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**FACTORS INFLUENCING HOME DELIVERY ASSISTED BY TRADITIONAL
BIRTH ATTENDANTS IN BANGLADESH**

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Abstract

Background: Bangladesh is committed to achieve Millennium Development Goals, especially to reduce maternal mortality ratio (143 per 100,000 live births by 2015) and infant mortality rate (32 per 1000 live births by 2015). Since traditional birth attendant (TBA) assisted home delivery is responsible for maternal and newborn deaths, it is important to characterize women who are assisted by TBAs for designing specific interventions to such groups. This study was conducted to find out the factors affecting the home delivery assisted by TBAs in Meherpur district of Bangladesh.

Methods: A cross sectional study was conducted, targeting the women who gave birth within one year prior to the survey. Binary logistic model was used to explore the factors influencing home delivery assisted by traditional birth attendants.

Results: A total 250 mothers were interviewed for this study. Fifty two percent mothers reported to have delivered at home assisted by TBA. Compared to women aged 25 years or less, women aged more than 25 years were 0.461 times less likely to be assisted by TBAs during delivery (OR=0.461, 95% CI: 0.247- 0.863). Mothers having secondary or higher education were 0.283 times less likely to be assisted by TBAs compared to those who had attained 5 years or less education (OR=0.283, 95% CI: 0.139- 0.578). Women having monthly family income 5001-10000 BDT, were 0.363 times less likely to be delivered by TBAs than the women having family income less than 5000 BDT (OR=0.363, 95% CI: 0.166- 0.793). Women, who received more than three ANC, were 0.346 times less likely to be delivered by TBAs than who received 3 ANC or less (OR=0.346, 95% CI: 0.189- 0.631)

Conclusion: Findings from this study shows that TBA assisted home delivery is associated with young maternal age, low education, low family income and low ANC visits. To reduce maternal and neonatal mortality in the study area, these factors should be considered in the design of interventions.

Keywords: Home delivery, Traditional Birth Attendants, Meherpur, Bangladesh.

1. Background

Maternal and neonatal mortality is a global health concern and every year a large number of mother and infant are dying due to pregnancy related causes. Demographic and Health Survey data from 40 countries collected between 1995 and 2003 revealed that more than 50% of neonatal deaths occur after home birth in the absence of skilled care attendance (Lawn et al., 2005). A large number of mothers die due to pregnancy-related causes (Ronsmans & Graham, 2006). It is known that maternal mortality can be reduced by ensuring skilled birth attendant at the time to delivery (de Bernis et al., 2003; De Brouwere et al., 1998; Kwast, 1996). Rasch emphasized that the presence of skilled birth attendance during delivery is necessary for this reduction (Rasch, 2007). Therefore, skilled birth attendants at delivery are very important to prevent both maternal and newborn deaths. But many deliveries in developing countries still occur at home in the absence of skilled birth attendance (Bell et al., 2003).

In Millennium Development Goal (MDG), special importance is given on the reduction of maternal and child mortality (Bryce et al., 2008). Bangladesh is committed to achieve Millennium Development Goals, especially to reduce maternal mortality ratio (143 per 100,000 live births by 2015) and infant mortality rate (32 per 1000 live births by 2015). Though skilled birth attendants (SBA) assisted delivery is considered as an indicator for measuring progress towards reducing maternal mortality, TBA assisted home delivery is still high in our country. Bangladesh Demographic Health Survey shows that 71% delivery occurs in home and of these deliveries, 53% are assisted by traditional birth attendants (BDHS, 2013).

Place of delivery with its determinants has long been on the research agenda (Campbell & Graham, 2006). The most consistent factors that are associated with receiving skilled delivery care are higher maternal age, low parity, maternal education and higher household economic resources (Gabrysch & Campbell, 2009). The main reasons for home deliveries are distance to health facilities; cost for medical care; delivery complications; high birth order; low education level and absence of ANC (Faye et al., 2011; Gabrysch & Campbell, 2009; Paul & Rumsey, 2002). In Bangladesh, low income families are less likely to be assisted by skilled birth attendants during delivery (Anwar et al., 2008).

Several studies have conducted in Bangladesh regarding the place of delivery and skilled care attendants (Anwar et al., 2008; BDHS, 2013; BMMHCS, 2012; Pervin et al., 2012). But very

few studies have focused on TBA assisted home delivery. Since TBA assisted home delivery is one of the reasons for maternal mortality and morbidity, it is important to characterize women who are assisted by TBAs for designing specific interventions to such groups. This study aims to find out the factors affecting the home delivery assisted by TBAs in Meherpur district of Bangladesh.

