



Differentials in the Utilization of Antenatal Care Services in EAG states of India

Rakesh Kumar Singh¹ and Shraboni Patra²

International Institute for Population Sciences, Mumbai, INDIA

Available online at: www.isca.in, www.isca.me

Received 10th October 2013, revised 21st October 2013, accepted 6th November 2013

Abstract

Maternal health has ever been a serious matter of concern worldwide. In developing countries like India, maternal health care services are not sufficient as per requirement, which ultimately leads to maternal deaths triggering a challenge to achieve improve maternal health (i.e. MDG 5). Therefore, utilization of maternal health care services like ante-natal care (ANC) in 'Empowered Action Group's states, which are known as EAG states of India, need special attention as these states comprise the majority of population in India and are very backward as per various socioeconomic and demographic indicators. The present study has tried to focus on the utilization of ante-natal care services by women of age group 15 to 49 years by their demographic and socioeconomic characteristics. Indian Human Development Survey (IHDS-2005) data has been used. Simple bivariate and multivariate analyses like binary logistic regression, significance test are used. Though, previous literatures have already shown that socio-economic factors are the important predictors of the utilization of ANC services, but the present study has found a huge variation in the utilization of ANC services in EAG states. Apart from the other background characteristics like women's age, residence, level of education, economic status etc., indicator like abortion experienced by women have also immense influence on women's health as well as ante-natal care services received by them. Though education has significant positive impact on women's health and utilization of ANC services, still the scenario is not same in all EAG states. Percentage of women, who have received ANC, has shown great discrepancy after controlling the variable like education and other socio-economic and demographic variables. Social equity with respect to the distribution of facilities is the utmost important prerequisite in these states. To reduce the gap between the ante-natal care service providers and the service receivers, appropriate policy, public private collaboration and their strategic implementation are required.

Keyword: EAG states, ante-natal care, ANC, abortion.

Introduction

Globally around 287,000 maternal deaths were occurred in 2010, which was a decline of 47% from the levels in 1990. Sub-Saharan Africa (56%) and Southern Asia (29%) reported 85% of the global burden of 245,000 maternal deaths in 2010. At the country level, the two countries report a third of global maternal deaths: India at 19% (56,000) and Nigeria at 14% (40,000)¹. The fifth Millennium Development Goal (MDG 5), put forwarded by the United Nations, proposes to reduce the world's maternal mortality ratio by 75%, by 2015².

According to World Health Organization (WHO), more than three-quarters of maternal deaths were found in just two regions of the world: 53% in the African Region and 25% in South-East Asia³. Ante-natal care is one of the most important indicators for controlling maternal morbidity and mortality. In most of the developing countries women do not receive proper ante-natal care during pregnancy. Most of the researches have shown that the countries which have improved their maternal health care services are successful in reducing the maternal morbidity or mortality⁴⁻⁶. Pregnancy related complications are the leading causes of maternal death and disability for women

aged between 15-49 years in developing countries³. Most of the maternal deaths can be saved by strengthening the health care facilities. All women need access to ante-natal care during pregnancy, attended by professional health workers during child birth, and care and support during the post partum period. It is very imperative that all the births should be attended by skilled health professionals, as timely delivery care, proper management and careful treatment can make the difference between life and death.

Post comparative research on demographic behaviour has showed that there are huge variations in the northern and southern states of India⁷⁻¹⁰. The southern states of India are highly advanced in respect to demographic indicators. The Government of India (GOI) has prepared a list of eight states which are very poor in respect of demographic as well as the socioeconomic indicators. The GOI has given a name to these eight states as Empowered Action Groups or EAG states. These states are Uttaranchal, Uttar Pradesh, Bihar, Madhya Pradesh, Rajasthan, Odisha, Jharkhand and Chhattisgarh¹¹.

The present study examines the factors affecting the utilization of maternal health care in EAG states. Previous studies on

determinants of the maternal health care utilization in India have either focused on the southern states or all the states at national level but a single study, on particular EAG states to see the nature of maternal health care utilization in these states, can hardly be found. In this paper, an attempt has been made to fill these gaps by examining the variation in the utilization of maternal health care services among EAG states of India.

