

Perception and Willingness towards COVID-19 Vaccination in Pregnant Females in Jinnah Hospital, Lahore

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Abstract

Objective: To identify perceptions, concerns and barriers affecting willingness for COVID-19 vaccination among pregnant females.

Method: This was a cross-sectional study conducted on 365 pregnant women from Gynae outdoor department of Jinnah Hospital, Lahore from August 2021 to January 2022. After informed consent, data were collected with the help of a semi-structured questionnaire; entered, cleaned and analyzed using SPSS version 20.0. Chi Square was applied as a test of significance where p value is 0.05

Results: Among 365 females, only 58(15.9%) were vaccinated. About 6(10.4%) women received vaccination in the 1st trimester and 26(44.8%) each in the 2nd and 3rd trimester. Significant contributors for vaccination were vaccination center location, advice from health care provider, perception about vaccine safety and vaccine protection, supportive family attitude, previous history of COVID-19 infection and suspicious rumors.

Conclusion: Vaccine hesitancy and rejection can be minimized through a multipronged strategy to combat infodemic and to educate the public. Health care providers can play a vital role through their effective communication and counseling.

Keywords: COVID-19, Vaccine hesitancy, barriers, pregnancy, COVID-19 Vaccination

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Introduction

A bunch of atypical pneumonia cases were discovered in Wuhan, China in December 2019 which was named as COVID-19 caused by severe acute respiratory syndrome Coronavirus (SARS-COV-2). Symptoms were variable from asymptomatic disease or mild symptoms to severer acute respiratory distress which caused high mortality. It was declared as a pandemic by the World Health Organization (WHO). In Pakistan, It

was first detected on 26th February 2020 in Karachi, Sindh and later spread to the whole county.^{1,2}

During this time period, pregnant females were included in high risk group who were 70% more prone to getting infected and developing complications such as miscarriages, pre-eclampsia, postpartum hemorrhage in mother and premature deliveries followed by ICU admissions, ventilator support requirements and death in babies.³ High mortality and restriction of social life due to lockdown resulted in increased mental health issues. Vaccination was the only escape in this dreadful condition. Numerous Medical and Research Institutes developed vaccines for COVID-19. Depending upon vaccine efficacy, approximately 60-90% vaccination coverage is required to contain this disease.⁴ Despite the urgent need of vaccination to curb the pandemic, vaccine hesitancy was observed worldwide. About 31% vaccine

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hesitancy was observed globally. In the UK, 25%, in Canada 14% and in Australia 9% of the population surveyed, were reluctant for immunization.⁵ Pakistan already has vaccine hesitancy and rejection issues in the past, especially observed in Polio vaccine. So, the same attitude was observed this time against COVID-19. Before the introduction of the vaccine, conspiracy theories were fabricated and people were reluctant due to fear of side effects. Social networks played a vital role in its spread.^{6,7} As the vaccine was formulated in a short time, so the public had safety concerns. The compulsion to get vaccinated also added fuel to the fire.⁸ Hence, this study was designed to identify perceptions, concerns and barriers affecting willingness for COVID-19 vaccination among pregnant females

Material and Methods

The cross-sectional study was conducted at Gynae outdoor department of Jinnah Hospital, Lahore from August 2021 to January 2022. The Institutional Ethical Review Committee granted ethical approval. Furthermore, prior to enrollment in the study, permission from the participants was obtained. All pregnant women of child bearing age (15–49 years) were included; however, divorced, widow, post-menopausal women were excluded from the study.

Following formula was used to calculate the sample size

$$n = \frac{z^2 1-\alpha / s P(1-P)}{d^2}$$

Where Confidence interval was 95%, margins of error 5 percent and the anticipated population was 0.614.⁴ The estimated sample size was 365. After informed consent, data was collected through a pre-tested questionnaire. Observations were noted on a questionnaire. Data were entered, cleaned and analyzed using Statistical Package for Social Sciences (SPSS) version 20. Frequency tables were generated for all possible variables including age, education, occupation, family income, vaccination status, advice regarding vaccination, short term complications, advice by health care regarding vaccination, awareness about vaccination, vaccination center availability, perception regarding vaccination safety, suspicious rumors, effect of COVID-19 and family attitude. Means and other parameters of central tendency were calculated for continuous data. The comparison was done to find out the association of vaccination status with respect to baseline variables. Chi

Square was applied and p-value of ≤ 0.05 was considered statistically significant.

