Comparative Analysis of Maternal Health Situation in Rajasthan and Uttar Pradesh using State Fact Sheets of National Family Health Survey (NFHS)-3 and 4

By

Amritesh Mishra

Dissertation submitted in partial fulfillment of the requirements of the degree

MBA Hospital and Health Management

Academic year, 2018-2020

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Pursuing MBA-Hospital & Health Management from IIHMR University, Jaipur

In recognition of having successfully completed his

Dissertation & Internship in the department of

National Health Mission, Rajasthan

and has successfully completed his Project on

Comparative analysis of Maternal Health Situation in Rajasthan & Uttar Pradesh using state fact sheet of National Family Health Survey (NFHS)-3 and 4

Date : 11th March to 10th June, 2020

He comes across as a committed, sincere & diligent person who has a strong drive and zeal for learning.

We wish him all the best for future endeavors.

Special Secretary
Medical, Health & Family Welfare
Mission Director, NHM
Rajasthan

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Introduction

Maternal wellbeing refers to the strength of women at the time of ante-partum, intrapartum, and post-partum period. The condition of ante-partum period firmly impacts the result of intra- and post-partum periods. Maternity cycle incorporates five significant stages: (a) treatment; (b) pre-birth period; (c) intra-natal period; (d) post-natal period; and (e) between conceptional period. By and large, parenthood is a for the most part positive and satisfying involvement with created nations. Be that as it may, the circumstance isn't the equivalent in many creating nations where parenthood is related to affliction, sick wellbeing, and even passing.

According to WHO, ninety-nine per cent of the maternal death around the globe is taking place in the developing countries, and on a daily basis, nearly 830 women are dying during pregnancy and childbirth due to the causes that are preventable. The causes portrayed for high maternal mortality are postpartum haemorrhaege, pregnancy induced hypertension,sepsis, premature birth, and obstructed labour. Figure 1 shows the rate appropriation of various reasons for maternal passing in India. Maternal Mortality Ratio (MMR) is a measure utilized as a hearty marker to evaluate maternal wellbeing which is additionally utilized in India broadly for policymaking. The SRS Report of 2015-17 says that the MMRs of Rajasthan and Uttar Pradesh are 186 and 216 per 100,000 live births against the country’s rate of 122. The inter-state data of MMR is seen to be very high, ranging from the highest of 229 in Assam and the lowest of 42 in Kerela. The pattern of Maternal Mortality Ratio of India over time is shown in Figure-2. India has focused on Sustainable advancement objectives by 2030 to diminish the MMR under 70. In light of wellbeing, instruction, and foundation; the arranging commission of India has labelled Rajasthan, Uttar Pradesh, Madhya Pradesh, and Bihar as BIMARU states. With this foundation an evaluation was pointed dependent on NFHS-3 and 4 truth sheets aiming to

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comprehend the maternal wellbeing circumstance in the upper two BIMARU states; Rajasthan and Uttar Pradesh.