Methodology

Data Source: India Human Development Survey 2005 (IHDS) has provided the data related to women's health problems, specifically information on pregnancy complications and post natal complications and maternal health care services. IHDS is the collaborative project of researchers from the University of Maryland and National Council of Applied Economic Research (NCAER), New Delhi. The IHDS-2005 was administered to a nationally representative sample of 41,554 households and a knowledgeable woman from each household, residing in rural and urban areas, was selected from 33 states and union territories (UTs) of India excluding Andaman, Nicobar and Lakshadweep. The sample extends to 384 out of 593 districts identified in 2001 census. It is a household survey, whose primary goal is to intensify understanding of human development in India. IHDS data provide the detail information about the all ever married women on the health care utilization during pregnancy for the last live birth that were born in the 5 year prior to the date of the survey. The present study has used ante-natal care seeking by women for the most recent pregnancy (that resulted in live birth). The sample size of ever married women aged 15-49 years from all the EAG states was 6270.

Sample Design: Villages and urban blocks (comprising of 150-200 households) formed the primary sampling units (PSUs) from which the households were selected. For sampling purposes, some small states were joined with nearby big states. The rural sample contains about half of the households that were interviewed initially by NCAER in 1993-94 in a survey titled Human Development Profile of India i.e. HDPI,¹² and the other half of the samples were drawn from both districts surveyed in HDPI as well as from the districts located in the states and UTs not covered in HDPI. The original HDPI was a random sample of 33,230 households, located in 16 major states, 195 districts and 1,765 villages. In states where the 1993-94 survey was conducted and re-contact details were available, 13,593 households were randomly selected for re-interview in 2005¹³.

Methodology: The methodology applied in the present study is divided into two sections: variables construction and statistical analyses.

Variable construction: Predictor Variables: Background characteristics of women, such as age group of ever married women, place of residence, level of education, caste, religion, wealth quintile of women, birth order of the child, ever had still birth, ever had spontaneous abortion and ever had induced abortion.

Outcome Variables: Ante-natal check-up, which is the main dependent variable of the study, has been categorized as less than three checkups and three and more checkups with the reference period last five years. Frequency of ante-natal checkups is coded as 0 for those women who received less than 3 ante-natal check-up and 1 for those who received 3 or more ante-natal checkups during pregnancy.

Statistical Analysis: The study has used bivariate and multivariate techniques to understand the ante-natal check-up among ever married women of age group 15-49 years. A multivariate technique like logistic regression analysis is applied to examine the effect of demographic and socioeconomic characteristics of women. Logistic regression model has been applied to estimate the odds ratio of differentials in ante-natal check-up by socio-economic and demographic background characteristics of women. The whole analysis has been performed by using statistical software SPSS (version 20).

Results and Discussion

Percentage of women who received at least three ANC by their background characteristics: Table 1 presents the percentage distribution of women, received ante-natal check-ups by selected background characteristics who have given live birth during last 5 years prior to the survey. More than 60 percent women of age groups 15-34 years have received at least 3 ante-natal check-ups in EAG states whereas the percentage is only 47.4 for age groups 35-49 years. 52.3 percent women who belong to scheduled caste/tribes have received at least three ante-natal check-ups. Among highly educated women, about 90 percent have visited for 3 or more ante-natal check-ups.

About 80 percent women who belong to richest quintile have received at-least three ANC. As birth order increases, the percentage of women who received at least three ANC decreases (64.8, 53.7 and 35.5 percent for first, second and third order birth respectively). Those women who have ever experienced spontaneous abortion, the percentage of ANC receive is 65.6 whereas those have not experienced spontaneous abortion, for them the percentage is 59.7. Similarly, those women have experienced induced abortion and those have not experienced, for them the percentages of receiving at least three ANC are 76.7 and 59.6 respectively.

