



Research Article

VARIATION IN USE OF BASIC MATERNITY CARE IN ASSAM: PILLAR OF SAFE MOTHERHOOD TO REDUCE MATERNAL MORTALITY RATE

Sarjima Brahma

Research Scholar University of Science and Technology, Meghalaya

ARTICLE INFO

Article History:

Received 24th November, 2019

Received in revised form 19th

December, 2019

Accepted 25th January, 2020

Published online 28th February, 2020

Key words:

Basic Maternity Care, Safe motherhood, maternal mortality, antenatal care (ANC), safe delivery, factors, variations

ABSTRACT

Basic Maternity Care comprising of important determinants of antenatal care and safe delivery is very essential to ensure smooth pregnancy and reduce complications during child delivery. It has an important role in reducing maternal mortality rate (MMR) by creating a Safe motherhood. But in spite of Safe motherhood program intervention, it could be noticed that equal access to antenatal health care and safe delivery by all women has not been achieved which is reflected with maternal death being highly noticed in developing countries and within the states like Assam being the highest in maternal mortality rate compared to other states in India. Variation in use of these health care services was found among the women in the study due to different factors affecting in utilizing these services of Basic Maternity Care. Education, religion and residence were the significant factors impacting on its use with large variation among the women. Results were analyzed using the information from the secondary source, National Family Health Survey-4(2015-16) of Assam, Government of India. Further studies will help to develop policies and interventions to reduce these variations by targeting those women who are deprived of adequate use of these services with more focus into the rural women.

Copyright©2020 Sarjima Brahma. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

Improving maternal health by aiming to reduce maternal death is one of the important goals of Millennium Development Goals (MDGs). It is necessary that important determinants Antenatal care (ANC), Institutional delivery and postnatal care of maternal health care be received by all the women which can help in reducing maternal death, (WHO, 2012). But in spite of Safe motherhood program intervention, it could be noticed that equal access to quality health care by all women has not been achieved. As such Basic Maternity Care including ANC and Safe delivery among women under this programme is also not satisfactory which is reflected with maternal death being highly noticed in developing countries.

And this maternal death is more among women due to different factors affecting in utilizing Basic Maternity Care with antenatal care and safe delivery. Use of ANC and safe delivery varies among women depending on different factors including education, economic status, age, occupation, region, etc. To bring equity in use of Basic Maternity Care among women for Safe motherhood these factors are necessary to be targeted as due to these factors many women still lack behind in achieving this care. So it is of importance not only to identify the Basic Maternity Care indicators but also the factors becoming barriers in utilizing this basic health care equally among women to create Safe motherhood.

Accordingly, the study tries to reveal the use of this care in Assam within the country with antenatal care and safe delivery as its determinant for Safe motherhood and what factors impact on its use resulting in variation among the women.

Objectives of the Study

1. To identify the determinants of Basic Maternity Care among women.
2. To understand the utilization of ANC and Safe delivery among women.
3. To analyze the variation in use of ANC and Safe delivery among women depending on different factors.

METHODOLOGY

The present study is analytical in nature which is completely based on secondary data. The data on Antenatal care and Health facility delivery are compiled from the secondary source, National Family Health Survey (NFHS-4), 2015-16, Assam, Government of India. Further, data related to Maternal Mortality Ratio (MMR) of India is collected from the Sample Registration System (SRS), 2018 and MMR of Assam from the NITI Aayog, 2018.

