

Original Research Article

Factors affecting access to early postnatal care service among women of urban slum in Bangladesh

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ABSTRACT

Background: Postnatal care (PNC) refers to care and attention to the general mental and physical health of the mother and infant during the period beginning after the delivery of the placenta up to the next six weeks. The postnatal period, the hours and days after birth is critical to the health for survival and is the most vulnerable time for a mother and newborn. Majority of maternal death occur after delivery but the postnatal period is the most ignored time for the establishment of quality services yet now in Bangladesh. The aim of the study was to assess the factors affecting access to early postnatal care service among women of urban slum in Bangladesh.

Methods: This was a community based cross sectional descriptive quantitative study conducted among the women of reproductive age who gave birth in the last one year prior to the study period in different slums of Dhaka South City Corporation, Dhaka, Bangladesh during the period from September to October 2016. A stratified sampling method was employed to select the total of 382 study participants for this study. Data were collected by means of a pretested structured interviewer administered questionnaire. Chi square and binary logistic regression analysis was carried out by using statistical package for the social sciences (SPSS) version 21.0.

Results: In this study, it was found that, 29.1% women and 29.8% of their baby received postnatal care service (PNC) visit after last delivery. The factors that significantly affected the access to postnatal care service utilization in this study were women's education, household income, residence, husband's education and occupation, physical violence against women, place of delivery, ANC visit, PNC checkup for baby, postnatal complications, importance of PNC checkup, knowledge in PNC service, perception of postnatal danger sign, sources of information, transport use, and health insurance. In assessing all those factors, the p values were found as <0.001.

Conclusions: Among the common factors affecting access to early postnatal care service among women of urban slum, domestic physical violence against women and health insurance emerged as strong predictors. In Bangladesh there is a crucial need for public health interventions to increase the access rate to early postnatal care service that should target women who need this service at the appropriate time.

Keywords: Early postnatal care, Access, Women, Urban slum, Bangladesh

INTRODUCTION

Postnatal care (PNC) refers to care and attention to the general mental and physical health of the mother and infant during the period beginning after the delivery of the placenta up to the next six weeks. The postnatal period is

critical to the health and survival of a mother and her newborn and during the hours and days after birth is the most vulnerable time for both. Death or disability may result due to deficiency of care in this time period.¹ Rates of provision of skilled care are lower after childbirth when compared to rates before and during childbirth. Most maternal and infant deaths occur during this time (WHO,

2014).² Worldwide, in each year, an estimated of 289 000 women and 2.9 million neonates die from complications related to pregnancy, childbirth or the postnatal period and up to two thirds of such maternal deaths occur after delivery. Among these 99% of the maternal and neonatal deaths occur in low- and middle-income countries.³ Nonetheless, early postnatal care (PNC) service utilization rates remain inadequately low in several regions, including 41% in Africa, 50% in South-East Asia, and 43% in the Eastern Mediterranean region.² In Bangladesh, each year 5500 women and 76000 neonates die from complications related to pregnancy, childbirth or the postnatal period (MCA/WHO-SEAR, 2012; MMR-Bangladesh, 2015).⁴ Majority of maternal death occur after delivery; whereas only 36 percent of women receive PNC from a medically trained provider within 42 days after delivery; the rate to take this service within first two days of delivery is 34 percent (BDHS, 2014).⁵ Common causes of maternal deaths include postpartum hemorrhage, eclampsia, and complications of abortion, obstructed labor, and postpartum sepsis and that of neonatal death include birth asphyxia, prematurity, sepsis and other infectious conditions.^{4,6} Most of these could be prevented through timely care- seeking during and after delivery and in postnatal period. Bangladesh Government provides maternal health care services including antenatal care (ANC), emergency obstetric care (EOC) and PNC free of charge for all, hence the use rate of PNC services is very low and there is poor and non- poor inequality in the utilization of maternal health care services in terms of ANC, facility delivery care and PNC.⁷ In Bangladesh, the postnatal period is the most ignored time for the establishment of quality services yet now. poor access to PNC causes most maternal and infant death during this time. Only 36 percent of women receive PNC from a medically trained provider within 42 days after delivery; the rate to take this service within first two days of delivery is 34 percent.⁵ Moreover, Bangladesh is undergoing a rapid urbanization process and about one third of the urban population live in urban slums with negatively affected health condition. Free maternal care services provided by the government and several non-governmental organizations (NGOs) are available nearby the slums even though in slums only 34 percent of women receive PNC from a medically trained provider which is lower than the average uptake rate of the country; though it is targeted to increase up to 80% by 2020 (BUHS, 2013).⁸ The major objective of this current study was to assess the factors affecting access to early postnatal care service among women of urban slum in Bangladesh.

