

# Impact of COVID-19 on Antenatal, Natal, and Postnatal Care of pregnant females at Akbar Niazi Teaching Hospital

Nadia Jabeen<sup>1</sup>, Fareeha Zaheer<sup>2</sup>, Kinza Ali<sup>3</sup>, Amna Faruqi<sup>4</sup>, Irfan Afzal Mughal<sup>5</sup>, Asma Irfan<sup>6</sup>

<sup>1</sup> Associate Professor, Department of Gynae./Obs., Akbar Niazi Teaching Hospital, Islamabad.

<sup>2</sup> Assistant Professor, Department of Gynae./Obs., Pak Emirates Military Hospital, Rawalpindi.

<sup>3</sup> House Officer, Department of Gynae./Obs., Akbar Niazi Teaching Hospital, Islamabad.

<sup>4</sup> Associate Professor, Department of Physiology, Islamabad Medical & Dental College, Islamabad.

<sup>5</sup> Associate Professor, Department of Physiology, HBS Medical & Dental College, Islamabad.

<sup>6</sup> Professor, Department of Physiology, Islamabad Medical & Dental College, Islamabad.

## Author's Contribution

<sup>1,2</sup> Conception of study

<sup>1,2,3</sup> Experimentation/Study conduction

<sup>5</sup> Analysis/Interpretation/Discussion

<sup>3,4,6</sup> Manuscript Writing

<sup>4,5</sup> Critical Review

<sup>6</sup> Facilitation and Material analysis

## Corresponding Author

Dr. Nadia Jabeen,

Associate Professor,

Department of Gynae./Obs.,

Akbar Niazi Teaching Hospital,

Islamabad

Email: [njj69@hotmail.com](mailto:njj69@hotmail.com)

## Article Processing

Received: 08/09/2020

Accepted: 24/02/2021

**Cite this Article:** Jabeen, N., Zaheer, F., Ali, K., Faruqi, A., Mughal, M., Irfan, A. Impact of COVID-19 on Antenatal, Natal, and Postnatal Care of pregnant females at Akbar Niazi Teaching Hospital. *Journal of Rawalpindi Medical College*. 30 Mar. 2021; 25(1): 60-65.

DOI: <https://doi.org/10.37939/jrmc.v25i1.1471>

**Conflict of Interest:** Nil

**Funding Source:** Nil

**Access Online:**



## Abstract

**Objective:** To determine the perception of pregnant patients regarding the COVID pandemic, preventive measures taken by the patients during the pandemic, and the impact of COVID on their Natal, Intrapartum, and Postpartum Care.

**Materials and Methods:** This study included 850 patients presenting in the Obstetrics and Gynaecology department for antenatal care, inpatient care (delivery and caesarean section), and postpartum complications. Percentages were calculated for descriptive variables like demographic factors, source of information, and opinion of patients about COVID-19, preventive measures are taken by the patients, their Antenatal, Natal, and Postnatal fears. An independent t-test was applied and a p-value of <0.05 was taken as statistically significant.

**Results:** We enrolled 850 patients in this study with a mean age of  $\pm 28$  years, mean gravidity of  $\pm 3$ , 50% were matriculated and 75% of our patients belonged to middle-class families. Among our patients, 96% were in fear of getting infected along with their fetus, if they visited the hospital for antenatal care, which is why a majority of them did not visit the hospital for antenatal care and a statistically significant percentage (80%) of them missed antenatal care for 5 months. While the same number of patients (96%, p-value <0.05) shared their fear regarding contracting the infection from the hospital during delivery and postnatal care in the hospital, and the same percentage were of the opinion that the baby would get infected during and after delivery in a hospital.

**Conclusion:** Antenatal care is a basic right of every pregnant female. During emergencies like pandemics ways and means should be devised, not only to provide care but, also, to address the fears of pregnant females to prevent complications during this important phase of life.

**Keywords:** Pregnancy, Knowledge, Prevention, COVID-19, Fears.

## Introduction

Pregnancy is a special time full of excitement and anticipation. But, for the pregnant female, facing the outbreak of coronavirus disease (COVID-19), fear, anxiety, and uncertainty have clouded this otherwise happy time.

