

## **Maternal health service seeking behaviour among the pregnant women in Balodabazar district of Chhattisgarh.**

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### **Background**

India contributes to the 12% of total maternal deaths in the world (35,000 maternal deaths in 2017)<sup>1</sup>. With improved Maternal health care services over the past decade the institutional delivery has seen 10% jump (NFHS 5) from NFHS-4 (2015-16) and the C-sections have also increased from 17.2% to 21.5% indicating availability and accessibility of EmOCH services<sup>2</sup>. NFHS- 4 reported that 51.2% pregnant women received full antenatal care (ANC), which has also increased to 58.1% in NFHS-5. Also, Mothers who received postnatal care from skilled health personnel within 2 days of delivery (%) has increase to 78% as per NFHS-5<sup>2</sup>.

Maternal Mortality Ratio of India has come down to 122 per 100,000 live births in 2015–2017, however, it is still on the higher side. In India, Post-Partum Hemorrhage (PPH), Sepsis, hypertensive disorders, complications of delivery and obstructed labor are the most common causes of maternal deaths.

Past studies conducted in India reported a significant association between women's use of maternal health care services and their socio-demographic factors such as rural-urban residence, geographical region, educational level, ethnic group, religion, wealth index, parity/birth order, etc<sup>3,4</sup>. Also, as per earlier studies, socio-economic factors play together with poor access to maternal health care services and low demand affect the utilization of maternal health care<sup>5</sup>. However, most of these studies included all women of reproductive age (15–49 years) in their analysis. The current study is exploring the association of covid-19 on these services among pregnant women by utilizing the primary data. Various earlier studies have provided evidence of association between use of maternal health care services in India and socio-demographic factors such as education level, religion, wealth, geographical region, insurance coverage etc. However, very few studies have tried to explore the association of covid-19 and behavior of women in utilization of maternal health care service<sup>6&7</sup>.

## COVID -19 Pandemic

Till March 2021, world witnessed more than 120 million positive cases and about 3 million deaths due to covid-19 infection. India alone had over 12 million reported positive case with a recovery rate of 98.7% as compared to global recovery rate of 97.5% and around 1.43 (1.66 lacs death) death rate on cases which had an outcome<sup>8</sup> as compared to 2.3 % globally.

As per WHO “Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus and most people infected with the COVID-19 virus experience mild to moderate respiratory illness and recover without requiring special treatment”<sup>6</sup>. The transition rate of the disease has created panic globally. In perception of social distancing to slow down the infection rate government of India on 24 March 2020 initiated countrywide lockdown of 21 days, limiting movement of the entire population of India as a preventive measure against the COVID-19 pandemic in India<sup>8</sup>.

COVID-19 pandemic overburdened the health systems and the priorities changed due to the response to the outbreak. Essential health services and preventive services like immunization, maternal health services were also disturbed, and general population was unable to access healthcare for regular needs. Many of the patient were avoiding the planned hospital visits until and unless it's not emergency for them. One of the studies done in USA by Health research Institute (HRI) found that almost 80% of responded that they would skip a wellness visit, maintenance visit for a chronic illness, elective procedure or recommended lab test or screening<sup>9</sup>.

The Government of India (GoI), on March 21, 2020, released guidelines for the hospitals to prepare for the coronavirus outbreak. Responding to the emergency, often leads to the neglect of basic and regular essential health services. Amongst other things, the hospitals were required to reserve beds, create isolation wards, mobilize additional manpower and train the staff, in addition to arranging for adequate high-oxygen

masks and ventilators. The resource deployment/diversion were likely to impact/disrupt the routine healthcare services.

The lockdown restriction also exacerbated the transportation delays for institutional care for pregnant women and accessibility of basic maternal health services. This pandemic also possibly changed the behavior of patients and may have impacted institutional delivery and maternal mortality around the world. Maternal health services require more rigorous efforts specially in case of emergency or pandemic like Covid-19. An analysis of the 2014 outbreak of Ebola virus in west Africa showed that the indirect effects of the outbreak were more severe than the outbreak itself<sup>11</sup>. In past epidemics, health systems struggled to maintain routine services and utilization of the services decreased, accordingly Global organizations have also called for maintaining routine health services during the pandemic. As WHO notes during the pandemic, “People, efforts, and medical supplies all shift their focus on responding to the emergency. This often leads to the neglect of basic and regular essential health services. Therefore, it is important to analyze the impact of COVID-19 on maternal health services<sup>10</sup>”.

