

Utilization of Maternal Health Care Services: An Inter-District Analysis of Jammu and Kashmir

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Abstract: *Despite more than 50-year history of family welfare programs, India contributes nearly a quarter of the global estimated internal morbidity and mortality. Maternal deaths are 113 per 100,000 live births as per SRS 2016-18, one of the highest in world. The direct causes of maternal mortality are well known and, to a large extent, can be prevented and treated. Socioeconomic conditions, low quality of care, lack of trained health professionals, lack of adequate infrastructure, and barriers to access to medical facilities. In India, there are many causes of high maternal mortality rates like low literacy levels, poorly resourced facilities, poor transportation services, and the fragile system of the country, all of which increase the risks of countries' vulnerability to compromised access to maternal health care. This paper examines an inter district analysis of maternal health care utilization in Jammu and Kashmir.*

Keywords: Maternal Health, Pre-Natal, Post-Natal, Health Services, Safe Delivery Care

World Health Organization defines "Maternal health as the health of women during pregnancy, childbirth and the postpartum period". It is known that motherhood is often a positive and fulfilling experience, but for too many women, it is associated with suffering, ill-health and even death (WHO 2010). Therefore, maternal health has always been an issue of concern, especially in developing countries. Koblinsky and Campbell (2003) observed that nearly half of all maternal deaths in developing countries occur during labour or delivery or in the immediate postpartum period. Further, a child's nutritional status is highly associated with the mother's health status during her pregnancy (Derbyshire, 2011). Nutritional deficiency, low weight or anaemia during a mother's pregnancy can lead to being under-weight, contributing to more than one-third of child deaths (UNICEF, 2009). Improving maternal and child health is an indicator of development measure reflecting the status to access the health institutions, women empowerment, skilled health personnel, education, nutrition intake and socioeconomic status of the society (Johnson, 2010). Investing in the health of women and children is a significant component of the right to health and child care united nation economic and social council (2000). Thus, the current state of maternal and child health directly or indirectly conditions the future status of public health (Victoria et.al.,2008). Better maternal, reproductive, and child health helps secure the right to health, reduces poverty and unemployment, and strengthens economic growth (World Health Organization (2014). Improvements in maternal and child health depend on a country's capacity to progress in different areas both within and beyond the health sector. Health is determined by various social, political, economic, cultural, and environmental factors, not just biomedical ones. The evidence shows that health outcomes can be improved by working on this social determinant of health (UNDP, 2011). Health sector progress includes family planning, immunization, and antenatal and postnatal care provisions. The improvement beyond the health sector includes a reduction in total fertility, infant mortality, etc.

Maternal and child health reflects the level of development of both community and the health care delivery system (Kupari, 2005). Mothers and young children considered the most vulnerable group in the community, need special medical care. Mothers need special care during pregnancy, and children need regular medical checkups and nutrition supplements to avoid childhood illness (Yesudian,1988). The health of the mother is a significant determinant of infant mortality. Women with a poor health condition may deliver a weak child, the probability of whose survival becomes very low.

In contrast, a healthy woman takes a nutritious diet and proper medical care and delivers a healthy child. Thus, the health status of women contributes an essential component in Maternal and Child Health (MCH) care. The global consensus on maternal and child health concerns was emphasized in 2000 as the MDG and recently in 2015 as SDGs. There has been significant improvement in some of the development goals, such as hunger, the decline of poverty, access to clean water, and provision of electricity and roads. However, the achievements fall short in cases of reduction in gender equality, child mortality, maternal health and access to adequate sanitation etc (UN, 2015). Maternal mortality is not only a basic indicator of the overall health of a population, but it provides an indirect commentary on the status of women and gender inequality. Despite this significant progress, many people living in rural and remote areas, especially poor and vulnerable people, including women and children, continue to suffer due to inequitable health and medical services distribution. In order to address this issue, the National Rural Health Mission (NRHM) was introduced in April 2005 by the Government of India as an umbrella scheme to improve the availability of and access to quality medical and health care for people, the maternal and child health and their survival are central to the achievements of national health goals under

