Research Article

KNOWLEDGE, MYTHS AND ACCEPTABILITY OF COVID-19 VACCINATION AMONG EXPECTANT WOMEN ATTENDING OUT PATIENT DEPARTMENT OF THE PRIVATE AND PUBLIC SECTOR HOSPITALS

Zahida Parveen Brohi[1], Uzma Parveen[1], Aneela sadaf[2], Roohi Nigar[1], Ifat Baloch[1]

[1]Department of obstetrics and Gynaecology Bilawal Medical College for boys Jamshoro, Pakistan, [2]Department of Obstetrics and Gynaecology, Services Hospital Karachi, Pakistan

Correspondence:
Zahida Parveen Brohi, Associate Professor Department of obstetrics and Gynaecology Bilawal Medical College for boys, Jamshoro, Pakistan
Email:zahidaparveen66@yahoo.com

DOI:
10.38106/LMRJ.2024.6.2-06
Received: 25.05.2024
Accepted: 26.06.2024
Published: 30.06.2024

ABSTRACT

This cross-sectional study was conducted to explore pregnant women's knowledge, attitudes, and acceptance of the COVID-19 vaccination. A total of 237 pregnant women were included from January 2021 till December 2021. After enrolment in the hospitals and before antenatal checkup all patients sent for COVID-19 vaccinations, those who had reservations regarding vaccination in pregnancy and willing to participate and share their knowledge were included. Data was collected using a pre-designed structured proforma. There were 84 pregnant women (35.4%) from rural residences, 67.1% with middle socioeconomic status, 84.8% were literate, 83.5% with 1 -3 antenatal visits, 46.8% with 21 – 26 weeks of gestational age, the mean gestational age of samples was 21.7 weeks. The source of information regarding hazards of COVID vaccine during pregnancy, there were 35 (44.3%) reported family, 24 (30.4%) reported friends, 15 (19%) reported healthcare providers and 5 (6.3%) reported media as the main source of information regarding hazards of COVID vaccine in pregnancy. Most of the expectant ladies who has misconceptions and were worried about birth defects and long-term effects on babies, the safety and prevention of COVID infection by the vaccine had information from the family.

Keywords: Pregnant women, COVID-19 vaccination, acceptability, counseling

INTRODUCTION

Recent Corona virus causing coronavirus disease 2019 (COVID-19) pandemic has made all the nations around the globe to experience terrible health and social consequences (1). It was essential to create herd immunity in the fight against this pandemic by immunizing as many people as possible worldwide at the earliest. This will stop new variants from forming and spreading that could compromise the immunity that immunizations provide (2). Since COVID-19 vaccines have been developed and certified for use in emergencies, public trust is crucial to the success of global vaccination (3). According to American College of Obstetricians and Gynecologists (ACOG) recommendations, the vaccine should be administered to pregnant and nursing mothers based on their risk. mRNA-based immunizations are believed to have lower risk to the fetus because the mRNA is anticipated to break down in circulation (4).

The pregnant women are highly susceptible to severe COVID-19 illness. A study found that pregnant women had a 1.5 times higher risk of dying from COVID-19 and were three times more likely than non-pregnant women to need hospitalization or intubation (5). According to the authors of a recent study on the disease's impact during pregnancy Maternal mortality was 22 times greater in pregnant women with a COVID-19 diagnosis than in those without pregnancy. When giving birth, females infected with COVID-19 had a significantly increased risk of being admitted to the intensive care unit (ICU) and of delivery before the full 37 weeks gestational age. Pregnant women in Pakistan who are not vaccinated are believed to face numerous challenges due to COVID-

19(7). When local data was obtained and presented at a webinar titled "Pregnancy in Covid-19 and relevance of vaccine," organized by a public medical university in association with the American Society of Microbiology, it was discovered that COVID-19 had an 8% death rate for pregnant women (8). These adverse pregnancy outcomes emphasize how important immunization is for pregnant mothers. Promising results have been observed in recent trials assessing the effectiveness of the COVID-19 vaccination among pregnant women. Women who received at least one dose of the COVID-19 vaccination during their pregnancies showed comparable rates of all unfavorable pregnancy outcomes when compared to those who did not, according to Blakeway et al. They concluded that there is no relationship between vaccines and perinatal outcomes (9). There is limited data available on the understanding of pregnant women about COVID vaccination in Pakistan, therefore this study was explore if pregnant women visiting public and private hospitals accept the COVID-19 immunization.