Background of the Study

Basic Maternity care (BMC) is very important to create a Safe motherhood by making them safe during pregnancy period and during the child delivery. Accordingly ANC and safe delivery are the two Basic Maternity Care included as the pillar of the

*Corresponding author: **Sarjima Brahma**

Research Scholar University of Science and Technology, Meghalaya

safe motherhood. Basic Maternity Care comprising of antenatal care and safe delivery is very essential to ensure smooth pregnancy and reduce complications during child delivery, (Dahiru and Oche, 2015). It has an important role in reducing maternal mortality rate (MMR) and as a health indicator in showing the great difference between the developed and developing countries, (Carroli, Roomey and Viilar, 2001). According to the World Health Organization (WHO), in the developing countries Maternal Mortality Ratio (MMR) was noticed to be with 239 per 100,000 live births versus 12 per 100,000 live births in developed countries in the year 2015. MMR is noticed to be with large disparity between the countries, within the high and low income and also within the women living in rural and urban areas. Approximately 830 women die every day from preventable causes related to pregnancy and childbirth and among them 99% of maternal death occur in Developing countries, (WHO, 2018). Among the countries developed countries like Germany, Australia, France has been noticed with very less MMR with 6, 6, 8 respectively compared to developing country like India with very high MMR with 174 in 2015, (CIA, 2015). Though the Maternal mortality has dropped worldwide by 44% between 1990 and 2015 but it is still seen to be very high in developing countries (WHO, 2018). But no doubt, reduction in maternal mortality over the decades is due to availability of multiple factors like increased and effective antenatal care (ANC), institutional delivery and postnatal care which are the important determinants of Maternal Health care, (Pandit, 1992).

But it is said that in spite of maternal health care available in the countries, developing countries like India is still facing a very high maternal mortality compared to the developed countries. Variations in Maternal mortality are noticed not only among the countries but also among the states in the country. Among the states in India, Assam is seen to be with the highest in Maternal Mortality Ratio with 237 in 2018 compared to the other states like Kerala(46), Tamil Nadu (66) in the same year, (NITI Aayog, 2018). So, it is necessary to understand whether the basic maternity care with antenatal care and safe delivery is adequately and equally utilized among the women or not and what are the factors affecting its use so that it can help reduce risk and complications among women and death to women.

Findings

Variations in utilization of ANC among the women by indicators

Though the proportion of women age 15-49 receiving ANC had risen from 77 percent in NFHS-3 (2006-06) to 84 percent in NFHS-4 (2015-16) in India but there was variations seen among the women depending on different factors in receiving ANC services not only within India but also within the state.

Table 1 Percentage of women who received different types of Antenatal care by indicators

Background Characteristics	Percentage who had four or more ANC visits	Percentage with an ANC visit in the first trimester of pregnancy	Percentage who received two or more TT injections during pregnancy	Percentage who took IFA for at least 100 days	Percentage who had full antenatal care
		Residence			
Urban	60.4	68.5	87.5	44.0	30.4
Rural	44.8	53.5	83.2	30.5	16.6
		Education			

No schooling	33.1	43.4	72.5	20.5	9.1
<5 years complete	37.3	45.4	81.9	25.2	10.9
5-9 years complete	46.5	56.6	86.7	31.3	16.9
10-11 years complete	61.1	64.1	89.0	43.0	28.3
12 or more years complete	66.3	72.1	90.2	51.4	35.9
		Religion			
Hindu	55.0	60.8	87.7	39.9	24.4
Muslim	34.9	47.6	77.9	20.8	9.6
Christian	46.7	52.9	86.2	35.9	18.3
		Caste/tribe			
Schedule caste	48.1	57.5	86.8	35.4	19.3
Schedule tribe	46.5	56.7	85.8	36.4	17.9
Other backward class	58.1	61.3	88.5	41.5	26.4
Total	46.5	55.1	83.6	32.0	18.1
India	51.7	58.6	83.0	30.3	

