

# Maternal Education and the Utilization of Maternal & Child Health Services in India

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## Abstract:

**Research Question:** What are maternal education and the utilization of Maternal and Child Health Services in India, especially in South and North India?

**Objective:** 1-To Assess the maternal education and the utilization of maternal and child health services. 2-To study the patterns and determinants of maternal health care services use in north and south Indian states.

**Results:** On an average, the southern states fare better than northern counter-parts on all the selected background characteristics in the study.

**Conclusion:** The study reveals that lack of maternal education and the utilization of Maternal and Child Health Services in northern states. The southern states provide good maternal education and child health services to mothers. There are positive correlation between mother education and utilization of MCH services.

Key words: Maternal education, Child Health Services, DLHS, Antenatal care etc.

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## Introduction:

Health is a fundamental to the national progress in any sphere. In terms of resources for economic development, nothing can be considered of higher importance than the health of people which is measure of their energy and capacity as well as of the potential man hours for productive work in relation to the total no. of persons maintained by the nation. Since health is influence by a no. of factor such as adequate food, housing, basic sanitation, healthy lifestyle, protection against environmental hazards and communicable disease, the frontiers of health extended beyond the narrow limits of medical care (Park & park, 1991). It is thus clear that 'health care' implies more than 'medical care'. It embraces a multitude of services provided to individuals or communities by against of the health services or professionals

for the purpose of promoting, maintaining monitoring or restoring health. The World Health Organization (WHO) estimates that, of 536,000 maternal deaths occurring globally each year, 136,000 take place in India. Estimates of the global burden of disease for 1990 also showed that India contributed 25% to disability-adjusted life-years lost due to maternal conditions alone. This research is undertaken partly in response to the lack of clarity, consistency, and strength of the maternal schooling child mortality explanation, and partly to exploit the rich data collected in the NFHS that potentially could shed more light on this subject. The fact that more than 100,000 women in India are estimated to die every year from Pregnancy- and childbirth-related causes reinforces the importance of ensuring that all pregnant women receive adequate antenatal care during pregnancy and that deliveries take

place under the supervision of trained medical personnel in a hygienic environment (IIPS 1995). Antenatal care provides an opportunity for a variety of preventive interventions during pregnancy, including tetanus toxoid injections, and educating women about nutrition, safe delivery, and postpartum care of mothers.

## Materials and Methods:

### *Research Design and Source of Data:*

Data used in this paper come from the District Level Household and Facility Survey 2007-08. This report is based on data collected from 7, 20,320 households from 28 States and 6 Union Territories of India during 2007-08. From these households, 6,43,944 ever-married women aged 15-49 years and 1,66,620 unmarried women aged 15-24 years were interviewed to achieve information on fertility, family planning knowledge and use, infant and child mortality and maternal. DLHS-3 adopted a multi-stage stratified probability proportion to size sampling design. The International Institute for Population Sciences (IIPS) was designated as the nodal agency for carrying out the survey. Bilingual questionnaires in local language and in English pertaining to Household, Ever Married Women (aged 15-49 years), and Unmarried Women (aged 15-24 years) were used.

### Methodology:

1. Univariate analysis is applied to ascertain the frequency of the covariates.
2. Binary Logistic Regression analysis is applied in this study.

In this study we have used Bivariate analysis to examine significance of association between incidence of MCH services and socio-demographic factors. Multivariate analysis is used to assess the influences of socio-demographic background on maternal education.

**Binary Logistic Regression:** Binary logistic regression analysis is applied to obtain the odds of MCH services. The dependent variable is selected different MCH services.

Logistic Regression models are commonly estimated by maximum likelihood function. For these outcome variables, logistic regression model takes the form:

$$\text{Log (P/1-P)} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 \dots \beta_n X_n$$

Where  $X_i$ 's are covariates and  $\beta_i$ 's are coefficients. P is predicted probability and log odds of P and (1-P) provides the odds ratios with respect to reference category.

In this paper to study the patterns and determinants of use of maternal health care services, we have considered the most recent births to ever married women, which took place during the four years prior to the date of the survey each woman was interviewed. In this paper we focus only on **North** (Uttar Pradesh, Rajasthan, Madhya Pradesh, and Bihar) and **South** (Andhra Pradesh, Karnataka, Kerala and Tamil Nadu) Indian States. We focus on the utilization of four maternal health care services during pregnancy and the birth of the reference child.