METHODS

This was a community based cross sectional descriptive quantitative study conducted among the women of reproductive age who gave birth in the last one year prior to the study period in different slums of Dhaka South City Corporation, Dhaka, Bangladesh during the period from September to October 2016. A stratified sampling method was employed to select the total of 382 study participants

for this study. The ethical approval of our research proposal was obtained from Institutional Review Board (IRB) on Human Subjects Research and Ethics Committee of Hanyang University, Seoul, Korea. Letters of permission to conduct the survey in study area were obtained from the local councilor office, Dhaka south city corporation of the Ministry of Local Government in Bangladesh which is authorized to permit the health-related matters in urban area. Properly written consent was taken from all the participants before data collection. The whole intervention was conducted following the principles of human research specified in the Helsinki Declaration and executed in compliance with currently applicable regulations and the provisions of the General Data Protection Regulation (GDPR).^{9,10} As per the inclusion criteria of this study, women of reproductive age group of (18- 49 years) gave live births within one year prior to the study reside in the study area were included. On the other hand, according to the exclusion criteria of this study, women who hadn't met the inclusion criteria and women who hadn't found mentally and physically capable of being interviewed were excluded. Data analysis was done by using the statistical program for social sciences (SPSS) version 21.0. Chi square test was done to examine the association between background characteristics of the women and PNC utilization. Binary logistic regression was used to determine independent predictors for PNC utilization. Association between independent variable and dependent variable has considered significant if 'p value' was less than 0.05. Odds ratios (OR) have reported together with their 95% confidence intervals (CI). Finally, data has displayed by tables and graphs as necessary.

RESULTS

In this study, the respondent's age ranged from 18 to 45 years with a mean of 27.15 ± 5.862 (SD). More than half of the respondents 196 (51.3%) who gave birth within last one year were aged between 25 and 34 years. In total 289 (75.7%) of the women attended primary and above level education, while 93 (24.3%) respondent never went to school, 369 (96.6%) were married, 363 (95.0%) reported they live in a temporary house. In total 176 (46.1%) respondents were house maid while 71 (18.6%) were housewife and unemployed. On the other hand, 176 (46.1%) respondents reported their monthly household income was <5000 BDT and the rest 206 (53.9%) reported <5000 BDT. In total 204 (53.4%) of the husbands of the respondents had primary and above level education, 60 (15.7%) husbands of the respondents were employed, 322 (84.3%) were unemployed and reported to involve in informal occupation like manual labor, 259 (67.8%) respondents reported that they had experience of physical violence (PV) from their husband, while 123 (32.2%) had not. In assessing the association of socio demographic characteristics of women with postnatal care service utilization we observed that, women's education, type of residence, monthly household income, husband's education and occupation and women's experience of physical violence from their husband were found to be

