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Review Article

Maternal health care in India: some observations from RSOC, NFHS-3 and DLHS-3

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ABSTRACT

Maternal health is a key indicator of women's health and status. Strengthening of maternal health care services is very important to ensure safe motherhood. The maternal health care services include antenatal care, natal care and postnatal care. Absence of proper maternal health care leads to various complications and eventually maternal death. World Health Organization, in its World Health Report 2005, suggests that poor maternal conditions account for the fourth leading cause of death for women worldwide, after HIV/AIDS, malaria, and tuberculosis. Situated within this background, this paper locates the status of maternal health care in India and identifies the changes that have occurred within the maternal health care services since last one decade. This paper is based on the secondary sources in general and the data provided by Rapid Survey on Children (RSOC 2013-14), District Level Household and Facility Survey (DLHS-3, 2007-08) and National Family Health Survey (NFHS-3, 2005-06) in particular. The data shows that maternal health care differs with the socio-cultural background like income, age, caste and place of residence. After having a comparison of the data provided by the three different surveys, it was observed that since the last decade the percentage of institutional deliveries has increased for both rural and urban areas. There has been an increase in the proportion of postnatal care received by women within 48 hours of discharge/ delivery. The Iron and Folic Acid (IFA) intake for 90 days or more has not improved by more than 0.5 percent. In India still about 30 percent women aged (20-24) married before the legal minimum marriage age of 18. Percentage of women receiving ANC from government health facility has decreased and for private facility it has increased when we compare the data from all the three surveys.

Keywords: Antenatal care (ANC), Institutional delivery, Maternal health

INTRODUCTION

Women undergo various biological, physiological and psychological changes throughout the pregnancy period. Childbirth is both a pleasure and pain giving event depending on the socio- economic, bio-cultural and environmental conditions surrounding the birth giving mother. These conditions play a significant role on woman's overall health but these become more significant during pregnancy and childbirth as these events are marked by risks of ill health and premature death. Not only this but in some developing countries this is fuelled with extra burden of giving birth to a male child, an heir or a proponent of family name and property. This is more obvious in Indian context, where the people, especially the in-laws hold a woman as the sole responsible person for producing a male child. This however is just the opposite as biologically it is the male partner who has the Y chromosome required for producing a male child.

Besides this, the complications which are inherent in the pregnancy and childbirth lead to a large number of maternal deaths globally. World Health Organization, in its World Health Report 2005, suggest that poor maternal conditions account for the fourth leading cause of death for women worldwide, after HIV/AIDS, malaria, and tuberculosis.[1]The World Health Organization lists five causes of maternal mortality which together explain nearly three- quarters of all death resulting from pregnancy. These include post-partum hemorrhage, infection, eclampsia, obstructed labour and unsafe abortion with unclean instruments by untrained personnel.[2] The most common cause being the post-partum hemorrhage. In the International statistical Classification of Diseases and related health problems, (ICD-10), WHO defines maternal death as "the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes".[3] Pregnancy and childbirth are of course not diseases. But, they carry risks because of the varying and embedded complications, practices, processes, beliefs, life conditions and the immediate environment. These risks can be reduced by health care interventions such as the provision of maternal and public health care, supplementary nutrition, family planning, safe abortion and improvement in other reproductive conditions.[4]

Improving maternal health is one of the eight Millennium Development Goals (MDGs). The Millennium Development Goals (MDGs) are eight international development goals that were established following the Millennium Summit of the United Nations in 2000, following the adoption of the United Nations Millennium Declaration. Under MDG goal-5, countries are committed to reducing maternal mortality by three quarters between 1990 and 2015. However, between 1990 and 2013, the global maternal mortality ratio (i.e. the number of maternal deaths per 100 000 live births) declined by only 2.6 percent per year. This is far from the annual decline of 5.5 percent required to achieve MDG5.[5]

