

# MATERNAL HEALTH SERVICES UTILIZATION IN THE STATE OF HARYANA - AN ANALYSIS

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**E-mail:** ishugarg.economics@kuk.ac.in**ABSTRACT**

*'Health and well-being for all' is among one of the sustainable development goals (SDGs), and to achieve the same, maternal health is an important agenda for emerging economies like India. In this regard, the utilization of available maternal health services becomes a crucial aspect of healthcare. In light of this, the current study makes an effort to examine the degree of maternal health service consumption in Haryana, a progressive Indian state, using information from the National Family Health Survey (NFHS-5). District-wise consumption of maternal health services have been analyzed on three basis including antenatal care, delivery care, and postnatal care. The study reveals that the utilization of maternal health services is not impressive as none of the indicators of antenatal care, delivery care, and postnatal care have shown full utilization. Amongst all districts, overall consumption of maternal health services is quite low in district Mewat. Moreover, in the case of antenatal care, most of the districts are looking weak relative to their position in delivery and postnatal care. The paper suggests that by improving maternal health services, SDG of health and well-being can be realized, leading to an up-gradation in the overall SDG index score of the country.*

**Keywords:** Antenatal Care, Delivery Care, Postnatal Care, Maternal Health, SDGs

**INTRODUCTION**

The major concern, now-a-days, of policymakers across the countries is about achieving sustainable development goals (SDGs: 2015-2030). India has seen advancements in a number of SDG categories, including affordable, clean energy, infrastructure and industrial breakthroughs, clean water and sanitation, and sustainable cities and communities. Additionally, there has been considerable growth in human development metrics like health; yet, there has been a significant disparity in the performance of Indian States (Vyas and Pandya, 2011; Goyal and Kukreja, 2020). The sustainable development report (2019) by Sachs *et al.* (2019) says that India ranks the lowest on the overall SDG index. Accordingly, India needs improvement in its functioning on all frontiers; however, health and well-being is a crucial SDG to be achieved by a developing

economy like India where poverty, hunger, and malnutrition have always remained the most hyped and political agendas.

Furthermore, achieving the goal of improving maternal health is even more important because, from a health perspective, pregnant and breastfeeding women are among the most vulnerable groups in the Indian population (Ramachandran, 2018). Additionally, around 80 per cent of maternal deaths are from causes that may eventually be prevented; only important health initiatives could lower these avoidable deaths (Chauhan *et al.*, 2021; Chahal *et al.*, 2023). Although, there exists several Government schemes like Pradhan Mantri Matru Vandana Yojana (PMMVY), Ayushman Bharat Programme, National Nutrition Mission, and Janani Suraksha Yojana which offer many health services to Indian women; but, only the provision of services is not sufficient, the adequate utilization of services is the superimposed factor.

As per the reports by Pati (2022) and Kumar (2022), despite being the most progressive State in India, Haryana has been lagging in maternal health. Here, the maternal mortality ratio or MMR (which refers to the number of maternal deaths per 100000 live births) has increased to 110 in 2018-20 from 91 in 2016-18. Indeed, the MMR of districts including Rohtak (MMR=226), Palwal (MMR=150), Karnal (MMR=138), Panipat (MMR=130), Charkhi Dadri (MMR=129), Fatehabad (MMR=119), Hisar (MMR=115), and Jind (MMR=112) are going forward from the State. And to reduce MMR and improve maternal health outcomes, the Government needs to enhance the accessibility and usage of maternal health care services (Agarwal, 2011).

Against this backdrop, the State of Haryana is selected to examine the district-wise status of maternal health service utilization. The rest of this paper is organized under sections of review of literature, research gap and objective, research methodology, analyses and interpretations, conclusion and policy implications, and further research directions.

## REVIEW OF LITERATURE

Indeed, there is no dearth of literature in this field, however, only selected relevant studies have been reviewed here.

Leone *et al.* (2013) projected that more over 80 per cent of households spent money on maternity healthcare services, with private care facilities accounting for nearly four times the cost of treatment compared to public facilities. The study also discovered evidence of a substantial burden of maternal healthcare costs, with notable heterogeneity at the household and community levels and significant variation across states in terms of healthcare consumption.