significantly associated with PNC utilization ($p < 0.001$). Women with above primary level education 106 (93.0%), having permanent house for residence 15 (13.2%), household income more than 5000 BDT 101 (88.6%), husbands with above primary level education 95 (83.3%), Women without experience of physical violence from their husband 81 (71.1%) used more PNC services comparatively. On the other hand, socio-demographic characteristics like age of the respondents, and marital status showed no significant association with PNC utilization. In assessing the reproductive health related factors of women related to PNC utilization we observed that place of delivery, duration of hospital staying, advices that women received during discharge from hospital after delivery, antenatal visits, PNC checkup for baby, decision making power, experiencing postnatal complications were found to be significantly associated with PNC utilization ($p < 0.001$). On the other hand, women's gravidity, parity, number of children, reasons that mentioned by the respondents for not attending in PNC, and place of checkup for baby during PNC were not found significantly associated with PNC utilization. Women who mentioned PNC checkup is important, they 103 (92.8%) utilized more PNC services than those 8 (7.2%) who didn't mention it as important. Regarding importance of PNC checkup was found to be significantly associated with PNC utilization ($p < 0.001$). Knowledge in the components of PNC service showed significant relationship with PNC utilization ($p < 0.001$). Women who were aware of PNC components utilized PNC service more, like physical examination- used 74 (66.7%), not used 25 (9.2%); BP check- used 48 (43.2%), not used 25 (9.2%); Family planning- used 91 (80.0%), not used 103 (38.1%); Breast feeding counseling- used 93 (83.8%), not used 177 (65.3%); Baby immunization- used 106 (95.5%), not used 229 (84.5%); utilized more PNC services than those who were not aware of components. Similarly, women's perception on danger signs in postnatal period found significant with PNC utilization ($p < 0.001$). Women who had perception on at least one danger sign in postnatal period utilized PNC services more than those who had no perception on danger signs, like severe bleeding- used 94 (84.7%), not used 174 (64.2%); Raised blood pressure- used 37 (33.3%), not used 22 (8.1%); convulsion- used 83 (74.8%), not used 92 (33.9%); high fever- used 61 (55.0%), not used 64 (23.6%); severe abdominal pain- used 86 (77.5%), not used 95 (35.1%). Source of information about PNC service also showed significantly associated with PNC utilization ($p < 0.001$). Respondents who get information about PNC service from health professional 96 (86.5%) and from radio/ television 50 (45.0%) used more PNC services than those who get information from friends/relatives/neighbors. Among the factors transport use to reach nearest health facility was significantly associated with PNC utilization ($p < 0.05$). Respondents used PNC services more who use taxi or others (bus) to reach the health facility 57 (51.4%) than those who use rickshaw or go by walk 54 (49.6%). Health insurance found to be significantly associated with PNC utilization ($p < 0.001$). Women used

PNC services more who had private health insurance 15 (13.5%) than who had not 96 (86.5%). Factors like place for seeking PNC service was not found significant. In logistic regression analysis we found significant associations that were found in the bivariate chi-square analysis at the p value of < 0.05 included in the multivariate binary logistic regression analysis to determine which factors best explained or predicted the PNC service utilization. Educational status of women, monthly household income, residence type, husband's education and occupation, women's experience of physical violence from their husband, place of delivery with advice for PNC visit during discharge from HF, ANC visit with advice for PNC visit, PNC checkup for baby after last delivery, previous postnatal complications and PNC visit for that complications, importance of PNC checkup, knowledge in more than three components of PNC service, perception of at least one danger sign in postnatal period, source (more than one) of information, transport use to reach HF, and health insurance were found to be significantly associated with the PNC service utilization. Women, with above primary and secondary level education, with household income more than 5000 BDT, with permanent type of residence, whose husband were educated, whose husband engaged in formal profession like business or formal jobs, and who had no experience of physical violence from their husband had a greater chance of PNC service utilization. Regarding place of delivery, those respondents who delivered at health facility and received advice for PNC visits were more likely to use PNC services compared to home delivery and who didn't receive advice. Similarly, Women who attended for antenatal care and received advice for PNC visits were 5-6 times more likely to use PNC services than who didn't attend the antenatal visits and not received advice for it. Also, respondents used PNC services 304 times more when their baby received such kind service. Regarding previous postnatal complications, women who had such history and who visited PNC check-up for that complication used PNC services more compared to those who had no such complications and didn't visit previously. Women who mentioned PNC check-up is important, they utilized PNC services 53 times more than those who didn't mention it as important. Regarding knowledge in the components of PNC service, women who were aware of more than three PNC components utilized more PNC services than who were aware of three or less components. Similarly, women who had perception of at least one danger sign in postnatal period, were more likely to utilize PNC services, compared to those who had no perception danger signs. In terms of source of information about PNC service, respondents who get information from more than one source were more likely to use PNC services than those who get information from single source. Women who used taxi or bus to reach in HF were likely to utilize PNC service more than those who used to go by walking or rickshaw. Women who had private health insurance used PNC services 21 times more than those who had not or who don't know about it.