Maternal health is an important indicator of women's health and status. The World Health Organization (WHO) (2009) in Women and Health: Today's Evidence Tomorrow's Agenda defines maternal health as the health of women during pregnancy, childbirth and the postpartum period.[6] Often motherliness seems to be a positive and fulfilling experience, but for too many women it is linked with suffering, ill-health and even death. Human history, all the way through has witnessed death and disability both among women and neonatal due to pregnancy and childbearing. Losing a woman during pregnancy or at the time of giving birth or during the post partum period does not cause death of a single role. Not only with her dies a mother but also a life partner, a society contributor and the best nurse for the child she gives birth to. This can be avoided if during pregnancy and at the time of childbirth the woman has access to quick treatment, better health facility and financial. Further the women always have faced a disadvantage to men in terms of their access to those resources which promote health .[7] This is apparent from the fact that in a country like India woman eats less food because she eats after every male member finishes eating to their fill. This is coupled with less access to the economic and social capital of the household .[8] Also a woman has the least say in the family planning or contraceptive rights therefore she faces unplanned and unwanted pregnancies. Globally it is estimated that up to half of all pregnancies are unplanned and a quarter of all pregnancies are unwanted.[9] These unwanted and unplanned pregnancies lead to illegal abortions under unhygienic conditions which aggravate the risks of death among them. Providing attention towards the health needs of a woman not only gives an opportunity to that woman to live a healthy life but along with her the next generation which she has to bear and raise. Keeping all these things in view the paper aims to fulfil the following objectives:

- To observe the maternal health care statistics in India from three different surveys viz. RSOC, DLHS-3 and NFHS-3.
- To identify the specific changes in maternal health care in India which have taken place in last one decade.

REVIEW OF LITERATURE

This work is based on the secondary sources and especially data provided by the Rapid Survey on Children (RSOC) which was commissioned by the Union Ministry of Women and Child Development. RSOC covered 105,483 households and 5630 Anganwadi centres (AWC) leading to more than 210,000 interviews across 29 States during November, 2013 to May, 2014 with technical and financial assistance from UNICEF India.[10] The District Level Household and Facility Survey (DLHS-3) is one of the largest ever demographic and health surveys carried out in India, with a sample size of gathering information from 7,20,320 households covering 601 districts from 34 states and union territories of India conducted during December 2007 to December 2008.[11] The National Family Health Survey (NFHS-3) collected information from a nationally representative sample of 109,041 households, 124,385 women age 15-49, and 74,369 men age 15-54 from November 2005 to August 2006. The NFHS-3 sample covers 99 percent of India's population living in all 29 states.[12] These surveys are the backbone of policies and programmes as they help to portray a picture of how well a society is performing on different indicators of health. It is saddening to accept the fact that there have not been any of such survey reports after NFHS-3 or DLHS-3 that would help to figure out the present status of health of the country and the progress that has taken place since then. However, RSOC is a recent survey which tries to fill the gap created due to the delay of DLHS-4 and NFHS-4 data.

DISCUSSION

Maternal health care includes antenatal care, natal care and post natal care. The characteristics of individual women like age, residence, income, caste, religion, number of previous pregnancies, the health system available to them, and education level play a role in determining whether they seek appropriate services. A woman's age, the number of children she has already had, her knowledge of services, and previous birthing experience can all influence pregnancy and delivery care.[13] A woman's level of education, her specific knowledge about the importance of pregnancy and delivery care and awareness of where to receive them also plays a role in uptake of services.[14] Caste, wealth quintile, and urban or rural residence were all found to be associated with quality of antenatal services received by different groups in India.[15]

Maternal health care indicators

Maternal health care includes antenatal care, natal care and post natal care. Antenatal care (ANC) refers to pregnancy-related health care, which is usually provided by a doctor, an Auxiliary Nurse Midwife (ANM), or another health professional. Ideally, antenatal care should monitor a pregnancy for signs of complications, detect and treat pre-existing and concurrent problems of pregnancy, and provide advice and counselling on preventive care, diet during pregnancy, delivery care, postnatal care, and related issues.[12] The main purposes of antenatal care are to prevent certain complications, such as anaemia, and identify women with established pregnancy complications for treatment or transfer.[16] In India, the Reproductive and Child Health Programme aims at providing at least three antenatal check-ups which should include a weight and blood pressure check, abdominal examination, immunization against tetanus, iron and folic acid prophylaxis, as well as anaemia management. The days and weeks following childbirth – the postnatal period – is a critical phase in the lives of mothers and newborn babies. The health of a mother and her newborn child depends not only on the health care she receives during her pregnancy and delivery, but also on the care she and the infant receive during the first few weeks after delivery. Postnatal check-ups soon after the delivery are particularly important for births that take place in non institutional settings. Recognizing the importance of postnatal check-ups, the Reproductive and Child Health Programme recommends three postnatal visits.[12]

In India, as per the NFHS-3 (2005-06) about 76.4 percent women had at least one ANC visit, more than 50 percent had three or more ANC visits and 43.9 percent had an ANC visit in first trimester. Only 5.1 percent Indian women were seen to have received PNC within 48 hours of discharge/ delivery. However, as per the Rapid Survey Of Children (RSOC) 2013-14, in India, the situation has bettered to some extent. Now it is observed that 85.2 percent women received at least one ANC check up. More than 60 percent women received first ANC in first trimester and 63.4 percent women received three or more ANCs. Yet only about 20 percent women in India received full ANC. There has been an increase in the proportion of PNC received by women within 48 hours of discharge/ delivery to 39.3 percent in 2013-14 (Table 1).