MATERIALS AND METHODS

This cross sectional study was conducted at Hajiani Hospital, Hyderabad, Pakistan and Bilawal Medical College teaching (CDF) Hospital Hyderabad, Pakistan for 1year from January 2021 to December 2021.

During the study time period, a total of 237 pregnant women were enrolled in the study. After enrolment in the hospitals and before antenatal checkup all participants were sent for COVID vaccinations according to the hospital protocol. Those who had reservations regarding COVID vaccination in pregnancy and willing to participate and share their knowledge were included. It was done using a pre-designed structured proforma. Each participant got a physical examination and provided a clinical history. From each pregnant woman was asked regarding their concerns about COVID-19 vaccine such worried about birth defects and long-standing effects on babies, their concerns about safety of immunization in pregnancy. It was also asked whether in their opinion the vaccine does not prevent COVID-19 infections, or the vaccine is harmful to pregnant women. Participants were also requested to provide the source of information regarding the hazards of COVID vaccine during pregnancy. Data were analysed using IBM-SPSS version 23.0. Number with percentages were reported on location, socioeconomic status, literacy, number of antenatal visits and gestational age (in weeks) of study sample. Pearson Chi-Square test was used to test the relationship of perceptions of respondents on hazards of COVID vaccine during pregnancy with the source of information. P-values less than 0.05 was considered statistically significant

RESULTS

A total of 237 women were included in this study with mean gestational age of samples was 21.7 (SD=±5.4) weeks, out of which 35.4% were from rural areas, 67.1% belonged to middle socioeconomic status, 84.8% were literate, 83.5% with 1 -3 number of antenatal visits, 46.8% with 21 – 26 weeks of gestational age. Eighty-four women showed expressed their concerns related to COVID vaccine.

Source of information regarding hazards of COVID vaccine during pregnancy family and relatives in 35 (44.3%), 24 (30.4%) reported friends, 15 (19%) reported healthcare providers and 5 (6.3%) reported media as the main source of information regarding hazards of COVID vaccine during pregnancy (Figure 1).

Table 2 reports the perceptions on hazards of COVID vaccine during pregnancy with the source of information, results showed samples who were worried about birth defects and long-term effects in babies 13.5% had information from a healthcare provider, 47.3% had information from family, 32.4% had information from friends and 6.8% had information from media. For samples who thought the vaccine was unsafe in pregnancy 3.2% had information from a healthcare provider, 56.5% had information from family, 38.7% had information from friends and 1.6% had information from media, samples who thought that the vaccine does not prevent the COVID infection 1.7% had information from a healthcare provider, 58.3% had information from family, 38.3% had information from

friends and 1.7% had information from media, samples who thought the vaccine was harmful to pregnant mother 1.8% had information from a healthcare provider, 54.5% had information from family, 41.8% had information from friends and 1.8% had information from media, whereas samples who had some other concerns 5.3% had information from a healthcare provider, 42.1% had information from family, 52.6% had information from friends and none had information from media. Pearson Chi-Square test provide a significant relationship of Perceptions on the hazard of COVID vaccine during pregnancy with the source of information of the respondent ($p<0.05$). A summary is presented in Figure 2.

Table 1: Demographic characteristics of the study population (n=237)

Characteristics		**n**	**%**
Residence	Urban	66	27.8
	Rural	84	35.4
	Semi Urban	87	36.7
Socioeconomic status	Low	36	15.2
	Middle	159	67.1
	Upper	42	17.7
	Unemployed	0	0.0
Literacy	Literate	213	84.8
	Illiterate	24	15.2
Number of antenatal visits	0 visits	15	6.3
	1 - 3 visits	198	83.5
	4 - 6 visits	24	10.1
Gestational age (weeks)	<20 weeks	75	31.6
	21 - 26 weeks	111	46.8
	>26 weeks	51	21.5
	Mean ±SD	*21.7*	*±5.4*