Source: National Family Health Survey (NFHS-4), 2015-16, Assam & India

As per the National Family Health Survey, it was examined that the percentage of women utilizing full ANC service in Assam as not satisfactory with only 18.1 percentages and which was also noticed with varying in nature depending on different factors that reflected their background characteristics with residence, education, religion and caste or tribe. Among them lesser proportion of women belonging to schedule tribe with 17.9 percentages received full antenatal care compared to other backward classes (26.4%) and schedule caste (19.3%). Moreover, women from Muslim community (9.6%) received very less proportion of full antenatal care when compared to women belonging to Hindu community (24.4%) and Christian community (18.3%). Accordingly, when full ANC utilization is noticed with education background then percentage of women receiving the full ANC service was noticed with varying largely with the education level. About 28.3% of women were noticed with utilizing full ANC those whose education level was 10 to 11 years complete and 35.9% with 12 or more years complete. Lesser number of women received this service with lower education level and only 9.1 percentages of women were seen to be receiving this service those who had no education. It was also examined that the percentage of women receiving this service was varying by residence. The women in rural areas utilized the full antenatal care service with only 16.6 percentages compared to urban areas (30.4%) which were noticed with about 46% lesser among rural women than the urban women. Similarly, it was revealed that in utilizing antenatal care among women by different indicators including ‘4 or more antenatal care visit’, ‘antenatal care visit at first trimester of pregnancy’, ‘two or more TT injections received during pregnancy’ and ‘IFA taken for at least 100 days’, there was variation noticed within different backgrounds. Use of all the indicators revealed that more proportion of women utilized these services belonging to Other Backward Classes and Christian religion, with higher education level and those who resided in urban areas. Overall in utilizing all the four indicators of antenatal care service Assam was noticed to be unsatisfactory with lesser than the national average except in utilizing the services with ‘received two or more TT injections’ and ‘took IFA for at least 100 days’. And, also with varying result in use of ANC service among the women depending on their background.

Variations in Utilization of Safe Delivery

Safe delivery including delivery of a child under the prevalence of skilled health personnel within a clean environment in the health facility was noticed to be 70.6% in the state compared to the national average with 78.9% which

showed an unsatisfactory result. And when it was noticed from different background of women utilizing this facility then it was noticed to be varying by residence, number of ANC visits, education, religion and caste or tribe. Women from urban areas (92.9%) were using more health facility delivery than the rural women (68.2%). Also when health facility delivery was examined by the use of number of ANC visits then more number of women was noticed to be delivered in health facility that had four or more ANC visits (85.7%) than the women with one to three ANC visits (67.7%). Women having no ANC visits had the least health facility delivery with only 40.3%. Similarly, in case of use of this service, women with more education had more health facility delivery. It was seen that 94.0% of women had utilized this service with 12 or more years of schooling compared to 58.6% of women with less than 5 years complete schooling and 50% with no schooling among the women. Moreover, in the field of different religion and caste or tribe, this variation in use of health facility delivery could also be noticed among the women. Women belonging to Muslim community (53.6%) utilized lesser proportion of this service than the Hindu (84.7%) and Christian community (69.6%). It was also seen that schedule tribe (78.2%) used lesser health facility delivery compared to schedule caste (84.1%) and other backward classes (84.1%). Higher level of education and more number of ANC visits had more impact on higher percentage of health facility delivery.

Table 2 Percentage of women delivered in a health facility

Background /Characteristics	Percentage of births delivered in a health facility
Residence	
Urban	92.9
Rural	68.2
ANC visits	
None	40.3
1-3	67.7
4+	85.7
Mother's Education	
No schooling	50.0
<5 years complete	58.6
5-9 years complete	75.3
10-11 years complete	90.1
12 or more years complete	94.0
Religion	
Hindu	84.7
Muslim	53.6
Christian	69.6
Caste/tribe	
Schedule caste	84.1
Schedule tribe	78.2
Other backward classes	84.1
Assam	70.6
India	78.9

Source: National Family Health Survey (NFHS-4), 2015-16, Assam & India

DISCUSSION

Use of Antenatal care as a Basic Maternity Care for Safe motherhood

Antenatal care which is also known as prenatal care is one of the Basic Maternity Care helps in creating Safe motherhood by identifying and treating complications and promoting healthy behavior, (WHO,2005). It is identified as a key component of a healthy pregnancy as it makes available with preventive care with the goals of providing regular check-ups that allow doctors or midwives to treat and prevent potential health problems throughout the course of pregnancy. Those problems may be pregnancy induced hypertensions, malaria which put a

risk both to the life of the mother and baby, (Bloom *et al.*, 1999; Bhatia & Cleland, 1995). ANC helps in promoting healthy lifestyles that benefit both the mother and the child. This availability of ANC can take part in reducing maternal death rates and miscarriages as well as birth defects, low birth weight and other preventable health problems.

