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Determinants of Postnatal Care Utilization for the Newborns in Urban Slums of Bangladesh: A Study Based on Bangladesh Urban Health Survey Data

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Abstract

Better child health can be guaranteed by ensuring postnatal care for the newborns after birth. Newborns in the slums of Bangladesh are lagging behind to receive postnatal care and the percentage of newborns receiving health check-up from medically trained provider within first two months after birth is very low. The purpose of this study is to find out the potential determinants of receiving postnatal care from medically trained provider for slum newborns in Bangladesh. Data have been extracted from Bangladesh Urban Health Survey (UHS), 2013 to serve the purpose of the study. From regression analysis, it is found that antenatal care during pregnancy from medically trained provider, delivery by skilled birth attendant, economic status of the newborn family, education level and media exposure of mothers are significant factors associated with the uptake of postnatal care from medically trained provider for the newborns in slums.

Keywords: Post natal care, medically trained provider, UHS, crude and adjusted odds ratio.

I. Introduction

Bangladesh has made impressive improvements in reducing maternal and child mortality since its independence. In spite of having many constraints, the trends of poverty, illiteracy, under-five child mortality and maternal mortality are declining [1,2,3]. *Author for correspondence. e-mail: miraj.sta@du.ac.bd

However, the health outcomes of urban slums are still worse compared to non-slums. The main reasons behind these outcomes are fewer antenatal care (ANC), post natal care (PNC) and many delivery at home[4]. Consequently, the neonatal mortality rate in slums of Bangladesh is still high (43 deaths per 1,000 live births)[5].

Safe motherhood is largely dependent on PNC which is necessary to assess and treat delivery complications. Moreover, it creates awareness among mothers about how to take care for themselves and their babies which helps reduce maternal and child mortality. According to the recommendation provided by WHO, newborns should receive PNC within 24 hours of birth if their births are at home and at least 24 hours after birth if birth occurs in a health facility[6]. Although the number of women receiving PNC from medically trained provider (MTP) has increased in Bangladesh from 2006 to 2013, women in slums are still lagging behind in attaining the Health Population & Nutrition Sector Development Plan (HPNSDP) target of giving PNC to fifty percent of newborns by 2016. Only less than 33% of women in urban slums receive PNC from medically trained provider whereas newborns are less likely to take PNC check-ups from medically trained provider[7]. So, it is necessary to find out which factors are responsible for receiving lower PNC among slum newborns.

Delivery by skilled birth attendant (SBA) and complication during pregnancy were found to have significant association with receiving PNC for newborns in Bangladesh[8]. Besides, age at delivery, place of residence, level of education and wealth index were also significant factors with the postnatal utilization care[9,10,11]. A study conducted in Indonesia on PNC for newborns found that high birth rank and smaller than average infants at birth were negatively associated with receiving PNC [12].

The purpose of this study was to find out the significant determinants of receiving PNC from MTP for newborns in the urban slum areas in Bangladesh using Urban Health Survey (UHS), 2013 data. The adjusted effects of the covariates on the response variable were calculated by applying logistic regression model.

II. Data and Methodology

Data

Data have been extracted from Bangladesh Urban Health Survey (UHS), 2013 to serve the purpose of our study. The main objectives of this survey were to find important health outcomes and service utilization indicators in slums and non-slums areas of City Corporations, and other urban areas in Bangladesh. A complete list of urban Mohallas in the selected areas from the 2011 census has been used as a sampling frame for the study. For every Mohalla, slum and non-slum clusters were separated by using a mapping activity, and then 2 slum and 1 non-slum clusters were randomly selected. Finally, a household listing activity was applied to select households randomly from the selected clusters. From the extracted dataset, we have separated the slum women who gave birth since 2010 and information on the last child of the selected women were considered for the analysis. Complete information for all the selected variables was obtained for 4066 newborns.