Table 1: Socio-demographic factors and utilization of PNC (N=382).

Variables	n	%	Utilization of PNC, N (%)		P value
			Yes	No	
Women’s age in years					
>25	144	37.7	45 (39.5)	99 (36.9)	0.815
25-34	196	51.3	58 (50.9)	138 (51.5)	
35-49	42	11	11 (9.6)	31 (11.6)	
Women's education					
Illiterate	93	24.3	8 (7.0)	85 (31.7)	0.000
Educated	289	75.7	106 (93.0)	183 (68.3)	
Marital status					
Married	369	96.6	110 (96.5)	259 (96.6)	0.941
Others	13	3.4	4 (3.5)	9 (3.4)	
Residence type					
Permanent house	19	5	15 (13.2)	4 (1.5)	0.000
Others	363	95	99 (86.8)	264 (98.5)	
Women's occupation					
Employed	135	35.3	68 (59.6)	179 (66.8)	0.182
Not employed	247	64.7	46 (40.4)	89 (33.2)	
Monthly household income (in BDT)					
<5000 BDT	176	46.1	13 (11.4)	163 (60.8)	0.000
>5000 BDT	206	53.9	101 (88.6)	105 (39.2)	
Husband's education					
Illiterate	178	46.6	19 (16.7)	159 (59.3)	0.000
Educated	204	53.4	95 (83.3)	109 (40.7)	
Husband’s occupation					
Employed	60	15.7	77 (67.5)	245 (91.4)	0.000
Not employed	322	84.3	37 (32.5)	23 (8.6)	
Physical violence from husband					
None	123	32.2	81 (71.1)	42 (15.7)	0.000
Violence	259	67.8	33 (28.9)	226 (84.3)	

Table 2: Reproductive health related factors and utilization of PNC (N=382).

Variables	Utilization of PNC, n (%)		P value
	Yes	No	
Gravidity			
One	12 (10.8)	14 (5.2)	0.541
Two	37 (33.3)	96 (35.4)	
Three	33 (29.7)	81 (29.90)	
Four	20 (18.0)	59 (21.8)	
Five	7 (6.3)	17 (6.3)	
Six	2 (1.8)	3 (1.1)	
Seven	0 (0.0)	1 (0.4)	
Parity			
One	13 (11.7)	19 (7.0)	0.713
Two	40 (36.0)	103 (38.1)	
Three	37 (33.3)	88 (32.6)	
Four	17 (15.3)	46 (17.0)	
Five	3 (2.7)	12 (4.4)	
Six	1 (0.9)	1 (0.4)	
Seven	0 (0.0)	1 (0.4)	
Number of children			
One	13 (11.7)	21 (7.7)	0.62
Two	43 (38.7)	110 (40.6)	

Continued.