Results

The study was conducted in Jinnah hospital in Gynae outpatient department and 365 pregnant females were assessed through questionnaire to estimate the frequency of their willingness for COVID-19 vaccination and associated concerns and perceptions. Among 365 females, only 58(15.9%) were vaccinated and 307 (84.1%) were not vaccinated. About 6(10.4%) women received vaccination in the 1st trimester and 26(44.8%) each in the 2nd and 3rd trimester. Literacy percentage for the participants was 74.2% and 248(67.9%) women were 18–30 years of age. A large proportion of 318(87.1%) were housewives while only 47(12.9%) were working women while the monthly household income of 356(97.5%) participants was more than 20,000. Only 102(27.9%) women received advice from a health care provider regarding vaccination. A Hundred percent of participants had awareness about vaccination, while only 30(8.2%) complained that the vaccination center is distant from their residence. As far as the perception of respondents regarding vaccination is concerned, more than half of respondents 195(53.4%) thought that COVID-19 vaccination is not safe. A major proportion of 339(92.9%) participants replied that vaccination can have side effects, only 5(1.4%) replied that it has no negative impact and 21(5.8%) described that COVID-19 does not exist. About two third of participants 21(66%) confirmed that they have heard suspicious rumors about vaccination. However, 257 (78.6%) participants found support from the household regarding vaccination. Short Term Complications after COVID-19 Vaccination in Pregnant Females (n=58) were described in the pie chart below.

Discussion

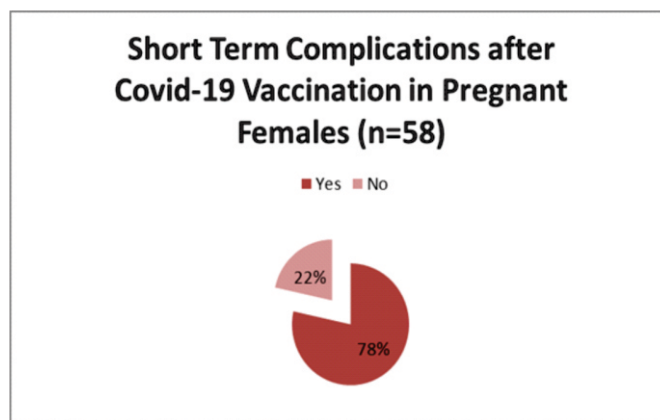


Table 1: Inferential statistics regarding association of Vaccination Status with variables

Characteristics	Vaccinated		Not Vaccinated		p-value
	n	%	n	%	
Near	57	17.0	278	83.0	0.050
Not Near	1	3.3	29	96.7	
Yes	37	36.3	65	63.7	<0.001
No	21	8.0	242	92.0	
Safe for both	55	32.4	115	67.6	<0.001
Not safe	3	1.5	192	98.5	
Supportive	57	19.9	230	80.1	<0.001
Non-Supportive	1	1.3	77	98.7	
Yes	9	45.0	11	55.0	<0.001
No	49	14.2	296	85.8	
Yes	58	33.9	113	66.1	<0.001
No	0	0.0	29	100.0	
To some extent	0	0.0	165	100.0	
Yes	17	7.1	22.4	92.9	<0.001
No	41	33.1	83	66.9	

P-value ≤ 0.05 significant.
Test Applied: Chi-square

The Covid infection has imposed a great threat on physical, mental and social health of the population. Pregnant women are under great vulnerability and in need to get vaccinated which can only be possible if their concerns and perceptions are identified which can affect their willingness to get vaccinated. We pursued to determine perceptions and determinants related to COVID-19 vaccine hesitancy amid pregnant females in Lahore to monitor inoculation struggles in this at risk population.