Table-1
Percentage distribution of ever married women by ante-natal check-ups according to selected background characteristics in EAG states of India, IHDS 2004-05

Women's Background Characteristics	Ante-natal Check up (EAG States)	
	Less than 3 Ante-natal check up	3 and above ante-natal check up
Age group (years)		
15-24	37.5	62.5
25-34	38.6	61.4
35-49	52.6	47.4
Religion		
Hindu	38.1	61.9
Muslim	47.4	52.6
Christian	31.9	68.1
Others	46.7	53.3
Caste		
Schedule caste/Schedule tribes	47.7	52.3
Other backward caste	42.8	57.2
Others	28.9	71.1
Residence		
Rural	39.7	60.3
Urban	40.3	59.7
Education		
No education	56.7	43.3
Primary	44.7	55.3
Upper primary and Secondary	31.5	68.3
Higher education	10.8	89.2
Wealth quintile		
Poorest	56.4	43.6
Poor	51.5	48.5
Medium	41.7	58.3
Rich	34.2	65.8
Richest	18.7	81.3
Birth order		
1	35.2	64.8
2	46.3	53.7
3 and above	64.5	35.5
Ever had still birth		
No	39.4	60.6
Yes	47.7	52.3
Ever had spontaneous abortion		
No	40.3	59.7
Yes	34.4	65.6
Ever had induced abortion		
No	40.4	59.6
Yes	23.5	76.5

Determinants of maternal health care use: Results from multivariate logistic regression models have been shown in table 2 for the EAG states of India. Women of age 25-49 years are found significantly less likely to receive at least three ANC as compared to women aged 15-24 years. The study reveals that some of the factors which influence ante-natal health utilization are religion, education level, caste and wealth index. Muslim women are significantly less likely to receive at least 3 ANC as

compared to Hindu women. As compared to the schedule caste/tribe women, women belong to other categories (39 percent) are more likely to receive at least three ANC. Highly educated women are significantly 5 times more likely to receive minimum three ante-natal care as compared to the women who don't have a single year of education.

Women belong to the richest wealth quintile are significantly 2 times more likely to visit for at least three ante-natal care as compared to the women belong to the poorest quintile. As the birth order of the women increases, the likelihood of receiving at least three ANC decreases significantly. Those women who

have experienced stillbirth and abortion are more likely to receive at least three ante-natal check-up as compared to those women who have not experienced any still birth or abortion.

Table-2
Results of logistic regression analysis on the determinants of frequent use of ante-natal care in EAG states of India, IHDS 2004-05

Women's Background Characteristics	Odds Ratio (Exp β)	Confidence Interval	
		Lower limit	Upper limit
Age group (years)			
15-24®	1		
25-34	0.864***	0.758	0.988
35-49	0.512**	0.418	0.627
Religion			
Hindu®	1		
Muslim	0.690***	0.579	0.822
Christian	0.866	0.578	1.297
Others	0.862	0.621	1.196
Caste			
Schedule caste/Schedule tribes®	1		
Other backward caste	1.104	0.947	1.287
Others	1.388***	1.160	1.660
Residence			
Rural®	1		
Urban	0.796***	0.700	0.905
Women education			
No education®	1		
Primary	1.700***	1.365	2.118
Upper primary and Secondary	2.218***	1.930	2.549
Higher education	5.002***	3.767	6.641
Wealth quintile			
Poorest®	1		
Poor	1.189*	0.990	1.428
Medium	1.469***	1.223	1.764
Rich	1.736***	1.432	2.103
Richest	2.275***	1.830	2.828
Birth order			
1®	1		
2	0.704***	0.618	0.803
3 and above	0.488***	0.368	0.648
Ever had still birth			
No®	1		
Yes	1.065	0.805	1.410
Ever had spontaneous abortion			
No®	1		
Yes	1.041	0.838	1.291
Ever had induced abortion			
No®	1		
Yes	1.458	0.985	2.158

® Reference category, *** p< 0.01, ** p < 0.05, *p<0.10, (1=received at least 3 ante-natal check-ups;0=received less than 3 ante-natal check-ups)

