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Original Research Article

## Impact of COVID-19 on antenatal care utilization- a tertiary care center study in New Delhi

Garima Maan\*, Niharika Dhiman

Department of Obstetrics and Gynecology, Maulana Azad Medical College and Lok Nayak Hospital, New Delhi, India

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**\*Correspondence:**

Dr. Garima Maan,

E-mail: [garimamaan92@gmail.com](mailto:garimamaan92@gmail.com)

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### ABSTRACT

**Background:** The COVID-19 pandemic has impacted people's daily lives all around the world. A lack of resources caused by COVID-19 has put many health systems under pressure and sparked protest from many quarters. As COVID-19 care was the primary focus of the majority of Delhi's healthcare delivery facilities, several staff members became positive, staff members became involved in COVID-19 emergency duties, and staff members were forced into mandatory quarantines, which limited the provision of antenatal care to routine care. The aim of this study was to know the impact of COVID-19 on routine antenatal care utilization.

**Methods:** This was a questionnaire-based study was conducted in the Department of Obstetrics and Gynecology in MAMC and Lok Nayak Hospital New Delhi, between December 2020 to May 2021 over a period of 6 months. A total of 55 antenatal cases who fulfilled the inclusion and exclusion criteria were included in the study presenting to hospital over a period of 6 months.

**Results:** Only 12% women were booked, 23% women had fear of getting infection, all routine investigation were done in only 14.5% women, 20% women had travel difficulties, 50% women missed their first trimester visit, 50.9% women could get the anomaly scan done.

**Conclusions:** The COVID-19 had a substantial impact on antenatal care, delaying the diagnosis, travel to the medical facility, and subsequent treatment. Age of the mother, suspension and diversion of maternity health care, fear of the COVID-19 pandemic, lack of family support, and transportation accessibility were all important factors that affected how little antenatal care pregnant women used.

**Keywords:** ANC care (antenatal care), COVID-19

### INTRODUCTION

The WHO defines antenatal care as the care given to a pregnant mother before birth, and it involves education, screening, counselling added with treatment of problems, and immunization.<sup>1</sup> Antenatal care is the systematic supervision of women during pregnancy to monitor the progress of fetal growth and to ascertain the wellbeing of the mother and the fetus. Proper antenatal care provides necessary care to mother and helps to identify any complications of pregnancy such as anemia, pre-eclampsia and hypertension in the mother and detects inadequate growth of the fetus.<sup>2</sup>

The coronavirus disease (COVID-19) pandemic has challenged the resilience of the most effective health systems of the world. It has emerged as a threat to global public health, forcing countries to go into complete self-imposed lockdowns.<sup>3</sup> It has disrupted the continuum of care and compelled the healthcare systems to prioritize the services rendered by them.<sup>4</sup> As COVID-19 care was the primary focus of the majority of Delhi's healthcare delivery facilities, several staff members became positive, staff members became involved in COVID-19 emergency duties, and staff members were forced into mandatory quarantines, which limited the provision of antenatal care to routine care. The COVID-19 pandemic and the response

of the healthcare delivery system are affecting and disrupting both the provision and utilization of RMNCH services. These disruptions in maternal and child health services may be due to restrictions imposed by the government on population movements like the creation of containment zones, reassignment of health workers, equipment and facilities to cater to COVID-19 patients.<sup>5</sup>

Thus, the aim of this study was to assess pregnant women's satisfaction with antenatal care during COVID-19 pandemic.

## METHODS

This was a questionnaire-based study was conducted in the Department of Obstetrics and Gynecology in MAMC and Lok Nayak Hospital New Delhi, between December 2020 to May 2021 over a period of 6 months. It was filled by only 55 patients over a duration of 6 months. From the antenatal clinic, 55 women who satisfied the following inclusion and exclusion criteria were included in the study. While conducting the surgery the new WHO care model was used, women who comes under high risk by classifying form were excluded from the study. The women who need basic component of ANC programme were part of our study. New ANC model basic component checklist was used.<sup>6</sup>

The following items were measured on a 5-point Likert scale from "strongly disagree" to "strongly agree" which includes 1) did COVID-19 affect your antenatal care like difficulty in getting routine investigations as well as immunisation. 2) Did COVID-19 affect your availability of regular medications such as iron and calcium. 3) COVID-19 affect your social life visiting friends/family/regular walk. 4) Did you feel COVID-19 affected your antenatal and postnatal care. 5) Did you feel you need to spend extra money due to COVID-19.<sup>7</sup>

### Inclusion criteria

All pregnant women between the age of 20-35 years who are willing to come for antenatal checkups.

