

Factors Influencing Women Receiving Safe Child-Delivery Care in Bangladesh

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Abstract

Worldwide, every minute of every day, a woman dies of pregnancy-related complications, resulting in 586,000 women dying each year (Barkat et al. 1998). Estimates of the maternal mortality ratio in Bangladesh range from 320 to 400 maternal deaths per 100,000 live births, which is considerably higher compared to other developing countries (Hill et al. 2001). The majority of these deaths could be prevented if professionally skilled health personnel were present during child-delivery. Despite the availability of primary healthcare infrastructure at the grassroots level, home births are still common in Bangladesh (90%). About 44% of women do not receive antenatal care. Overall, 71% of urban women receive antenatal care from a medically trained person, compared with 43% of rural women. Only about 13% of women delivered their most recent baby with the assistance of a professionally skilled health provider. This paper examines the factors that influence women receiving safe child-delivery care in Bangladesh using multivariate logistic regression analysis of Bangladesh Demographic and Health Survey (BDHS), 2004 data. The study shows that demographic and socio-economic factors were the most important aspects that influence women receiving safe child-delivery care in Bangladesh. The independent factors influencing women receiving safe child-delivery care included maternal age, antenatal checkup, problems during delivery, education of mothers, place of residence and household economic status.

Introduction

Every minute of every day, a woman dies due to pregnancy-related complications (Barkat et al. 1998), and 99% of all such deaths occur in developing countries (Akhter et al. 1996). In Bangladesh,

approximately four of every 1,000 mothers who become pregnant die of causes related to pregnancy and birth (Hill et al. 2001). Home births are still common in Bangladesh despite efforts to increase institutional care to help promote safe child-delivery care. About 87% of mothers in Bangladesh deliver at home with the help of unskilled birth attendants in poor hygienic conditions – placing the lives of both mother and child at risk. It is well-established that giving birth under the care and supervision of skilled healthcare providers promotes child survival and reduces the risk of maternal mortality and morbidity (Sugathan et al. 2001). Women play a principal role in rearing children and their death due to maternity-related causes is a significant traumatic effect on the child, the family and the community as a whole. Delivery of a child requires a safe and healthy environment and needs to be attended by skilled personnel. The underutilization of the existing health services is a global problem, evidenced in different countries (Hill et al. 2001). Very little is known about the current magnitude and factors that influence women receiving safe child-delivery care in Bangladesh. The purpose of this paper is to assess the factors in Bangladesh affecting women receiving safe child-delivery care.

Materials and Methods

Data for this study were obtained from the Bangladesh Demographic and Health Survey 2004, which is a nationally representative sample survey. The present study is based on 5,416 women, who had at least one child less than five years of age at the time of survey. The women who had births five years prior to the survey were specifically asked about the place of child-delivery and type of person who attended the delivery.

The variables included in the analysis are maternal age at birth, child's birth order, antenatal care, delivery complications, educational status of women, exposure to mass media, place of residence, region and household economic status.

Method of Analysis

The unit of analysis for this study was women who had at least one live birth in the five years preceding the survey. Both bi-variate and multivariate analyses were carried out to understand the factors that influence women receiving safe child-delivery. Since logistic regression analysis was performed, the dependent variable was dichotomized whether or not the women had experienced safe child-delivery (we assumed safe delivery is equal to one; otherwise, it is zero). The results of the logistic regression analysis are presented in the form of odds ratios.

Results

In Bangladesh, according to the BDHS 2004, professional skilled persons attended about 13% of child-deliveries. The information in this regard revealed that traditional birth attendants (TBA) assisted 77% of births (14% assisted by trained TBAs and 63% by untrained TBAs); relatives and friends assisted another 9% of births. Both bi-variate and multivariate analysis suggests that safe child-delivery depends on many factors, which are discussed below.