Sharma (2017) discovered that a large number of ASHAs might significantly increase the reach of community-based activities that the Village Health Sanitation and Nutrition Committee (VHSNC) can supervise. Village Health and Nutrition Days (VHNDs) are another way to support integrated outreach service delivery. In fact, institutional deliveries were made easier by the Janani Suraksha Yojana (JSY) and Janani Shishu Suraksha Karyakram (JSSK) programs, which made it possible for sick newborns to get care.

Ramachandran (2018) stated that the two main nutritional issues affecting Indian women were under nutrition and anemia. Furthermore, over nutrition among women has been steadily increasing across all demographic groups, including in urban and rural regions. This is mostly because of a sharp decline in physical activity. According to the author, screening programs for non-communicable illnesses, under nutrition, over nutrition, and anemia in women are crucial parts of preventive healthcare at all levels.

Sharma *et al.* (2020) demonstrated that, in urban slums, the use of maternal healthcare services was low when compared to national averages. The mother's age, birth order, and the head of the family's educational and employment status were found to be unrelated to the use of health services; however, the mother's employment and education, the family's category and type, the distance and travel time to the health facility, and the mother's age were found to be significantly associated with health service utilization.

Yadav *et al.* (2020) discovered that there was an increase in the use of maternal healthcare services between 1998–1999 and 2015–2016. Significantly low utilization of maternal health care services was linked to factors like illiteracy, female age (more than or equal to 40 years), having five or more

children, being a member of a scheduled tribe, living in a rural area, and not having a health card. Better chances of using these services were linked to the partner's education, strong economic standing, women's autonomy, and community infrastructure.

Singh *et al.* (2021) evaluated the Nuh (Mewat) District of Haryana's maternal health service consumption pattern and related characteristics were evaluated. It was discovered that only 58.3 per cent and 11.7 per cent of participants, respectively, had access to full and prenatal care services. Of the patients, 52.7 per cent experienced difficulties connected to pregnancy. Maternal health care service consumption was mostly determined by the age, literacy level, parity, socioeconomic status, and occupation of the women. However, the inability to receive complete ANC care was caused by characteristics such as being in a lower age group and having poor decision-making ability.

Meh *et al.* (2022) discovered that the maternal mortality ratio (MMR) decreased throughout India, with the greatest MMRs being recorded in Assam, Uttar Pradesh/Uttarakhand, and Madhya Pradesh/Chhattisgarh, surpassing the country's MMR estimate of 113 for the years 2016–2018. Furthermore, it was discovered that the odds of maternal mortality were higher in rural and tribal areas of the northeastern and northern states, even after controlling for education and other characteristics. Pregnancy-related infections (per cent=12), obstetric hemorrhage (per cent=47), and hypertensive disorders of pregnancy (per cent=07) were shown to be the main causes of maternal death.

### RESEARCH GAP AND OBJECTIVE

Literature analysis shows that maternal health care is under-utilized and there may be several determinants of health service utilization. However, according to Goel (2011) and Ramachandran (2018), using health services is crucial to improving maternal health outcomes. And if maternal health outcomes will improve, it will lead to improvement in overall health status, reaching sustainable development goals. Also, as the overall development of a country depends upon the working of individual States, the success of States depends upon working at the district level. Accordingly, the present study aims at examining

the district-wise status of maternal health service utilization in Haryana.

### RESEARCH METHODOLOGY

The Ministry of Health and Family Welfare, Government of India, publishes the National Family Health Survey (NFHS-5): 2019–21, from which all secondary data used in this study was gathered. The International Institute for Population Sciences (IIPS), Mumbai has been selected by the ministry as the survey's nodal agency. Concerning maternal health, this survey provides data on three indicators: 'antenatal care', 'delivery care', and 'postnatal care' from 2017 to 2021, based on the respondents included in the sample. The collected data have been presented in suitable tables and for judging inter-district disparities, the coefficient of variation has been computed ( $CV = \frac{\sigma}{\bar{x}} \times 100$ ).

### ANALYSES AND INTERPRETATIONS

Analyses are presented under three sub-sections, exhibiting utilization of antenatal care (ANC), delivery care, and postnatal care services.