Coronavirus disease (COVID-19) emerged in China in December 2019, caused by the SARS-COV-2 virus. After that, it had a worldwide spread.<sup>1</sup> General opinion about Coronavirus disease is that it is very contagious, and prevention is probably the most effective tool against it. The behavior of people, including females, is affected by provided knowledge, perception, and awareness regarding the ongoing situation of COVID-19.<sup>2</sup>

This pandemic has resulted in an increased level of anxiety and other mental health problems in the general population.<sup>3</sup> There is increasing evidence that this stress is likely to be even greater for pregnant women, as pregnancy represents a period of additional uncertainty.<sup>4</sup> Specifically, these anxieties are likely to revolve around COVID-19 itself, the impact of social isolation resulting in reduced support from wider family circle and friends, the potential of reduced household finances, and major changes in antenatal care, including some appointments being changed, insecurity and inability to access support systems (hospital care). These are expected to affect pregnant women more than usual during the pandemic.<sup>5</sup> The virus has also caused tremendous anxiety and fear about the continuation of pregnancy, effects on the newborn, and chances of vertical transmission.<sup>6</sup> Many pregnant women are avoiding visiting their gynaecologist in a hospital due to concerns of exposure to the coronavirus and their baby getting infected.

The care of pregnant women with complex healthcare needs is challenging during this pandemic. Maternity care is essential for every pregnant woman and various studies conducted in the UK and internationally, have shown that women who do not attend antenatal services are at an increased risk of maternal death, stillbirth, and other adverse perinatal outcomes.<sup>7</sup> Antenatal and postnatal care should be therefore regarded as essential, which women should be advised and encouraged to attend, whilst observing current social distancing measures.<sup>8</sup> According to UK maternal mortality reports, women at particularly high risk during pregnancy are Asian and of lower socioeconomic status.<sup>9</sup>

Women avoiding going to a hospital to prevent exposure of themselves, family members, and their fetus can result in further complications during antenatal and intrapartum periods.<sup>10</sup>

This study aimed to determine the perceptions of pregnant women about the COVID-19 pandemic and its impact on their antenatal, natal, and immediate postnatal period.

## Materials and Methods

### Objectives of the study:

1. To determine the perception of pregnant women and preventive measures taken by them during COVID, presenting at Akbar Niazi Teaching Hospital about ongoing COVID-19 pandemic.
2. To identify the impact of COVID-19 on their antenatal, natal, and immediate postnatal period.

This cross-sectional study was conducted in the gynaecology and obstetrics department of Akbar Niazi Teaching Hospital, Islamabad affiliated with Islamabad Medical and Dental College, during the COVID pandemic after getting approval from the ethical committee of the hospital. Data was collected from pregnant patients (booked and non booked) presenting in the outpatient department for antenatal care as well as from the inpatient department from patients admitted with medical problems, pregnancy-related complications, during labour, and for elective and emergency caesarean section.

Informed consent was taken from all the pregnant patients. All the participants were interviewed face to face by the principal researcher.

The sample size was calculated using a cross-sectional study sample size calculator from openepi.com, an opensource calculator, recommended by the Center for Disease Control, America. The confidence level was taken as 95% and the margin of error acceptable was taken as 5%, whereas, the assumed percentage frequency was taken as (50%). The sample size was calculated to be 385. To increase the statistical power of the study, the sample size was increased to 850.

Data was collected with the help of a structured proforma during the peak of the COVID pandemic from April 2020 till July 31<sup>st</sup>, 2020. For purpose of data collection, easy understanding of patients, and for the convenience of interviewers, the proforma was divided into various sections. The first section of the proforma included demographic information. The second section focused on the perception of the

COVID-19 pandemic. The third section dealt with the source of information about the COVID-19 pandemic, while the fourth section was about the effect of this pandemic on their antenatal visits (reason of continuation/discontinuation) to the hospital, their fears for themselves and their babies, of contracting this infection during the antenatal, intrapartum and immediate postpartum period in the hospital. Statistical analysis was done on SPSS version 22.

Results were reported section-wise separately. For quantitative variables like age, gravidity, parity, and socioeconomic status, percentages were calculated. Regarding open-ended questions, opinions were reported (answer by most of the people and answer by a minimum number of people) and percentages were calculated for their answers. Regarding close-ended questions, the question-wise analysis was done and results were shown in percentages.