Variables	Utilization of PNC, n (%)		P value
	Yes	No	
Three	38 (34.2)	92 (33.9)	0.000
Four	17 (15.3)	43 (15.9)	
Five	0 (0.0)	4 (1.5)	
Six	0 (0.0)	1 (0.4)	
Delivered alive baby within last one year			
Yes	111 (100.0)	271 (100.0)	0.000
Place of delivery			
Home	39 (35.2)	212 (78.2)	
Health center	35 (31.5)	30 (11.1)	
Hospital	22 (19.8)	22 (8.1)	
Private clinic/hospital	15 (13.5)	7 (2.6)	0.000
Duration of hospital staying during last delivery			
24 hours	34 (30.6)	27 (10.0)	
48 hours	23 (20.7)	22 (8.1)	
3 days	16 (14.4)	10 (3.7)	
7 days	1 (.9)	0 (0.0)	0.000
Received advice about importance of PNC during discharge after delivery			
Yes	73 (65.8)	52 (19.2)	
No	1 (.9)	7 (2.6)	
Advices received during discharge from hospital after delivery			
Danger signs	Yes 18 (16.2)	Yes 56 (50.5)	0.000
	No 21 (7.7)	No 38 (14.0)	
Breast feeding	Yes 40 (36.0)	Yes 33 (29.7)	0.000
	No 36 (13.3)	No 23 (8.5)	
Family planning	Yes 66 (59.5)	Yes 8 (7.2)	0.000
	No 46 (17.0)	No 13 (4.8)	
Baby immunization	Yes 48 (43.2)	Yes 26 (23.4)	0.000
	No 41 (15.1)	No 18 (6.6)	
Received ANC visit in last pregnancy			
Yes	85 (76.6)	88 (32.5)	0.000
No	26 (23.4)	183 (67.5)	
Number of ANC visits			
One	29 (34.1)	45 (51.1)	0.019
Two	45 (52.9)	35 (39.8)	
Three	11 (12.9)	5 (5.7)	
Four	0 (0.0)	3 (3.4)	
Received advice for PNC during ANC visit			
Yes	83 (97.6)	77 (87.5)	0.011
No	2 (2.4)	11 (12.5)	
Reasons for not attending in PNC			
Did not see any need	Yes- 0 (0.0)	Yes- 1 (100.0)	0.306
	No- 139 (51.3)	No- 132 (48.7)	
Shortage of money	Yes- 1 (100.0)	Yes- 0 (0.0)	0.178
	No- 96 (35.4)	No- 175 (64.6)	
Lack of awareness	Yes- 0 (0.0)	Yes- 1 (100.0)	0.431
	No- 104 (38.4)	No- 167 (61.6)	
Baby received PNC checkup			
Yes	103 (92.8)	11 (4.1)	0.000
No	8 (7.2)	260 (95.9)	
Place of checkup for baby during PNC			
From government hospital	83 (81.4)	9 (81.8)	0.892
From private hospital	17 (16.7)	21 (18.2)	
Others	2 (2.0)	0 (0.0)	

Continued.

Variables	Utilization of PNC, n (%)		P value
	Yes	No	
Decision making power for utilization of PNC			
Husband only	16 (14.4)	231 (85.2)	0.000
Self	7 (6.3)	0 (0.0)	
Both	87 (78.4)	39 (14.4)	
Other family members	1 (0.9)	1 (0.4)	
History of postnatal complication			
Yes	47 (42.3)	38 (14.0)	0.000
No	64 (57.7)	233 (86.0)	
PNC visit for postnatal complication			
Yes	45 (95.7)	18 (47.4)	0.000
No	2 (4.3)	20 (52.6)	

Table 3: Knowledge of the respondent and utilization of PNC (N=382).

Variables	Utilization of PNC, n (%)				P value
	Yes		No		
Whether PNC service is important or not					
Yes	103 (92.8)		53 (19.6)		0.000
No	8 (7.2)		218 (80.4)		
Knowledge in the components of PNC service					
Physical examination	Y	74 (66.7)	Y	37 (33.3)	0.000
	N	25 (9.2)	N	246 (90.8)	
BP check	Y	48 (43.2)	Y	63 (56.8)	0.000
	N	19 (7.0)	N	252 (93.0)	
Family planning	Y	91 (82.0)	Y	20 (18.0)	0.000
	N	103 (38.1)	N	167 (61.9)	
Breast feeding counseling	Y	93 (83.8)	Y	18 (16.2)	0.000
	N	177 (65.3)	N	94 (34.7)	
Baby immunization	Y	106 (95.5)	Y	5 (4.5)	0.003
	N	229 (84.5)	N	42 (15.5)	
Others	Y	0 (0.0)	Y	111 (100.0)	0.522
	N	1 (0.4)	N	270 (99.6)	
Perception of danger signs in postnatal period					
Severe bleeding	Y	94 (84.7)	Y	17 (15.3)	0.000
	N	174 (64.2)	N	97 (35.8)	
Raised blood pressure	Y	37 (33.3)	Y	74 (66.7)	0.000
	N	22 (8.1)	N	249 (91.9)	
Convulsion	Y	83 (74.8)	Y	28 (25.2)	0.000
	N	92 (33.9)	N	179 (66.1)	
High fever	Y	61 (55.0)	Y	50 (45.0)	0.000
	N	64 (23.6)	N	207 (76.4)	
Severe abdominal pain	Y	86 (77.5)	Y	25 (22.5)	0.000
	N	9535.10%	N	17664.90%	
Others	Y	1 (0.9)	Y	110 (99.1)	0.118
	N	0 (0.0)	N	271 (100.0)	
Source of information about PNC service					
From health professional	Y	96 (86.5)	Y	15 (13.5)	0.000
	N	51 (18.8)	N	220 (81.2)	
From friends relatives/neighbours	Y	92 (82.9)	Y	19 (17.1)	0.58
	N	218 (80.4)	N	53 (19.6)	
From radio/television	Y	50 (45.0)	Y	61 (55.0)	0.000
	N	17 (6.3)	N	254 (93.7)	
Others	Y	1 (0.9)	Y	110 (99.1)	0.513