ANC providers and birth attendants

Many studies in both developed and developing countries suggest that birth delivery assistance from a trained and well-equipped provider is necessary to reduce maternal mortality.[17] Key reasons for the continued prevalence of home deliveries assisted by traditional birth attendants (TBAs) are the family's trust in the ability of TBAs, their desire to follow family customs and rituals regarding birthing and the easy accessibility of TBAs within the community. Moreover, the non availability of Skilled Birth Attendants (SBAs) in every village and the perceived poor quality of services provided by SBAs are also reasons for their poor utilization by women and families.

Table 1: ANC indicators according to NFHS-3 and RSOC.[10,12]

Source of data	Percentage who had at least one ANC visit	Percentage who had three or more ANC visits	Percentage with an ANC visit in first trimester	Percentage with full ANC	Percentage who received PNC within 48 hours
NFHS-3 (2005-06)	76.4	52.0	43.9	N.A	5.1
RSOC (2013-14)	85.2	63.4	61.8	19.7	39.3

Table 2: ANC providers and birth attendants as per DLHS-3 and RSOC.[10,11]

Source of data	Percentage of women who received ANC from Government health facility	Percentage of women who received ANC from Private health facility	Percentage of women who had institutional delivery	Percentage of women delivered by skilled birth attendants
RSOC (2013-14)	43.3	38.1	78.7	81.1
DLHS-3 (2007-08)	54.5	36.3	47.0	52.7

As per DLHS-3, in India 54.5 percent women received their ANC from government health facility and 36.3 percent received it from private health facility. However, as per the RSOC, there has been a decline to 43.3 percent women who received their ANC from government health facility and 38.1 percent from private facility. There has been an increase in the percentage of institutional delivery as well as of those delivered by skilled birth attendants in India since last one decade (Table 2).

Age at marriage

Marriage of girls at an early age due to cultural factors like dowry related burden, religious factors, economic factor like poverty where parents cannot afford to continue to feed the female child and educate her higher, leads her to face the pregnancy related complications and complicated childbirth. Age becomes significant determinant when we consider the teenage pregnancies. Despite the Child Marriage Restraint Act, 1978, 34 percent of all women are married below the legal minimum age of marriage i.e. 18 years which is higher in rural areas than urban areas. Adolescent girls face considerable health risks during pregnancy and childbirth. Girls in the age group of 15 to 19 years are likely to die twice more than women in their twenties from childbirth.[18] A study by Craft in 1997 showed that even older women face greater risk of complications from pregnancy and poor outcomes. For many of these women these risks are increased because of the number of pregnancies and deliveries which they initially have practiced. Not only do the women face complications but also the social stigma of producing more children even at later stages of life.

In India, percentage of women aged 18-29 who first married by exact age 18 both in urban and rural areas was high. About 45.6 percent women between the age 18-29 married by exact age 18 and there is a wide difference between rural and urban areas in this regard. About 30 percent of urban women and 53.4 percent of rural women were first married by exact age 18.

As per the RSOC, women aged (20-24) who married before age 18 was found to be 30.3 percent which differed with rural urban difference. In rural areas 33.5 percent women and in urban areas 22.4 percent women married before age 18 (Table 3).

Table: 3 Age of marriage by 18 or before.[10,12]

Age of marriage	Urban	Rural	Total
Percentage of Indian women age 18-29 who were first married by exact age 18 (NFHS-3 2005-06)	29.7	53.4	45.6
Percentage of Indian women age 20-24 who were married by before age 18 (RSOC 2013-14)	22.4	33.5	30.3

Maternal health care and food

Food again is very important factor that has an impact on woman's health. A healthy mother can give birth to a healthy child. A woman who eats balanced diet does not suffer from severe anaemia. Further she also does not need to rely on iron supplements which although can reduce her iron deficiency but can lead to other problems. During pregnancy a women has increasing demands for energy both for her and the growing foetus. Therefore it is important that she gets proper nutritious food as well as good care in absence of which there can be complications or sickness in mother as well as the baby.

Anaemia is a major health problem in India, especially among women and children. Anaemia can result in maternal mortality, weakness, diminished physical and mental capacity, increased morbidity from infectious diseases, perinatal mortality, premature delivery, low birth weight, and (in children) impaired cognitive performance, motor development, and scholastic achievement.