In order to identify the mean differences between the responding groups, an Independent t-test was applied. The significance level was set at a p-value <0.05.

## Results

Our study enrolled 850 pregnant patients from both outpatient and inpatient departments. The age of the pregnant patients in our study ranged from 22 to 32 years with a mean age of  $\pm 28$  years. The Gravidity of patients ranged from 1 to 9 with the mean value of  $\pm 3$ . Regarding education, 10% were educated till primary, 25% till secondary, 50% till matric and 15% had done masters level. Seventy percent of our patients belonged to middle-class families, 20% belonged to the lower middle class, and 10% to higher class families.

Table 1 illustrates the perception of pregnant females about the COVID pandemic. Regarding information about COVID-19, 765 patients (90%) said that it originated from China, while 85 patients (10%) had no idea about its origin, 595 patients (70%) said that cough was the main mode of spread, flu was regarded as the main symptom by 680 patients (80%) and 510 patients (60%) considered pneumonia as the main complication of COVID. Regarding carrier state, 833 patients (98%) were aware that if they got infected, they could transmit the infection to others. The assumption regarding the disappearance of COVID, 612 patients (72%) said that it would disappear from our society in about three months' time.

Figure 1 illustrates preventive measures observed by the patients during the COVID pandemic. Regarding preventive measures for COVID, 595 patients (70%)

were of the opinion that wearing a mask was the most effective strategy.

The source of information regarding the COVID pandemic is expressed in Figure 2. The main source of information of the COVID pandemic was social media (Facebook) for 391 patients (46%) while 340 of patients (40%), received information from television.

The impact of COVID on antenatal, natal, and postnatal care of pregnant females is shown in Table 2. Among our patients, 96% were in fear of getting infected along with the fetus if they came to the hospital for antenatal care, which is why a majority of them did not visit the hospital for antenatal care and a statistically significant percentage (80%) of them missed their antenatal care for 5 months (p-value=0.000). While the same number of patients (96%) shared their fear regarding catching an infection from the hospital during delivery and postnatal care in hospital (p value=0.000) and the same percentage were of opinion that their baby would get infected during and after delivery in hospital (p value=0.000).

**Table 1: Perception of pregnant patients about COVID pandemic**

<i>Place from where COVID started</i>	<i>China n= 765 (90%)</i>	<i>Paki stan n= 0 (0%)</i>	<i>Iran N=0 (0%)</i>	<i>Others n= 85 (10%)</i>	
<b>What is mode of transmission (how it spreads)</b>	Cough n=595 (70%)	Hand shake n=170 (20%)	Sneezi ng n=85 (10%)	Close contact n=0 (0%)	No idea n=0 (0%)
<b>What are signs and symptoms of this infection</b>	Flu n=680 (80%)	Cough n=85 (10%)	Fever N=85 (10%)	No idea n=0 (0%)	
<b>Complications of COVID infection</b>	Pneu monia n=510 (60%)	Gener alized weakn ess n=85 (10%)	Fever N=85 (10%)	No idea n=170 (20%)	
<b>Do you think if you are infected you can spread infection (carrier)</b>	Yes n=833 (98%)	No n=17 (2%)			
<b>How long this infection will prevail in our society</b>	3 months n=612 (72%)	6 month s n=238 (28%)	9 month s n=0 (0%)	1 year n=0 (0%)	2 year s n=0 (0%)

