Determinants of Safe-delivery Practices in Rural Bangladesh: Evidence from the Bangladesh Demographic and Health Survey 1996-1997

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Contents

Abstract

This paper investigates the selected demographic, socioeconomic, cultural and programmatic factors associated with safe-delivery practices in rural Bangladesh. The paper is based on the national-level data drawn from the Bangladesh Demographic and Health Survey 1996-1997 with a sample of 6,160 ever-married women of reproductive age who had at least one delivery before they were interviewed. In this analysis, *safe-delivery practices* refer to a delivery assisted by a medically trained person, such as doctor, nurse, paramedic and trained traditional birth attendant (TBA). Descriptive statistics and multivariate regression methods were employed in analyzing data.

The data show that almost all the deliveries (95%) took place at the homes of the women, and most of them (84%) were assisted by untrained TBAs, relatives, or neighbours in unsafe and unhygienic conditions. Only 16 percent of the deliveries were assisted by the medically trained persons, such as registered physicians, nurses, paramedics and trained TBAs.

Multivariate regression results show that the uneducated women are less likely to have safe-deliveries. Exposure to television is positively associated with safe-delivery practices. Conservatism and religious taboos are likely to affect the delivery practices, since Muslim women are less likely to have safe-delivery practices compared to non-muslim women. The results suggest the need for behaviour change communication activities to be undertaken to educate the community people, particularly the uneducated and conservative women, about the benefits of safe-delivery practices.

Introduction

Maternal mortality rates are very high in developing countries, and exceed 1000/1,00,000 live-births in approximately 21 developing countries [1]. The situation in South Asia is more precarious, which accounts for about half of the global maternal deaths [2]. Despite some improvement, maternal mortality rate in Bangladesh is still very high (4.5 per 1,000 live-births), even by the standards of other developing countries [3, 4].

Delivery-related complication is one of the leading causes of maternal mortality in Bangladesh [5]. Result of a study conducted in rural Bangladesh showed that one-third of the women experienced delivery-related complications during their last delivery [6]. Result of another study showed that prolonged labour was the most common delivery-related complication, followed by haemorrhage and retained placenta [7].

The high rate of maternal mortality in Bangladesh can partially be reduced through safe-delivery practices among rural women. Safe delivery reduces the probability of mortality of mother and her baby [8]. Some studies have shown that the probability of survival of the baby declines with the death of a mother. On the other hand, when a baby dies, the mother soon gets pregnant. Such repeated pregnancy taxes the health of the mother and threatens both her life and that of the foetus [9].

In many developing countries, the safe-delivery facilities are grossly underused [10]. In Bangladesh, a vast infrastructure exists to provide maternal healthcare, including delivery services, to rural women under the national health and family planning programme. The government health centres, such as Thana Health Complexes (THCs) and Health and Family Welfare Centres (HFWCs) at the union level, provide maternal health care including delivery services free of charge to the rural population[1]. However, the use rates of delivery services of these health centres are very low [11]. Most deliveries take place at homes, and are assisted by untrained traditional birth attendants (UTBAs) and relatives [4]. The deliveries which take place at homes and are assisted by untrained birth attendants are very often done in unsafe and unhygienic conditions, resulting in high risk of maternal and neonatal morbidity and mortality [12,9].

[1] In Bangladesh, medical colleges, district hospitals and maternal and child welfare centrrs (MCWC) work as comprehensive EOC facilities; THCs as basic EOC facilities; while union HFWCs provide first aid EOC services. Besides, comprehensive EOC services are also available in several THCs under special projects.

Objective

The objective of this paper was to investigate the selected demographic, socioeconomic, cultural and programmatic factors associated with safe-delivery practices in rural Bangladesh.

Materials and Methods

Data source

This paper is based on the secondary analysis of the national-level data drawn from the Bangladesh Demographic and Health Survey 1996-1997. (For details about sample design, see Mitra *et al.,* 1997 [4]). The sample for this analysis consisted of 6,160 ever-married women aged 10-49 years who had at least one delivery before the interview. (The women who did not have any delivery before the interview were excluded from the analysis).