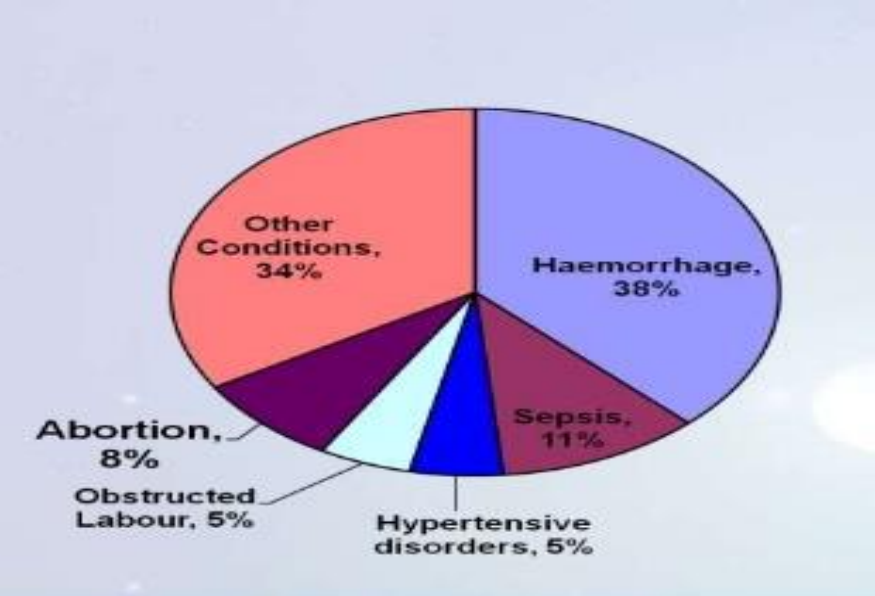

Fig. 1 – Maternal Mortality causes in India

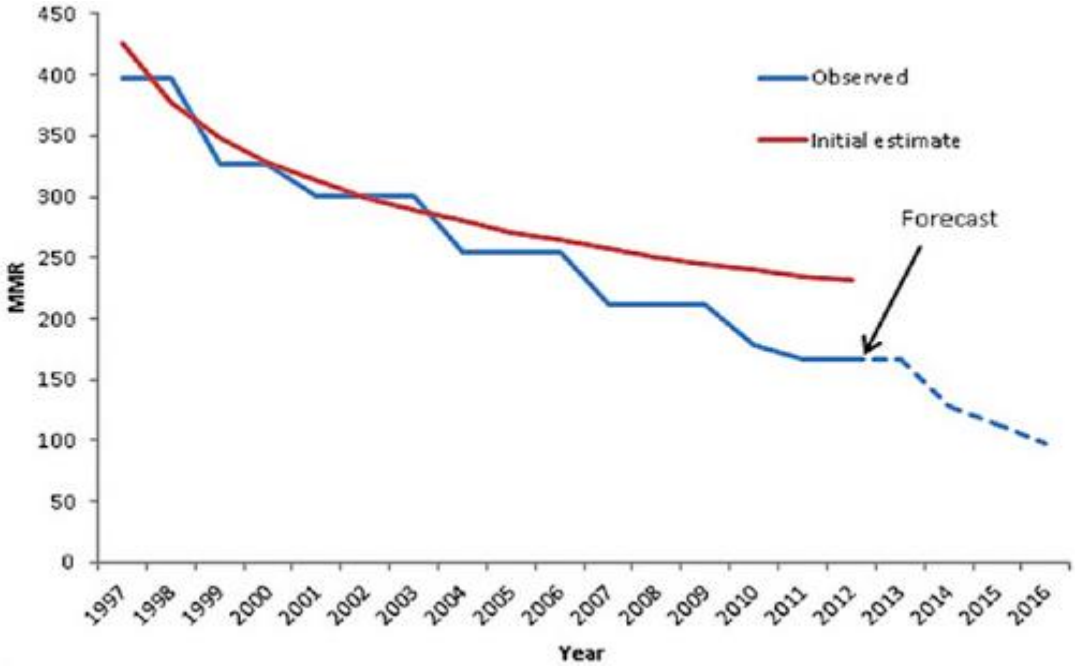

Fig. 2 – Trend of Maternal Mortality Ratio over time in India

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Literature Review

Title of the study (Author/s, year)	Sample size	Objective/s	Key findings
"Predictors of Maternal Health Services Utilization by Poor, Rural Women: A Comparative Study in Indian States of Gujarat and Tamil Nadu" (Kranti Suresh Vora, Sally A Koblinsky, Marge A Koblinsky, 2015)	1584 and 601 rural women from Gujarat and Tamil Nadu, respectively	• "To examine the role of JSY/CY and other healthcare system and social factors in predicting poor, rural women's use of maternal health services in Gujarat and Tamil Nadu".	• Maternal healthcare services were used more by the women of Tamil Nadu than by those of Gujarat. • The women of Tamil Nadu were entitles with cash assistance for home deliveries under some scheme, which implied the failure of JSY in predicting institutional deliveries. • ANC was not incentivized, due to which schemes like JSY/CY failed to provide adequate ANC. • In Tamil Nadu, institutional delivery and CS delivery were predicted by women's