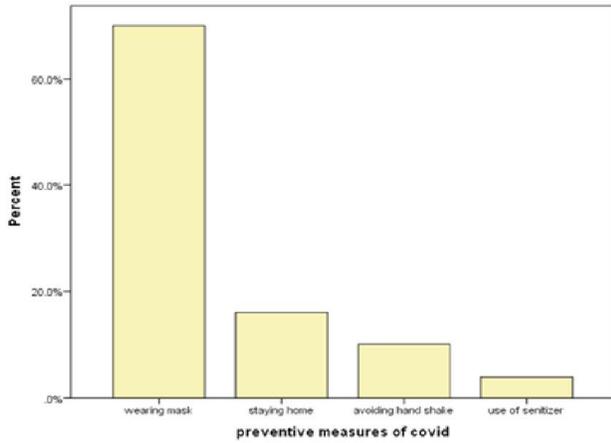


Figure 1: Preventive measures observed by the patients during the COVID pandemic

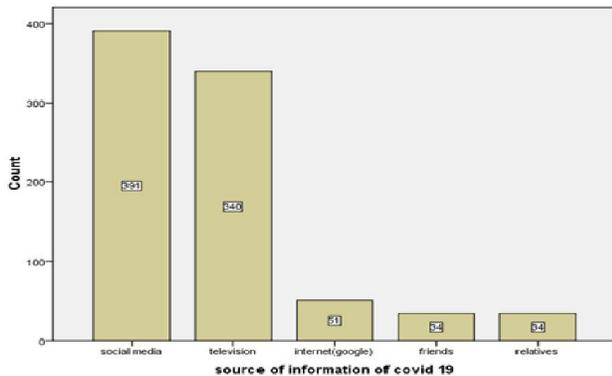


Figure 2: Source of information regarding COVID-19

## Discussion

Pregnancy is a challenging situation for females as the pattern of life changes during this period owing to sleep disturbances, relationship stresses, and feelings of lack of support.<sup>11</sup> These life changes lead to psychological stress for many females<sup>12</sup>, and if she is exposed to environmental stressors such as natural disasters (COVID-19 presently), this will have a strong impact on pregnancy and fetal outcome.<sup>13</sup> Pandemic is a situation during which the exposed population faces challenges of not only dealing with the situation but also of prevention of spread. Knowledge about a situation (pandemic) mainly affects the behavior of people exposed to take preventive measures.<sup>14</sup> Risk perception of a pandemic is affected by the acceptability of the situation and health complications associated with exposure. In our study, we found that

Table 2: Impact of COVID on Antenatal, Natal, and Postnatal Care

Different fears of women	Antenatal, Natal & Post care	P-value
Fear of getting an infection during an antenatal visit	782 (95.8)	0.000
Fear of fetus getting infected during an antenatal visit	722 (92.3)	0.167
Spread of infection in a carrier state	765 (91.8)	0.239
Fear of Prevalence of COVID infection and delay in hospital visits	612 (78.3)	0.000
<ul style="list-style-type: none"> <li>➤ 3 months</li> <li>➤ 6 months</li> </ul>	170 (21.7)	
Afraid of catching infection from hospital during and after delivery	816 (96)	0.000
Fear of baby getting an infection during and after delivery	782	0.000

*P-value <0.05 is taken as significant  
Values in parenthesis indicate the percentage*

pregnant patients found the COVID pandemic as an actual threat to their health and life. Moreover, a large majority of our patients had a good knowledge regarding COVID and this was higher than in the previous studies.<sup>15</sup> Regarding preventive measures during this pandemic, our studied population agreed that if they observed safety measures such as wearing a mask, social distancing, avoiding close contact like a handshake, and use of sanitizers, they would remain safe during pregnancy. The percentage of preventive strategies observed by the patients was higher than a similar study regarding MERS Coronavirus infection in Saudi Arabia<sup>16</sup> but in close comparison to a study conducted on COVID infection in Iran<sup>17</sup>, where people believed that prevention could save their lives. During this pandemic, the media acted as a facilitator in providing up-to-date information regarding COVID spread, improving knowledge, and bringing awareness to the public.<sup>18</sup>

Multiple sites are available on the internet providing necessary information. However, many of them are not reliable and it is difficult to distinguish between rumors and real news.

In our study, the main source of information for the patients was social media (Facebook) followed by television, the internet (google), relatives, and friends. These results are in comparison with a study that showed social media as a strong source of information regarding COVID.<sup>19</sup>

Pregnancy is a condition, in which women are more vulnerable to viral infections, and the morbidity is high even with seasonal influenza due to an immunocompromised state. Therefore, the COVID-19 epidemic may have serious consequences for pregnant women. Various studies have proven human-to-human transmission of the virus with even asymptomatic people spreading COVID infection.<sup>20</sup> Mortality was found to be substantially high in people who were immunocompromised.<sup>21</sup>

Pregnancy is a time when the female needs to be seen regularly by the gynaecologist, which is difficult during the pandemic.<sup>22</sup> The difficulty in accessing professional antenatal help may also be a source of anxiety for pregnant women.<sup>23</sup> They are also insecure about exposure risk to the coronavirus when accessing antenatal facilities. In our study, a statistically significant number of our patients denied visiting hospitals for antenatal care, due to fear of the COVID pandemic. Out of these, the majority did not visit the hospital in the last five months while others did not visit for the last four months of their antenatal period, and no investigations were done. The main reason for not visiting the hospital was fear of contracting COVID infection as well as fear of transmission of infection to the fetus. So, a majority of the patients felt that their antenatal care was greatly affected. These trends were all found to be statistically significant.