Data analysis

Descriptive statistics and multivariate regression methods were employed in analyzing data.

In our analysis, *safe-delivery practices* refer to a delivery assisted by a medically trained person, such as doctor, nurse, paramedic, and trained TBA. To examine the effects of selected demographic, socioeconomic, cultural and programmatic factors on the safe-delivery practices of rural women, a logistic regression model was used. In this model, the dependent variable was: delivery assisted by a medically trained person during last delivery (dichotomous variable). The independent variables were: age, education, employment status, religion, prior visit to healthcare facilities, e.g. visit to satellite clinic, and ownership of TV.

Limitations

Besides the selected demographic, socioeconomic, cultural and programmatic factors which have been included in this analysis, a host of other programmatic e.g. accessibility, quality and costs of delivery services, etc. and cultural factors e.g. religiosity, prejudices, women's role in decision making process, subordinate status of women, etc. are also likely to influence the delivery practices of rural women. However, due to lack of relevant data, the effects of these programmatic and cultural factors on the delivery practices could not be examined in this paper. Also, the available data did not permit us to examine all aspects of the delivery practices.

Results

Background characteristics

The background characteristics of the samples considered for analysis are shown in Table 1. The table shows that three quarters of the women were aged less than 30 years, and about half of the women had 3 or more children. Over half of the women were uneducated. Only one-quarter had 5 years or more of schooling. Most of the women were housewives, but one-fifth of them worked for earning.

Table 1. Background characteristics of the respondents (n=6,160)

Variable	% of women	Variable	% of women
Age in years		**Parity**	
<20	15.7	0-2	52.0
20-24	31.0	3-4	31.4
25-29	28.7	5+	16.6
30-34	14.4		
35-40	6.8	**Religion**	
40+	3.3	Muslim	91.7
		Hindu	8.3
Education			
None	59.4	**Ownership of**	
1-4 years	15.2	TV	9.5
5 years+	25.4	Radio	29.6
		None	60.9
Employment			
Housewife	80.4	**Visit to SC**	
Work for earning	19.6	Ever visit	55.3
		Never visit	44.7

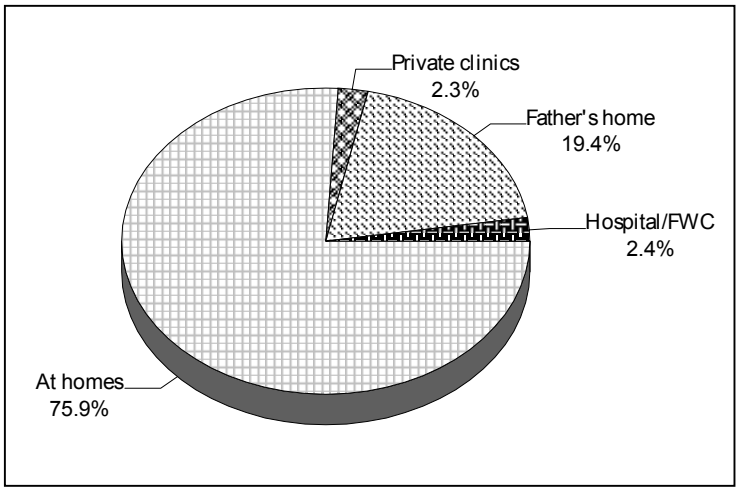
About one-third (29.6%) of the women reported that they owned a radio; however, only 9.5 percent reported to have owned a television.

Regarding prior exposure to the healthcare centre, over half (55.3%) of the women visited a satellite clinic (SC) before their last delivery.