### Exclusion criteria

All pregnant women belonging to extreme of age which were below the age of 20 and above the age of 35 years. Maternal complications such as diabetes, renal disease, hypertension and other medical disorders as well as the women with bad obstetric history.

The Data was entered in MS Excel and analysis was done using SPSS (Statistical Package for the Social Sciences) 21.0 version.

## RESULTS

Around 50% women were belonged to age group of 26-30 years.

**Table 1: Frequency table for age group distribution among pregnant women.**

Age group	Frequency	Percentage
20 - 25	20	36.4
26 - 30	28	50.9
31 - 35	7	12.7
<b>Total</b>	55	100.0
<b>Mean±SD (range)</b>	26.8±3.1 (21-35)	

The covid positivity rate among the women was around 27.3%.

Around 18% women were covid positive while pregnancy.

**Table 2: Frequency table of level of health care received for antenatal care.**

Level of health care	Frequency	Percentage
PHC (Mohalla clinic)	25	45.5
CHC	7	12.7
Medical college (tertiary care center)	4	7.3
Private clinic	19	34.5
<b>Total</b>	55	100.0

This level of health care service received by the patient were calculated to total number of visits to the hospital. 45.5% women visited PHC (Mohalla clinic) for basic immunisation and getting medicines, only 7.3% could visit to tertiary care centre due to various restrictions, 34.5% women received their routine antenatal care from private clinic by registered medical practitioner.

**Table 3: Frequency and percentage of unbooked, registered or booked pregnancy.**

Present pregnancy	Frequency	Percentage
Unbooked	15	27.3
Registered	33	60.0
Booked	7	12.7
<b>Total</b>	55	100.0

Among all 55 women only 12% pregnant women could get themselves completely booked during COVID-19 pandemic which was significantly low.

**Table 4: Listing the reason for less visits during antenatal period.**

Reason for less visit	Frequency	Percentage
Fear of COVID-19	13	23.6
No family support	12	21.8
Active covid infection	16	29.1
Transport restriction	11	20.0
Others	3	5.5
<b>Total</b>	55	100.0

**Table 5: ANC care utilization during all trimesters.**

ANC care utilization	Frequency	Percentage
<b>Routine investigations done</b>	8	14.5
<b>Folic acid intake</b>	5	9.1
<b>Iron and calcium intake</b>	42	76.4
<b>TT immunisation</b>	50	90.9
<b>Anomaly scan</b>	28	50.9

Around 23% were scared of getting infecting of COVID-19, similarly 21% women could not family support due to

ongoing COVID-19 pandemic, 29% women had covid 19 during her antenatal period 20% women faced transport restrictions due to lockdown or living in containment zone.

Only 14% women could get the all-routine investigations done during antenatal period, folic acid intake was also only about 9% due to unplanned pregnancy as well as not being able to visit hospital during first 12 weeks, although 76% women could get iron and calcium intake as well 90% could get their TT immunisation complete, only 51% women could get their anomaly scan done during antenatal period.

**Table 6: Likert scale denoting the effect of COVID-19 on antenatal care.**

Effect of covid	Disagree	Undecided	Agree	Strongly agree
<b>ANC care (e.g immunisation, investigations)</b>	-	9 (16.4%)	29 (52.7%)	17 (30.9%)
<b>Availability of medicine</b>	-	8 (14.5%)	42 (76.4%)	5 (9.1%)
<b>Social life</b>	-	-	27 (49.1%)	28 (50.9%)
<b>Pregnancy care (e.g antenatal and postnatal visits)</b>	-	-	26 (47.3%)	29 (52.7%)
<b>Extra money compared</b>	-	15 (27.3%)	40 (72.7%)	-

Approximately 29% women strongly agreed about the fact that COVID-19 affected their antenatal care, however only 5% strongly agreed about impact of COVID-19 on availability of medicines, 50% women strongly agrees regarding covid affecting their social life as well antenatal and postnatal care, 72% women felt that they have to spend extra women due to COVID-19.

## DISCUSSION

COVID-19 had significant impact on antenatal care which include delay in recognizing the problem, delay in reaching the health facility, as well as delay in receiving the treatment. There were fewer opportunities for women to visit to hospital, which can increase anxiety for women, especially those with complex pregnancies; other women may be disproportionately affected by additional anxiety due to language issues, mental health problems or learning disabilities.