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the National Rural Health Mission (NRHM) and the 12 five-year plans. Maternal and child health outcomes are a sensitive indicator of the country's health system and show how a society treats its most vulnerable members. The mother's health determines the child's health and thus the adult human capital. Improved maternal, new-born and child health saves money and other resources and benefits individuals, families, society and the nation. For instance, households with better nourished and healthier mothers and children spend less on healthcare. They also generate substantial economic returns because healthy people can work more efficiently and productively and thus improves their own lives and contribute positively to the broader economy. India has introduced many health programmes on maternal and child health and nutrition.

Status of Maternal Mortality Ratio in India

As per the Ministry of Health and Family Welfare, the Sample Registration System (SRS) report by the Registrar General of India for the last three years, the Maternal Mortality Ratio of India has reduced from 130 per 100,000 live births in SRS 2014-16 to 122 in SRS 2015-17 and 113 per 100,000 live births in SRS 2016-18. This means that compared with 2016, 2500 more mothers were saved each year in 2018. The estimated total number of maternal deaths decreased from 33800 in 2016 to 26437 in 2018. Maternal mortality can be attributed to poor socioeconomic conditions, low quality of care, lack of trained health professionals, lack of adequate infrastructure, and barriers to access to medical facilities. In less developed countries, there are many causes of high maternal mortality rates like low literacy levels, poorly resourced facilities, poor transportation services, and the fragile system of the countries, all of which increase the risks of countries vulnerability to compromised access to maternal health care. Despite more than 50-year history of family welfare programs, India contributes nearly a quarter of the global estimated internal morbidity and mortality. The WHO estimates show that out of the 536000 maternal deaths worldwide, 117000 (22 per cent) occur in India every year. For a long time, the quality of maternal health has been neglected by the Indian public health system. Despite efforts that have been made to strengthen maternal health care services, maternal mortality is still high in most developing countries. These maternal and child services are uneven and have significant variations across regions.

Maternal healthcare services are improving women's health by increasing availability, accessibility and utilization of basic health services and strengthening the health system to enable sustainability. Improving the well-being of mothers and infants is an important public health goal. Their well-being determines the future generation's health status and can help predict the future public health challenges for families, society and the health care system. Maternal and infant health is significant because it reduces the risk of pregnancy-related complications and infant mortality. It can be reduced by increasing access to antenatal care and prenatal care. Healthy birth care and early disease identification can prevent the infant from death or disability, which helps the infant to live a healthy life. (Watson et al., 2006). For a long time, the quality of maternal health has been neglected by the Indian public health system. Despite efforts that have been made to strengthen maternal health care services, maternal mortality is still high in most developing countries. These maternal and child services are uneven and have significant variations across regions. Is there any district-level variation in the utilization status of maternal and child health care services in Jammu and Kashmir? In this study, an attempt has been made to examine the utilization of maternal healthcare services in Jammu and Kashmir.

Literature Review:

Magadi et al. (2007) explore how teenagers' use of maternal health services compares with that of older women and examines the effect of maternal health services among teenagers in sub-Saharan Africa using Demographic and Health Surveys. A comparison of maternal health care between teenagers and older women, based on bivariate analysis, shows a slight variation in maternal health care by age. The study finds no evidence of significant variations across countries in the observed patterns of maternal health care by maternal age. Mohanty and Srivastava (2012) study recent trends in the utilisation and cost of hospital-based delivery care in the Empowered Action Group (EAG) states of India using the District Level Household Survey 3 data. The multivariate analyses suggest that time, state, place of residence, economic status, educational attainment, and delivery characteristics of the mother are significant predictors of hospital-based delivery care in India. The study demonstrates the utility of public spending on health care and provides a thrust to the ongoing debate on universal health coverage in India. Ahmad et al. (2010) explores the linkage between women's economic, educational, and empowerment status and maternal health service utilisation in developing countries. The analysis uses data from the most recent Demographic and Health Surveys conducted in 31 countries. The economic, educational and empowerment status (3Es) are significantly associated with utilisation of maternal health services. Singh et al. (2013) examine the role of community- and district-level factors in utilising maternity healthcare services in India. A nationally representative District Level Household and Facility Survey conducted during 2007-08 was used to analyse the three maternity outcomes: four or more antenatal care visits, skilled birth attendance, and postnatal care after birth. Results show that along with individual-/household-level factors, community and district-level factors influence the pattern of utilisation of maternal healthcare services significantly. At the community level, the odds of maternal healthcare utilisation were lower in rural areas and communities with a high concentration of poor and illiterate women. Moreover, the average population coverage of primary health centres (PHCs), availability of labour room in PHC, and percentage of registered pregnancies were significant factors at the district level that influenced maternity care services. The study also found a strong association between the extent of previous use of maternal healthcare and its effect on subsequent usage patterns. Rai (2014) study the factors associated with the utilisation of maternal healthcare services among Muslim women in India, Bangladesh, and Pakistan. The Demographic and Health Survey data from India (2005-2006), Bangladesh (2007), and Pakistan (2006-2007) were used in the analysis. The binomial logistic regression model identified that the place of residence, a woman's education, the partner's education, respondent's age at birth, birth order, and wealth quintile were significantly associated with the utilisation of selected maternal healthcare services.

Based on the reviewed literature, it has been found that many studies conducted to date on the maternal and child care services and problems faced by mothers during and after pregnancy. Also, the studies analysed the factors affecting their access to maternal and child care services. However, there is little known about maternal health care services in Jammu and Kashmir. Therefore, in this present backdrop, this study is undertaken in Jammu and Kashmir to examine maternal health care services and factors determining maternal health care services.

Data Sources and Methodology

The present study is based on the fourth round of National Family Health Survey 2015-16 (NFHS-4) individual-level data. NFHS are a series of nationally representative, cross-sectional surveys that provide data on various demographic, socioeconomic, maternal and child health outcomes, reproductive health and family planning for India and each State/Union territory. As in the earlier rounds, the Ministry of Health and Family Welfare, Government of India, designated International Institute for Population Sciences, Mumbai, as the nodal agency to conduct NFHS-4. NFHS-4, for the first time, provides district-level estimates for many important indicators. In the fourth round, around 700,000 women aged 15–49 years from 601,509 households were interviewed using a two-stage stratified sampling design, with a response rate of 97 per cent. The women's survey schedule provides information for all eligible women aged 15–49 years; women were asked questions on various topics, including background characteristics: age, literacy, religion, caste, media exposure etc., maternal and child health care services: antenatal care, delivery care, postnatal care; husband's background and women's work, husband's schooling, women's employment, women's empowerment etc. This nationally representative survey follows primary sampling. In Jammu and Kashmir, NFHS-4 collected information from 23,800 women with 19475 rural women and 4325 urban women. The present study mainly focuses on three variables, i.e., antenatal care, safe delivery care and postnatal care to look into the status of maternal healthcare services at the district level in Jammu and Kashmir.

Results and Discussions

Antenatal care (ANC)

Antenatal care (ANC) reduces pregnancy-related morbidity and mortality and improves maternal and newborn health. The World Health Organization recommends that all pregnant women have at least four antenatal care (ANC) assessments by or under the supervision of a skilled attendant (World Health Organization, 2006). Reproductive health care, the care a woman receives before and during pregnancy, at the time of delivery, and soon after delivery, is important for the survival and well-being of the mother and her child. Antenatal care (ANC) from a skilled provider is important to monitor pregnancy and reduce the risk of morbidity for the mother and baby during pregnancy and delivery. The quality of antenatal care can be monitored through the content of services received, and the kind of information mothers are given during their visits. Antenatal care is more beneficial in preventing adverse pregnancy outcomes when sought early in the pregnancy and continued through delivery. It is clear from Table 1 that the ANC visits in the first-trimester range from 42 per cent (Doda District) to 92 per cent in Pulwama District.