### RESULT:

Table 1 shows that maternal health care indicator according to their literacy status both south and north India. It shows that all type of ANC received by literate mother were found to be more in comparison illiterate mother with the exception of consumption of iron folic acid in north India. Similar results was shown in south India also.

For instance in table 2, on average **received any antenatal care** (Includes women who received two or more doses) maximum in Uttar Pradesh is 64 percent and minimum in Rajasthan 56 percent in north India. And maximum in Tamil Nadu and Kerala is 99 percent and minimum is in Andhra Pradesh in south India. **Received full antenatal care** maximum in Madhya Pradesh is 9 percent and minimum in Uttar Pradesh is 3.3 percent in north India. And maximum in Kerala is 72 percent and minimum is 40 percent in Andhra Pradesh in South India. And **Received iron folic acid tablets** maximum in Rajasthan 85 percent and minimum is 74 percent Uttar Pradesh in north India. And maximum in

Kerala is 92 percent and minimum is 87 percent in Andhra Pradesh in north India. And **safe deliveries** maximum in Rajasthan is 53 percent and minimum in Uttar Pradesh is 30 percent in south India. And in south India maximum is 99 percent in Kerala and minimum is 71 percent in Karnataka. Table 3 and table 4 represents that the odds ratio according to their residence, education, religion, age, caste, and wealth with respects to all type of facility as like ANC, TTI, Safe delivery and IFA in both south and north India.

#### **DISCUSSION:**

The various studies over the past decade have found a nearly universal and positive Association between mother's schooling and child survival. This relationship has persisted even when other socioeconomic influences have been held constant. This study provides useful insights into how Education could influence child health-care behavior; such investigations lack a quantitative foundation. Part of the problem lies in the lack of large-scale data allowing amore quantitative investigation into the pathways linking education and child survival. Another problem has been the absence of a cross-cultural dimension in the Investigations. This study indicates that small-scale investigations of one or a few child health-care indicators. Using data from the NFHS in India, this project indicate the relationship between education and the utilization of MCH services, These factors are affect maternal, infant, and child mortality and morbidity and the relationship to mother's schooling. In general, maternal education emerges as the single most significant predictor of the utilization of MCH services with no systematic difference between the north and south. We find that a higher level of maternal education results in improved child survival to a substantial extent because preventive health services are used to a greater extent by mothers with higher education than those with little or no education. This project verifies the positive relationship between mother's education and utilization of MCH

services in a much more or less taken the study variables which examining the utilization of antenatal-care services, delivery-care services, and child health-care services. We did this by analyzing data separately for four states in the north and four states in the south of India that are quite distinct culturally.

#### **SUMMARY AND CONCLUSION:**

We conclude that the benefits of maternal education persist even when other socioeconomic factors are taken into account. From the programmatic point of view, the conclusions reached in this paper reinforce the call for continued investments in female education, which are indispensable for achieving reduced infant and child mortality and morbidity and possibly have an impact on factors that reduce maternal mortality. This research also confirms that, while the mechanisms of influence vary across different cultural settings, education per exerts a dominating influence. The southern states provide good maternal education and child health services to mothers. There are positive correlation between mother education and utilization of MCH services.

Nevertheless, public policies should not focus on education alone, as there are other factors, such as access to health facilities, which affect health-care utilization. In a setting where illiteracy is high, improving access to health facilities should go hand in hand with educating women.

#### **REFERENCES:**

1. Alison, P. D. (1984). *Event history analysis: regression for longitudinal event data*. Sage University Paper series on Quantitative Applications in the Social Sciences, Number 46. Beverly Hills and London: Sage Publications.
2. Boerma, J. Ties, Elisabeth A. Sommerfelt, Shea O. Rutstein, and Guillermo Rojas. 1990. *Immunization: Levels, trends, and differentials*. DHS Comparative Studies, No. 1. Columbia, Maryland: Institute for Resource Development.

