

# Obstetric care practice in Birbhum District, West Bengal, India

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## Abstract

**Background.** The study area is the Birbhum district of the State of West Bengal in India. It is one of the backward districts in India.

**Objectives.** The paper investigates the existing pattern of obstetric health care practices and the factors associated with the utilization of such care.

**Method.** The present analysis includes 495 adult married women of both rural and urban areas of nine Blocks of Birbhum district. Besides performing  $\chi^2$  tests to see the association of the relevant individual and household characteristics, logistic regression was also carried out to measure the effect of these characteristics on the use of obstetric health care.

**Results.** In Birbhum district of West Bengal 65 percent mothers go to doctors for antenatal check-up during their pregnancy, but only 26 percent mothers deliver their babies in institutions and 30 percent mothers get the help of professional health assistants during delivery. Educated women have emphasized role in the practice of obstetric health care. Husband's education and the standard of living of the family also have some effect on the practice of antenatal check up, place of delivery and assistance of health professional. While most of the family background variables have significant effect on the practice of antenatal check up, these variables do not have much effect on the choice of delivery or seeking assistance of health professionals.

Contrary to the popular belief the working status of women does not have favourable influence on the obstetric health care practices. In developing countries like India, it is the poverty, which compels the women to take jobs—that too in low paid jobs especially in rural backward areas.

**Conclusion.** The status of literacy of mothers and standard of living of the family are of prime importance in improving the obstetric health care practices.

**Keywords:** Obstetric health care, family background, socioeconomic condition, logistic regression, Birbhum district, West Bengal, India

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In the Alma Ata Conference, family planning, maternal and child health care and prevention of common diseases were accepted as basic human rights [1]. In India, more than 1 billion people, where the women on an average have three children, a large number of maternal deaths occur. In fact, 440 women die of maternity-related complications for every 100 000 live births. This gives one maternal death per 227 live births on an average. The United Nations [2] estimated that one out of every 55 women in India faces the risk of maternal death, compared with one in 80 in Pakistan and one in 610 in Sri Lanka. According to the World Bank [3], most of the maternal deaths in India can be prevented because many

are due to lack of appropriate care during pregnancy and childbirth.

Global evidence points out the fact that obstetric health care practice has no effect on reducing maternal mortality rate, which is directly linked to the place of delivery [4]. However, in India, data show that 70% of mothers, who had four or more antenatal check-ups, delivered in institutions compared with 7% for those who had no antenatal check-ups [5].

The Reproductive and Child Health Programme emphasizes the need for mothers to deliver babies in hygienic conditions under the supervision of skilled health professionals, but most women in India deliver their babies at home

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without professional help. NFHS-2 [6] estimated that in India, 66% of births during 1998–99, particularly in rural areas, took place at the women's or parents' homes. Among these deliveries, one in seven was attended by health professionals. In West Bengal, NFHS-2 [7] estimated that 90% mothers receive at least one antenatal check-up, 60% babies were delivered at home and 44% mothers receive the help of trained health professionals during delivery. It was found in another survey of North 24 Paraganas district of West Bengal, 71% mothers deliver babies at home [8]. Mukhopadhyay *et al.* [9] studied in the three districts of West Bengal during 1999 and found that women generally disagreed to get institutionalized delivery due to unaffordable cost, unfair behaviour of hospital staff and feeling of insecurity in the hospital.

A number of factors have been seen to be associated with the utilization of obstetric health care. It is directly related with social, cultural and economic factors [10]. Besides socio-economic factors, women's education, birth order and standard of living index have pronounced influence in choosing the health care facility [11, 12]. In India, coexistence of private and public health system is inevitable due to lack of proper public health facilities. But it is evidenced that most of the pregnant women of Indian household, mainly in rural areas, receive preventive care from public health providers than private providers [13].

From Table 1, it is clear that West Bengal is somewhat in a better position than an average Indian State. But since Birbhum is a backward district, it is expected that the corresponding figures for the Birbhum district would be in a lower side.

It is in this background we want to investigate the situation in Birbhum district of West Bengal. The objective of the paper is to examine the pattern of obstetric health care practice and the factors associated with the utilization of such care. Though the study is restricted only to a typical backward district, the result of the study will help in understanding the reproductive health problems not only in West Bengal but also in India, and in South Asia region. It will also help us in finding out the reason why obstetric health care practice is mostly restricted in antenatal check-up and not spreading in institutional delivery and assistance of equipped health workers.