For understanding the use of the Basic Maternity Care with ANC received among women, different indicators are necessary to be undertaken into consideration for full ANC utilization. It includes timing and number of ANC visits, vaccination and iron folic acid tablets used among the women. According to WHO, it has been recommendation that for better outcome of pregnancy, pregnant women should have their first antenatal visits in the 12 weeks gestation with subsequent contacts taking place at 20, 26, 30, 34, 36, 38 and 40 weeks gestation. Also an increase in the amount of antenatal visits by the pregnant women with her health provider can reduce maternal and perinatal mortality. It is also said as per the WHO that minimum of eight ANC visits can help reduce perinatal mortality and improve women's experience of care, (WHO, 2016).

But, in spite of importance of use of ANC and its availability with different indicators, it was found in the present study that the full ANC utilization unsatisfactory in Assam with only 18.1%. Moreover, if the state was examined with ANC utilization by different indicators then proportion of women utilizing these different types of services was noticed with lesser than national average except in case of 'two or more TT injections received during pregnancy' and 'IFA tablet taken for at least 100 days'. It is the entry into ANC use that makes one knows about the need to be received with and taken vaccination and iron folic tablet. As such it is also supported in the earlier study done in Kenya that ANC utilization can help in brining positive pregnancy outcome by providing with tetanus toxoid and iron folic acid tablet, (Magadi *et al.*, 2000). In the previous study, Das (2017) has signified that ANC can detect early signs of risk factors for disease followed by timely intervention, originally with the aspiration of reducing maternal mortality and morbidity. So, utilizing antenatal care with its proper timing is essential and also the adequate number of visits as it has an effective result on Pregnancy outcome by including all essential care components, (Carrol *et al.*, 2001). It was added that if during pregnancy women utilize ANC service with proper timing and adequate number of visits then it can fully benefit them from interventions like immunisation against tetanus, prophylactic treatment of malaria and worms and also in testing and counseling HIV which could save them from health issues during pregnancy, (Villar and Bergsjo, 2002). Utilization of antenatal care along with adequate and right period of visit by the pregnant women is very necessary as it has been found that when ANC is visited by the pregnant women less than four times and after the fourth month of pregnancy then it can have a significant risk on the maternal mortality, (Taguchi *et al.*, 2003). But in spite of benefits and importance of ANC services to be received on time and with adequate number of visits, this Basic Maternity Care is not equally achieved among the women and complications which can result to maternal death are noticed to be more among the women due to lacking behind in achieving the ANC services.

But in spite of its importance the basic maternity care with utilizing ANC by 4 or more visits and ANC visit by 1st

trimester in Assam was not satisfactory being lesser than national average. In case of receiving 4 or more ANC visits and ANC visit in first trimester the state average was 46.5% and 55.1% compared to India with 51.7% and 58.6%. It was also seen that full utilization of ANC was varying depending on different factors which reflected their background with residence, education, religion and caste or tribe. Among these, education as a factor significantly affected the use of full ANC service with about 75% higher among the women with 12 or more years of schooling than the women with no education. Similarly, religion also showed a large variation in its use with 61% higher among the Hindu women when compared to the Muslim women. By residence it was reflected that the women in urban areas were about 46% higher than the urban women in using full ANC service.

Moreover, the use of ANC by different indicators was examined to be varying among the women depending on their backgrounds. By residence urban women were noticed to be more in utilizing all the ANC services than the urban women. This study showed that women in rural areas use less proportion of full ANC service. Also, the result of analysis revealed that education as a factor was the most significant determinant for increasing utilization of all the basic ANC services where higher level of education showed higher utilization of all the ANC services whereas women with no education received the least number of ANC services. It was found that mother's education was the most consistent and important determinant of use of ANC. In other factor with women from different religion, more proportion of women from Christian community were noticed to be receiving all the services with different indicators compared to Hindu and Muslim community. Further variation could also be seen among the women belonging to different caste and tribe. In case of first, second and third indicator of ANC, Schedule tribe was noticed with least in utilizing the services next to Schedule caste and Other Backward Classes.