3. Caldwell, John. 1979. Education as a factor in mortality decline: An examination of Nigerian data. *Population Studies* 33:395–413.
4. Caldwell, John, and Pat Caldwell. 1988. *Women's position and child mortality and morbidity in LDC's*. Research Paper. Canberra: Department of Demography, Research School of Social Sciences, Australian National University.
5. Caldwell, Pat, and John C. Caldwell. 1990. *Gender implications for survival in South Asia*. Health Transition Working Paper No. 7. Canberra: National Center for Epidemiology and Population Health, Australian National University.
6. Cleland, John. 1990. Maternal education and child survival: Further evidence and explanations. In *what we know about health transition: The cultural, social, and behavioral determinants of health*, pp. 400–419.
7. Cleland, John, and Jerome K. van Ginneken. 1988. Maternal education and child survival in developing countries: The search for pathways of influence. *Social Science and Medicine* 27:1357–68.
8. Desai, Sonalde. 1994. *Maternal education and child health: Evidence and ideology*. Paper presented at the IUSSP Seminar on Women, Poverty, and Demographic Change, Oaxaca, Mexico, October 2–28.
9. Dyson, Tim, and M. Moore. 1983. On kinship structure, female autonomy, and demographic behavior in India. *Population and Development Review* 9:35–60.
10. International Institute for Population Sciences (IIPS). 1995. *National Family Health Survey*.

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**Tables:**

**Table-1: Percentage of mothers by various maternal health care indicator and mother's education in north and south India.**

Maternal health care indicator	Mother's education	
	Illiterate	Literate
<b>North India</b>		
ANC(any)	52.6	75.9
ANC(full)	1.9	10.1
Safe delivery	27.2	54.3
Iron folic acid	80.5	75.5
TTI	51.0	74.7
<b>South India</b>		
ANC(any)	86.4	98.2
ANC(full)	33.0	58.0
Safe delivery	58.5	91.7
Iron folic acid	90.9	88.5
TTI	82.2	96.4

**Table 2: Percentage of mothers by Selected Various Maternal Health Care Indicators, in Northern and Southern States of India.**

States	Received any antenatal care	Received full antenatal care	Received iron folic acid tablets	Safe deliveries
<b>NORTH INDIA</b>				
Rajasthan	56.5	6.5	85.9	52.6
Uttar Pradesh	64.3	3.3	74.6	30.3
Bihar	59.0	4.6	75.4	31.9
Madhya Pradesh	61.6	8.5	82.8	49.9
<b>SOUTH INDIA</b>				
Andhra Pradesh	95.9	40.4	87.0	75.7
Karnataka	89.9	50.8	90.0	71.9
Kerala	98.8	72.4	92.0	99.3
Tamil Nadu	98.9	51.8	88.0	95.7

**Table 3: Odds ratio of receiving maternal health care services by selected background characteristics, South India.**

Background Characteristics	South India				
	ANY ANC (C.I)	FULL ANC (C.I)	TTV(C.I)	IFA(C.I)	SAFE Del. (C.I)
<b>Residence</b>					
Rural <sup>R</sup>	1.000	1.000	1.000	1.000	1.000
Urban	0.644,(0.053-7.874)	1.198,(0.943-1.522)	1.471,(1.140-2.166)	0.981,(0.773-1.245)	3.365,(3.017-3.753)
<b>Education</b>					
<5Year Schooling <sup>R</sup>	1.000	1.000	1.000	1.000	1.000
>5 Years schooling	1.724,(1.153-2.579)	1.539,(1.122-2.109)	1.140,(0.847-1.535)	1.139,(0.834-1.556)	3.459,(3.075-3.891)
<b>Age</b>					
< 25 Years <sup>R</sup>	1.000	1.000	1.000	1.000	1.000
>25 Years	2.067,(1.221-3.500)	1.745,(1.232-2.472)	1.215,(.732-1.408)	0.090,(0.629-1.259)	4.866,(4.031-5.921)
<b>Religion</b>					
Hindu <sup>R</sup>	1.000	1.000	1.000	1.000	1.000
Muslims	0.661,(0.425-1.053)	1.949,(1.351-2.814)	1.110,(0.807-1.526)	0.642,(0.446-0.925)	2.189,(1.909-2.511)
Other	1.431,(0.743-2.756)	1.822,(1.103-3.010)	0.897,(0.582-1.384)	0.778,(0.472-1.283)	1.791,(1.475-2.175)
<b>Caste</b>					
Non SC/ST <sup>R</sup>	1.000	1.000	1.000	1.000	1.000
Other	1.058,(0.819-1.368)	0.587,(0.476-0.724)	0.806,(0.665-0.978)	1.241,(1.008-1.528)	0.411,(0.380-0.444)
<b>Wealth Index</b>					
Poorest <sup>R</sup>	1.000	1.000	1.000	1.000	1.000
Lower Middle	2.090,(1.369-3.191)	0.948,(0.646-1.392)	1.035,(0.755-1.419)	1.222,(0.842-1.774)	1.491,(1.314-1.692)
Middle	1.797,(1.173-2.751)	1.198,(0.823-1.745)	1.571,(1.140-2.166)	1.141,(0.791-1.645)	2.998,(2.651-3.391)
Upper Middle	3.449,(2.138-5.565)	2.170,(1.456-3.234)	1.309,(0.935-1.833)	0.893,(0.604-1.319)	8.087,(7.024-9.312)
Richest	4.482,(2.428-8.276)	3.445,(2.210-5.369)	1.549,(1.047-2.291)	0.883,(0.538-1.280)	43.493,(33.781-55.998)