Fetal well-being is one of the main maternal concerns. Although the possibility of vertical transmission has not yet been confirmed with concrete evidence, women feel worried about such risk infection of the infant during the peripartum period.<sup>24</sup>

However, existing COVID-19 studies that focused on infected pregnant women till now have revealed no case of vertical transmission of the virus to the fetus.<sup>25</sup> This is very reassuring for pregnant females, as we observed in our study that this was the issue of greatest concern faced by our patients.

## Conclusion

Concerns of pregnant females regarding COVID infection should be taken seriously so that high-risk cases with obstetrical complications are not neglected. A policy should be devised, wherein, antenatal care is provided at home by lady health visitors while adhering to social distancing measures. It is necessary to counsel high-risk females to visit the hospital to avoid complications that may endanger their lives and their babies. During the pandemic, telemedicine should be practiced by all government and private hospitals.

## References

1. Qu YM, Kang EM, Cong HY. Positive result of Sars-Cov-2 in sputum from a cured patient with COVID-19. *Travel medicine and infectious disease*. 2020 Mar 1. DOI: 10.1016/j.tmaid.2020.101619
2. Mirza TM, Ali R, Khan HM. The knowledge and perception of COVID-19 and its preventive measures, in public of Pakistan. *Pakistan Armed Forces Medical Journal*. 2020 Apr 30;70(2):338-45.
3. Moreno C, Wykes T, Galderisi S, Nordentoft M, Crossley N, Jones N, et al. How mental health care should change as a consequence of the COVID-19 pandemic. *The Lancet Psychiatry*. 2020 Jul 16. doi.org/10.1016/S2215-0366(20)30307-2
4. Vickers NJ. Animal communication: when i'm calling you, will you answer too?. *Current biology*. 2017 Jul 24;27(14):R713-5. doi.org/10.1016/j.cub.2017.05.064
5. Saccone G, Florio A, Aiello F, Venturella R, De Angelis MC, Locci M, et al. Psychological impact of coronavirus disease 2019 in pregnant women. *American Journal of Obstetrics & Gynecology*. 2020 Aug 1;223(2):293-5. doi.org/10.1016/j.ajog.2020.05.003
6. Fakari FR, Simbar M. Coronavirus pandemic and worries during pregnancy; a letter to editor. *Archives of academic emergency medicine*. 2020 Mar 16;8(1):e21
7. Dowswell T, Carroli G, Duley L, Gates S, Gülmezoglu AM, Khan-Neelofur D, et al. Alternative versus standard packages of antenatal care for low-risk pregnancy. *Cochrane Database of Systematic Reviews*. 2015(7). doi.org/10.1002/14651858.CD000934.pub3
8. Ortiz EI, Herrera E, De La Torre A. Coronavirus (COVID 19) Infection in Pregnancy. *Colombia Médica*. 2020 Jun;51(2). doi.org/10.25100/cm.v51i2.4271
9. Knight M. The findings of the MBRRACE-UK confidential enquiry into maternal deaths and morbidity. *Obstetrics, Gynaecology & Reproductive Medicine*. 2019 Jan 1;29(1):21-3. doi.org/10.1016/j.ogrm.2018.12.003
10. Hall KS, Samari G, Garbers S, Casey SE, Diallo DD, Orcutt M, et al. Centring sexual and reproductive health and justice in the global COVID-19 response. *The lancet*. 2020 Apr 11;395(10231):1175-7. doi.org/10.1016/S0140-6736(20)30801-1
11. Sandman CA, Davis EP, Buss C, Glynn LM. Exposure to prenatal psychobiological stress exerts programming influences on the mother and her fetus. *Neuroendocrinology*. 2012;95(1):8-21. doi.org/10.1159/000327017