2. Methodology

2.1 Study design:

Cross sectional survey design was used in the study. Mothers having children 0-12 month old were interviewed in Meherpur district, Bangladesh. Mothers enlisted in the FWA (Family Welfare Assistant) register of Family planning department were our target population. Among the 112 working units of family planning in Meherpur district, 25 units were selected at random. Drawing ten samples from each cluster on random basis, a total of 250 mothers were selected for the interview. It is necessary to mention that number of population and number of eligible couple of all units were almost same. If any randomly selected mother remained absent at the time of data collection, replacement strategy was applied to select another mother within the cluster.

For data collection, a structured questionnaire with some open questions was used. To test the validity and reliability of the questions, the questionnaire was pre-tested in a similar population in a neighboring district. Twenty five Family Welfare Assistants (FWAs) were employed for data collection, since FWAs were used to go to house to house for their working purposes. They were given training on objective of the study, content of the questionnaire, and technique to collect accurate information from the respondents.

2.2 Data analysis:

After collecting data from field interview, data were analyzed with the help of SPSS program. First, Descriptive statistics such as frequency, percentage, proportions etc were used to describe the sample according to the outcome of interest. Second, chi-square test was done to find association between TBA assisted home delivery and socio-demographic factors. Finally, binary logistic model was used to explore the factors influencing home delivery assisted by traditional birth attendants. In order to predict whether delivery care from traditional birth attendants would be sought, “traditional birth attendant” was coded as “1”

and other types of care as “0”. Here the known influence of predictors was taken into consideration.

3. Results

A total of 250 women who gave birth within twelve months prior to the survey, were interviewed for the study. Their mean age was 24.92 with standard deviation 5.08 and more than half of the respondents (64.4%) were aged above 25 years. Thirty six percent of the mothers and 37% of their husbands had secondary or higher education. Most of the respondent's (68.8%) monthly family income was 5000 BDT or less. Number of children ever born ranged from 1 to 6 with a median of 2 and most of mothers (67.6%) had more than one child (table 1). Respondents were asked whether they received antenatal care (ANC) during the most recent pregnancy and for those who received; the number of ANC visits was obtained. It was found that 42.2% mothers received more than three ANC and a few of them (6%) didn't receive any ANC during their last pregnancy (table not shown). About half of the mothers (51.6%) reported to have delivered at home assisted by TBAs (table 1).

Table 1 also shows that TBA assisted home delivery is significantly associated with mother's age, education, husband education, family income and number of ANC visits. Proportion of mothers who were attended during home delivery by TBA were seen to decrease from 53.4% among women aged 25 years or less to only 39.3% among women aged above 25 years ($p < 0.05$). Women having more than 5 years of education, reported to have lower proportion (25.8%) of TBA assisted home deliveries compared to those who had primary or less education ($p < 0.01$). The proportion of TBA assisted home delivery was seen to decrease with increasing years of husband schooling from 57% among husband having 5 years of schooling or less to 37% among husband having secondary or higher education ($p < 0.001$). A higher proportion of the women (58.7%) having monthly family income 5000 BDT or less, reported to have TBA assisted home delivery compared to the women having family income more than 5000 BDT ($p < 0.001$). The proportion of TBA assisted home delivery was also seen to decrease with increasing ANC visits ($p < 0.001$).

Table 1: Socio-demographic characteristics of the respondents by delivery assistance

Characteristics	n (%)	% TBA assisted home delivery	χ^2 -test	p-value
Age (years)				
≤ 25	161 (35.6)	53.4	4.556	.033
> 25	89 (64.4)	39.3		
Mother's education (in years)				
0-5	161 (64.4)	60.9	28.157	.000
> 5	89 (35.6)	25.8		
Husband's education				
0-5	151 (60.4)	57	11.171	.001
> 5	99 (36.6)	35.4		
Family income (BDT)				
≤ 5000	172 (68.8)	58.7	23.718	.000
5001-1000	58 (23.2)	24.1		
> 1000	20 (8)	30		
No. of ANC visits				
≤ 3	144 (57.6)	61.1	21.972	.000
> 3	106 (42.4)	31.1		
Parity				
Primipara	81 (32.4)	46.9	0.106	.745
Multipara	169 (67.6)	49.1		
Total	250 (100)	51.6		

Table 2 presents factors associated with TBA assisted home deliveries that were considered in the multivariate logistic regression analysis. Parity and husband education were not significantly associated with TBA assistance during delivery. Age group, mother's education, monthly family income and number of ANC visits, were significantly associated with TBA assisted home delivery. Compared to women aged 25 years or less, women aged more than 25 years were 0.461 times less likely to be assisted by TBAs during delivery (OR=0.461, 95% CI: 0.247- 0.863). Mothers having secondary or higher education were 0.283 times less likely to be assisted by TBAs compared to those who had attained 5 years or less education (OR=0.283, 95% CI: 0.139- 0.578). Women having monthly family income 5001- 10000 BDT, were 0.363 times less likely to be delivered by TBAs than the women having family income less than 5000 BDT (OR=0.363, 95% CI: 0.166- 0.793). Women, who received more than three ANC, were 0.346 times less likely to be delivered by TBAs than who received 3 ANC or less (OR=0.346, 95% CI: 0.189- 0.631)

Table 2: Odds Ratios (OR) and 95% confidence interval (CI) of the association of socio-demographic variables and delivery assisted by traditional birth attendant.

