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Research Article



# Knowledge, Attitude and Practice Towards Covid 19 Vaccine Among Pregnant Females in Makkah Region

**Farah Alsaadi[1] , Alaa H. Falemban[2,3], Safaa M. Alsanosi[2,] Deena Bukhary[3] And Yosra Al-Hindi[2*]**

[1] *Pharm D Candidate, Faculty of Pharmacy, Umm Al-Qura University, Makkah, Ksa.*

[*2] *Pharmacology and Toxicology, Faculty of Medicine, Umm Al-Qura University, Makkah, Ksa.*

[3] *Saudi Toxicology Society, Umm Al-Qura University, Makkah, Saudi Arabia*

[4] *Pharmaceutical Science Department, Faculty of Pharmacy Umm Al-Qura University, Makkah, Ksa*

**Abstract:** Background: Coronavirus disease 2019 (COVID-19) is an emerging respiratory disease that is caused by a novel coronavirus, which was first diagnosed in December 2019 in Wuhan, China, and subsequently spread to many other countries. Numerous countries have reported increasing numbers of confirmed cases and death per day; therefore, on March 11, 2020, the WHO declared COVID-19 a pandemic. COVID-19 is a highly infectious disease and can affect patients with low immunity especially pregnant females. Vaccines are an important source of elevating immunity and promoting health. Aim: Our main aim for this study is to determine the knowledge, attitude, and practice of pregnant females towards COVID-19 vaccine in Makkah Mukarramah. Methods: A cross-sectional survey was carried out among 73 consenting pregnant women using pretested questionnaires. Results: In our results we found the mean age and mean gestational age of the respondents were between 25 and 30 years of age and third trimesters, respectively. More than four-fifths (90%) of the females believed that COVID-19 is real, and their main source of information was the internet. The majority had adequate knowledge of COVID-19. Majority showed a good attitude and preventive practice of COVID-19 disease; however, 39 percent thought that hospitals are very infected with this virus. The study population has good knowledge, attitude, and practice of COVID-19 disease and the need of vaccination against it. However, community education is needed to reduce anxiety among pregnant women and to increase the acceptance of vaccination towards improving health and immunity.