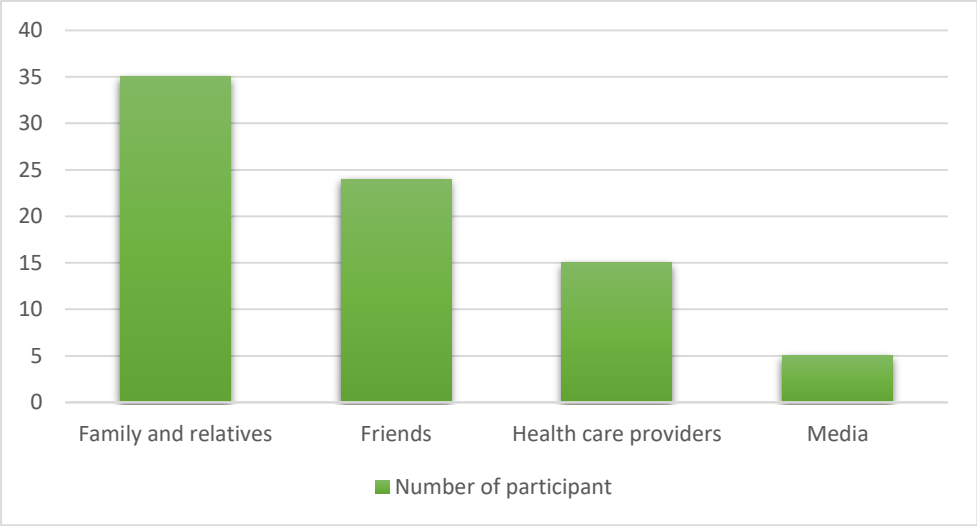

Figure 1. Source of information to the participants of the study regarding COVID vaccination

Table 2: Association of Hazard of COVID Vaccine Perceptions during Pregnancy with Source of Information of Respondents

Variables		what is your source of information regarding hazards of Covid vaccine during pregnancy								p-value
		Health Care Provider (n=45)		Family (n=105)		Friend (n=72)		Media (n=15)		
		n	%	n	%	n	%	n	%	
Worried about birth defects and long term effects in baby	Yes	30	13.5	105	47.3	72	32.4	15	6.8	<0.01*
	No	15	100.0	-	-	-	-	-	-	
vaccine is unsafe in pregnancy	Yes	6	3.2	105	56.5	72	38.7	3	1.6	<0.01*
	No	39	76.5	-	-	-	-	12	23.5	
vaccine does not prevent the Covid infection	Yes	3	1.7	105	58.3	69	38.3	3	1.7	<0.01*
	No	42	73.7	-	-	3	5.3	12	21.1	
vaccine is harmful for pregnant mother	Yes	3	1.8	90	54.5	69	41.8	3	1.8	<0.01*
	No	42	58.3	15	20.8	3	4.1	12	16.6	
other concern	Yes	3	5.3	24	42.1	30	52.6	-	-	0.04*
	No	42	23.3	81	45.0	42	23.3	15	8.3	
*p<0.05 was considered statistically significant using Pearson Chi-Square test										

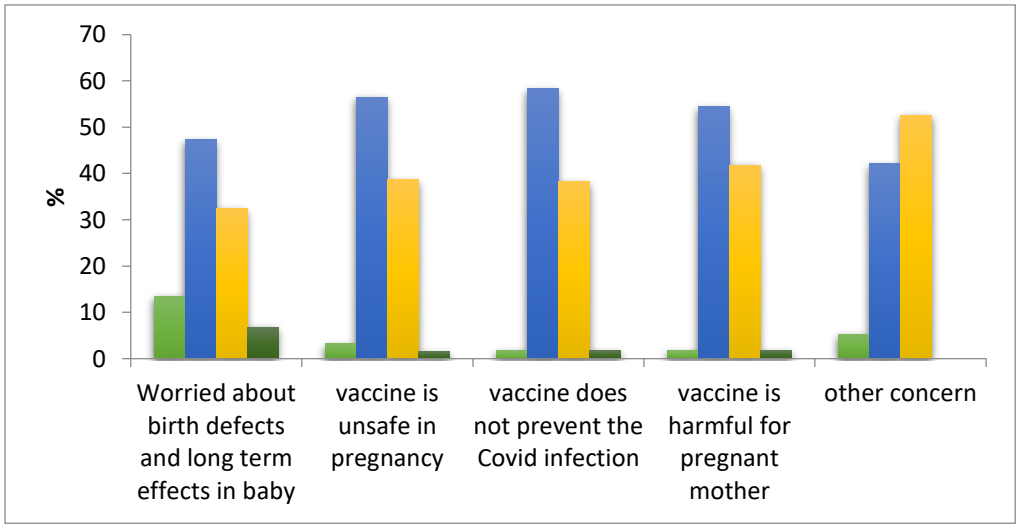

Figure 2. Source of information about vaccines related concerns of participants of the study

DISCUSSION

In our study there were eighty-four pregnant women showed their concerns related to the COVID vaccine. According to a local study about seventy-six percent of the study participants (n = 286) were between the ages of 25 and 34 and had a history of successful pregnancies. Despite the fact that their family members (93.9%, n = 372) had already gotten at least one dose of the COVID-19 vaccine, more than half of the study participants (56.0%, n = 227) had not had the immunization at the time the data were collected. The primary motivators for vaccine reluctance were vaccine effectiveness, protection for the fetus, and risk of COVID-19-associated hospitalization among individuals who got COVID-19 vaccination (7). According to another local study Television accounted for 117 (36.8%) of the material on COVID-19, and healthcare practitioners made for 105 (33%). The participants said they could be persuaded to get vaccinated if there were 118 (37.1%) more published studies on vaccine efficacy and safety, 90 (28.3%) or higher government officials received the same vaccination and 39 (12.3%) they saw no adverse reactions in vaccine recipients (9-10).