Further, districts in the Jammu region recorded a meagre percentage of ANC visits during the first trimester compared to districts in the Kashmir region. Srinagar district recorded fewer ANC visits during the first trimester than Pulwama district in the Kashmir region. The urban women also initially receive the ANC services from the private sector and prefer to register with a government facility for delivery in the third trimester. In TT injection against neonatal tetanus, the highest percentage district is recorded Budgam and the lowest percentage in Doda district. The coefficient variation is 10.44. Most of the districts in the Kashmir region have reported that more than 90 per cent of women have received TT. Whereas, in the case of the Jammu region, the performance of some of the districts has reported a low percentage of TT injections received. The average percentage is 82 in TT injection coverage in the Jammu region.

Table 1: Women's Antenatal Care (ANC) Status in Jammu and Kashmir

Districts	ANC check-ups in the first trimester (%)	TT injection against neonatal tetanus (%)	IFA tablets consumed for 100 days or more (%)	At least four or more visits (%)	Full ANC (%)
Doda	41.8	63.5	9.1	36.9	48
Jammu	84.4	91.6	56.6	83.9	12.4
Kathua	82.7	89.7	56.6	93.3	15.5
Kishtwar	64.1	82	17.2	54.4	26.7
Poonch	70.5	83	39.3	73.8	23.5
Rajouri	55.5	70.6	19	55.9	30.5
Ramban	62.3	83.6	18	51	19.8
Reasi	54.2	78.4	35.9	57.7	20
Samba	71.9	75.1	47.3	76.7	18.6
Udhampur	78.3	94.7	50.6	90.5	29.2
Jammu Region (A)	66.57	81.22	34.96	67.41	24.42
S.D (A)	13.63	9.68	17.89	18.85	10.11
C.V (A)	20.48	11.92	51.17	27.97	41.42
Anantnag	76.7	89	11.7	82.5	18.1

Bandipore	83.1	89.9	15.7	90.3	52.4
Baramula	86.8	94	31	95.2	51.9
Budgam	86.3	97.6	19.7	95.7	36.7
Ganderbal	81.2	92.7	13.1	94.5	33.2
Kulgam	87.2	91	20.5	95.1	5.3
Kupwara	81.3	91.1	19.5	87.8	15.8
Pulwama	92.3	95.4	30	98.3	10.9
Shopian	88.9	95.3	21.7	96.4	14.1
Srinagar	85	90.2	27.1	91	12.5
Kashmir Region (B)	84.88	92.62	21	92.68	25.09
S.D (B)	4.46	2.85	6.67	4.78	17.23
C.V (B)	5.25	3.07	31.74	5.16	68.68
JK (A+B)	75.73	86.92	27.98	80.05	24.75
S.D (A+B)	13.63	9.08	14.96	18.63	13.75
C.V (A+B)	17.99	10.44	53.48	23.28	55.50

Source: Author's Compilation from NFHS-4

Providing iron and folic acid (IFA) tablets to pregnant women to prevent nutritional anemia is an integral part of the health of both mother and child. The percentage of IFA coverage is very low in both regions, with 21 per cent in the Kashmir region and 35 per cent in the Jammu region. Except for Jammu and Kathua districts, all the districts reported below 50 per cent IFA coverage in Jammu and Kashmir. Regarding the coverage of complete antenatal care, the average is 24 per cent in Jammu Region and 25 per cent in the Kashmir region.

Safe Delivery Care

Proper medical attention and hygienic conditions during delivery reduce the risk of complications and infections that may cause death or severe illness for the mother, the baby, or both. Hence, an essential component in efforts to reduce the health risks of mothers. Table 2 provides information about the district-wise place of the birth delivery status in Jammu and Kashmir. There are significant variations across different districts regarding the proportion of births occurring at health care facilities. Kashmir region has recorded an average of 93.2 per cent of institutional births, with most of the districts in the Kashmir region having high institutional delivery rates of more than 90 per cent.