Table 4: Percentage of any anaemia and IFA intake for 90 days as per NFHS-3 and RSOC.[10,12]

Source of data	Any anaemia (<12.0 g/dl)	Percentage who took IFA for at least 90 days
NFHS-3 (2005-06)	55.3	23.1
RSOC (2013-14)	N.A	23.6

More than half of women in India (55.3 percent) have anaemia. However, only 23.1 percent women in India were found to be taking Iron and Folic Acid (IFA) for at least 90 days. From the rapid survey on children we find that this picture has improved by just 0.5 percent and it is only 23.6 percent women in India who consumed 100 or more IFA tablets/syrup during pregnancy (Table 4).

Anaemia is directly related to risk of preterm delivery, inadequate gestational weight gain, and increased perinatal mortality.[19- 21] The more severe the anaemia the greater is the risk that the mother will deliver low birth weight baby because of poor intra uterine growth.[22]

Maternal health care and place of residence

Rural- urban differences are also found to be having a considerable influence on maternal health. Urban women are found to have a better accessibility to ante natal and post natal care. Besides, they also have a better awareness towards different health care necessary during the pregnancy and childbirth. Also the urban women are found to be going for institutional deliveries more than the rural women. Pebley et al. (1996) found that distance to the nearest clinic was considerably and negatively related to both prenatal care and delivery assistance in Guatemala.[23] There is sufficient evidence that financial barriers, shortages of trained personnel, especially in

rural areas, and poor performance on the part of trained personnel all have a say to high levels of maternal mortality in developing countries.[24]

Table 5: Relationship between place of residence and maternal health care.[10,11]

Place of Residence	Full ANC		Government facilities for ANC		Private facilities for ANC		Institutional delivery	
	DLHS-3 (2007-08)	RSOC (2013-14)	DLHS-3 (2007-08)	RSOC (2013-14)	DLHS-3 (2007-08)	RSOC (2013-14)	DLHS-3 (2007-08)	RSOC (2013-14)
Rural	14.7	17.3	55.3	42.7	30.4	33.1	37.8	74.6
Urban	29.5	25.2	52.6	44.6	48.7	49.7	70.4	88.5

Urban women, in India were found to have more of full ANC than rural women. Rural women were found to be going to governmental facilities more than the urban women. Moreover, a huge difference was seen in the per cent age of women going for institutional deliveries depending upon their residence.

The Rapid Survey on Children shows that about 17.3 percent rural women and 25.2 percent urban women received full ANC. It was found that 42.7 percent rural women and 44.6 percent urban women received ANC from government health facility which has decreased from 55.3 percent and 52.6 percent respectively from 2007-08 and 33.1 percent rural women and 49.7 percent urban women received ANC from private health facility and this has increased from 30.4 percent and 48.7 percent respectively from 2007-08. Institutional deliveries have increased among rural as well as urban women, 74.6 percent rural women and 88.5 percent urban women had institutional delivery as compared to 37.8 percent rural women and 70.4 percent urban women who had institutional delivery according to DLHS-3 (Table 5).

Maternal health care and income

The income of the family itself may affect maternal health outcomes. A family with low income may be constrained in being able to pay for health service fees, transport to facilities, or health-related resources that incur additional expense (e.g., nutritious food, contraceptive supplies or condoms, some biomedical tests).Income is an important determinant of maternal health as it helps provides the necessary resource to access and afford the essential care and treatment needed by the women during pregnancy, childbirth and the postpartum period. The health of a woman is not only affected if she does not receive the required ante natal or post natal care during and after the pregnancy period but also if she has been left ignored during her child hood in terms of nutrition, education which are in turn affected by the low economic profile of the family where she is born. Besides low income, gender inequality also plays a considerable role which leaves girl child face disadvantage to male child. Further, a poor woman also faces a violation in her dignity from the health personnel during institutional deliveries.