12. Woody CA, Ferrari AJ, Siskind DJ, Whiteford HA, Harris MG. A systematic review and meta-regression of the prevalence and incidence of perinatal depression. *Journal of affective disorders*. 2017 Sep 1;219:86-92. doi.org/10.1016/j.jad.2017.05.003
13. Farewell CV, Jewell J, Walls J, Leiferman JA. A mixed-methods pilot study of perinatal risk and resilience during COVID-19. *Journal of Primary Care & Community Health*. 2020 Jul;11:2150132720944074. doi.org/10.1177/2150132720944074
14. Roy D, Tripathy S, Kar SK, Sharma N, Verma SK, Kaushal V. Study of knowledge, attitude, anxiety & perceived mental healthcare need in Indian population during COVID-19 pandemic. *Asian journal of psychiatry*. 2020 Jun 1;51:102083. doi.org/10.1016/j.ajp.2020.102083
15. Kim JS, Choi JS. Middle East respiratory syndrome-related knowledge, preventive behaviours and risk perception among nursing students during outbreak. *Journal of clinical nursing*. 2016 Sep;25(17-18):2542-9. doi.org/10.1111/jocn.13295
16. Nour MO, Babilghith AO, Natto HA, Al-Amin FO, Alawneh SM. Knowledge, attitude and practices of healthcare providers towards MERS-CoV infection at Makkah hospitals, KSA. *Int Res J Med Med Sci*. 2015 Oct 1;3(4):103-2.
17. Taghrir MH, Borazjani R, Shiraly R. COVID-19 and Iranian medical students; a survey on their related-knowledge, preventive behaviors and risk perception. *Archives of Iranian medicine*. 2020 Apr 1;23(4):249-54. DOI: 10.34172/aim.2020.06
18. Gralinski LE, Menachery VD. Return of the Coronavirus: 2019-nCoV. *Viruses*. 2020 Feb;12(2):135. doi.org/10.3390/v12020135
19. Karasneh R, Al-Azzam S, Muflih S, Soudah O, Hawamdeh S, Khader Y. Media's effect on shaping knowledge, awareness risk perceptions and communication practices of pandemic COVID-19 among pharmacists. *Research in Social and Administrative Pharmacy*. 2021 Jan 1;17(1):1897-902. doi.org/10.1016/j.sapharm.2020.04.027
20. Chan JF, Yuan S, Kok KH, To KK, Chu H, Yang J, et al. A familial cluster of pneumonia associated with the 2019 novel coronavirus indicating person-to-person transmission: a study of a family cluster. *The lancet*. 2020 Feb 15;395(10223):514-23. doi.org/10.1016/S0140-6736(20)30154-9
21. Bastola A, Sah R, Rodriguez-Morales AJ, Lal BK, Jha R, Ojha HC, et al. The first 2019 novel coronavirus case in Nepal. *The Lancet Infectious Diseases*. 2020 Mar 1;20(3):279-80. doi.org/10.1016/S1473-3099(20)30067-0
22. Poon LC, Abramowicz JS, Dall'Asta A, Sande R, Ter Haar G, Maršal K, et al. ISUOG Safety Committee Position Statement on safe performance of obstetric and gynecological scans and equipment cleaning in context of COVID-19. *Ultrasound in Obstetrics & Gynecology*. 2020 May;55(5):709-12. doi.org/10.1002/uog.22027
23. Simó S, Zúñiga L, Izquierdo MT, Rodrigo MF. Effects of ultrasound on anxiety and psychosocial adaptation to pregnancy. *Archives of women's mental health*. 2019 Aug;22(4):511-8. doi.org/10.14740/jocmr2275w
24. Kajdy A, Feduniw S, Ajdacka U, Modzelewski J, Baranowska B, Sys D, et al. Risk factors for anxiety and depression among pregnant women during the COVID-19 pandemic: A web-based cross-sectional survey. *Medicine*. 2020 Jul 24;99(30). DOI: 10.1097/MD.00000000000021279
25. Chen H, Guo J, Wang C, Luo F, Yu X, Zhang W, et al. Clinical characteristics and intrauterine vertical transmission potential of COVID-19 infection in nine pregnant women: a retrospective review of medical records. *The lancet*. 2020 Mar 7;395(10226):809-15. doi.org/10.1016/S0140-6736(20)30360-3.