#### Antenatal Care

Prenatal or antenatal care is the term used to describe the medical and health care that expectant mothers receive from qualified healthcare professionals. Pregnancy-related or coexisting disease treatment and preventative visits are part of it. In addition to iron and folic acid (IFA) tablets or syrup and TT (tetanus toxoid) injections, pregnant women receiving antenatal care are also given medical information about prenatal nutrition and changes in the mother's body (Tuncalp *et al.*, 2017; National Family Health Survey-5, 2021). In Table 1, the status of various indicators of antenatal care utilization in Haryana is presented. All the indicators shown in Table 1 are explained as follows:

- **Percentage of women who received four or more ANC check-ups**

In Haryana, 60.4 per cent of the total number of women (N=5126) visited for antenatal care four or more times. In this regard, districts of Karnal (per cent=84.7), Panchkula (per cent=76.9), Rohtak (per cent=72.3), Hisar (per cent=69.9), Kaithal (per cent=68.8), Yamunanagar (per cent=66.4), Rewari (per cent=63.8), Sonapat (per cent=64.1), Sirsa (per cent=61.9) are ahead from State average; while remaining districts are lagging.

- **Percentage of women who received ANC within the first trimester of pregnancy:**

In this case, except Mewat and Ambala, all other districts, as well as the State of Haryana, experienced service utilization by more than 80 per cent of women. However, the highest percentage of women receiving this service is found to belong to Sirsa (per cent=93.9) whereas the lowest percentage exists in Mewat (per cent=70.9). Indeed, the State average stood at 85.2 per cent.

- **Percentage of women who received TT (Tetanus Toxoid) injections during pregnancy:**

The highest percentage of women receiving this service is found in Kaithal (per cent=93.9), followed by Sirsa (per cent=93.5) and Hisar (per cent=90.6). While the lowest utilization rate is visible in Palwal (per cent=52.2). The State average for this indicator is 79.2 per cent.

- **Percentage of women who received IFA (Iron and Folic Acid) dose:**

In Haryana, 91.8 per cent of the sample size, have received IFA dose. Indeed, fifteen districts are showing a higher percentage than the State average. Also, Mewat is weakening in this indicator with 70.3 per cent of women receiving IFA dose.

**Table 1: Indicators of Antenatal Care (ANC) Utilization in Various Districts of Haryana**

Districts	Percentage of Women Received:					Sample Size (Number of Women)
	Four or more ANC Check-up	ANC within 1 <sup>st</sup> trimester of pregnancy	Two or more Tetanus toxoid (TT) injections during the pregnancy	IFA (Iron and Folic Acid) dose	Intestinal Parasite drug	
Ambala	57.4	76.5	77.1	93.0	18.0	198
Bhiwani	60.4	89.0	88.7	89.8	46.1	241
Charkhi Dadri	53.4	82.6	82.8	95.7	47.9	105
Faridabad	51.2	85.5	62.1	93.4	33.4	328
Fatehabad	60.1	91.2	80.1	94.4	32.1	218
Gurgaon	48.1	86.2	84.9	89.2	37.1	273
Hisar	69.9	91.2	90.6	95.8	28.3	387
Jhajjar	60.1	87.3	71.8	95.7	31.1	197
Jind	49.6	82.6	73.1	95.3	35.2	265
Kaithal	68.8	81.4	93.9	88.0	26.8	203
Karnal	84.7	91.2	79.6	97.1	54.8	336
Kurukshetra	59.8	82.7	82.6	95.1	37.5	201
Mahendragarh	55.2	88.1	82.7	85.6	25.4	158
Mewat	45.9	70.9	74.0	71.3	25.4	310
Palwal	53.4	81.2	52.2	87.0	31.1	245
Panchkula	76.9	82.6	82.7	98.6	38.2	98
Panipat	49.2	81.3	71.4	92.8	23.0	273
Rewari	63.8	85.7	89.3	88.6	28.2	168
Rohtak	72.3	86.4	89.8	94.6	34.5	210
Sirsa	61.9	93.9	93.5	95.8	18.0	225
Sonapat	64.1	85.8	72.5	93.4	36.9	266
Yamunanagar	66.4	87.4	81.1	94.3	37.3	221
<b>Haryana State</b>	60.4	85.2	79.2	91.8	33.0	5126
<b>CV (per cent)</b>	16.31	6.13	12.77	6.29	27.50	--