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			education, while those in Gujarat were predicted by husband's education.
"Rates, Indications, and Outcomes of Caesarean Section Deliveries: A Comparison of Tribal and Non-Tribal Women in Gujarat, India" (Gayatri Desai et. al., 2017)	19923 deliveries Kasturba Maternity Hospital.	• "To estimate and compare rates, determinants, indications and outcomes of caesarean section". • "To assess how the inequitable utilization can be addressed in a community-based hospital in tribal areas of Gujarat, India".	• When compared to the non-tribal population, the CS delivery was notably less in tribal population. • Factors like age of the woman, number of pregnancies, history of CS delivery and distance from the hospital affected the CS rates. • No significant difference was found between incidence of birth asphyxia and case fatality rate, among both the population.
"How Equitable Is the Uptake of Conditional Cash Transfers for Maternity Care in India? Evidence From the Janani Suraksha Yojana Scheme in Odisha and Jharkhand" (Nattawut	3,682 births in five districts of Jharkhand and Odisha.	• "To measure and explain socioeconomic inequality in the receipt of JSY benefits".	• Although most of the women had heard of the JSY scheme, the receipt of the benefits was low. • There was high district wise variations, especially

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Thonkong et. al., 2017)			in Jharkhand, in receiving the benefits of JSY scheme. • There were substantial pro-rich inequalities in JSY receipt and in the institutional delivery rate. • The observed poor-rich inequalities in the receipt were determined by the delivery in a public health facility.
"Maternal Health Situation in Bihar and Madhya Pradesh: A Comparative Analysis of State Fact Sheets of National Family Health Survey (NFHS)-3 and 4" (Ranjit Kumar Dehury and Janmejaya Samal, 2016)	NFHS – 3&4 fact sheets of Bihar and MP	• "To assess the maternal health situation of Bihar and MP based on National Family Health Survey (NFHS-3) and 4 fact sheets".	• Madhya Pradesh had performed comparatively better than Bihar. • However, the performance was poor in all the three level of maternal health. • This performance could be assessed by strong political will, community mobilization and awareness, and health system strengthening.

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"Are Young Mothers in India Deprived of Maternal Health Care Services? A Comparative Study of Urban and Rural Areas" (N. Kavitha, 2015)	NFHS-3 data	• "To study the effect of age of women at birth on the use of maternal health care services separately for urban and rural areas using data from the National Family Health Survey (NFHS)-3".	• Women giving birth during adolescence were less likely to use maternal health services in both urban and rural areas.
"Out-of-pocket Expenditure on Prenatal and Natal Care Post Janani Suraksha Yojana: A Case From Rajasthan, India" (Dipti Govil et. al., 2016)	424 mothers who delivered recently from Rajasthan	• "To examine the variation in OOPE in accessing maternal health services" • "To examine the extent to which JSY incentives covered the burden of cost incurred". • "To understand the differential and determinants of OOPE".	• Factors like place of ANC, type of delivery and delivery complication determined the variations in OOPE. • The OOPE in public health center for normal delivery was US$44 and that for complicated delivery was US$145. • JSY contributed to 44 % of the total cost per delivery. The share was 77 % in normal delivery and 23 % in complicated

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			delivery. • OOPE was predicted by factors like educational level of women, economic status of the family and complications during pregnancy.

Research Question

What is the maternal health situation of Rajasthan and Uttar Pradesh as per NFHS-3 and 4?

Aim

To assess the situation of maternal health in Uttar Pradesh and Rajasthan on the basis of NFHS-3 and NFHS-4 data.

Methodology

- Study Setting – Rajasthan and Uttar Pradesh
- Study Type – Descriptive
- Sample Size – data of NFHS- 3&4 for Rajasthan and Uttar Pradesh has been analysed
- Data Collection Method – Secondary data
- Data Collection Tool – Data was abstracted from NFHS fact sheets of Rajasthan and UP

The information was contrasted to one another (NFHS-3 and NFHS-4) for different maternal wellbeing markers in both the states. These indicators were –

- Ante-Natal Care (ANC) administrations
- Execution in sickliness and lockjaw in neonates
- Execution in mother and youngster assurance card

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- Post-natal consideration
- JSY and cash-based use
- Gifted birth participation
- Conveyance administrations

The NFHS fact sheets (NFHS-3 & 4) of both the states were compared for various maternal health indicators.

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Result

An antenatal check-up is a good indicator for maternal healthcare. A mother is obliged to have four ANC for the best maternal care. Moreover, ANC visits in the first trimester are considered to impact the health of the mother in a positive manner.