**Table 1** Percentages of mothers getting obstetric care

Area	Antenatal check-up taken at least once (%)	Institutional births (%)	Skilled attendants during deliveries (%)
India <sup>a</sup>	65.4	33.6	42.3
West Bengal <sup>a</sup>	90.0	40.1	44.2
Birbhum <sup>b</sup>	64.6	26.3	30.1

<sup>a</sup>Source: NFHS-2 (1998–99) [6, 7]. <sup>b</sup>Present study.

## Background of the study

Birbhum district is one of the typical backward districts of West Bengal. Agriculturally, the people mainly depend on the traditional system of rain-fed farming, but also use modern irrigation system. Ethnically, the people are proportionately heterogeneous.

During the last decade, several developmental measures were taken in Birbhum. The developmental measures include the construction of all weather roads, minor irrigation projects, distribution of land among the landless, Total Literacy Campaign, etc. It is expected that these developmental measures would have positive effect in changing the socio-economic as well as socio-cultural life of that area.

## Methods

The present study was undertaken in Birbhum district of West Bengal. The time period of data collection was between 1999 and 2001. Six blocks for rural areas and only three blocks for urban areas were selected. From each block, six villages for rural and six wards for urban samples have been selected. From each village and ward, only 20 households were selected. From block to household selection was done by 'simple random sampling without replacement' (SRSWOR) sampling technique. The present analysis included 495 ever married women of both rural and urban sectors, aged 15–49, having at least one child who were born within five years prior to the date of interview. This was done to minimize the recall lapse.

## Maternal care

We have focused on the utilization of three obstetric health care practices among the women of Birbhum district.

*Antenatal check-up.* Information on antenatal check-up includes whether mother was visited by a doctor at least once during her pregnancy. And the responses were binary in nature giving 'Yes' or 'No', representing whether mothers have received any antenatal check-up.

*Place of delivery.* It is an important factor that affects the fatal risk of mother and child during delivery, because, an unhygienic place have a great chance to develop tetanus to both mother and child during delivery. The question was asked to mothers whether the child was born in a hospital/nursing home, etc. The answer was given in terms of 'Yes' or 'No'.

*Assistance during delivery.* Place of delivery is very much related with the assistance during delivery. But we have treated this variable as a separate category, as health professionals may also attend at home during delivery. Here information was collected about whether they received help from health professionals (trained nurse and doctor). The answer is again 'Yes' or 'No'. Here 'No' means the mother was attended by a non-health professional (traditional birth attendant, 'Anganwadi' worker or relatives) during delivery.

## Individual characteristics

We have used the following individual characteristics to explain the above three aspects of obstetric health care.

*Women's age.* Mother's age was grouped into two categories such as below 25 years (younger mother) and 25 years and above (older mother). The main purpose of this dichotomous separation is to see the difference between them in respect of health seeking behaviour, experiences, etc. The younger mothers are more prone to take help of modern medicines and institutional care, as they have a higher chance to become educated than older mothers [14, 15].

*Women's education.* Educated mothers are more likely to receive institutional care and assistance of health professionals. An educated and working mother has a greater confidence and capabilities to make decision about themselves and their children during their illness, as well as to seek modern health facilities [15–19]. Here, mother's educational status was grouped into four categories such as illiterate (those who can neither read nor write), primary (literate up to class IV standard), middle (class V to X standard) and the fourth group is high school and above (class XI and onwards, i.e. Higher Secondary, Graduate or Post graduate, etc).

*Husband's education.* It is expected that apart from the mother's education, father's education has also a great effect on the maternal health care. Father's educational status was also grouped into same four categories.

*Women's working status.* Here women's working status refers to earner or non-earner. Working status of women has been considered due to two reasons. If the mother is working, it means that she is an earning member and has decision-making power to some extent. Also she has better access to go outside and expected to have more knowledge about health care.

## Household characteristics

For household characteristics, we have considered caste or community affiliation and standard of living index only.

*Caste/religion.* The importance of caste/religion is enormous. Here, we have taken only three categories such as Scheduled Castes and Scheduled Tribes combined, Muslims and General caste. In India, Scheduled Castes and Scheduled Tribes are socially and economically backward than General castes. In rural areas, generally they have separate settlements, which are away from the mainstream settlements, and in urban areas, significant portion of them live in the slum areas. Muslims are treated as separate entity.