Continued.

Variables	Utilization of PNC, n (%)		P value
	Yes	No	
	N	N	
	1 (0.4)	270 (99.6)	

Table 4: Health care facility related factors and utilization of PNC (N=382).

Variables	Utilization of PNC, n (%)		P value
	Yes	No	
Place for seeking PNC service			
From government hospital	87 (78.4)	216 (79.7)	0.771
From private hospital	24 (21.6)	55 (20.3)	
Distance of health facility (km)			
1	19 (17.1)	54 (19.9)	0.044
2	42 (37.8)	86 (31.7)	
3	15 (13.5)	71 (26.2)	
4	3 (2.7)	2 (0.7)	
5	26 (23.4)	44 (16.2)	
6	6 (5.4)	14 (5.2)	
Transport use to reach nearest health facility			
By foot	13 (11.7)	49 (18.1)	0.041
By rickshaw	41 (36.9)	121 (44.6)	
By taxi	55 (49.5)	100 (36.9)	
Others	2 (1.8)	1 (0.4)	
Health insurance			
Yes	15 (13.5)	2 (0.7)	0.000
No	72 (64.9)	206 (76.0)	
Don't know about it	24 (21.6)	63 (23.2)	

Table 5: Logistic regression analysis (N=389).

Variables	df	Sign.	Exp (B)	95% CI for the exp (B)	
				Lower	Upper
Monthly household income (in BDT)					
5000 to <10000	1	0.000	0.036	0.014	0.095
10000 to >20000					
Women's education					
Illiterate	1	0.000	0.254	0.129	0.498
Educated					
Residence					
Permanent	1	0.000	10.43	3.378	32.201
Temporary					
Husband's education					
Illiterate	1	0.000	0.113	0.063	0.203
Educated					
Husband's occupation					
Employed	1	0.000	0.069	0.041	0.118
Not Employed					
Physical violence from husband					
Yes	1	0.000	0.063	0.037	0.108
No					
Gravidity					
Primigravida	1	0.052	2.225	0.995	4.978
Multigravida					
Place of delivery					
Home	1	0.000	0.151	0.093	0.245
Institution					

Continued.

Variables	df	Sign.	Exp (B)	95% CI for the exp (B)	
				Lower	Upper
Received advice for PNC during discharge					
Yes	1	0.035	9.827	1.173	82.301
No					
Received ANC visit in last pregnancy					
Yes	1	0.000	6.799	4.093	11.294
No					
Received advice for PNC during ANC visits					
Yes	1	0.023	5.929	1.273	27.605
No					
Baby received PNC service after last delivery					
Yes	1	0.000	304.3	119	778.16
No					
Decision making power for PNC utilization					
Both /self	1	0.063	0.069	0.004	1.159
Husband	1	0.574	2.231	0.136	36.59
Complication during previous postnatal period					
Yes	1	0.000	4.503	2.706	7.493
No					
PNC checkup for complication					
Yes	1	0.000	25	5.291	118.13
No					
Whether PNC service is important or not					
Yes	1	0.000	52.95	24.28	115.46
No					
Knowledge on more than three components of PNC service					
Yes	1	0.000	0.066	0.038	0.117
No					
Perceived at least one danger sign during postnatal period					
Yes	1	0.000	0.214	0.119	0.382
No					
Source (more than one) of information about PNC service					
Yes	1	0.000	0.019	0.01	0.037
No					
Transport use to reach HF					
By foot rickshaw	1	0.033	0.47	0.235	0.939
By taxi others	1	0.037	0.6	0.371	0.971
Health insurance					
Yes	1	0.000	21.01	4.719	93.593
No					