Table 1 shows the per cent distribution of women who received ANC services. In Rajasthan, the percentage of women receiving ANC check-up in their first trimester has increased by up to 85 per cent from NFHS-3 to NFHS-4, while that in UP increased by 79 per cent from NFHS-3 to NFHS-4. The percentage of women receiving at least four ANC visits has increased by 64.5 per cent in Rajasthan from NFHS-3 to NFHS-4, while that in UP had increased by more than twice from NFHS-3 to NFHS-4. A minimum of four antenatal visits, one Tetanus Toxoid (TT) injection, and IFA capsules/syrup for at least 180 days are considered to be a full ANC package for the pregnancy care. The women in Rajasthan who received full ANC package has increased by nearly 55 per cent, while that has been doubled in UP from NFHS-3 to NFHS-4.

Table 1 – Per cent distribution of women who received ANC services.

State	**NFHS-3**	**NFHS-4**
Women having antenatal check-up in the first trimester (%)		
Rajasthan	34	63
Uttar Pradesh	25.7	45.9
Women having at least 4 antenatal care visits (%)		
Rajasthan	23.4	38.5
Uttar Pradesh	11.1	26.4
Women receiving full ANC package (%)		
Rajasthan	6.3	9.7
Uttar Pradesh	2.7	5.9

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Table 2 shows the per cent distribution of women who were vaccinated against neonatal tetanus and given IFA doses for the prevention of anemia. Both Rajasthan and Uttar Pradesh showed nearly 40 per cent increase in women being protected against neonatal tetanus from NFHS 3 to NFHS 4. Similarly, the per cent of women consuming IFA tablets/syrups for a minimum of 100 days had almost doubled in both the states from NFHS-3 to NFHS-4.

Table 2 – Per cent distribution of women protected against neonatal tetanus and anemia.

State	NFHS-3	NFHS-4
Per cent of women whose last birth was protected against neonatal tetanus		
Rajasthan	65.2	89.7
Uttar Pradesh	64.5	86.5
Per cent of mothers who fed on IFA for one hundred days or greater when they have been pregnant		
Rajasthan	8.7	17.3
Uttar Pradesh	6	12.9

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The Mother and Child Protection (MCP) card is aimed mainly at the more rigorous monitoring of the status of maternal health. Therefore, evaluating the use of MCP card in NFHS-4 data would measure the record maintenance and care compliance. Rajasthan performed better than UP in providing MCP cards to the pregnant women by about 16 per cent. The data is shown in Table 3.

Table 3 – Per cent distribution of registered mother getting the Mother and Child Protection (MCP) card.

State	NFHS-4
Rajasthan	92.3
Uttar Pradesh	79.8

Table 4 shows the per cent distribution of women receiving financial assistance and the incurring out-of-pocket expenditures (OOPEs). NFHS-4 records confirmed that Rajasthan has performed fairly in provision of JSY advantages to the pregnant women than UP. Still, a pregnant woman in Rajasthan bears an extra OOPE for a delivery that is more than 50 per cent of that in UP. On an average, Rs. 3052 and Rs. 1956 are the OOPEs per delivery in a public health facility in Rajasthan and UP, respectively. The trend is proven in the table 4.

Table 4 – Per cent distribution of women getting financial assistance under JSY and incurring out of pocket expenditure.

State	NFHS-4
Per cent of women getting financial assistance under JSY	
Rajasthan	56.1
Uttar Pradesh	48.7
Average out of pocket expenditure per delivery in public health facility (Rs.)	
Rajasthan	3,052
Uttar Pradesh	1,956

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Aspen discovered that accepting post-natal consideration amid the initial two days after conveyance limits maternal dismalness and mortality. Table 5 shows the per cent distribution of women receiving postnatal care. It reveals that in Rajasthan, the per cent of women accepting the postnatal care from any health personnel within two days of delivery has increased by more than twice in NFHS-4 as compared to NFHS-3, while that in UP had increased by four times from NFHS-3 to NFHS-4.Both Rajasthan and UP have indicated improvement in the arrangement of postnatal consideration from health professional from NFHS-3 to NHFS-4. Around half of the women, despite everything, denied of early post-natal consideration.