*Standard of living index.* Standard of living index has been constructed from a set of proxy indicators (followed by NFHS II [6]): house type, availability of water in the premises, toilet facility in the household, electricity, fuel for cooking, ownership of the house, ownership of agricultural land, possession of consumer durable such as tractor, scooter, motorcycle, bicycle, electric fan, radio, TV, water pump, mattress, cot, table, almirah, etc. Each item was

assigned a score ranging from 0 to 4. Thus the total scale of household to which the women belong ranged between 0 and 30. Scale '0–5' was considered as a low standard of living index, '6–14' score was medium and '15–30' was high.

## Analysis

Besides presenting data in the form of tables to see the distributions and the relationships between dependent and independent variables, multivariate logistic regression has been carried out to measure the effect of various individual characteristics as well as household factors on the use of obstetric health care practices. Here logistic regression has been considered separately for each dependent variable. The dependent variables as well as the factors are binary. An estimated odds ratio of 1 indicates that the nature of dependent variable is not different from the reference category. If the estimated odds ratio is  $>1$ , the nature of dependent variable is higher relative to the reference category, and if it is  $<1$ , it is opposite to  $>1$  category.

## Results

Among the three behaviours of obstetric health care practices of women in India, West Bengal and Birbhum, it is seen that West Bengal is somewhat in a better position than an average Indian State and Birbhum district is in a lower side among the three (Table 1).

Younger mothers are more prone to take antenatal check-up than older mothers, though the relationship is not very strong (Table 2). Place of delivery and help of health assistant do not depend much on the age of women. Women's education as well as husband's education are directly related to the utilization of modern maternal health care. This is expected and the Birbhum district is no exception. It is a general trend that a working mother has access to enable more maternal health facilities than a non-working mother. But in Birbhum district, the situation is just the opposite. About 71.9% mothers receive antenatal check-up among the non-working mothers, whereas 49.4% mothers receive it among working mothers. Similar features are also found for help of health assistant during delivery and place of delivery. It is due to the fact that the earnings of most of the working mothers are not much. They are forced to take the job for maintaining their livelihood. Caste/religion is also a significant factor in Birbhum areas. The mothers of General caste are taking more care than those of Scheduled Castes, Scheduled Tribes and Muslims. In general, women with high standard of living have more access to maternal health care than low and middle standard of living classes (Table 2). It is also to be noted that the mothers who received antenatal check-ups were also more likely to deliver their child in an institution.

To see the simultaneous influence on the mother's obstetric health care practices by the concerned variables (dependent variables) with the independent variables, it is best to

**Table 2** Effect of family background on the status of obstetric care

Variables	N	Whether antenatal check-up taken		Delivery in a health institution		Assistance by health professionals		
		Yes (%)	P-value	Institution (%)	P-value	Trained (%)	P-value	
Women's age	<25 years	290	68.3	0.045	26.9	0.703	32.1	0.258
	≥25 years	205	59.5		25.4		27.3	
Women's education	Illiterate	312	55.8	0.000	16.3	0.000	19.6	0.000
	Primary	88	75.0		29.5		33.0	
	Middle	80	81.3		56.3		61.2	
	High school and above	15	100.0		53.3		66.7	
Husband's education	Illiterate	221	49.3	0.000	18.1	0.000	19.5	0.000
	Primary	132	65.9		22.7		30.3	
	Middle	109	88.1		36.7		40.4	
	High school and above	33	84.2		60.6		66.7	
Women's working status	Working	335	71.9	0.000	29.0	0.049	32.8	0.055
	Not-working	160	49.4		20.6		24.4	
Caste/religion	SC and ST	291	57.4	0.000	22.7	0.000	27.5	0.000
	Muslim	107	64.5		15.0		13.1	
	General	97	86.6		49.5		56.7	
Standard of living	Low	166	53.6	0.000	17.5	0.000	20.5	0.000
	Medium	264	63.6		25.4		28.8	
	High	65	96.9		52.3		60.0	
Total		495	64.6	—	26.3	—	30.1	—

use multiple regression because it takes care of confounding effects if there is no multicollinearity problem. The independent variables for each regression are mother's age at delivery, parent's education, working status, caste/religion and standard of living index. All these variables are individually good predictors. Caste/religion and standard of living do not have significant influence on any of the obstetric health care practices. Thus, it is not the religion or standard of living that decides the level of mother's care. Mother's education is the only variable that has very significant effect on the place of delivery. It is not clear why women's education is not a significant factor for antenatal check-up. For antenatal check-up, the variables such as mother's age, husband's education and women's working status are also to count. As age increases, mothers become more confident in taking care of her health herself during the period of pregnancy and do not take help of health professionals. Possibly this is induced by poverty. Use of health professionals is being decided by women's educational level. Working women has less antenatal check-up (Table 3).