Delivery practices

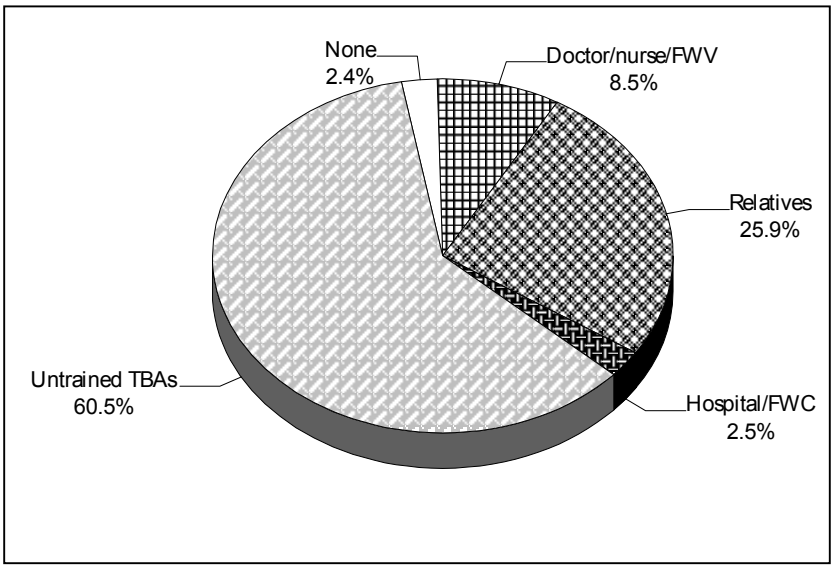
Almost all the deliveries (95%) took place at homes. Only 2.4 percent of the deliveries were conducted at the government healthcare facilities, such as hospitals, THCs and HFWCs. A similar percentage of the deliveries was also conducted at the private clinics. About three-quarters (75.9%) of the deliveries took place at the homes of the women; while one-fifth (19.4%) took place at their father's homes (Fig.1).

Fig. 1. Distribution of places where deliveries took place



Most deliveries were assisted by the untrained traditional birth attendants (TBAs) called *dais*, and relatives. Only eight percent of the deliveries were assisted by the doctors, nurses, and paramedics, while an another eight percent by the trained traditional birth attendants (TTBAs) (Fig. 2).

Fig. 2. Distribution of deliveries by types of attendant



Regression results

In rural Bangladesh, most deliveries take place at homes and are assisted by untrained TBAs, dais, relatives or neighbours generally in unsafe and unhygienic conditions. Only a small proportion (16%) of the deliveries is assisted by medically trained persons, such as doctors, nurses, paramedics, and trained TBAs. To investigate the selected demographic, socioeconomic, cultural and programmatic factors associated with delivery assisted by a medically trained person, a logistic regression analysis was done. In this analysis, the dependent variable was: delivery assisted by a medically trained person during last delivery (dichotomous variable). The independent variables included a number of selected demographic, socioeconomic, cultural and programmatic variables (see data analysis on page 2). The results of this analysis are presented in Table 2. It shows that the likelihood of delivery assisted by the medically trained persons increased with the increase of age up to 34 years, and then it declined in the same order. The 30-34-year age-group had the highest probability of having their deliveries assisted by medically trained persons.

As expected, the uneducated women were less likely to have their deliveries assisted by a medically trained person. The women with 5 or more years of schooling had 2.5 times higher probability of having their deliveries assisted by a medically trained person than the uneducated women.

Table 2. Logistic regression odds ratios: demographic, socioeconomic and programmatic factors associated with delivery assisted by medically trained persons

Variable	Odds ratio
Age (in years)	
<20 (RC)†	1.00
20-24	1.28
25-29	1.32*
30-34	1.47**
35-39	1.16
40 years+	1.15
Education	
No education (RC)	1.00
1-4 years	1.68***
5 years+	3.53***
Employment	
Housewife (RC)	1.00
Work for earning	0.88
Religion	
Hindu (RC)	1.00
Muslim	0.52***
Ownership of radio/TV	
None (RC)	1.00
Radio	1.13
TV	4.77***
Satellite Clinic visit	
Never visited (RC)	1.00
Ever visited	0.92

†RC = Reference category; *p<0.05; ** p<0.01; *** p<0.001.