Conclusion

The study has found that there are significant variations in the utilization of ante-natal facilities in EAG states of India. As a whole, women of age groups 34-49 years are significantly less likely to receive at least three ANC as compared to 15-24 years women. Similarly, women with higher birth order children are significantly less likely to receive at least three antenatal cares. Those women who had experienced any pregnancy wastage are more likely to receive antenatal care. Education has been found as an important predictor in the utilization of maternal health care facilities. Those women have at least 12 years education are 5 times more likely to receive at least three ante-natal cares. However, the situation of utilization of ante-natal facilities among EAG states is not very impressive.

There is a large difference in the utilization of ante-natal care services among the different cluster of Indian society (Reproductive and Child Health Survey, Phase II, 2002). Certain sections of the population are poor and could not get the existing medical care facility as they are less aware of the available ante-natal care services provided by public and private service providers. Whereas, privileged sections of the society enjoy the fruits of all the facilities. Thus, the gap between service provider and the facility seekers has remained the same.

The findings of the study also support the fact that among the EAG states, differential in utilizing various ante-natal care services exist. Besides, it is very clear to understand that there is an urgent need for separate policy for EAG states for the improvement of maternal health care services and make it available and affordable to all. The integrated maternal and child health programme may also aim to spread awareness among illiterate and scheduled caste/tribes population about the benefits of using maternal health care services for both mother and child. There is a need for revising the existing strategies to achieve better and effective maternal health care services for disadvantaged population of the EAG states..

References

1. World Health Organization. Maternal Mortality, <http://www.who.int/mediacentre/factsheets/fs348/en/index.html>, 8 January (2013)
2. Koch E., Thorp J., Bravo M., Gatica S., Romero C.X., Aguilera H. and Ahlers I., Women's Education Level, Maternal Health Facilities, Abortion Legislation and Maternal Deaths: A Natural Experiment in Chile from 1957 to 2007, *Plos One*, **5**, e36613 (2012)
3. World Health Organization, Trends in maternal mortality: 1990 to 2010. <http://www.who.int>, 15 December (2012)
4. Rejoice P.R. and Ravishankar A.K., Differentials in Maternal Health Care Service Utilization: Comparative Study between Tamil Nadu and Karnataka, *World Applied Sciences Journal*, **14**, 1661-1669 (2011)
5. Barlett L.A., Mawji S. and Whitehead S., et al., Where Giving Birth is a Forecast of Death: Maternal mortality in four districts of Afghanistan 1999-2002, *The Lancet*, **365**, 864-870 (2005)
6. Kilpatrick J.S., Crabtree K.E. and Kamp A., et al. Preventability of Maternal Deaths: Comparison between Zambian and American referral hospitals, *Obstetrics and Gynaecology*, **100**, 321-326 (2002)
7. Naveentham K. and Dharmilngam A., Utilization of Maternal Health Care Services in Southern India, *Social Science and Medicine*, **55**, 1849-1869 (2002)
8. Basu A.M., Mother's education and childhood mortality: the status of women as a 'proximate' proximate determinant. In: L. Visaria, J. Simons, and P. Berman (Eds.), *Maternal Education and Child Survival*. Delhi: Vikas Publishing House Pvt. Ltd, (1997)
9. Miller B.D., *The endangered sex: neglect of female children in rural north India*, Ithaca and London: University Press, (1981)
10. Dyson T. and Moore M., On kinship, female autonomy and demographic behaviour in India. *Population and Development Review*, **9**, 35-60 (1983)
11. Singh RK., Lifestyle behavior affecting the prevalence of anaemia among women in EAG states, India, *Journal of Public Health*, **21**, 279-288 (2012)
12. Shariff A., *India Human Development Report*, New Delhi: Oxford University Press, (1999)
13. Desai S.B., Dubey A. and Joshi B.L., et al., *India Human Development Survey: Design and Data Quality*, 2010, Oxford University Press, New Delhi, (2010)