

# Catastrophic Health Care Expenditure on Maternal Health Care in India: Evidence from National Level Data

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## Abstract

**Introduction:** Catastrophic health expenditure is defined as payments for health services exceeding 40% of household disposable income after subsistence needs are met. Utilization of maternal health care services has been recognized as a significant factor in influencing maternal and child mortality. India continues to account for a quarter of all maternal and child deaths at the world level. The cost of health care is comparatively higher in private sector than the public health facilities. Households using private inpatient services are more likely to face catastrophic expenditure.

**Materials and Method:** This paper has utilized the data collected by the National Sample Survey Organization (NSSO) during January-June, 2014. It is a cross sectional dataset available in public domain. The dataset provides information on Social Consumption and Health scenario of the population. To carry out the research, descriptive statistics, bivariate and logistic regression analysis has been used.

## FINDINGS

The study shows that urban sector, primary educated and women belonging to poorest wealth quintile bear high catastrophic health expenditure than their other counterparts. Western and Southern region have low percentage of women going for catastrophic expenditure on maternal health care. The likelihood of catastrophic health expenditure on maternal health care decreases with the increase in wealth quintile from poorest to richest.

**Conclusion:** Place of residence, educational status and wealth index plays an important role in determining the catastrophic health expenditure on maternal health care. Further research needs to be done in exploring the factors that leads to inequity of the expenditure used in the utilization of maternal health care.

**Keywords:** *Ante-natal care, Catastrophic expenditure, Child Health, Maternal health care, Post-natal care.*

## Introduction

The progress in improving maternal health, as envisaged in the UN Millennium Development Goals (MDGs), critically depends on the availability, afford ability and effective use of reproductive health services<sup>1-4</sup>. India is one of the rapidly developing country where health is still a challenge at the national level, although maternal and child health indicators have shown a little or no progress.

India continues to account for a quarter of all maternal and child deaths at the global level<sup>5</sup>. The

maternal mortality ratio in India showed a decline from 301 deaths per 100,000 live births in the period 2001–03 to 254 and 212 during 2004–06 and 2007–09 respectively, but the ratio still lags behind the MDG target of 109 by the year 2015<sup>6</sup>.

People living with poverty, accessibility and unawareness are the major reasons for poor uptake of maternal health care services in India. For example, in Bihar, one of India's poorest states where over 80% of births are home births, approximately 50% of women reported financial concerns as the reason for not opting

for institutional delivery care<sup>7</sup> despite the fact that maternal health care services are provided free-of-charge in public health facilities in India. Majority of states in India has the higher utilization of public maternal healthcare services than the private health care services. The delivery care services utilization has almost equal share with the public and private sectors.

In India, the total health expenditure constituted 4.3% of GDP (2009), with private and public sectors accounting for 78 and 20% respectively<sup>8</sup>. Out-of-Pocket Expenses (OOPE) and catastrophic health expenditure contribute to over 70% and 30% of the total health expenditure respectively. These additional expenses deteriorate and makes the women vulnerable pushing their households further into poverty. Peters et al. estimated that a quarter of the Indian population fall into poverty as a direct result of the medical expenses incurred through hospitalization<sup>9</sup>. Data from the National Sample Survey Organization (NSSO) show an increase in household poverty in both rural and urban India after accounting for OOPE<sup>10</sup>. This has further deteriorated the catastrophic health expenditure on maternal health care.

So far, very less pieces of research are available on catastrophic health expenditure for maternal health care services in India. In many southern and western states of India, the utilization of maternal healthcare is high. Furthermore, catastrophic health expenditure on maternal health care services is neglected by policy makers and planners.

A recent study by Bonuet al. analyzed national data

to examine maternal health care expenditure in Indian households<sup>11</sup>. However, this study does not take into account the indirect costs associated with maternal health care expenditures. The main aim is to consider the socio-economic characteristics that determine the catastrophic health expenditure on maternal health care in India.