Table 5 – Per cent distribution of women receiving post-natal care.

State	NFHS-3	NFHS-4
Per cent of women accepting postnatal care from any health personnel within two days of delivery		
Rajasthan	26.9	63.7
Uttar Pradesh	12.3	54

Table 6 represents the per cent distribution of newborn receiving care by skilled health personnel. It has been observed that a very low per cent of newborn of home delivery were taken to the health facility for checkup within 24 hours of birth, both in Rajasthan and UP. The expansion is minor within NFHS-3 and NFHS-4. The consideration is given by healthcare professional within two days of birth. The point by point pattern has appeared in the table.

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Table 6 – Per cent of newborn receiving care at health center and by skilled health care personnel.		
State	**NFHS-3**	**NFHS-4**
Per cent of newborn delivered at home who were taken to a health facility for check-up within 24 hours of birth		
Rajasthan	0.1	1.2
Uttar Pradesh	0.1	0.8
Per cent of newborn receiving health checkup after birth from a healthcare professional within two days of delivery		
Rajasthan	NA	22.6
Uttar Pradesh	NA	24.4

Table 7 shows the per cent distribution of delivery care. The institutional delivery in both Rajasthan and UP has accelerated significantly as mentioned through NFHS-4 contrast to NFHS-3 which was three times increase in the study period, the reason being the successful implementation of JSY. However, the NFHS-4 data reports that Rajasthan was ahead in per cent of institutional deliveries by more than 16% than that of UP. The data on per cent of institutional deliveries in public facilities showed the similar pattern, and Rajasthan was ahead of UP by 19%. The percentage of home deliveries was comparatively low in both the states in NFHS-4, clearly due to the adoption of institutional delivery by majority of the population. The percentage of deliveries assisted by health personnel showed a spectacular increase in both the states, which was nearly twice in NFHS-4 than NFHS-3.

The overall performance of Rajasthan is 16% greater in comparison with UP in NHFS-4. This indicates that deliveries are carried out via SBAs in both states. However, the increase in the CS deliveries in both the states was very minimal. When the CS deliveries were compared for private and public health facilities, it was found that the CS deliveries in private facilities increased while that in public health facilities decreased from NFHS-3 to NFHS-4 in both the states. The trend is detailed in the Table 7.

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Table 7 – Per cent of Delivery Care

State	NFHS-3	NFHS-4
Per cent of institutional deliveries		
Rajasthan	29.6	84
Uttar Pradesh	20.6	67.8
Per cent of institutional births in public facilities		
Rajasthan	19	63.5
Uttar Pradesh	6.6	44.5
Per cent of home deliveries conducted by skilled birth attendants (SBA)		
Rajasthan	11.5	3.2
Uttar Pradesh	6.8	4.1
Per cent of births assisted by a health personnel		
Rajasthan	41	86.6
Uttar Pradesh	27.2	70.4
Per cent of total caesarean section deliveries		
Rajasthan	3.8	8.6
Uttar Pradesh	4.4	9.4
Per cent of caesarean section in private facilities		
Rajasthan	14.9	23.2
Uttar Pradesh	26	31.3
Per cent of caesarean section public health facilities		
Rajasthan	11.7	6.1
Uttar Pradesh	11.1	4.7

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Discussion

From the latest NFHS-4, the growth in the indicators of maternal health in the states of Rajasthan and UP has not yet been attained as anticipated. UP is still having a ameliorate photograph in regards with the maternal health situation. However, Rajasthan shows a progressive result in contrast to UP. Improvement in the discussed maternal health indicators is significantly important for the development of maternal health situation in any state. Provision of ANC plays a major role in the upkeep of safe motherhood. A proper and regular ANC can be a guide to an early intervention in case of any complication in pregnancy. To ensure this, a minimum of four ANC checkups are mandatory at different stages of pregnancy. For instance, in many interventions in India for anemia are being implemented at various stages of pregnancy. TT injection and IFA capsules/syrups are supplied usually for the maintenance and wellbeing of pregnancy.