Table 2: District wise Births Delivery Status of Women in Jammu and Kashmir

Districts	Births delivered assisted by doctor/ Nurse/any other health personal (%)	Births delivered in public health facility (%)	Births delivered in private health facility (%)	Births delivered in public health facility delivered by caesarean section (%)	Births delivered by caesarean section (%)
Doda	56.5	48	1.7	21.9	12
Jammu	95.2	84.2	7.6	26.1	28.4
Kathua	95.4	89.3	2.7	22.3	21.8
Kishtwar	67.3	64.4	0.3	23.2	15.3
Poonch	81.5	77.4	2.2	30	24.8
Rajouri	78	73.3	2.5	29.2	22.7
Ramban	64.1	58.5	2.1	17.7	11.5
Reasi	62.8	60.1	2.5	27	17.5
Samba	89.8	77.5	8.3	28.7	27.5
Udhampur	86.7	78.1	4.6	20.3	18.1
Jammu Region (A)	77.73	71.08	3.45	24.64	19.96
S.D (A)	14.24	12.89	2.60	4.16	6.04
C.V (A)	18.33	18.14	75.34	16.88	30.27
Anantnag	93.3	86.6	4.7	32.6	32.1
Bandipore	89.9	74.5	14.2	38.2	34.6
Baramula	91.1	83.1	10.7	38.8	41.5
Budgam	98.4	90.7	6.4	49.9	49.8
Ganderbal	96.1	92	3.4	51.2	49.9
Kulgam	91.6	85.2	4.3	34.6	32.3
Kupwara	90.4	74.3	16.7	31.9	31.6
Pulwama	93.9	82.3	11.6	55.5	56.1

Shopian	92.7	78.3	13.7	38.1	42.3
Srinagar	99.6	78.1	21.2	70.1	74.7
Kashmir Region (B)	93.70	82.51	10.69	44.09	44.49
S.D (B)	3.34	6.24	5.94	12.29	13.68
C.V (B)	3.56	7.56	55.52	27.88	30.75
JK (A+B)	85.72	76.80	25.78	34.37	32.23
S.D (A+B)	12.98	11.47	38.09	13.39	16.26
C.V (A+B)	15.14	14.93	147.77	38.97	50.45

Source: Author's Compilation from NFHS-4

Institutional delivery in public facilities is concerned that the percentage of institutional delivery in public facilities is highest in Ganderbal and lowest in the Doda district. On the contrary, the Jammu region has 74 per cent of institutional delivery. Some low-performing districts in the Jammu region are Doda, Reasi, Ramban and Kishwar. The percentage of home delivery conducted by skilled health personnel is highest in Doda district, whereas lowest in Srinagar district. The deliveries conducted at the health facilities and trained staff attending home deliveries are considered the safe delivery-the proportion of safe deliveries (either institutional or home deliveries assisted by skilled personnel). The proportion of home deliveries assisted by skilled personnel has led to safe deliveries. Further, efforts are being made to ensure that women in an institution stay there for at least 48 hours so that treatment for any post-delivery complications can be immediately provided. The percentage of births assisted by doctors/Nurse/other health personnel is highest in Srinagar, whereas lowest in Doda district. The coefficient of variation is 15.14. The percentage of births delivered by caesarean section is highest in Ganderbal and lowest in the Ramban district. The coefficient of variation is 50.45. The percentage of births in a private health facility provided by caesarean section is higher in Srinagar. The coefficient of variation is 147.77. On the other hand, births in public health facilities delivered by caesarean are more in Srinagar district and lowest in Ramban district. The coefficient of variation is 38.96.