**Key words:** Pregnant, Covid-19, Vaccine, KAP, Makkah, cross-sectional

***Corresponding Author**

**Yosra Al-Hindi , Pharmacology and Toxicology, Faculty of medicine, University of Umm Al-Qura, Makkah, KSA.**

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## 1. INTRODUCTION

Coronavirus disease 2019 COVID-19 is an emerging respiratory disease that is caused by a novel coronavirus, which was first diagnosed in December 2019 in Wuhan, China, and subsequently spread to many other countries [1]. Numerous countries have reported increasing numbers of confirmed cases and death per day; therefore, on March 11, 2020, the WHO declared COVID-19 a pandemic [2,3,4.] COVID-19 is a highly infectious disease "whose main clinical symptoms vary from fever, dry cough, fatigue, myalgia, and dyspnea to acute respiratory distress syndrome, difficult-to-tackle metabolic acidosis, septic shock, and bleeding and coagulation dysfunction" [5,6,7.]The coronavirus epidemic caused significant morbidity and mortality during the past two years. It affects the respiratory system that requires hospitalization in 5% to 6% of all SARS-CoV-2–infected pregnant women [8,9]. However, data were initially unclear as to whether pregnant individuals are at increased risk of severe complications from COVID-19 [10]. On the other hand, a large study from the Centers for Disease Control and Prevention (CDC) provided data suggesting an increased risk. Among more than 450,000 symptomatic women of reproductive age with COVID-19 for whom pregnancy status was known [11]. Nowadays, we can see the important practice of COVID19 vaccination in pregnancy. Anyhow, the use of other vaccines during pregnancy has the same efficacy and safety "as COVID-19 miRNA vaccines in pregnant populations". Indeed, with their mechanism of inducing an immune response, clinicians can outline the benefit of prevention of COVID-19 illness, as well as the undefined but possibly limited risk to the fetus [10,11,12,13.] Following the global initiation of a mass vaccination application in opposition to COVID19, the Kingdom of Saudi Arabia (KSA) additionally released its vaccination marketing campaign for Saudi nationals and immigrants living within the Kingdom. Currently, 3 distinct vaccines, manufactured by Pfizer-BioNTech, Moderna and AstraZeneca are broadly administered in KSA [14]. Initially, the health workers, healthcare experts and older population had been prioritized because of the restricted manufacturing and availability of vaccine doses [15]. The vaccine can become off market for young adults if they are not manufactured. [16]. However, vaccine hesitancy is the most important problem within the country wide vaccine marketing campaign. A variety of religious, ethnic, social, and cultural ideals might also additionally have an impact on the vaccination marketing campaign. Additionally, safety worries of newly permitted vaccines additionally avert vaccine acceptability. As most of the people who are hesitant to take the vaccine are afraid from the side effects of the vaccine. Despite the coordinated global efforts for mass vaccination, the anti-vaxxers have unfold the disinformation concerning risks and facet outcomes associated with COVID-19 vaccines, growing (or increasing) hurdles in vaccinating the masses. Therefore, in Saudi Arabia it is important to educate people about vaccinations and perform more education to improve this. [17,18,19,20]. The boundaries that may impede the vaccine marketing campaign are structural and attitudinal. Systemic problems that have an impact on an individual's acceptance to get entry to the carrier which includes availability of vaccine, outlet place and affordability, are structural boundaries. In contrast, ideals and perceptions influencing vaccine popularity come beneath the attitudinal boundaries [21,22]. Currently, the authorities have administered more than 16 million doses at more than 587 vaccination centers throughout the Kingdom. The availability of vaccines and the national presence of vaccination facilities imply that structural boundaries are now no longer prescribing the KSA from accomplishing complete vaccination coverage. Thus, the attitudinal boundaries are the main motive of vaccination hesitancy**.** Our main aim for this study was to determine the knowledge, attitude, and practice of pregnant females towards COVID-19 vaccine in Makkah Mukarramah.

## 2. MATERIALS AND METHODS

### *2.1 Study Design*

The present study is a cross-sectional study that assessed the knowledge, attitudes, and preventive practice of COVID-19 infection among pregnant females towards COVID-19 vaccine in Makkah Mukarramah from January 2022 to May 2022. Ethical approval for the study was obtained from the Research and Ethics Committee of Umm Al-Qura University (HAP0-02-K-012-2021-09-750).

### *2.2 Study Instrument*

The study instrument was a pretested structured interviewer questionnaire which was divided into sections: socio-demographic and obstetric characteristics; knowledge; attitude; and practice of COVID-19 infection. The questionnaire took 5–7minutes to complete.

### *2.3 Sample Size*

The sample size was calculated using the formula for cross-sectional study ($N=Z^2 PQ/D^2$) where N is the required sample size, $Z$ is 1.96 at 95% confidence interval (CI), $P$ is estimated patient satisfaction from similar studies of 50% (0.5), $D$ is the margin of error at 5% (standard deviation of 0.05), and $Q$ is $1 - P$. A minimum sample size of 62 patients was obtained and, after the addition of a 10% attrition rate, was increased to 73.

## 3. STATISTICAL ANALYSIS

The data obtained were analyzed using SPSS version 23 (IBM Corp., Armonk, NY, USA). The results were presented with frequency tables/percentages and bar charts. Categorical variables were compared with odds ratios (OR) and $x^2$ test. The level of significance was set at $P<0.05$.

## 4. RESULTS

Table 1 demonstrates the sociodemographic features of participants. Of 73 pregnant women who completed the questionnaire, the mean age and mean gestational age of the respondents were between 25 and 30 years of age and third trimesters and most of the participants were prime.

| Table 1. Sociodemographic and obstetrics variables of the pregnant female respondents | |
|---|---|
| **Parameters** | **Percentages (Numbers)** |
| **Age (years)** | |
| ≤24 | 9.49% (13) |
| 25–30 | 23.36% (32) |
| 31–35 | 8.03% (11) |
| >35 | 6.57% (9) |
| **Marital status** | |
| Married | 100% (73) |
| Unmarried | 0 |
| **Level of education** | |
| Elementary | 1.4% (1) |
| Intermediate | 2.8% (2) |
| Secondary | 15.3% (11) |
| College | 80.6% (58) |
| **Gestational age** | |
| First trimester | 9.7% (7) |
| Second trimester | 41.7% (30) |
| Third trimester | 48.6% (35) |
| **Number of children** | |
| 0 | 34.3% (47) |
| 1 | 18.1% (1) |
| 2 | 11.1% (8) |
| 3 | 5.6% (4) |
| 4 | 34 (8) |
| 5 | 1.1% (1) |
| 6 | 1.1% (1) |