## Methods

This study was an observation study, utilizing retrospective and primary data. The study utilized the data collected from the health MIS on maternal health care services from Baloda bazar district of Chhattisgarh, India. The district MIS contained data on all the services availed by the pregnant women i.e., Antenatal care, delivery, and post-natal care during her pregnancy cycle. Monthly aggregated block wise data was collected of all the women who completed the ANC, delivery, and PNC as per the information available on the MIS system between the period from April 2020 to March 2021.

The collected data from MIS has been utilized to Interview women who had availed the services for the collection of qualitative data for the study to explore the role of socio-economic factors and

Covid-19 pandemic on utilization of maternal health care services. Primary data was collected from the selected 422 respondents, computation of sample size was done by Cochran's formula. Respondents were selected from the listed female who had completed the cycle of ANC, delivery, and PNC between the period of April 2020 to March 2021 as per the district MIS record. These respondents were interviewed, and the data collected through a semi structured open-ended questionnaire from each selected respondent in the form of one-to-one field level survey. The interview was focused on information gathering on socio-demographic characteristics of the women, information pertinent to maternal health services i.e. delivery, ANC & PNC visits, role of family members, her knowledge about the covid-19 and the questions on utilization of maternal health care service seeking behavior during COVID-19. The sample was selected from 2 out of 6 blocks of districts and responded from these blocks were selected purposefully to get representation of such women who have completed the cycle of ANC, delivery, and PNC. Out of the pool of these women a systemic random sampling method was adopted to select the 422 respondents for the study. Each interview was recorded, and the data was analyzed based on the questionnaire and literature review around maternal mortality & contribution of health insurance on reduction of maternal mortality.

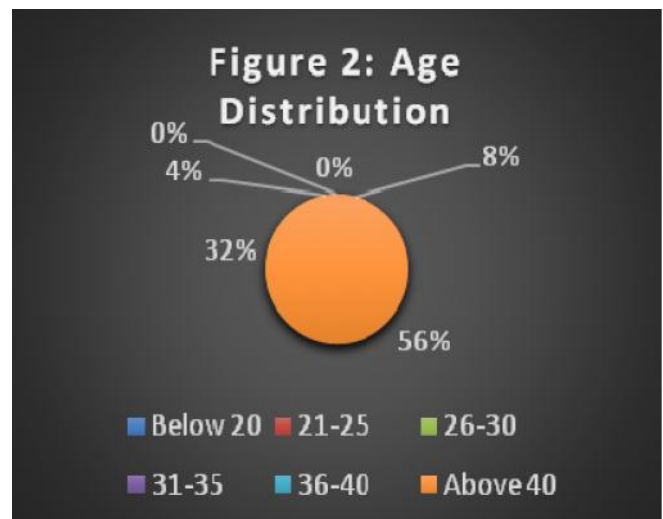
### Statistical analysis

All responses were entered into Microsoft Excel for analysis and then for further analysis it was exported to SPSS. The analysis was done on various indicators like number of women who opted for institutional deliveries, visits for ANC & PNC services, support from families, travelled to avail the services and covid effect on availing these services. To understand the impact of the covid-19 on the maternal health care services the descriptive study was conducted women who had availed the services between April 2020–March 2021, this period contains peak covid-19 pandemic and various lockdown restriction imposed by the Centre and State Government. Descriptive statistics was used under the study to

analyze the demographic and socio-economic data and qualitative data were used to analyses the service utilization, factors affecting the utilization and health seeking behavior of responded on utilization of maternal health services.

### Results

Out of 422 women selected for the study from the two blocks Balodabazar and Bilaigarh of Baloda bazar districts. Of the selected responded 74 % females had more than secondary education including 15% graduation. The responders were in the age between 18 and 49 years and the average of 1.75 children per respondent between 0 and 6 living children. Out of the total responded 56% women were from the age group of 21-25 years and out of that only 5% were 30 years. The average age of women interviewed was approximately 28 years. More than 70% of the women interviewed were housewife and 20% were daily wage earners. Although State has universal coverage for health insurance scheme, however, around 23% were reported that they were not covered under any government sponsored health insurance scheme.



**Relationship of Academic Qualification on first ANC checkups and choice of doctor:**

The ANC service utilization by the pregnant women in the first trimester and their education level were found associated. Women with Graduation (n=49) or postgraduate (n=12) have

received ANC services in first trimester were 82% and 75.0% respectively whereas only 15% pregnant women with secondary or Primary education (n=361) have availed the ANC services in first trimester. Women’s education was consistently found to be associated with the use of maternal health service in India.