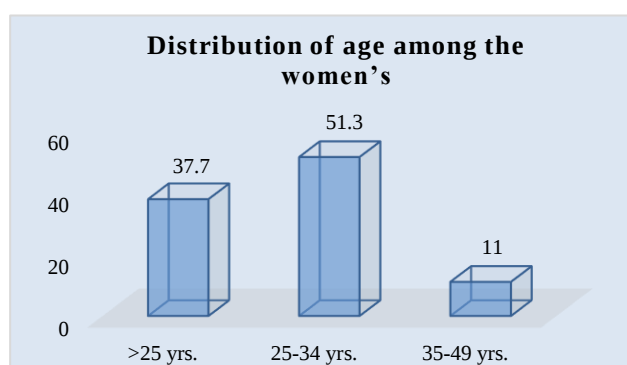


Figure 1: Age wise respondents distribution (N=382).

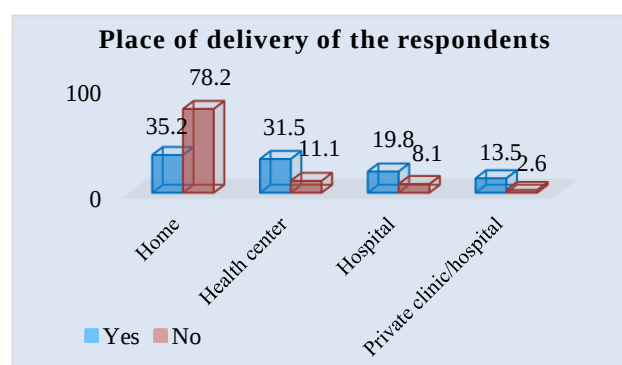


Figure 2: Place of delivery of the respondents (N=382).

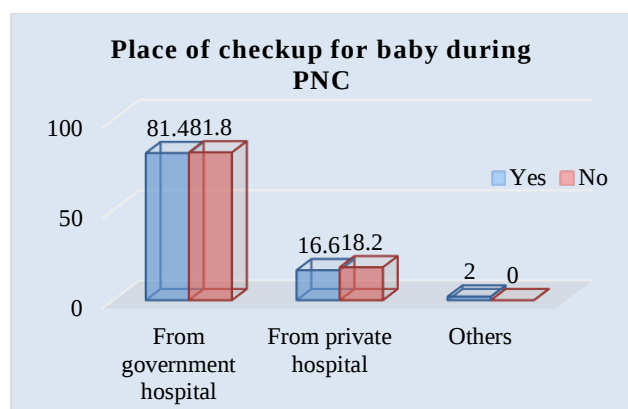


Figure 3: Place of check-up for baby during PNC (N=382).

DISCUSSION

This study aimed to assess the factors affecting access to early postnatal care service among women of urban slum in Bangladesh. In this study, we found that utilization of postnatal care service is relatively low across the survey area. PNC service utilization for mother was 29.1% and for baby was 29.8% in the study area. The findings of this study are lower than the Bangladesh demographic and health survey (2014) that were 36.1% and 36% for mother and baby respectively (BDHS, 2014) but higher than several previous studies conducted in Bangladesh where PNC utilization rates were- 20%, 25%, and 27%.^{7,11,12} However, the observation in the present study was much less than the other study, 62% in Bangladesh, 44%.^{12,14} This study showed that women education status is an important predictor of PNC utilization. Educated women were more likely to use PNC service when compared to those who were illiterate. This finding is consistent with a study conducted in Bangladesh.¹¹ We found that women live in permanent house used PNC service more than those who live in temporary house. This finding supports the previous study finding that poor living condition in the residence negatively affects the PNC utilization, conducted in Bangladesh.¹⁵ Although previous study found that women's age is important in PNC utilization and younger age group utilize service more and women's occupation also was found significant with PNC utilization with the assume that employed women are able to spend travelling and other costs in health center.^{1,16} Surprisingly, in this study we have not found any significant of women's age and occupation with PNC utilization. In this study we found coverage of PNC is extremely unequal where the women with higher household income having better access than lower income group. This finding is consistent with studies conducted in Bangladesh, in Nepal, and in India.^{1,11,14} In this study the level of the husband's educational and employment status also emerged as significant predictors in PNC utilization. These results consistent with previous studies conducted in Bangladesh and in Nepal.^{11,17} In the present study, women who delivered at health facilities (HF) and received advice during discharge from HF for PNC visit had higher rates