In this study the mean age of women was 26.8±3.1 (21-35) and around 50% women belonged to age group of 26-30 years as compared to Rabbani et al the mean age was 31.3 (±7.6) years and 202 (50.0%) were >30 years of age, this difference of mean age group in our study was due to the fact that there is culture of getting married early in India.<sup>9</sup>

In our study the covid positivity rate among the women was around 27.3%. Around 18% women were covid positive while pregnant. According to study by Ellington et al data on pregnancy status were available for 91,412 (28.0%) with laboratory-confirmed infections; among these, 8207 (9.0%) were pregnant.<sup>10</sup> A potential cause for this difference was because our institution (MAMC and

LNH, New Delhi) has been declared for covid dedicated facility only for a longer period of time.

In our study this level of health care service received by the patient were calculated to total number of visits to the hospital which include minimum 8 visits during antenatal period as described by New ANC WHO model 45.5% women visited PHC (Mohalla clinic) for basic immunisation and getting medicines, only 7.3% could visit to tertiary care centre due to various restrictions, 34.5% women received their routine antenatal care from private clinic by registered medical practitioner.<sup>11</sup>

In this study we found that around 23% were scared of getting infecting of COVID-19, similarly 21% women could not family support due to ongoing COVID-19 pandemic, 29% women had COVID-19 during her antenatal period, 20% women faced transport restrictions due to lockdown or living in containment zone, similar findings were concluded by Tadesse et al their study revealed that 216 (55.5%) respondents missed or were late to start ANC services during the COVID-19 pandemic period.<sup>12</sup> Of these, 23 (5.9%) were due to deploying of maternal workers to COVID-19. The majority of respondents (122, 56.48%) reported it was due to fear of COVID-19 infection, followed by interruption and diversion of maternal services to COVID-19 (72, 33.33%). Similarly, 66 (17%) of the respondents reported they did not attend due to the stay at home principle and 28 (7.2%) reported it was due to costly transportation during the lockdown period.

Table 5 concluded that only 14% women could get the all routine investigations done during antenatal period, folic

acid intake was also only about 9% due to unplanned pregnancy as well as not being able to visit hospital during first 12 weeks, although 76% women could get iron and calcium intake as well 90% could get their TT immunization complete due to rampant availability of these at PHC (Mohalla clinic) as well as ANM services provide to all pregnant women, only 51% women could get their anomaly scan done during antenatal period. similar findings were concluded by Tadesse et al which says most of the women (359, 92.3%) received iron supplementation for  $\geq 3$  months and 383 (98.5%) of them were supplemented with folic acid.<sup>12</sup> Regarding ANC visit the highest proportion (149, 38.3%) of women had two visits only, similarly stated by UNICEF 2020.<sup>13</sup>

In our study we found approximately 29% women strongly agreed about the fact that COVID-19 affected their antenatal care, however only 5% strongly agreed about impact of COVID-19 on availability of medicines, 50% women strongly agreed regarding covid affecting their social life as well antenatal and postnatal care, 72% women felt that they have to spend extra women due to COVID-19.

Similarly concluded by Landrian et al said that Women who delivered during COVID-19 were asked to report how the pandemic affected their ability to access or attend ANC, nearly half (47%) of all women reported any effects to ANC due to COVID-19.<sup>14</sup> Among these women (n=255), the most reported effects included facilities being closed, too busy or not accepting patients (61%), being scared to contract COVID-19 if going to a hospital or health facility (20%) or going out into the community (15%), an inability to afford care because of COVID-19 (15%) and COVID-related restrictions, such as curfews or mask mandates, hindering ANC access (12%).

Similar to our study Ma et al concluded More than half of participants reported increased work stress (68.5%), financial stress (71.4%) and home stress (59.3%) amid the COVID-19 pandemic.<sup>15</sup> In addition, majority of participants reported increased feeling of being horrified (60.8%), apprehensive (61.6%) and helpless (73.7%) amid the COVID-19 pandemic. Only trimester of pregnancy was associated with two of the measures of negative mental health impacts amid the COVID-19 pandemic, which were “increased stress from work” and “increased financial stress”.

This study was limited by a relatively small sample size, as well as short duration of study and the results cannot be generalised to a population.

## CONCLUSION

The age of the mother, interruption, and diversion of maternity health-care service, fear of COVID-19 pandemic, lack of family support and transport inaccessibility were significant factors which contributed to the low antenatal care service utilization of pregnant, not

only antenatal care utilisation, COVID-19 had significant effect on social wellbeing of patient as well increased financial stress. Although now cases of COVID-19 are declining but we should not be complacent, and that we need to maintain vigilance and speak up for staff safety and for the safe, high quality care for women and families during the COVID-19 era, also need to increase COVID-19 vaccination as a prevention strategy.

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