Source: National Family Health Survey (NFHS-5): 2019-21

**Notes:** 1. All values are related to live birth in the 5 years preceding the survey

2. CV is calculated for districts

- **Percentage of women who received Intestinal Parasite drug:** This drug is used to treat intestinal parasitic infections that cause anaemia in pregnant women. As per the State average, 33 per cent of women have received intestinal parasite drugs. Besides, the largest percentage of women took this drug in Karnal (per cent=54.8), followed by Charkhi Dadri (per cent=47.9), and Bhiwani (per cent=46.1). While, in Ambala and Sirsa, the lowest percentage (per cent=18) of women have received intestinal parasite drugs.
- **Inter-district disparities in utilization of antenatal care services:** The computed scores of coefficient of variation (CV) confirm the presence of inter-district disparities in Haryana in the utilization of antenatal care services. However, inter-district disparities are found to

be largest in the case of an intestinal drug receiving (per cent  $_{CV}=27.5$ ), followed by four or more ANC check-ups (per cent  $_{CV}=16.31$ ) and two or more TT injections received (per cent  $_{CV}=12.77$ ). Indeed, inter-district variations are low in the case percentage of women who received ANC within 1<sup>st</sup> trimester of pregnancy where CV is 6.13 per cent.

### Delivery Care

Safe delivery (of the babies) without injuring to the mother and newborn, and preventing post-partum complications is ensured by delivery care. Births performed in any type of medical facility, deliveries aided by medical professionals, and caesarean section deliveries are indicators of the use of delivery care services. Table 2 displays these indicators' district-by-district status in the context of Haryana.

**Table 2: Delivery Care Utilization in Various Districts of Haryana**

Districts	Percentage of Deliveries			Number of Births	Percentage of Births receiving Financial assistance Under Janani Suraksha Yojana (JSY)
	In any Public or Private Health Facility	Assisted by Health Personnel	In Caesarean Section		
Ambala	97.8	91.0	34.2	255	8.9
Bhiwani	97.7	97.8	13.1	340	4.9
CharkhiDadri	98.9	99.7	14.2	138	10.6
Faridabad	92.5	93.9	23.5	425	5.6
Fatehabad	97.9	97.9	22.2	292	12.6
Gurgaon	96.7	97.2	18.6	356	7.8
Hisar	98.2	98.8	18.2	529	9.7
Jhajjar	97.2	97.2	21.3	251	6.9
Jind	98.7	99.0	14.5	355	11.2
Kaithal	98.2	99.7	24.9	282	14.9
Karnal	99.0	98.6	18.7	440	10.0
Kurukshehra	98.4	97.6	21.9	255	15.7
Mahendragarh	98.9	98.8	22.6	194	7.5
Mewat	74.6	77.8	4.2	496	4.8
Palwal	78.3	83.2	11.7	371	2.5
Panchkula	97.0	97.0	32.7	117	16.6
Panipat	97.1	96.3	20.3	347	6.0
Rewari	98.7	98.3	26.0	201	12.7
Rohtak	97.4	96.7	19.8	281	14.9
Sirsa	99.3	99.3	27.2	286	18.4
Sonipat	99.7	90.2	16.7	358	7.2
Yamunanagar	94.8	85.9	28.0	279	11.7
<b>Haryana State</b>	94.9	94.4	19.4	6848	9.7
<b>CV (per cent)</b>	6.76	6.20	33.51	--	42.76

Source: National Family Health Survey (NFHS-5): 2019-21

**Notes:** 1. All figures are related to live birth in the 5 years preceding the survey

2. CV is calculated for districts

- **Percentage of deliveries in any public or private health facility:** In the State of Haryana 94.9 per cent of the total number of births (N=6848) have been delivered in health facilities (public or private). Except for the districts of Mewat and Palwal where just 74.6 per cent and 78.3 per cent of deliveries have been taken care of in health facilities, the remaining districts have experienced more than 90 per cent of deliveries in health facilities.
- **Percentage of deliveries assisted by health personnel:** In this case, 94.4 per cent of total births are assisted by health personnel in Haryana. In the districts of Charkhi Dadri, Kaithal, and Sirsa more than 99 per cent of the total number of births have been cared for by health personnel. However, Mewat is the district with the lowest percentage of births assisted by health workers which is 77.8 per cent.
- **Percentage of deliveries in caesarean section:** In Haryana, 19.4 per cent of births have been delivered in caesarean section. In this regard, districts of Ambala and Panchkula are ahead with 34.2 per cent and 32.7 per cent deliveries in the caesarean section. Moreover, Mewat has the lowest percentage of births (per cent=4.2) in caesarean section.
- **Percentage of births receiving financial assistance under Janani Suraksha Yojana (JSY):** In Haryana, 9.7 per cent of births have received financial assistance under JSY. However, in the district of Sirsa largest percentage (per cent=18.4), while Palwal has the lowest percentage (per cent=2.5) in this regard.
- **Inter-district disparities in the utilization of delivery care:** The presence of inter-district disparities in all indicators of delivery care is visible. These disparities are largest in the case of percentage of births receiving financial assistance under JSY as the score of CV is 42.76 per cent, followed by percentage of deliveries in the caesarean section for which CV stood at 33.51 per cent. Albeit, inequalities are low in percentage of deliveries assisted by health workers and births delivered in health facilities as CVs are 6.20 per cent and 6.76 per cent respectively.