## Discussion

In Birbhum, the health infrastructure is not up to the mark [20]. Besides the infrastructure, the accessibility to health centres or hospitals by pregnant women greatly varies over socio-economic and socio-cultural conditions. Parents' education has also great impact on it.

It is very common that working mothers take more antenatal care than the non-working mothers. But in Birbhum areas, the percentage of antenatal check-up is higher among non-working mothers than working mothers and is statistically significant at 1% level. It coincides with the view that in India, women earning is largely poverty-induced and is likely to have a negative impact on the utilization of maternal health care [21].

Standard of living index has also positive impact, as the odds ratio is higher in high standard of living families than in families with low standard of living. In India, it is known that 56% of all pregnant women received no antenatal check-ups, though the proportion varies depending on mother's education and place of residence [6].

In case of delivery assisted by health professionals during delivery, only 30.1% of mothers received it. Caste/religion is a very fluctuating determinant and has regional variations. Standard of living index also has great impact on this practice.

Antenatal check-up is a means to encourage women by the health professionals to deliver in an institution. There is a positive relation between the percentage of antenatal check-up and the percentage of institutional deliveries.

The study indicates that educated women with high standard of living have an emphasized role in the practice of more maternal health care. Among the literate mothers, 80% receive antenatal check-up, 43% receive institutionalized delivery and 48% mothers get the help of professional health workers during delivery. On the contrary, among illiterate mothers, the corresponding percentages are nearly half of

**Table 3** Results of logistic regression on the status of antenatal check-up, place of delivery and assistance of health professionals

Variables	Antenatal check-up			Delivery in a health institution			Assistance of health professionals		
	Odds ratios	95% confidence intervals		Odds ratios	95% confidence intervals		Odds ratios	95% confidence intervals	
		Lower boundary	Upper boundary		Lower boundary	Upper boundary		Lower boundary	Upper boundary
Women's age									
<25 years <sup>1</sup>	1.00			1.00			1.00		
≥25 years	0.66*	0.44	0.99	1.09	0.70	1.68	0.90	0.59	1.37
Women's education									
Illiterate <sup>1</sup>	1.00			1.00			1.00		
Literate	1.27	0.72	2.24	4.19**	2.29	7.66	3.34**	1.92	5.82
Husband's education									
Illiterate <sup>1</sup>	1.00			1.00			1.00		
Literate	2.40**	1.46	3.95	0.80	0.44	1.46	1.19	0.6	2.08
Women's working status									
Not working <sup>1</sup>	1.00			1.00			1.00		
Working	0.61**	0.39	0.95	0.99	0.58	1.68	0.90	0.59	1.37
Caste/religion									
SC/ST <sup>1</sup>	1.00			1.00			1.00		
Muslim and General caste	1.37	0.86	2.17	0.92	0.57	1.50	0.77	0.48	1.24
Standard of living index									
Low <sup>1</sup> (0–5)	1.00			1.00			1.00		
Medium (6–14) and high (15–30)	1.25	0.81	1.93	1.44	0.86	2.41	1.46	0.90	2.38

\*Significant at 5% level. \*\*Significant at 1% level. <sup>1</sup>Reference category.

the above three percentages. Another feature is that only 26.3% mothers deliver babies in hospital and 30.1% mothers get the help of professional health assistants during delivery. So the practice of home delivery with the help of untrained health workers or elder persons is still continuing. The study also suggests that modern outlook of obstetric health care practice is restricted only to antenatal check-up, but the practice of institutionalized delivery and help of trained personnel during delivery is still very unsatisfactory. This is mainly due to the low economic condition. The findings of this study show that rural antenatal care is still mostly based on Indian traditional system. It is the women who need to be educated and must be made aware about the importance of health care for ensuring healthy pregnancy and safe delivery.

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