This survey revealed low vaccination status (15.9%) among pregnant females, higher understanding about vaccine efficacy (93%) and high safety apprehensions relevant to complications on the fetus (46.8%). COVID-19 shot coverage in gravid women varied globally, from 77% in a study steered in China to 37% in a study executed in Turkey.^{9,10} Vaccine approval related to safety and efficacy was on the higher side, but administration status in this population is quite low at 16%, which indicates a quest for an initiative to boost acceptance ultimately leading to sufficient vaccination in the population. Our decreased vaccine willingness is directly proportional to low supposed threat of infection due to decreased countrywide infection rates as per this study, enhanced infection risk perception was considerably associated with superior vaccine reception in expectant women

in our study. Reduced vaccine reception has also been influenced by endorsements from the local Health Ministry during survey times.¹¹ It was observed that due to organizational support for vaccination regarding gravid and lactating females, vaccine approval was quite higher than in our study population (44-58% and 55% in gravid and lactating females correspondingly).¹²

In our study, suspicious rumors were reported by 66% of women, although 76% of the family was supportive in administration of COVID-19 vaccine. However, other studies reported concerns regarding vaccine willingness among gravid women as compared to non-gravid and lactating women.¹³ A potential justification might be that expectant women may have been learned of the bigger hazard of severe ailment in infected gravid women, thus lessening their vaccine acceptance.

The healthcare providers were of the least concern to advise the pregnant ladies towards vaccination (27.9%). Although gravid women make more trips to health care centers due to ante-natal checkups, investigations and thus have a more chance to visit health care provider. It is the best time for physician to give a brief counseling regarding vaccine safety and to give answers to patients' questions and concerns. Many studies have indicated that due to certain concerns regarding developing fetus and her own wellbeing, pregnant women avoid vaccination.^{12,13}

Deficient safety data is a major contributor towards vaccine avidity in this study population. Expectant women were more anxious due to possible current and future side effects of the vaccine on child's health. According to observational data from different countries, mRNA-based vaccines were proved safe for expectant and lactating mothers and no short or medium duration side effects were observed for them.¹⁴ Appropriate dissemination of this data can play a vital role to enhance vaccine acceptance.

In this study, it was found that decreased education level and age were not significantly connected with higher vaccination numbers in pregnant women. This is dissimilar to other studies where greater education level and age were linked with greater inoculation administration.¹⁵ It is quite evident that females who were highly educated and of younger age were better conversant about the inoculation administration. This can also clarify our finding of lowered vaccine numbers in pregnant women, as a smaller fraction of pregnant women had a graduate degree or higher (6.6% vs. 1.9%). Certainly more pregnant women will be ready to get a job

after dissemination of safety data regarding vaccination. Limitation of this study was the cross-sectional method and the short duration of study, i.e. 3 months. During study conduction, Government recommendations regarding vaccine safety were changed with more emphasis on its safety. However, the results of this study are still relevant and valid, as these results depict the need of educational approaches targeting women who are either unsure or unwilling to accept the inoculation. In addition, vaccine acceptance was measured via participant reply, and not based upon actual vaccination rates. Reported intent is not a true reflection of human behavior on vaccination. Moreover, discussion regarding side effects and safety issues can also lead to vaccination uptake.¹⁶

This study is targeting a special vulnerable group, i.e. pregnant women in whom chances of complications after COVID-19 are high. Through this study we are able to propose platforms, namely social media and mass media, to raise awareness about the safety of vaccine in pregnant women to promote vaccination coverage. Along with expansion of the vaccination program, education of the masses is also very important

Conclusion

The perceptions regarding vaccine safety and willingness to receive COVID-19 vaccination are strongly related to the trusted recommendations from health care providers. Health education should be delivered to enhance the willingness in females. The data shows only 15.9% of pregnant females are vaccinated against COVID-19, which is a potential threat and the government should take strong measures to overcome this issue.

Conflict of Interest

None

Funding Source

None

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Authors Contribution

FG: Conceptualization of Project

KH: Data Collection

SK: Literature Search

FM, RH: Statistical Analysis

ZT: Drafting, Revision

SK: Writing of Manuscript