In Assam use of full antenatal care was noticed with not only unsatisfactory with lesser than national average. But, it was also noticed with variation in utilization of ANC with different indicators among the women due to different factors impacting its use which showed inequality in its use though it is important to be achieved by all. It is important to be received by all women because access to effective ANC with early visit by first trimester and adequate number of visit with four or more times can lead to better utilization of other Basic Maternity Care with safe delivery care, (Bloom et al, 1999).

Safe Delivery as a Basic Maternity Care for Safe motherhood

Delivery at a health facility is safe with the presence of skilled health personnel which substantially reduces the risk of maternal death, (Agha and Carton, 2011). Skilled attendance at delivery is an important indicator in monitoring progress towards Millennium Development Goals (MDG-5) to reduce the MMR by three quarters between 1990 and 2015 which it failed and further it is targeted in Sustainable Development Goals (SDG-3) to reduce it to more extend by 2030, (Kesterson et al., 2010). The key to reducing Maternal Mortality Rate and improving maternal health is increasing attendance by skilled health personnel throughout pregnancy and delivery, (Teffer, Alema and Woldeyohannes, 2012). But, despite continuing efforts to promote skilled Institutional delivery with skilled personnel, eight women die every hours

in India due to causes related to pregnancy and childbirth, (Nair, Ariana and Webster, 2012). This also reflects the nation's scenario to that of the state and also being one of the highest in MMR compared to the other states within the country which raises question on whether this health facility delivery is properly utilized among the women or not.

In the present study within the state, the use of health facility delivery among the women was noticed to be varying in nature depending on residence, number of ANC visits, education, religion and caste or religion. Among the women from different region, variation could be noticed in utilizing this service with rural women about 27% lesser than the urban women. Different study also reveals the fact of rural-urban variation in utilization of health facility delivery in the country like Ethiopia, (Fikre & Demissie, 2012). It was further added that the reason for this variation in receiving this facility among the rural women from the urban women include difference in accessibility in terms of physical distance for service utilization, being less likely to afford transportation cost and also the lack of vehicle in reaching to the health facility. Moreover, study in Nigeria in 2015 revealed that the factors like opportunity cost of leaving place of work to attend health facility and lack of skilled personnel at the health facility made the women from rural areas less likely to utilize health facility delivery than women from the urban areas, (Dahiru and Oche, 2015).

Also among the other factors impacting on use of safe delivery in health facility among the women, factor like adequate number of ANC visits was found to be the positive determinant of health facility delivery. Study in Nigeria also shows that number of ANC visits strongly predicts the health facility delivery utilization among the women, (*ibid*). But it was found in Assam that only 40.3% of women had used this service that had no ANC visit which was very less compared to the women (85.7%) having this service who had four or more ANC visits. This showed that the use of health facility delivery doubled among the women who four or more number of ANC visits than the women who had no ANC visits. Similar findings is also reflected by Brazier et al., 2014 in Guinea where women with more number of ANC visits is noticed to be twice likely to deliver at a health facility as they are given knowledge on need of exposure to birth preparedness during ANC visits, (Brazier et al., 2014). Moreover, in case of education level also this variation was noticed among the women. Women with 12 or more schooling were about 46% much more likely to have a health facility delivery than the women with no schooling. This finding shows that education along with number of ANC visits is significantly associated with health facility delivery. Also variations were noticed in using this service as a basic maternity care for safe motherhood among the women with different religion and caste or tribe.