Response and Explanatory variables

The main variable of interest is receiving PNC from MTP for newborn which was created and labeled as 'Yes' if the newborn received health check-up in first 2 months after birth from qualified doctor, nurse/midwife, paramedics, FWV, CSBA, or MA/SACMO. The variables that were considered as explanatory variables are mother's age at

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delivery, education level of mothers, region, economic status, religion, marital status of mother, media exposure, use of mobile phone during pregnancy, children ever born, multiple last birth, ANC by MTP, delivery by SBA and sex of last child. However, the variables ANC by MTP, delivery by SBA, media exposure and NGO membership of mothers of the newborns were created as they were not directly found in the survey data. ANC by MTP and delivery by SBA were labeled as 'Yes' if the mother of the newborn received ANC during pregnancy and took assistance during delivery from qualified doctor, nurse/midwife, paramedics, FWV, CSBA, and MA/SACMO respectively. The mother of a newborn was considered as media exposure if she read newspaper or magazine/watched TV/ listened to radio. Again, mothers were considered to have NGO membership if they were member of any of the organizations: BRAC, BRDB, Grameen Bank, PROSHIKA and ASHA.

Methods

For each of the explanatory variables, crude odds ratio (COR) was calculated to find the significant association of that variable with the response variable by using simple logistic regression model. Moreover, adjusted odds ratios (AOR) for the explanatory variables which showed significant association with the PNC from MTP for newborns were computed by applying multiple logistic regression model to know the adjusted effects on the response variable.

III. Results and Discussion

The bivariate associations between covariates and the response variable (PNC by MTP for the newborn) have been shown in the Table 1 with the help of crude odds ratios (COR) along with their 95% confidence intervals (C.I.). From this table, it is clear that mother's age at birth, education level, region, economic status, religion, media exposure, use of mobile phone, children ever born, multiple last birth, antenatal care (ANC) by medically trained provider (MTP) and delivery by SBA have significant association with the PNC by MTP for the child within two months of birth. On the other hand, marital status, NGO membership and sex of last child do not have any significant association with the response variable of interest.

In the Table 2, the results obtained from multiple logistic regression model have been represented. The covariates which have significant association with the PNC by MTP for newborns have only been considered in this regression model. It is found that education level, region, economic status, media exposure, use of mobile phone, ANC by MTP and delivery by SBA have significant effect on PNC by MTP for newborns whereas, mother's age at birth, religion, children ever born and multiple last birth do not have significant effect on the response of interest. Among these significant factors of PNC by MTP for newborns, all factors except use of mobile phone have positive effect on the response variable.

Table 1. Crude Odds ratios with 95% C.I of receiving postnatal care from medically trained provider for newborns

Covariates	CORs	95% C.I. of CORs (Lower limit, Upper limit)
Mothers' age at birth		
<18	0.93	(0.75, 1.16)
18 -35 (Ref.)	-	-
>35	0.66	(0.45, 0.96)
Education level		
No education (Ref.)	-	-
Primary	1.31	(1.07, 1.61)
Secondary / Higher	3.32	(2.72, 4.04)
Region		
Dhaka (Ref.)	-	-
Chittagong	1.18	(0.99, 1.40)
Others	1.69	(1.39, 2.05)
Economic status		
Poor	0.42	(0.36, 0.50)
Middle (Ref.)	-	-
Rich	1.70	(1.29, 2.23)
Religion		
Muslim	0.39	(0.30, 0.51)
Non-Muslim (Ref.)	-	-
Marital status		
Yes	0.73	(0.45, 1.18)
No (Ref.)	-	-
Media exposure		
Exposed	2.58	(2.03, 3.28)
Non-exposed (Ref.)	-	-
NGO membership		
Yes	1.09	(0.89, 1.33)
No (Ref.)	-	-
Use of Mobile phone		
Yes	0.31	(0.24, 0.39)
No (Ref.)	-	-
Children ever born		
1	1.36	(1.17, 1.57)
2-3 (Ref.)	-	-
>3	0.57	(0.44, 0.73)
Multiple last birth		
Yes	2.37	(1.15, 4.87)
No (Ref.)	-	-
ANC by MTP		
Yes	5.23	(4.43, 6.17)
No (Ref.)	-	-
Delivery by SBA		
Yes	83.65	(63.91, 109.48)
No (Ref.)	-	-
Sex of last child		
Boy	1.09	(0.95, 1.25)
Girl (Ref.)	-	-