Age of Mother at Delivery

Results of bi-variate analysis show that older mothers (≥ 25 years) were somewhat more likely to receive safe child-delivery care than younger mothers. Thirteen per cent of women aged 25 years or over received safe child-delivery care, while 15% of women below age 25 received this care. Logistic regression analysis shows that a woman's age has a positive effect on the odds of safe child-delivery, controlling other variables. Women 25 years and over were 2.16 times more likely ($p < 0.001$) to receive safe child-delivery care than women below age 25.

Birth Order

Bi-variate analysis shows that 24% of women received professionally assisted child-delivery care for first-order birth, while this practice for second-, third-, fourth- or higher-order births were

14.8%, 10.0% and 6.5% respectively. Multivariate analysis suggests that, when other variables are controlled, birth order of the child has significant negative effect on whether a woman will receive safe child-delivery care. The odds of safe child-delivery were approximately four times higher for the first-order births as opposed to fourth- or higher-order births. The analysis also suggests that second-, third- and higher-order births – 41%, 65% and 70% respectively – women are less likely to receive safe child-delivery care than first-order births.

Antenatal Care

Despite availability of primary healthcare infrastructure at the grassroots level, the majority of pregnant women (44%) do not seek antenatal care service in Bangladesh. About 23% of mothers who received antenatal care during their last pregnancy had their delivery attended by a skilled health provider; 3.3% of mothers did not receive such care. Poor quality of care, misperceptions regarding need for care and other social barriers underlie the low level of care-seeking behaviour by expectant mothers. Multivariate analysis revealed that antenatal checkup has a large effect on the likelihood of receiving safe child-delivery care. Mothers who received at least one antenatal checkup during their last pregnancy were 3.52 times ($p < 0.001$) more likely to receive safe child-delivery care than mothers who did not have an antenatal checkup.

Table 1. Distribution of factors influencing safe child-delivery care in Bangladesh

Factors	Total Women	Received Safe Child-delivery Care (%)	Adjusted Odds Ratio ^y
Women's age (in years) at delivery			
< 25 years (<i>Ref.</i>)	3,417	14.8	1
≥ 25 years	1,999	13.1	2.16*
Child's birth order			
1 (<i>Ref.</i>)	1,491	24.2	1
2	1,384	14.8	0.59*
3	993	10.1	0.35*
4+	1,548	6.5	0.30*
Received antenatal checkup			
No (<i>Ref.</i>)	2,391	3.3	1
Yes	3,025	22.7	3.52*
Delivery complications			
No (<i>Ref.</i>)	3,991	11.7	1
Yes	1,425	21.1	2.38*
Place of residence			
Rural (<i>Ref.</i>)	4,293	9.7	1
Urban	1,123	31.1	2.04*

Table 1 continued

Region			
Sylhet (<i>Ref.</i>)	400	12.0	1
Chittagong	1,115	12.2	0.69
Dhaka	1,677	16.0	0.99
Rajshahi	1,284	10.9	0.90
Barisal	333	12.3	0.99
Khulna	607	21.7	1.35
Mother's education			
No Education (<i>Ref.</i>)	1,997	4.5	1
Primary	1,642	10.0	1.38**
Secondary or higher	1,777	28.8	2.45*
Exposure to mass media			
No (<i>Ref.</i>)	2,291	5.2	1
Yes	3,125	20.7	1.44*
Household economic status			
Poor (<i>Ref.</i>)	2,421	3.8	1
Middle	2,051	14.0	2.11*
Rich	944	41.0	4.40*
N	5,416	14.2	

Y Adjusted for all variables included in the table.

* $p < 0.001$, ** $p < 0.05$

Child-delivery Complications

Among mothers who had any sort of child-delivery complications, about 21% of them received safe child-delivery care; 12% of mothers received safe child-delivery care who did not have any delivery complications. As expected, multivariate analysis also shows that receiving safe child-delivery care was 2.38 times ($p < 0.001$) higher among mothers who had faced any kind of complications during delivery.

Place of Residence

A significant association is found between two variables: place of residence and receiving safe child-delivery care. Women from urban areas tended to exhibit the higher use of safe child-delivery care (31.3%) compared to rural areas (9.7%). The adjusted odds ratio indicates that professionally assisted child-delivery care was 2.04 times ($p < 0.001$) higher for women who reside in urban areas than for those who live in rural areas. There were significant rural-urban differences; however, by region, the difference in how many women received safe child-delivery care was small. Mothers from Khulna region were more likely to receive safe child-delivery care (21.7%) compared to other regions that were studied.