Table 6: Relationship between income and maternal health care.[10,11]

Wealth index	Full ANC		Government facilities for ANC		Private facilities for ANC		Institutional delivery	
	DLHS-3 (2007-08)	RSOC (2013-14)	DLHS-3 (2007-08)	RSOC (2013-14)	DLHS-3 (2007-08)	RSOC (2013-14)	DLHS-3 (2007-08)	RSOC (2013-14)
Lowest	6.0	9.5	52.7	37.8	16.5	19.3	19.1	60.8
Highest	36.2	31.3	44.2	36.1	58.1	64	80.1	93

According to DLHS-3 (2007-08), in India only 6 percent women with lowest wealth index had full ANC whereas it is 36.2 percent for women with highest wealth index. This has undergone a change in 2013-14 to 9.5 percent and 31.3 respectively. Percentage of women with lowest and highest wealth index attending government facilities for ANC has decreased from 52.7 percent in 2007-08 to 37.8 percent in 2013-14 and from 44.2 percent to 36.1 percent respectively. This has increased for private health facility. Some researchers have observed that delivery services at public health centres are inferior, so with an increase in income people prefer to use private health

centres.[25] Similarly there was a huge increase in institutional deliveries from 19.1 percent to 60.8 percent among lowest wealth index women and from 80.1 percent to 93 percent among highest wealth index women. (Table 6)

Further, there has been also an increase in proportion of mothers who received financial assistance for delivery under Janani Suraksha Yojana (JSY) from 13.3 percent in

2007-08 as per DLHS-3 to 47.7 percent in 2013-14 as per RSOC.[10, 11]

Maternal health care and caste

In India, full ANC uptake has not improved much among the different castes between 2007-08 and 2013-14. The rapid survey on children gives a gloomy picture of percentage of women among different castes who received full ANC. Only 18 percent SC, 15 percent ST, 19.6 percent OBC and 23.2 percent other caste women received full ANC.

Besides this the percentage of women from different castes attending the government health facility for ANC has decreased and it has slightly increased for private health facility. The institutional deliveries have increased considerably among all the castes from 2007-08 to 2013-14. Almost 42 per cent SCs, 32.5 per cent STs, 47.8 per cent OBCs and 58.9 per cent others went for institutional deliveries as per DLHS-3 (2007-08) and it was found to be 76 percent, 70.1 percent, 79.2 percent and 84.2 percent for SC, ST, OBC and other castes respectively (Table 7).

Table 7: Relationship between caste and maternal health care.[10,11]

Caste/ Tribes	Full ANC		Government facilities for ANC		Private facilities for ANC		Institutional deliveries	
	DLHS-3 (2007-08)	RSOC (2013-14)	DLHS-3 (2007-08)	RSOC (2013-14)	DLHS-3 (2007-08)	RSOC (2013-14)	DLHS-3 (2007-08)	RSOC (2013-14)
Scheduled Castes(SC)	15.1	18.0	60.5	48.8	28.4	30.3	41.9	76
Scheduled Tribes (ST)	14.7	15.0	66.9	43.1	15.7	22.8	32.5	70.1
Other Backward classes (OBC)	19.2	19.6	48.9	38	40.7	41.1	47.8	79.2
Others	23.7	23.2	51.7	46.1	46.3	45.7	58.9	84.2

CONCLUSION

Overall, the findings of the paper suggest a relative improvement in the maternal health care in India. Noticeably, the proportion of institutional deliveries has increased from 39 percent in 2005-06 to 79 per cent in 2013-14. However, the progress in the maternal health in India has not yet reached to a satisfactory level. There are still a very little proportion of women who take full ANC in 2013-14 (19.7 percent) which was 18.8 percent in 2007-08. The IFA intake for 90 days or more has also not increased by more than 0.5 percent from 23.1 percent in 2005-06 to 23.6 percent in 2013-14.

Several factors that are associated with increased risk of maternal deaths are age at marriage/delivery, caste, economic conditions, utilization of antenatal care, post partum care, institutional delivery services etc. and the evidences provided by the DLHS-3 and NFHS-3 data suggest that these factors are important determinant of maternal health.

Age at marriage is very important factor that influences the maternal health. Still in India about 30 percent women between the age group 20-24 marry before the legal minimum age of 18. This leads to many pregnancy related complications and degrades the health of the woman as well the new born. Indian women still have to bear the brunt of maternal complications due to rural-urban differences and economic factors.

Maternal health must be recognized as a key development issue by the developing countries and must commend to increasing the quality and accessibility of reproductive health care. This can be done by expanding and improving health systems, addressing social and cultural factors that may discourage some of the most vulnerable women from seeking care. Also the woman must be educated about her health and about the importance of proper care during pregnancy and childbirth. Justice and equity become a matter of real concern for maternal health when a woman who faces different complications and deficiencies can get her treatment to avoid them but still is deliberately kept away from such opportunities. The maternal mortality or premature death of the child

can be avoided but if due to reasons like gender differences, poverty, lack of health care facilities etc they are ignored then certainly it is a violation of justice and equity. Besides it is the violation of fundamental and human rights. Policies and programmes with effective strategies are need of the hour. It will take many years of consistent, rigorous and dedicated efforts towards improving maternal health in India.

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