That is, taking PNC by MTP for newborns increases with the increase in education level of their mothers though there is no significant difference of taking PNC by MTP between newborns whose mothers have primary and no education. To be more specific, slum newborns whose mothers have secondary or higher education level have (1.45-1)*100% or 45% higher odds of receiving PNC by MTP than those whose mothers have no education. In addition, newborns in the slums of Chittagong region have 69% higher odds of

taking PNC by MTP than those in slums of Dhaka region though newborns in Dhaka slum and in others slum region do not differ significantly. Moreover, slum newborns in middle class family take more PNC by MTP than those in poor family but receive same PNC by MTP as those in rich family. Specifically, slum children who belong to poor family have 27% less odds of getting PNC by MTP within two months of their birth than those belonging to middle class family. Again, slum women having access to media take more (AOR=1.74) PNC by MTP for their children compared to non-exposed mother. Surprisingly, women who used mobile phone during pregnancy have 31% less odds of receiving PNC by MTP for their newborns than those who did not use mobile phone. Furthermore, receiving PNC by MTP for newborns increases with the increase in taking ANC by MTP for mothers. That is, the odds of taking PNC by MTP is 65% higher for the newborns whose mother received ANC by MTP during pregnancy than their counterpart. It is also found that women having delivery by SBA take much more PNC by MTP for their newborns than those whose delivery was not done by SBA. This variable has high significant effect on receiving PNC by MTP for newborns.

Table 2. Estimates, adjusted odds ratios along with p-values of PNC by MTP for newborns obtained from logistic regression model

Covariates	Estimate	p-value	Odds ratio
Mothers' age at birth			
<18	-0.026	0.881	0.98
18-35 (Ref.)	-	-	-
>35	0.142	0.641	1.15
Education level			
No education (Ref.)	-	-	-
Primary	0.085	0.565	1.09
Secondary / Higher	0.369	0.017	1.45
Region			
Dhaka (Ref.)	-	-	-
Chittagong	0.526	0.000	1.69
Others	0.226	0.124	1.25
Economic status			
Poor	-0.316	0.018	0.73
Middle (Ref.)	-	-	-
Rich	-0.100	0.622	0.91
Religion			
Muslim	0.009	0.963	1.01
Non-Muslim (Ref.)	-	-	-
Media exposure			
Exposed	0.556	0.001	1.74
Non-exposed (Ref.)	-	-	-
Use of mobile phone			
Yes	-0.367	0.032	0.69
No (Ref.)	-	-	-
Children ever born			
1	0.085	0.482	1.09
2-3(Ref.)	-	-	-
>3	-0.151	0.437	0.86
Multiple last birth			
Yes	0.408	0.445	1.50
No (Ref.)	-	-	-
ANC by MTP			
Yes	0.498	0.000	1.65
No (Ref.)	-	-	
Delivery by SBA			
Yes	4.209	0.000	67.31
No (Ref.)	-	-	-
Constant	-3.758	0.000	-
-2loglikelihood		2384.30	

IV. Conclusion

Postnatal care (PNC) after birth for the newborns can reduce the infant and under-five child mortality to a great extent. Since there still exists huge lack of receiving PNC from medically trained provider (MTP) among the newborns in the slum areas of Bangladesh, this care should be made available especially in these areas of Bangladesh. The analysis conducted in this study shows that education level of the mothers and economic status of the family of the newborns are playing significant role in receiving PNC from MTP for the newborns. Moreover, the utilization of PNC from MTP can be increased significantly by ensuring antenatal care (ANC) from MTP and delivery by skilled birth attendant (SBA). Necessary steps need to be taken so that mothers can receive ANC from MTP and get assistance from SBA during delivery. Consequently, this will help to reduce child and maternal mortality. Besides, mothers who were exposed to media took more PNC from MTP for their newborns. So awareness among mothers in the slums of Bangladesh should also be increased by making available opportunities for mothers to be exposed to media by which better health for the newborns can be ensured.

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