**Table 3: Postnatal Care Utilization in Various Districts of Haryana**

Districts	Percentage of women who received postnatal care within two days of birth
Ambala	88.7
Bhiwani	92.2
CharkhiDadri	93.8
Faridabad	96.5
Fatehabad	97.7
Gurgaon	87.7
Hisar	94.0
Jhajjar	96.1
Jind	97.0
Kaithal	95.6
Karnal	99.2
Kurukshetra	96.1
Mahendragarh	89.4
Mewat	73.6
Palwal	93.9
Panchkula	96.0
Panipat	92.9
Rewari	91.7
Rohtak	97.5
Sirsa	97.9
Sonipat	94.5
Yamunanagar	90.3
<b>Haryana State</b>	93.1
<b>CV (per cent)</b>	5.81

Source: National Family Health Survey (NFHS-5): 2019-21

- Notes:** 1. All figures are related to live birth in the 5 years preceding the survey  
2. CV is calculated for districts

### Postnatal Care

Postnatal care refers to the medical attention provided to a mother and her newborn child in the initial 42 days of the baby's life, starting immediately after the placenta is born (World Health Organization, 2010). In the context of Haryana, the district-wise utilization of postnatal care is shown in table 3.

- **Percentage of women receiving postnatal care within two days of birth:** It is visible that 93.1 per cent of women have received postnatal care within two days of birth in Haryana. Only in four districts including Mewat (per cent=73.6), Gurgaon (per cent=87.7), Ambala (per cent=88.7), and Mahendragarh (per cent=89.4), postnatal care utilization is less than ninety per cent.
- **Inter-district disparities in the utilization of postnatal care:** A CV score of 5.81 per cent, indicates that the inter-district variations in postnatal care utilization are low in comparison to antenatal care and delivery care utilization.

### CONCLUSION AND POLICY IMPLICATIONS

To sum up, utilization of maternal health services is not impressive as none of the indicators of antenatal care, delivery care, and postnatal care has shown a hundred per cent usage. However, in delivery care consumption, the position of Haryana is better relative to postnatal care and antenatal care. Besides, inter-district disparities are found to exist in all indicators of maternal health; but, disparities are low in the case of postnatal care in comparison to other services. Amongst districts, consumption of maternal health services is quite low in Mewat. Moreover, in the matter of antenatal care, most of the districts are looking somehow weak relative to their position in delivery and postnatal care.

The findings implicate the need to increase the utilization of maternal health services for women in all districts of Haryana by conducting maternal health awareness camps in rural as well as urban areas. Besides, there is a rationale to make maternal health services a public good by removing all financial constraints in their utilization. Moreover, for the districts showing poor performance in

maternal health indicators, the health policy framers require concrete action plans with the implementation strategies. Meanwhile, the State government must ensure that every women of the State must be aware about the maternal health schemes. Also, the functioning of maternal health schemes must be monitored regularly to improve performance and plug out financial leakages. Finally, the regular publication of data regarding maternal health services' utilization is the need of the hour to continue research in this field.

### FURTHER RESEARCH

This research can be extended by making separate indices for antenatal care, delivery care, and postnatal care so that comparison becomes easy. Moreover, a composite index of maternal health service utilization for each district can be constructed. Another way to extend the present research is to examine the significance of differences among means of utilization of antenatal care, delivery care, and postnatal care. The study can also be extended to State level comparison. Moreover, the same analysis can be done for rural and urban Haryana as per the availability of data in future. Last but not least, the determinants or factors affecting the utilization of maternal health services in various districts can also be judged, if appropriate data will be available.

This paper talks only about maternal health for progressing in sustainable development; however, this is not the only contributor. It's a fact that the SDG of health and well-being is not the solitary survivor which requires attention; though, achievement of it can prove a milestone for improving the overall SDG index for the country.

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