The present day NFHS-4 data shows an unsatisfactory status of maternal health indicators as an issue both for Rajasthan as well as Uttar Pradesh. Uttar Pradesh had a relatively poor performance with respect to mandatory four ANC checkups when compared to Rajasthan. Similar researches for UP shows that there is slighter usage of maternal healthcare facilities such as antenatal care checkups and health center visits. In both states, the socio-economic factors that affect the utilization of maternal health services are mother's religion, education, age at marriage, and income and wealth distribution of the family. A study on the DLHS data of the EAG states shows that the district wise variations indicates that not only the presence of health facility but also adequacy and accessibility of quality services are important in promoting is not adequate to promote service utilization. Some studies also suggest that besides accessibility of healthcare facilities, variables like demographic and socio-economic factors also important for the maternal health services utilization.

Institutional deliveries when compared to home deliveries are more successful without or with minimal maternal complications. However, due to factors like lack of resources, lack of knowledge and stigma associated, deliveries done at home are still prevalent in the country, especially in hard-to-reach places. Rajasthan & Uttar Pradesh come under the class of EAG states where the networks of referrals are not well developed. The NFHS- 4 statistics shows an improved performance of both states with respect to institutional

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deliveries as compared to NFHS 3, however, home deliveries are still being carried out without any assistance or with minimal assistance of the SBA, or other health personnel. In spite of so much training of health care professional under unified Management of Childhood Illnesses (IMNCI) and neonatal and Skill birth attendant, the performance at the grass-root level is atrociously poor, thereby affecting the health of pregnant women in rural areas, resulting in increased mortality and morbidity of mothers.

Neonatal care is equally important both for the maternal health as well as for the survival of the newborn. The first 28 days after the birth is the crucial period for the survival of the neonate. Therefore, institutional and the relevant professional are essential for the appropriate health of the newborn. In this respect, the status of Rajasthan and UP shows an improved accomplishment in the neonatal care in the first two days of birth.

The Caesarean Section (CS) deliveries took place more in private hospitals thereby showing an excessive contrast to the standards set with the aid of WHO as said by way of NFHS-3 and 4 data. In both the states, Caesarian Section is a common phenomenon. The comparative high proportion of Caesarean section deliveries in private hospitals indicates the inclination of private hospitals towards CS deliveries, purposively due to money-making factor. The other possibility is that the lower proportion of CS deliveries in public health facilities is due to lack of resources, or the lack of competent work force. Hence, important steps need to be undertaken to expand the number of human resources that is needed so that caesarean section deliveries can be organized as per the requirement.

Conclusions

The maternal health situation in Rajasthan and Uttar Pradesh indicates that there is a requirement of indulging more in the activities related to maternal health. A great deal of development is needed with respect to the maternal health services in order to achieve the maternal health goals. This progress is required in every level of pregnancy and delivery. Some important strategies that play a crucial role in improving the maternal health services are health system strengthening, stronger political will and community mobilization. Besides, the average age of marriage in both the states, which is lower than the legal age of marriage in the country, is also a subject of concern as regards the maternal health services. The age of marrying can affect both the maternal health as well as the newborn health, and

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can also lead to premature childbirth which will consequently result in maternal and newborn complications.

The study result focuses on the need of increasing the participation of the pregnant mothers in the antenatal period of her pregnancy and also emphasizes the importance of receiving the full ANC package. It also envisages a greater proportion of institutional deliveries by the skilled work-force and the lower proportion of home deliveries to be conducted.

Recommendations

The poor maternal health situation in Uttar Pradesh can be improved by proper and adequate use of resources, while the maternal health situation in Rajasthan which is comparatively in a better state, can be strengthened to achieve the anticipated maternal health objectives. As ante-natal care has a crucial role in maternal health, both the states need to focus on its proper management, primarily in the rural areas. Along with the promotion of institutional deliveries, the delivery by SBA must also be encouraged especially in hard to areas like tribal areas in order to decrease the mortality and morbidity of pregnant women. Promoting health services could be done by providing primary services by the frontline workers like distributing iron folic acid tablets and micronutrients, and immunization. The frontline workers can also counsel the society through various IEC materials for the utilization of maternal health services. The CS deliveries can be further reduced if such cases are handled by skilled health professionals and unnecessary CS deliveries are avoided. This will impact both the health of the woman as well as the socio-economic situation of the family. The private sector needs to be managed efficiently for the CS deliveries that are not necessary.

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