Table 1 : Academic status of Responders

Academic qualification	First ANC Trimester	%	N
PG and up	1-3	25%	12
	7-9	75%	
Graduate	1-3	14%	49
	4-7	4%	
	7-9	82%	
Primary and Secondary	1-3	15%	337
	4-6	4%	
	7-9	80%	
No school education	1-3	8%	24
	7-9	92%	

The data was studied to analyze whether there was any relationship between academic qualification & choice of doctors. It was noticed that beneficiaries with education level less than or equal to secondary school of education had taken consultation (18.6%) from quacks/unqualified medical professionals compare to pregnant women with Graduation or above (0%). The uptake for the use of ANC among women who had primary, secondary, and high school-level education compared to illiterate women were 1.5, 1.9, and 2.7; and 1.3, 1.7, and 2.4, respectively.

**Occupation & Choice of Health Facility:**

The data from analysis of occupation with choice of health facility revealed that beneficiaries with occupation as daily wage earner or those who were self-employed preferred government facilities over private facilities. 84.3% of daily wage earners/self-employed visited government health facilities for maternal health services. Similarly, 66.5% of housewives preferred government health facilities over private facilities and 100% salaried women preferred private facilities.

Table 2: Occupation details of responder and type of facility used for maternal health services

Occupation	Type of facility	%
Daily Wage earner /Self employed	Government facility	84.3
	Private Facility	15.7
Housewife	Government facility	66.5
	Private Facility	33.5
Salaried	Government facility	100
	Private Facility	0

**Relationship between delay in Maternal health care services & Covid -19 :**

Out of total responded 63% responded ( $n=422$ ) reported they did atleast one visit for their ANC care in their first trimester. In trimester two 91% pregnant women visited for ANC checkup, however, only 62% of total sample ( $n=422$ ) visited for their second ANC checkup and 28%

( $n=119$ ) made their first ANC visit in second trimester. Similarly, in third trimester total 78% pregnant women visited for ANC checkup but 4% visited first time for the ANC visit. Only 54% females from sample size received full ANC checkup (atleast 1 ANC visit in every trimester). Interesting to see 5% sample female ( $n=21$ ) did not visit for ANC checkup in any of the trimester.

Table 3: ANC services in each trimester by the responder

Responders	Atleast one visit in 1st Trimester	Atleast one Second ANC visit in 2nd Trimester	Atleast one Third ANC visit in 3rd Trimester
No ANC Visit	155 (37%)	161 (38%)	193 (46%)
ANC visit	267 (63%)	261 (62%)	229 (54%)
Atleast 1 ANC visit	267	386	329
First ANC visit	267	119	17

It was observed that due to covid-19 health seeking behavior got affected also. It was noticed that around 26% ( $n=422$ ) responder have delayed their due service by more than 3 weeks and only 39% responded that they did not delay any of their maternal health care services due to Covid-19. Similarly, 37% of beneficiaries reported that

they were afraid of going out of house to avail services due to covid-19 whereas only 16.8% had financial problems as a bottleneck for availing services. Furthermore, 46% responded reported that they were unaware of availability of open facilities for the services.

Table 4: Delay in seeking services due to Covid

Delay in health seeking behaviour due to covid -19	
1 week delay	12.6
1-2 Weeks	22.0
3-4 weeks	14.5
More than 4 Weeks	11.4
No delay	39.6

The analysis on whether the delay in health seeking behavior related to maternal health due to covid -19 and 46% female confirmed that it was due to covid-19 pandemic. The dependency of pregnant women on family for availing the services was also studied and almost 84% of PW under study had reported that they were dependent upon family members to avail the

services. When it was asked to all the responded (inclusive of 198 PG who reported delay due to Covid-19) that would they had visited the health center for seeking maternal health services and 98% responded reported that they would have visited the health facility if there had been no covid -19.

Table 5 : Delay in services and covid-19

Is this delay due to COVID-19	Freq.	Percent	Cum.
0	224	53.08	53.08
1	198	46.92	100.00
Total	422	100.00	

Were you dependent on family member's support to avail your health care service	Freq.	Percent	Cum.
0	67	15.88	15.88
1	355	84.12	100.00
Total	422	100.00	

If there was no COVID 19, would you have visited health care centres for delivery	Freq.	Percent	Cum.
1	7	1.66	1.66
bbb	415	98.34	100.00
Total	422	100.00	

In term of distance travelled to avail services, 45.5% & 52.7% women (n=422) responded that they had to travel more than 6 kms for availing delivery and ANC services respectively. Whereas 38.6% and 26.5% of responded (n=422) reported that they had to travel more than 12 Kms. Out of total responded 2% reported for home delivery while 98% opt for institutional deliveries with a public and private ration 76:22 percentage. The institutional delivery rate was quite high while compared to NFHS V for institutional delivery for

the district which was 78.1% and institutional delivery in public hospitals was reported 65.8% in NFHS V. When it was asked whether they planned delivery in the same institutions, 65% female (n=268) responded that they had planned delivery in the same institution while remaining reported change in planned institution for delivery. Out of total women who changed their delivery centre, 22% (n=33) reported that change in earlier planned centre due to covid-19.