Women's Education

Receiving safe child-delivery care is positively related with a woman's education. About 29% of women with secondary or higher education received safe child-delivery care, while 10% and 4.5% of women with primary and no education, respectively, received safe child-delivery care. Multivariate analysis shows that a woman's level of education has a large and significant effect on the odds of safe child-delivery.

Exposure to Mass Media

Twenty-one per cent of women who had regular exposure to mass media (i.e., weekly exposure to television, radio or newspaper) received safe child-delivery care; for women not exposed to mass media, the percentage dropped to 5.2. Logistic regression analysis indicates receiving safe child-delivery care was 1.44 times ($p < 0.001$) higher among women who were exposed to television.

Household Economic Status

Respondents have been categorized into different economic levels using an index of asset ownership or wealth rather than in terms of income or consumption (Filmer and Pritchett 1998; Gwatkin et al. 2000). Information regarding the household items (i.e., bicycle, television, radio or car) and dwelling characteristics, such as main floor materials, main roof materials, sources of drinking water and sanitation facilities, were assigned a weight or factor score generated through principle component analysis (score is not shown here). Women were ranked according to their total scores and divided into five quintiles (Q1, Q2, Q3, Q4 and Q5) to understand the health inequality. Among the five quintiles Q1 and Q2 were considered as the poorest group, Q3, Q4 as the middle and Q5 the richest group.

Bi-variate analysis showed that only 3.8% women belonging to households of the poorest economic group received safe child-delivery care, while 14% and 41% of women belonging to middle and rich economic groups, respectively, received safe child-delivery care.

Discussion and Conclusion

This study identified several factors that influenced women receiving safe child-delivery care in Bangladesh: maternal age at birth, birth order, antenatal checkup, delivery complications, place of residence, education, exposure to mass media and household economic status. A woman's age has a strong positive effect on receiving safe child-delivery care; on the other hand, birth order has a strong negative effect on receiving safe child-delivery care. The effects of maternal age and birth order indicate that women who delayed childbearing are more likely to receive safe child-delivery care than other women. Overall, the analysis indicates that receiving one or more antenatal checkup is the strongest predictor of institutional delivery. Health professionals who provided the antenatal care are likely to encourage mothers to deliver their baby in a health facility. Antenatal care reduces a woman's health complications and also improves the physical condition of the newborn child. This finding has important program implications. It suggests that it is possible to promote safe child-delivery care by expanding antenatal-care coverage with associated counseling.

Among the other important predictor variables considered, a woman's education has a strong positive effect on the odds of safe delivery. Education and mass media can play important roles in improving women's health-seeking behaviour, but in rural areas, people, especially women, get little access to these facilities. In urban settings, women learn from billboards, day-to-day observations, rallies, television, etc., but in rural areas, these opportunities are mostly absent. As expected, in both urban and rural areas, household economic status also has a positive impact on women receiving safe child-delivery care, that is, the richer the family, the greater the likelihood women will receive safe child-delivery care.

Areas for Focus

A key lesson here is that good quality and sustained supervision and support are indispensable for the improvement of healthcare services of pregnant women. The second key lesson is the need to reach families and communities with targeted messages and information. Families and communities require information to make healthy decisions regarding the care of pregnant women. Recent reviews on neonatal health suggest that other community-based interventions, such as health education to improve neonatal care practices and care-seeking for illness, as well as creating demand for skilled care, can improve neonatal survival.

Among women who experienced complications during childbirth, only one in three sought assistance from trained health providers, another one in three women used the services of unqualified providers and one in three sought no health provider at all. As awareness of the dangers of childbirth is raised, families must be motivated to make use of medically trained providers for these complications. Antenatal care, safe child-delivery care and postnatal checkups must be promoted as a total package of safe maternity care.

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