In the current study the source of information regarding hazards of COVID vaccine during pregnancy, there were 105 (44.3%) reported family, 72 (30.4%) reported friends, 45 (19%) reported healthcare providers and 15 (6.3%) reported media as the main source of information regarding hazards of COVID vaccine during pregnancy. According to the results of an international study, the strongest factor coexisting with acceptance of the COVID-19 vaccination in pregnancy were, belief in the importance of vaccinations, acceptance of other vaccinations such as those for influenza, clear communication about the safety of COVID-19 vaccines for pregnant women, and mass vaccination in one's own country (11). According to Battarbee AN et al's findings, 72% of expectant mothers were anxious about getting COVID-19, with 92% of them fearing for the health of their unborn child and 80% fearing for their own safety in the event that they become ill. Just 41% of respondents stated they would get vaccinated. Concerns about vaccine safety during pregnancy were most frequently voiced by women who were not likely to obtain vaccines (82%) (12).

According to another study Risk to the fetus or newborn was the main worry among the women who chose not to get vaccinated, followed by vaccine adverse effects (17.7%) (13). In an international survey, the respondents who were not pregnant had the highest likelihood of accepting vaccination (457 respondents, 76.2%; p-value 0.001), while those who were breastfeeding had the lowest likelihood (i.e. 55.2%). The lowest rate of vaccine acceptability was found among pregnant respondents (44.3%; p-value 0.001) (14). In developing nations, medical resources, diagnosis, and treatment must be improved. Pakistan has few resources for medical education and research, including low patient awareness, little access to medical and health resources, and less training and information on diseases (15–23). The study included only a small sample size of the women who were seeking their antenatal care in government sector and economical private sector hospital. Thus limited resources of information are a major confounding factor and considered as a limitation of the study.

CONCLUSION

Most of the women who were worried about birth defects and long-term effects on babies, safety of vaccine during pregnancy. Therefore, the counseling of the whole family should be done regarding the benefits and safety of COVID-19 vaccine during pregnancy.

Conflict of interest:

Authors declare no conflict of interest

Ethical Consideration

The study was approved by local research ethics committee, informed consent was taken from all the participants and their identity was anonymized.

REFERENCES

1. Lai CC, Shih TP, Ko WC, Tang HJ, Hsueh PR. Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and coronavirus disease-2019 (COVID-19): The epidemic and the challenges. International journal of antimicrobial agents. 2020 Mar 1; 55(3):105924.
2. Hossain MJ. Is Bangladesh moving toward herd immunity? Current COVID-19 perspective. Bangladesh Journal of Infectious Diseases. 2020 Nov 8:S63-6.
3. Fisk RJ. Barriers to vaccination for coronavirus disease 2019 (COVID-19) control: experience from the United States. Global Health Journal. 2021 Mar 1; 5(1):51-5.
4. Di Mascio D, Buca D, Berghella V, Khalil A, Rizzo G, Odibo A, Saccone G, Galindo A, Liberati M, D'Antonio F. Counseling in maternal–fetal medicine: SARS-CoV-2 infection in pregnancy. Ultrasound in Obstetrics & Gynecology. 2021 May; 57(5):687-97.
5. Hanna N, Hanna M, Sharma S. Is pregnancy an immunological contributor to severe or controlled COVID-19 disease?. American Journal of Reproductive Immunology. 2020 Nov; 84(5):e13317.
6. Chinn J, Sedighim S, Kirby KA, Hohmann S, Hameed AB, Jolley J, Nguyen NT. Characteristics and outcomes of women with COVID-19 giving birth at US academic centers during the COVID-19 pandemic. JAMA Network Open. 2021 Aug 2; 4(8):e2120456-.
7. Mustafa ZU, Bashir S, Shahid A, Raees I, Salman M, Merchant HA, Aldeyab MA, Kow CS, Hasan SS. COVID-19 Vaccine Hesitancy among Pregnant Women Attending Antenatal Clinics in Pakistan: A Multicentric, Prospective, Survey-Based Study. Viruses. 2022 Oct 25; 14(11):2344.
8. Villar J, Ariff S, Gunier RB, Thiruvengadam R, Rauch S, Kholin A, Roggero P, Prefumo F, Do Vale MS, Cardona-Perez JA, Maiz N. Maternal and neonatal morbidity and mortality among pregnant women with and without COVID-19 infection: the INTERCOVID multinational cohort study. JAMA pediatrics. 2021 Aug 1; 175(8):817-26.
9. Blakeway H, Prasad S, Kalafat E, Heath PT, Ladhani SN, Le Doare K, Magee LA, O'brien P, Rezvani A, von Dadelszen P, Khalil A. COVID-19 vaccination during pregnancy: coverage and safety. American journal of obstetrics and gynecology. 2022 Feb 1; 226(2):236-e1.
10. Rizwan W, Rana MN, Bukhari MH, Mushtaq A, Sadiq M. Reasons of vaccine hesitancy among Pakistanis with available COVID-19 vaccine: the next challenge in the fight against COVID-19. Natural Science. 2021 Jun 3; 13(6):211-7.
11. GoncuAyhan S, Oluklu D, Atalay A, MenekseBeser D, Tanacan A, MoralogluTekin O, Sahin D. COVID-19 vaccine acceptance in pregnant women. International Journal of Gynecology & Obstetrics. 2021 Aug; 154(2):291-6.