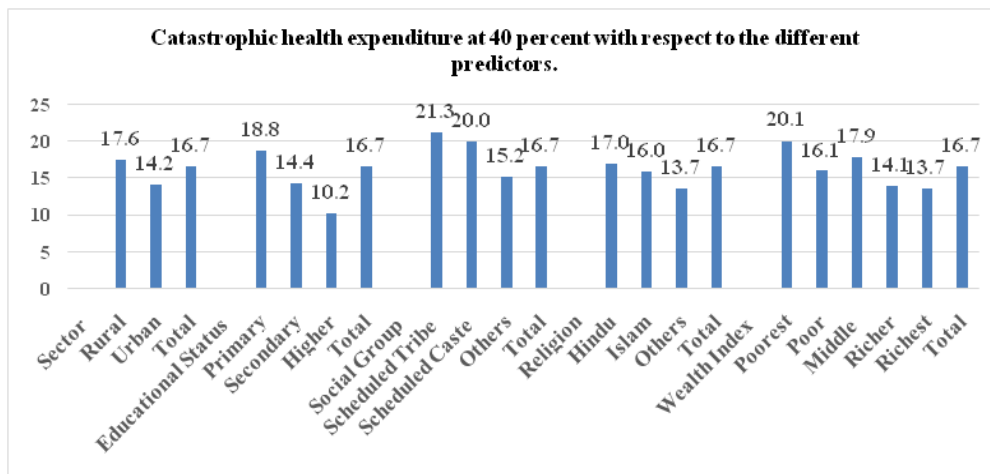
### Materials and Method

This paper has used the data collected by the National Sample Survey Organization (NSSO) during January–June, 2014. This round provides data on Social Consumption and health. The dataset provides enough information related to the prevalence, nature of treatment, level of care and financial expenditure for different morbidity in India.

Descriptive statistics is used to provide simple summaries about the sample and also about the observations that have been made. It is used to show the prevalence of maternal health care with respect to different predictor variables and also with respect to different states. Logistic regression is used to find out the odds of catastrophic health expenditure at 40 percent with respect to the different predictor variables.

In this study complete maternal health care comprises of women who has taken ante-natal care and post-natal care. Incomplete maternal health care comprises of women who has taken either ante-natal care or post-natal care. In majority of the literature available, catastrophic health expenditure is measured at 40 percent cut off levels.

### Findings:



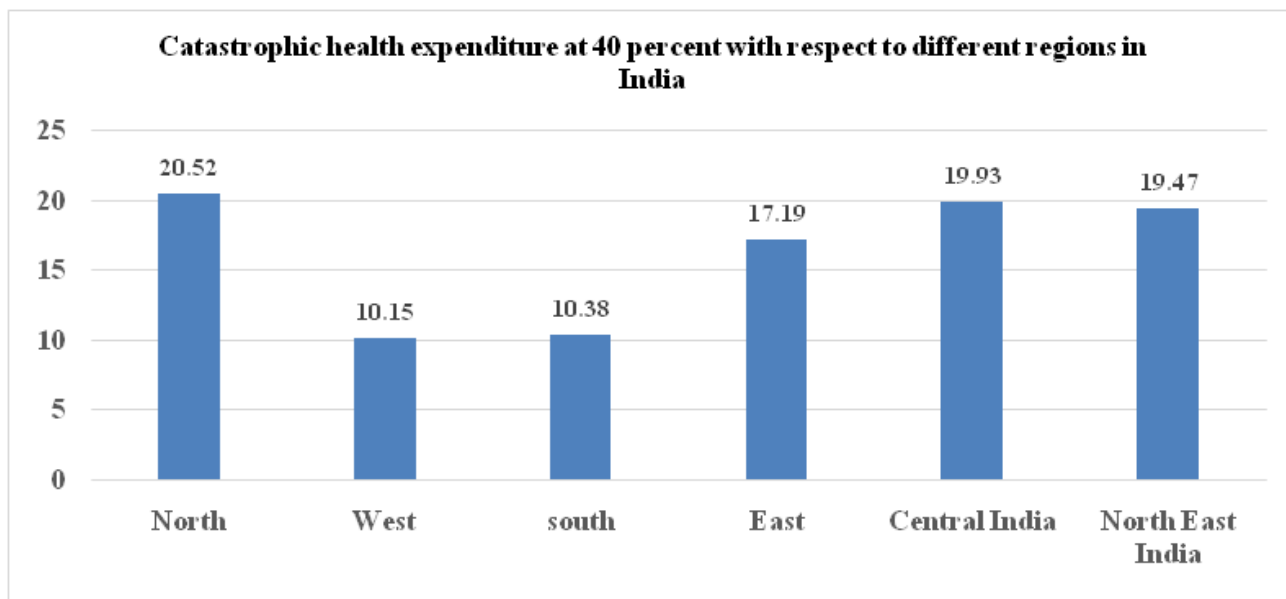
Source: NSSO 71<sup>st</sup> Round.