Postnatal Care (PNC)

The postpartum or post-delivery period is significant for women because, during this period, they may develop severe, life-threatening complications, especially immediately after delivery. Most maternal and neonatal deaths occur during the first 48 hours after delivery. Therefore, postnatal care visits provide an ideal opportunity to educate a new mother on caring for herself and her newborn baby. Table 3 provides information about the percentage of women receiving post-delivery checkups within two days (48 hours). An inter-district analysis shows significant variation in postnatal care (PNC), with an average of 74 per cent in Jammu and Kashmir. The per cent of PNC checkups in the Jammu region (65.49) is less than in the Kashmir region (83). The coefficient of variation in the Kashmir region is 5.52 low compared to 23.22 in the Jammu region, indicating a high variation in PNC compared to the Kashmir region in the Jammu region. The districts with a low PNC of less than 50 per cent are Doda, Reasi, Kishwar, and Rajouri. This is due to poor health facilities and inadequate human resources at PHCs and CHCs in these districts.

The ANC visits in the first trimester ranging from 42 per cent (Doda District) to 92 percent in Pulwama District. Further, districts located in Jammu region recorded very low percentage of ANC visits during the first trimester compared to districts located in Kashmir region. Most of the districts in the Kashmir region have reported that more than 90 percent of women have received TT. Whereas, in the case of the Jammu region, the performance of some of the districts has reported a low percentage of TT injection received. The average per centage is 82 in TT injection coverage in the Jammu region.

The percentage of IFA coverage is very low in both the region, with 21 per cent in Kashmir region and 35 per cent in Jammu region. Except Jammu and Kathua districts, all the districts reported below 50 per cent IFA coverage in Jammu and Kashmir. On average only 24 per cent in Jammu Region and 25 per cent in Kashmir region are reported full coverage of antenatal care. Kashmir region has recorded an average of 93.2 per cent of institutional births with most of the districts in Kashmir region have high institutional delivery rates of more than 90 per cent. On the contrary, the Jammu region has 74 per cent of institutional delivery. The percentage of births in a private health facility were provided by caesarean section is higher in Srinagar. The coefficient of variation is 147.77. On the other hand, births in public health facilities delivered by caesarean are more in Srinagar district and lowest in Ramban district.

An inter-district analysis shows significant variation in postnatal care (PNC) with an average of 74 per cent in Jammu and Kashmir. The per cent of PNC check-ups in the Jammu region (65.49 per cent) is less than in the Kashmir region (83 per cent). The districts with a low PNC of less than 50 per cent are Doda, Reasi, Kishwar, and Rajouri. This is due to poor health facilities and inadequate human resources at PHCs and CHCs in these districts.

Table 3: District wise Postnatal Care in Jammu and Kashmir

Districts	Percentage of women with a postnatal check within two days of birth
Doda	43.3
Jammu	85.2
Kathua	83.8
Kishtwar	58.2
Poonch	63.9
Rajouri	55.9
Ramban	58.2
Reasi	48.3
Samba	79.5
Udhampur	78.6
Jammu Region (A)	65.49
S.D (A)	15.20
C.V (A)	23.22
Anantnag	82.5
Bandipore	82.3
Baramula	82.3
Budgam	89.6
Ganderbal	93
Kulgam	78.5
Kupwara	80.1
Pulwama	81.5
Shopian	79.4
Srinagar	84.7
Kashmir Region (B)	83.39
S.D (B)	4.60
C.V (B)	5.51
JK (A+B)	74.2
S.D (A+B)	18.06
C.V (A+B)	24.33

Source: Author's Compilation from NFHS-4

Policy Recommendations

It is observed that poor health facilities and inadequate human resources such as the doctors, medical assistants and technicians are significantly determining the poor maternal healthcare utilization; therefore, efforts should be made to build requisite health infrastructure and ensure the appropriate availability of doctors and medical assistants. Whereas an utmost importance should be given to maternal health information using print and electronic channels of mass media especially in rural areas and disadvantaged regions may be prioritized to improve maternal health. Therefore, there is an urgent need to develop innovative strategies that will help upscale intervention, especially for improving these services. Effective integration of TBAs in providing care is needed to help improve the utilization of maternal services in rural areas. To improve antenatal care coverage, the quality of care should be improved, and the women with lower education levels and higher parity need special attention.

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