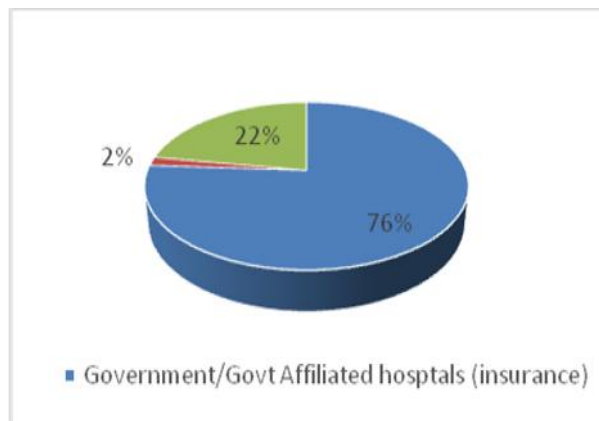


Figure 3: choice of centre for delivery

Women receiving 3 post-partum checkups after delivery is important for ensuring appropriate monitoring of progress of child and mothers health. The institutional delivery ensures that women is getting the first PNC checkup within the hospital stay but for the second and third PNC checkup health care worker (ANM) shall visit the house of the mother or mother can make a visit to the nearest institution for the services. Out of total responded (n=422), 25 percent female reported

PNC visit by the healthcare worker or by them after a month of delivery and around 8 percentage (n=32) reported no visits. When it was asked what the reason for this delay was or not opting for the PNC visits, 43 respondent reported fear of going out for the services during covid-9 period, 17 reported lockdowns restriction force them not to visit and 26 reported financial problems was reason for not accessing the services.

Table 6: Reason for delay in PNC services

Fear of going out	43
Financial problems	26
lockdown due to covid	17
No help from family to take advantage of services	1
Other	29
Uncertainty	14

## Discussion

The effect of education and socio-economic factors on maternal health services has been accepted and proven by many studies and under the current study has also indicated that the education qualification and socio-economic factors have played important part in utilization of maternal health services. The uptake for the use of ANC among women who had primary, secondary, and high school-level education compared to illiterate women were quite high (upto 2.7 times). Also female with better occupational ground tends to opt private hospitals more compared to daily wagers. The data analysis under the study indicated that education has a positive impact on the health seeking behaviour however, 84% of pregnant women reported that they were depended on any family member for their health care services.

Atleast one visit in every trimester by the sample population showed only 54% female visited atleast one ANC check-up in all three trimesters which is quite similar compared to full ANC (atleast 4 in visits and atleast one in every

trimester)58%. Around 28% female has gone through their first ANC check-up in 2<sup>nd</sup> trimester. It is prominent that covid-19 has delayed the ANC services of pregnant women, 46% female reported that the delay was due to covid-19 and almost all (98%) reported that they would have visited the centre if there was no covid019 pandemic.

During the covid -19, due to imposed lockdown, movements were also restricted and many of the health facilities were affected due to these restrictions. The current study explored that how much one has travel during the time for seeking maternal health care services and 38% respondent (n=422)reported that they had to travel more than 12 kilometres to avail the services. Interestingly, the institutional delivery rate among the sample were 98% which is quite high compared to NFHS -V reported percentage for institutional delivery,73%. Only 7 female reported home delivery and when it was asked would they visited hospital for delivery in case there was no covid-19 pandemic and all of them said yes, they would have visited hospital for delivery of their child.

Almost 35% female respondent reported of change of planned institution for the institutional delivery and 33 responder (22%) reported change of centre for institutional delivery due to covid-19. This could also be one of the reasons for high travel distance for the females to receive maternal health care services.

PNC services which is one of the critical component of maternal health services for the newly mother as well as for the new born has also been affected due to covid-19 pandemic and imposed lockdown. Almost 25% female reported delay in visit of second PNC care while 8% female did not opt for any of the PNC care after the delivery in institution. 43 female responders reported that they were afraid of going out for PNC care during the covid-19 period and 17 reported not opting of PNC care due to lockdown restriction.

The data from study highlighted that the number of quality ANC and PNC services may have fallen by as much as 20-30 percent during the lockdown, with many women not opting for these services due to covid 19 fear or lockdown restrictions. The study concluded that various factors such as accessibility, availability & quality of services were affected due to covid which had a direct impact on maternal health services. As well as Covid-19 had also affected the health seeking behavior of women which had a bearing on uptake of maternal health services.

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