Characteristics	Odds Ratio	95% Confidence Interval		p-value
		Lower	Upper	
Age group				
≤ 25	1			
> 25	0.461	0.247	0.863	.015
Mother's education (in years)				
0-5	1			
>5	0.283	0.139	0.578	.001
Husband's education				
0-5	1			
>5	1.214	0.605	2.435	.585
Family income (BDT)				
≤ 5000	1			
5001-1000	0.363	0.166	0.793	.011
> 1000	0.555	0.178	1.730	.310
No. of ANC visits				
≤ 3	1			
> 3	0.346	0.189	0.631	.001
Parity				
Primipara	1			
Multipara	0.733	0.376	1.429	0.362

4. Discussion

In this study, a total of 250 women who gave birth within twelve months prior to the survey were interviewed. Of them, more than half of the respondents were aged above 25 years, had 5 years or less education and received three or less antenatal care (ANC) visits. Most of the mothers had more than one children and their monthly family income was 5000 BDT or less. About half of the mothers (51.6%) reported to have delivered at home assisted by TBAs. In multivariate analysis it is found that mother's age, mother's education, family income and numbers of ANC visits have a significant influence on TBA assisted home delivery.

Age is found as an important predictor in this model. Mothers having age more than 25 years are less likely to be assisted by TBAs. The observation that old aged women receive delivery

assistance less from TBAs is probably due to the fact that they are more confident and influential in household decision making than the younger women (Navaneetham & Dharmalingam, 2002; Reynold et al., 2006). Older mother may be encouraged to deliver in a facility by the health workers since older age is a biological risk factor (Bell et al., 2003).

Women with low education were more likely to be assisted during delivery by TBAs. It may be due to lack of knowledge of the women to understand the need for professional supervision during delivery. Educated women may have a greater decision making power on health related matters and have the ability and willingness to travel outside the home to seek services (Mekonnen & Mekonnen, 2003; Tann et al., 2007). Again skilled birth attendants remain difficult to be accessed by less educated women (Tann et al., 2007).

In this study it is found that women whose family income was more than 5000 BDT were less likely to be assisted during delivery by TBAs. It indicates that family income play an important role in influencing delivery at home by TBA. Similar findings were also observed from other studies in Africa (Mekonnen & Mekonnen, 2003; Mrisho et al., 2007). Although a study in Nepal by Bolam et al. (1998) pointed out that economic factors were of little importance, we found that family income was a major factor for TBA assisted home delivery (Bolam et al., 1998). This may be due to the fact that access to health care facilities is limited to the low income people as a result of transport and hospital fees (Tlebere et al., 2007). TBA assisted home deliveries are deemed affordable for low income families since their payment is negotiable in terms time and amount (Amooti-Kaguna & Nuwaha, 2000). Since households with higher income and living standard are more receptive towards modern health care facilities (Navaneetham & Dharmalingam, 2002), higher income families may be less likely to have delivered at home assisted by TBA.

Women receiving more than three ANC visits were less likely to be assisted by TBAs during delivery. This may be due to the fact that pregnant women receiving more ANC services were highly exposed to health facilities, which ultimately discouraged them to deliver at home.

The above socio-demographic factors play an important role in determining place of delivery. Promoting female education especially health education, will ensure the safe and skilled

delivery practices. Though this study was conducted in only Meherpur district, the findings may be applicable to other region of Bangladesh. Nevertheless, regional variations must be considered when interpreting findings for regions outside the study district.

5. Conclusion

Findings from this study shows that TBA assisted delivery was associated with young maternal age, low education, low family income and low ANC visits. To promote facility delivery in presence of skilled birth attendant (SBA) in the study area, these factors should be considered in the design of interventions. This may reduce maternal and neonatal mortality in the study area.

6. List of abbreviations

ANC – Antenatal Care

BDHS- Bangladesh Demographic and Health Survey

BDT – Bangladesh Taka

CI – Confidence Interval

FWA – Family Welfare Assistant

MDG – Millennium Development Goals

OR – Odds Ratio

SBA – Skilled Birth Attendant

TBA – Traditional Birth Attendant

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