Figure 1: Catastrophic health expenditure at 40 percent with respect to the different predictor variables.

Figure 1 represents the catastrophic health expenditure at 40 percent with respect to the different predictor variables. Women residing in rural and urban areas undergoing catastrophic health expenditure is 17 percent and 14 percent respectively. Rural sector has higher percentage of catastrophic health expenditure than urban sector.

Women who have primary educational status have higher percentage levels of catastrophic health expenditure than secondary and higher educated women. Higher and secondary education status depicts 10 percent and 14 percent of women undergoing catastrophic health expenditure while primary educational status shows 19 percent level respectively. Women belonging to scheduled tribe bear higher catastrophic health expenditure than scheduled castes and others category.

Twenty one percent women of scheduled tribe, 20 percent women of scheduled caste and 15 percent belonging to other category undergo catastrophic health expenditure. Affiliation to Hindu religion depicts 17 percent of women for catastrophic health expenditure at 40 percent level. The catastrophic health expenditure beard by Hindus is higher than women affiliated with Islam (16 percent) and other religious groups i.e. 14 percent. Poorest wealth quintile shows 20 percent women undergoing catastrophic health expenditure. The catastrophic health expenditure decreases with the increase in the wealth quintile from poorest to richest category. Fourteen percent women belonging to richest wealth quintile undergo catastrophic health expenditure on the utilization of maternal health care.



Source: NSSO 71<sup>st</sup> Round.

Figure 2: Catastrophic health expenditure at 40 percent with respect to different regions in India

Figure 2 represents the catastrophic health expenditure on maternal health care with respect to different regions in India. Northern (21 percent) and Central Indian (20 percent) region show high percentage of women undergoing catastrophic health expenditure on maternal health care. Western and Southern region show

10 percent women undergoing for catastrophic health at 40 percent level. Twenty percent women residing in North East India show 20 percent women undergoing catastrophic health expenditure on the utilization of maternal health care services.

**Table 1: Determinants of catastrophic health expenditure at 40 percent on the utilization of maternal healthcare with respect to the different predictor variables.**

	Odds Ratio	95% Confidence Interval	
Sector			
Rural ®			
Urban	0.96	0.867	1.055
Educational status			
Primary ®			
Secondary	0.79***	0.718	0.889
Higher	0.59***	0.504	0.694
Social Group			
Scheduled Tribe ®			
Scheduled caste	0.96	0.805	1.138
Others	0.89	0.764	1.040
Religion			
Hindu ®			
Islam	0.87**	0.764	1.001
Others	0.85*	0.719	1.026
Wealth Index			
Poorest ®			
Poor	0.92	0.797	1.068
Middle	0.97	0.841	1.113
Richer	0.93**	0.730	0.991
Richest	0.85**	0.800	1.101
_cons	0.27	0.228	0.316

\*sig.at10% level; \*\*sig. at 5% level; \*\*\*sig. at 1% level; ® Reference category

Source: NSSO 71<sup>st</sup> Round.

Table 1 represents the determinants of catastrophic health expenditure at 40 percent on the utilization of maternal health care with respect to the different predictor variables. Secondary and higher educated women are 20 percent and 40 percent less likely to bear catastrophic expenditure on maternal health care than primary educational status respectively. Women affiliated to Islam is 13 percent less likely to have catastrophic expenditure on maternal health care than Hindu affiliated women. Similarly, the likelihood of women belonging to other religious category is 15 percent than Hindus. Women belonging to richer and richest wealth quintile is 13 percent and 15 percent less likely to have catastrophic health expenditure than poorest wealth quintile respectively. As the educational status and wealth quintile increases, the likelihood of women undergoing catastrophic health expenditure decreases.

## Conclusion

With the increase in the educational status, wealth status, place of residence from rural to urban there is an increase in the utilization of maternal health care. Western and Southern region in India are less prone for catastrophic health expenditure on the utilization of maternal health care. Similarly, the catastrophic health expenditure on maternal health care also increases with the increase in the place of residence from rural to urban, educational status from primary to higher and wealth index from poorest to richest.

**Conflict of Interest:** None

**Source of Funding:** None

**Ethical Clearance:** Secondary dataset, Available in public domain.

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