R= Reference Category

**Table 4-: Odd ratio of receiving maternal health care services by selected background characteristics, North India.**

Background Characteristics	North India				
	ANY ANC (C.I)	FULL ANC (C.I)	TTV(C.I)	IFA(C.I)	SAFE Delivery (C.I)
<b>Residence</b>					
Rural <sup>R</sup>	1.000	1.000	1.000	1.000	1.000
Urban	1.333,(1.090-1.631)	1.765,(1.558-2.00)	1.223,(1.031-1.450)	1.069,(0.958-1.194)	2.659,(2.553-2.769)
<b>Education</b>					
< 5 Years Schooling <sup>R</sup>	1.000	1.000	1.000	1.000	1.000
> 5 Years schooling	1.544,(1.216-1.961)	1.520,(1.300-1.778)	1.466,(1.195-1.800)	1.461,(1.283-1.664)	2.065,(1.696-2.167)
<b>Age</b>					
< 25 Years <sup>R</sup>	1.000	1.000	1.000	1.000	1.000
>25 Years	1.391,(1.020-1.896)	1.614,(1.343-1.938)	1.178,(0.902-1.539)	1.230,(1.044-1.449)	1.735,(1.629-1.864)
<b>Religion</b>					
Hindu <sup>R</sup>	1.000	1.000	1.000	1.000	1.000
Muslim	0.732,(0.602-0.914)	1.094,(0.926-1.293)	1.021,(0.869-1.199)	0.692,(0.602-0.795)	0.746,(0.715-0.778)
Other	1.410,(0.534-3.719)	1.271,(0.795-2.032)	1.343,(0.553-3.260)	1.696,(1.113-2.584)	2.269,(1.870-2.752)
<b>Caste</b>					
Non SC/ST <sup>R</sup>	1.000	1.000	1.000	1.000	1.000
Others	0.907,(0.779-1.057)	0.615,(0.455-0.695)	0.798,(0.706-0.903)	1.057,(0.960-1.163)	0.772,(0.747-0.797)
<b>Wealth Index</b>					
Poorest <sup>R</sup>	1.000	1.000	1.000	1.000	1.000
Lower Middle	0.830,(0.681-1.013)	1.437,(1.197-1.725)	1.409,(1.210-1.640)	0.877,(0.776-1.003)	1.356,(1.299-1.414)
Middle	1.142,(0.925-1.411)	1.548,(1.287-1.862)	1.457,(1.235-1.719)	0.993,(0.865-1.140)	1.841,(1.761-1.926)
Upper Middle	1.765,(1.416-2.200)	2.017,(1.689-2.409)	1.599,(1.339-1.910)	1.191,(1.040-1.365)	2.571,(2.454-2.694)
Richest	2.987,(2.306-3.871)	2.804,(2.355-3.338)	2.210,(1.772-2.756)	1.528,(1.332-1.752)	5.848,(5.539-6.175)

R= Reference Category