of PNC utilization than women who delivered at home. Present finding supported the previous studies conducted in Bangladesh and in Ethiopia.^{13,18} Post-delivery stays at HF also were a predicting factor with PNC utilization in previous study conducted in the Philippines and in our study, we also found significant association between duration of hospital staying and PNC utilization.³ The finding of this study suggests that the use of ANC visit has a significant effect on the use of PNC. Women who attended for ANC visit and received advice for PNC check-up had higher rates PNC utilization than those who didn't attend for ANC visit. This finding is similar to other studies conducted in Nepal, and Bangladesh.^{1,11} Our study showed that the experience of previous postnatal complications and PNC visit for those complications during postnatal period significantly increased the chances of PNC utilization. This result is consistent with previous studies conducted in the Philippines and in Bangladesh.^{11,20} Women who mentioned PNC check-up is important, they utilized more PNC services than those who didn't mention it as important, found in our study which is consistent with previous study.²¹ In this study we found that women's level of knowledge on PNC components emerged as strong predictor for PNC service utilization. Women who are knowledgeable on PNC components provided by the health facility were more likely to use PNC service than women who had not adequate knowledge on it. This finding supports the previous study conducted in India and in Nepal that showed lack of knowledge negatively affect the utilization of PNC services.^{16,17} In this study finding also showed that women who had adequate perception of danger signs in postnatal period they utilized PNC services more than those whose perception level was poor. This finding consistent with previous study conducted in Bangladesh.¹⁵ Another finding in this study showed significant in PNC utilization that is source of information from where women get the information about PNC service. Women who get information from different sources were likely to utilize more PNC service than those who get such information from a single source which is similar to previous study conducted in India.²² Health insurance emerged as a strong predictor in this study with PNC utilization and is positively correlated with seeking behavior. There is no national health insurance service in Bangladesh, so women who have private health insurance are more likely to use PNC service than those who don't have any insurance which supports the previous studies findings conducted in the Philippines and another systematic review study.^{19,23} All the findings of this current study may be helpful in further similar studies.

Limitations

Some limitations are intrinsic to the cross-sectional nature of this study that includes reporting of past behaviors and therefore likely chance of recall bias. Therefore, a 1-year recall period was chosen to minimize recall bias. Sample size of the study was small and study area was also limited. Moreover, the findings of this study were based on self-reported outcomes so there may be a difference from actual

behavior. Lastly, educational status may have been associated with the accuracy of women's reporting as the less educated respondents are more likely to report medical events less accurately than their more educated counterparts. However, in spite of these limitations the results have elicited important information that could help as a basis to improve the access rate of postnatal care service utilization among women in Bangladesh.

CONCLUSION

The present study has provided a better understanding that, despite the increase of maternal healthcare services in Bangladesh, less than one third women have an access for utilization of early postnatal care service in urban slums at the appropriate time. The women-with low education level, with low household income, who had temporary house, whose husbands were low illiterate and unemployed, who delivered at home, who didn't attend for ANC visit, inappropriate knowledge in components of PNC service, lack of awareness in postnatal danger signs, and difficulty in transportation have an inadequate access for utilization of early postnatal care service. Significantly, domestic physical violence against women and health insurance emerged as strong predictors for utilization of early postnatal care service in this study. However, a comprehensive service from pregnancy through the postnatal period must be provided for the women of urban slums or for other such resource poor-settings considering the serious lack of infrastructure and projected growth of slum areas in Bangladesh for sustainable development goals (SDGs). Specific policy interventions like health promotional program and program for knowledge campaigns are also needed to reinforce the postnatal care component in the maternal health care system. Regular monitoring and analysis should be ensured for health indicators such as postnatal care and associated factors in order to have a better understanding of the changes in maternal and child health inequalities.

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