12. Battarbee AN, Stockwell MS, Varner M, Newes-Adeyi G, Daugherty M, Gyamfi-Bannerman C, Tita AT, Vorwaller K, Vargas C, Subramaniam A, Reichle L. Attitudes toward COVID-19 illness and COVID-19 vaccination among pregnant women: a cross-sectional multicenter study during August–December 2020. American journal of perinatology. 2022 Jan; 39(01):075-83.
13. Levy AT, Singh S, Riley LE, Prabhu M. Acceptance of COVID-19 vaccination in pregnancy: A survey study. American journal of obstetrics & gynecology MFM. 2021 Sep 1; 3(5).
14. Sutton D, D'Alton M, Zhang Y, Kahe K, Cepin A, Goffman D, Staniczenko A, Yates H, Burgansky A, Coletta J, Williams Z. COVID-19 vaccine acceptance among pregnant, breastfeeding, and nonpregnant reproductive-aged women. American journal of obstetrics & gynecology MFM. 2021 Sep 1; 3(5):100403.
15. Jabeen M, Shahjahan M, Farid G. Information Dissemination during COVID-19 Pandemic among Postgraduate Allied Health Sciences Students in Pakistan. Pakistan Journal of Medical & Health Sciences. 2022;16(11):366-.
16. Shahjahan M, Jabeen M, Farid G. Information Providing in COVID-19 by Health Professionals in Pakistan. Pakistan Journal of Medical & Health Sciences. 2022 Dec 12;16(10):641-.
17. Farid G, Zaheer S, Khalid A, Arshad A, Kamran M. Evaluating Medical College Lib Guides: A Usability Case Study. Pakistan Journal of Medical & Health Sciences. 2022 Aug 26;16(07):461-
18. Farid G, NiaziAk, Muneeb M, Iftikhar S. Attitude towards Utilization of e-Resources of Medical Images among Health Care Professionals. Pakistan Journal of Medical and Health Science. 2021 Sep 15 (9);261-263
19. Farid G, Iqbal S, Iftikhar S. Accessibility, Usage, and Behavioral Intention of Print Books and eBooks by Medical Students. Library Philosophy and Practice. 2021:1-25.
20. Farid G, Abiodullah M, Ramzan M. A comparative study of information seeking behaviors of medical faculty working in government and private run medical colleges. International Journal of Information Management Science. 2013;2(1):17-24.
21. Farid G, Soroya SM. Perception and Behavioral Intention of Print and Electronic Books among Medical Students; A Comparative Study. Pakistan Library & Information Science Journal. 2018;49(1):52-60.
22. Baladi ZH, Farid G, Gulzar A, Hussain M, Iftikhar S, Naz M. Examining Authorship Dynamics, Publication Patterns, and Affiliations in the Pakistan Journal of Medical and Health Sciences (PJMHS) from 2009-2019. Pakistan Journal of Medical & Health Sciences. 2023 Jun 24;17(05):277-.
23. Shahbaz T, Farid G, Asghar RS, Rashid A. hepatitis b and c: knowledge, attitude and behavior of health care workers at rlmc and affiliated hospitals (amth & hlh). The Professional Medical Journal. 2015 Nov 10;22(11):1383-9.