CONCLUSION

The study identified the factors which affect the equity in use of antenatal care and safe delivery as Basic Maternity Care for Safe motherhood and it may be helpful for policy maker or service provider to make future plans or programs for equal maternal health care utilization among women with antenatal care use and safe delivery. There was an inequality in use of basic maternity care found among the women belonging to different backgrounds with residence, education, religion and

caste or community. So, there is a need to focus more on uneducated women, women residing in rural areas, women belonging to Schedule tribe and Muslim religion. Utmost attention is needed to be given for targeting those women who are deprived of adequate use of these services with these factors.

References

- Agha, S., & Carton, T. (2011). Determinants of institutional delivery in rural Jhang, Pakistan. *International Journal for Equity in Health*, 10 (1).
- Bhatia JC. & Cleland J.(1995). Determinants of Maternal Care in a Region of South India. *Health Transition Review* 5, 127-142.
- Bloom, S. S., Lippeveld, T., & Wypij, D. (1999). Does Antenatal Care Make a Difference to Safe Delivery? A Study in Urban Uttar Pradesh, India. *Health Policy and Planning*, 14 (1), 38-48.
- Brazier, E., Fiorentino, R., & Millimono, S. (2014). Rethinking How to Promote Maternity Care-Seeking: Factors Associated With Institutional Delivery in Guinea. *Health Care for Women International*, 35 (7-9), 878-895.
- Carrolli, G., Roomey, C., & Villar, J. (2001). How effective is antenatal care in preventing maternal mortality and serious morbidity? An overview of evidence. *paediatric & perinatal epidemiology*, 15(suppl.1), 1-42.
- CIA. (2015). *The World Factbook*. United States: Directorate of Intelligence.
- Dahiru, T., & Oche, M. O. (2015, August 31). Determinants of antenatal care, institutional delivery and postnatal care services utilization in Nigeria. *Pan African Medical Journal*.
- Das, A. C. (2017). Does antenatal care reduce maternal mortality. *GMC*, 4(1), 1-3.
- Fikre, A., & Demissie, M. (2012). Prevalence of institutional delivery and associated factors in Dodota Woreda (district), Oromia regional state, Ethiopia. *Reproductive Health*, 9:1 (33).
- International Institute of Population Sciences (IIPS) & ICF.2018.National Family Health Survey (NFHS-4), India, 2015-2016:Assam.Mumbai: IIPS.
- Magadi, M. A., Madise, N. J., & Rodrigues, R. N. (2000). Frequency and timing of antenatal care in Kenya: explaining the variations between women of different communities. *Social Science & Medicine*, 51 (4), 551-561.
- Nair, M., Ariana, P., & Webster, P. (2012). What influences the decision to undergo institutional delivery by skilled birth attendants? A cohort study in rural Andhra Pradesh, India. *Rural & Remote Health*, 12 (4).
- NITI Aayog, N. (2018). *Maternal Mortality Ratio*. New Delhi: Government of India
- Pandit, R. D. (1992). Role of antenatal care in reducing maternal mortality. *PubMed*, 18(1), 1-6.
- Taguchi, N., Kawabata, M., Maekawa, M., Maruo, T., Aditiawarman, & Dewata, L. (2003). Influence of Socio-economic Background and Antenatal care Programmes on Maternal Mortality in Surabiy, Indonesia. *Tropical Medicine and International Health*, 8(9), 847-852.
- Teferra, A., Alemu, F., & Woldeyohannes, S. (2012). Institutional delivery service utilization and associated factors among mothers who gave birth in the last 12 months in Sekela District, north west of Ethiopia: a community-based cross sectional study. *12*.
- Villar, J., & Bergsjö, P. (2002). Antenatal Care Randomized Trial, Manual for the Implementation of the New Model.
- WHO. (2016). Retrieved december 13, 2018, from <https://www.ncbi.nlm.nih.gov>

How to cite this article:

Sarjima Brahma (2020) 'Variation in Use of Basic Maternity Care in Assam: Pillar of Safe Motherhood to Reduce Maternal Mortality Rate', *International Journal of Current Advanced Research*, 09(02), pp. 21344-21348.
DOI: <http://dx.doi.org/10.24327/ijcar.2020.21348.4193>