Table 2 demonstrate that pregnant had good knowledge regarding COVID-19 information and their sources of information from the internet. Major number of Participants were aware about Covid-19 vaccine approximately 77.4% and their knowledge regarding agent of COVID-19 is high. Around 90.3% admitted that covid is real. 58.3% got their information from the internet. 68.1% said that vaccine is safe for pregnant.

| Table 2. Knowledge of COVID-19 among the pregnant female respondents | |
|---|---|
| **Variables** | **Percentages (Numbers)** |
| **Is COVID-19 real?** | |
| Yes | 90.3% (56) |
| No | 4.2% (3) |
| Not sure | 5.6% (4) |
| **Sources of information** | |
| Friends | 5.6% (4) |
| Social media | 36.1% (26) |
| Internet | 58.3% (42) |
| **Aware of COVID-19 vaccine awareness** | |
| Yes | 77.4% (57) |
| No | 22.6% (43) |
| **Agents of COVID-19** | |
| Virus | 97.2% (70) |
| Bacteria | 2.8% (2) |
| **Sources of infection transmission** | |
| Airborne | 20.2% (15) |
| Infected drops | 79.2% (57) |
| **Symptoms of COVID-19** | |
| Fever | 40.15% (55) |
| Diarrhea | 0.73% (1) |
| Cough | 7.3% (10) |
| Weakness | 0.73% (1) |
| Headache | 4.38% (6) |
| **Is COVID-19 Vaccine safe for pregnant?** | |
| Yes | 68.1% (49) |
| No | 31.9% (23) |
| **Is there any conflict for respiratory patients with coronavirus?** | |
| Yes | 52.8% (38) |
| No | 47.2% (34) |

Table 3 showed that some pregnant approximately 61% were believed that the hospital is the good environment of spread the infection, and most of them are ready to get vaccine. However, 61.1% were afraid to go out to visit common or crowded places.

**Table 3. Attitude of the pregnant females' women towards COVID-19 [a]**

| Variables | Sufficient Knowledge | Insufficient Knowledge | OR (95% CI) |
|---|---|---|---|
| Do you see hospitals as the places that bring infection? | 61.1% (44) | 38.9% (28) | 2.1 (0.51–1.9) |
| Afraid to visit common places so you do not go out? | 61.1% (44) | 38.9% (28) | 2.1 (0.51–1.9) |
| Are you ready to get the vaccine? | 62.5% (45) | 37.5% (27) | 1.44 (0.65–2.40) |

***Abbreviations: CI, confidence interval; OR, odds ratio.***
***[a] Values are given as number (percentage).***

Fig 1 showed the percentage of a pregnant women who took the vaccine. It was around 61%. Moreover, they did not suffer from any related side effect from the vaccines.

