of covid-19 vaccine among pregnant mothers who were more than 26-30years of age found nearly 2.7 times more likely than those pregnant mothers found in the females whose age is less than 25 years [OR=2.720(1.101-8.721)] Those pregnant mothers who had completed primary education were5.3 times more likely to accept COVID-19 vaccine compared to pregnant mothers who were illiterate [OR=5.385(2.059-14.084)] odds of acceptance is increasing with education. Also, Middle class and above (I,II,III) had 4.00 (1.581-10.121). Times odds of acceptance than lower class(IV,V).Odds of acceptance is 2.2 times more among participants who had co morbidity than normal ANC mothers whereas gravida, bad obstetric history, ANC visits are found non-significant.

DISCUSSION:

Multivariate logistic regression analyses were done to identify factors associated with the COVID-19 vaccine acceptance among pregnant women. In this study74.28% accepted to take vaccine because they think that vaccine is protective and also will reduce risk of covid 19 in their baby. 25.72% rejected mainly because they think vaccine will affect fetus. Whereas in study by **Milad azami et** al [4] (systematic review meta-analysis) the prevalence of COVID-19 vaccine acceptance in pregnant women was 53.46%. most common reason for rejection was same as our study as well as the insufficient vaccine data. **Ranya Aghamriet al** [5] the acceptance level of COVID-19 was 68%. The possible explanations for these differences are differences in access to healthcare services, differing awareness of the severity of COVID- 19, and study population differences.

In our study Factors associated for acceptance are mainly maternal age, education, socio economic status, and co morbid condition. Regression analysis demonstrated that those who received more than primary school level education were more willing to accept the vaccine than those were illiterate. Women with better educational attainment will have good health literacy which in turn influences them to seek information and advice from healthcare providers on COVID-19 vaccination. The reverse is true that women with lower educational status are more prone to traditional beliefs since they couldn't stand alone and were even influenced by others' decisions. whereas in study by **Oashe Bhattacharya**[6] et al similar findings were seen that participants with higher education, comorbid condition and employment of mother had more acceptance for covid vaccination in contrast in our study we could not find out any association with employment. **Ghamri et al**[5] study showed association with Education level, parity and ANC visits.

Recommendation

- Attitude, satisfaction, and trust level plays a great role in influencing women's choice of healthcare providers.
- Their attitude and perceptions towards COVID-19 vaccination triggers them to rely on it and to consider, free from life-threatening chemicals, no serious health implications, and life long effectiveness.
- Health care workers should provide health education to pregnant mothers during antenatal care visits to increase their knowledge about the diseases and disseminate leaflets regarding COVID-19 preventive measures to improve maternal practice of COVID-19 prevention.
- Pregnant women should be informed about the benefits and encouraged to take COVID-19 vaccine.
- More studies need to be done to see safety and effectiveness of COVID 19 vaccine.
- So Beyond the logistics of implementation of mass vaccination and in order to best protect at-risk populations, adherence of the population to vaccination and their agreement to be vaccinated is key.

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