Religion was significantly associated with the safe-delivery practices. The Hindu women had 50 percent higher probability of having their deliveries assisted by medically trained persons. There are two plausible explanations of this. The first one is that the Hindus are less conservative than the Muslims, which lead them to have their deliveries assisted by medically trained persons in a relatively higher proportion than the Muslims. The second explanation is that the Hindu women often come to health facilities to have their delivery not because they consider it safer, but to escape from rituals and difficulties arising out of their beliefs in "*untouchable*" state of parturient women. The Hindu common people consider it religiously binding to throw away or burn all the materials, dresses, clothes, mat, etc. used by and for the mother during delivery. This turns out to be expensive for poor families, and as such they go to a health facility for delivery. If the delivery is conducted at a health facility, they can save their clothes, dresses, mats/beds, etc., since these are provided by the health facility. However, we do not have any data to support either of the explanations.

Ownership of television (TV) was significantly associated with the safe-delivery practices. Those women who had TV had four times higher probability of having their deliveries assisted by a medically trained person. The possession of TV could be interpreted as a property indicator, and as such, the effects of exposure to TV could also be a function of high-economic status. However, due to lack of data on income or economic status, we could not examine the effects of economic status on safe-delivery practices.

Discussion and Conclusion

For traditional and cultural reasons, many people in developing countries still prefer that births be attended by a TBA, rather than a medically trained person. As a result, delivery facilities, including comprehensive and basic EOC facilities, remain underused [10]. The findings of this analysis suggest a similar conclusion. Result of our analysis has shown that almost all the deliveries took place at homes, and 84 percent of these deliveries were assisted by the medically untrained persons, such as TBAs, relatives, or neighbours. The deliveries, which take place at homes and are assisted by medically untrained persons, are likely to be done in unsafe and unhygienic conditions, which often result in delivery-related complications leading to maternal and neonatal morbidity and mortality [12, 9].

To improve the delivery skills of the TBAs, the Government of Bangladesh undertook a huge training programme in 1980s. Under this programme, 68,000 TBAs, one from each village, have been trained on delivery and referral skills. The training was conducted for 21 days divided into three phases over a 3 months period. Each of the trained TBAs was provided with a TBA kit containing necessary items to assist delivery in a hygienic condition [13]. However, the results indicate that these trained TBAs are grossly underused. The results of our analysis show that only 7.6 percent of the deliveries were assisted by the trained TBAs. This emphasizes the need for linking the trained TBAs with the health services systems to ensure maximum use of the services of the trained TBAs.

It appeared from our analysis that, like many developing countries, over half of the deliveries were assisted by the untrained TBAs. These untrained TBAs often play an important role in determining maternal and health outcomes by way of their practices and willingness to make referrals. Therefore, the untrained TBAs should also be given training to improve their delivery and referral skills and linked with the health services system.

Community is an important factor that affects safe-delivery practices in all settings. The regression results show that the uneducated women and the women aged less than 25 years or aged over 34 years are less likely to have their deliveries assisted by a medically trained person. This underscores the need for appropriate behaviour change communication (BCC) strategies to make the community people, particularly the uneducated women, and relatively younger or older women aware of the benefits of safe delivery by medically trained persons.

Religion is also significantly associated with the delivery practices. Muslim women are less likely to have their delivery assisted by medically trained persons probably because of their conservatism and religious taboos (which might be one of the plausible reasons). Appropriate BCC activities need to be undertaken to overcome conservatism and religious taboos against delivery.

Our study has shown that exposure to television was significantly associated with the safe-delivery practices. Due to lack of data on income or economic status, we could not measure precisely the effects of exposure to TV on the safe-delivery practices, controlling for economic status variables. (It might be a function of higher economic status, since possession of TV might be considered a property variable). However, it could be suggested that BCC activities through electronic media, such as television, should be intensified to reach the message of the benefits of safe-delivery practices to the community people.

Finally, there is a need for further investigation to examine the effects of some programmatic (e.g. accessibility, quality, and cost of delivery services) and cultural factors (e.g. religiosity, prejudices, women's role in the decision-making process, subordinate status of women, etc.) on the safe-delivery practices of the rural women.

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