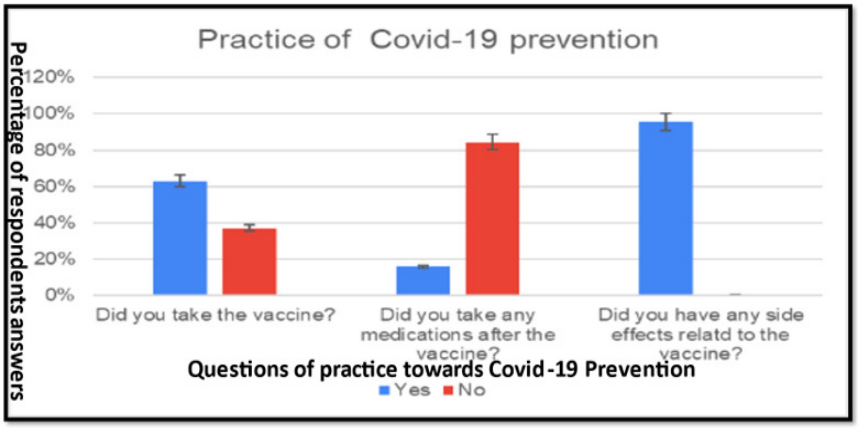


**Fig 1: Practice of COVID-19 prevention among pregnant females of the respondents. (N=73).**

## 5. DISCUSSION

Our main aim of the study was to assess the knowledge, practice, and attitude towards COVID-19 vaccine among pregnant women in Saudi Arabia. We found that the study population had good knowledge, attitude, and practice of COVID-19 disease. However, community education is needed to reduce anxiety among the female pregnant towards vaccines. Our results were like a study done in India, that showed satisfactory knowledge and positive attitude, moreover; they were following appropriate practice regarding COVID-19. However, they found that the females needed more awareness towards hygiene issues [22,23.] Another study examined knowledge in pregnant and found that the majority had a good knowledge but less than half of them were engaged in preventive practice [24]. In our study we showed that the mean age and mean gestational age of the respondents were between 25 and 30 years of age and third trimesters, respectively. More than four-fifths (90%) of the females believed that COVID-19 is a fact and true, however, their main source of information was the internet. Overall, the majority had adequate knowledge of COVID-19 disease itself. Majority showed a good attitude and preventive practice of COVID-19 disease. On the other hand, we found studies that discovered opposite results than our study. one reported low acceptance of Covid-19 vaccine. The females were concerned about the safety of vaccine [25]. Another Ethiopian study found that knowledge and practice were low in pregnant that was associated with age, residence, and perception of the Covid-19 on chronic diseases [12,13,26.] In our study we found that 39% of the respondents thought that hospitals were places that are very infected with this virus. This shows a lot of inadequate information that needs to be corrected. Therefore, education and educational programs or networks and conferences are essential in this part. Vaccination is visible as a public opportunity of the twenty-first century [27]. Vaccination now no longer simplest protects the inoculated person, however it can additionally guard the complete society through herd immunity. Vaccinating the bulk of wholesome human beings in a network facilitates shield folks that are not able to be vaccinated. However, a huge fraction of the populace ought to be vaccinated to perform this populace-stage impact [28,29,30.] Based on currently available data, specialists agree that immunizing 71% of the overall populace will lead to herd immunity in opposition to COVID-19 [31]. The excellent effects of classified ads hooked up through the Ministry of Health in Saudi Arabia to induce human beings to get the vaccination, the movements made through many excessive officers to acquire the immunizations in the front of cameras and the distribution of vaccines without cost have all contributed to the widespread upward thrust withinside the COVID-19 vaccine acceptability charge over the previous couple of months. In contrast to our study, a latest study at from Jordan and the United States suggested 37% and 57% vaccine attractiveness charge respectively which may be very less than our study [32,33,34.] The findings of the current study supported the stated hypothesis that heath educational intervention is effectively improving pregnant women's knowledge, attitude, and practice regarding the prevention of COVID 19.

## 6. CONCLUSION

The present study population has good knowledge, attitude, and practice of COVID-19 disease and the need of vaccination

against it. However, community education is needed to reduce anxiety among pregnant among the female pregnant and to increase the acceptance of vaccination towards improving health and immunity.

## 7. RECOMMENDATION

Based on the findings of this study the following should be recommended: 1. Health educational intervention regarding the prevention of COVID 19 should be provided for all pregnant women at all MCH centers until the total management of the COVID 19 virus. 2. Antenatal health care should have a plan to communicate online with pregnant women to manage such crisis situations.

## 8. AUTHOR CONTRIBUTION STATEMENT

Farah Alsaadi and Yosra Alhindi contribute to study conception, supervision, project administration, and revision. Farah Alsaadi Yosra Alhindi, Alaa Falemban, Deena Bukhary and Safaa Alsanosi contribute to literature review and writing/ manuscript preparation: writing the initial draft, data collection, formal analysis and data presentation, data collection.

## 9. ETHICAL APPROVAL

The Medical Ethics Committee of Umm Al-Qura University, Saudi Arabia, approved the study ethical approval number: (HAP0-02-K-012-2021-09-750). Furthermore, electronic informed consent was obtained from each participant to submit their answers, and they can withdraw at any time.

## 10. CONFLICT OF INTEREST

Conflict of interest declared none.

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