

Comparative assessment of birth preparedness and complication readiness among women in rural and urban areas of Bangladesh

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ABSTRACT: Background: Birth preparedness and complication readiness is an imperative intervention which has proven to reduce delays in care seeking behavior in case of obstetric emergencies. Although, many pregnant women and their families do not take the suggested steps to prepare for childbirth, despite of being known of them. Additionally, marked disparities often have been observed between rural and urban areas, with more maternal and neonatal deaths occurring in the rural areas owing to the unpreparedness. This study thus set out to assess and compare the knowledge, practice and factors associated with birth preparedness and complication readiness among women from rural and urban areas in Bangladesh. **Methodology:** A cross-sectional comparative study design have been undertaken among 250 rural and 240 urban women in the Department of Obstetrics and Gynecology, Shaheed Suhrawardy Medical College and Hospital, Dhaka, Bangladesh and Shaheed Sayed Nazrul Islam Medical College and Hospital, Kishoreganj, Dhaka over a period of 6 months from 1st October 2020 to 30th March 2021. All pregnant women who attended in the antenatal clinic of SSNIMCH and SSMCH for the first time during the study period was include in the study. Quantitative data was collected by the use of semi structured questionnaires adapted from the safe motherhood questionnaire, developed by maternal and neonatal Programme of Johns Hopkins Programme for International Education in Gynaecology and Obstetrics (JHPIEGO) an affiliate of John Hopkins University. **Result:** Birth preparedness and complication readiness was evident in 34.17% of the urban and 30.4% of the rural respondents. Urban women were statistically significantly more aware of the danger signs of pregnancy, labour and postpartum period ($p < 0.001$). Selection of place of delivery, arrangement of transportation, emergency fund and blood donor was the most important actions taken as part of birth preparedness both in rural and urban respondents. Null birth preparedness was observed among 28.0% of the rural respondents compared to 2.50% of the urban respondents. The decision regarding the place of delivery was taken mostly by their husband both in urban and rural sub sets. Thus, this study findings showed low practice of BPACR both among urban and rural community while rural people showed more inaction than urban people.

KEYWORDS: Birth preparedness, Complication readiness, Child-birth, Rural, Urban

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Introduction

Regardless of remarkable progress in maternal and neonatal health in Bangladesh, mortality rate in these two population sub set still remain high, which is attributed by low use of skilled obstetric care.¹ Deliveries under a skilled professional in a healthcare facility with availability of emergency obstetric care can reduce most cases of maternal deaths.² According to last available data sources, in Bangladesh, nearly 62% of the total births still take place at home, almost 48% of the children are born with the assistance of a traditional birth attendant and no more than 1/3rd of the births are attended by skilled

professionals.³ Necessary preparation for delivery and associated complications can save lives of the mothers and the newborns, as it reduces delays in seeking care for obstetric emergencies that contribute to the majority of maternal deaths in resource poor settings.⁴ Birth preparedness and complication readiness (BPACR) is a strategy which encourages time appropriate utilization of skilled obstetric and neonatal care through knowing the events, which should be regarded as life threatening for the mother and the baby, during the period of pregnancy, labour and post-partum period

and being prepared beforehand through selecting source and means of care availability.⁵ Promoting BPACR found to be a proven and effective health care approach in preventing maternal mortality especially in countries prevailing with high rate of maternal death and inadequacy of health care system.⁶ Studies completed in developing countries have showed that women have poor knowledge of the danger signs which reduces their care seeking attitude, thus results in delays for the attainment of obstetric management.⁷⁻¹⁰ Additionally, apart from medical causes, there are numerous socio cultural taboos, which leads to delays in care seeking attitude which contributes to the maternal deaths.¹¹ Moreover, disparities are often observed between rural and urban communities regarding the practice of BPACR, with more maternal and neonatal deaths occurring in the rural areas.¹² On these ground, the present study attempted to observe the knowledge and practice of BPACR among rural and urban people of Bangladesh.

Methodology

Subject and methods:

The research work used a cross sectional study design to assess birth preparedness and complications readiness among pregnant women in urban and rural area during the period of six months from 1st October 2020 to 30th March 2021, in the Department of Obstetrics and Gynecology of two government facilitated tertiary care level hospital in Dhaka division, one located in urban area- Shaheed Suhrawardy Medical College and Hospital, and another from a rural area- Shaheed Sayed Nazrul Islam Medical College and Hospital, Kishoreganj. Face to face interview had been carried out with a pretested semi-structured questionnaire among a total 490 purposively selected pregnant women (250 rural and 240 urban), who came to the hospital for an antenatal checkup and who met the selection criteria of the study.

Data collection and analysis:

Data regarding the knowledge of danger signs during pregnancy, labour and post-partum, knowledge and actions regarding birth preparedness and complication readiness, and the decision making authority had been assessed and recorded. The proportion of study respondents with “well aware” was considered who were able to recognize three or more danger signs. To assess birth preparedness and complication readiness a questionnaire had been adopted from the “Safe Motherhood Questionnaire” developed by maternal and neonatal programme of Johns Hopkins Programme for International Education in Gynaecology and Obstetrics (JHPIEGO).⁷ Data had been analyzed using SPSS software, version 25.

Ethical consideration:

Prior to the commencement of the study, ethical clearance had been availed from the BMRC ethical review board. Informed written consent was availed from each respondent before starting the interview.

Results

In this study respondents were interviewed during their first antenatal visit to the health care facilities. Half of the respondents (51.22%) belong from the age group of 20-25 years. Respondents aged below 20 years were higher in proportion in rural area (28.0%) than in the urban area (3.33%). The level of education was poor in rural area than in the urban area. Among t 25.83% of the urban and 16.8% of the rural women were involved with income generation. Majority of rural respondents (67.6%) had a monthly family income below 15000 BDT and majority of the urban respondents (44.17%) had a monthly family income between 15000 to 25000 BDT (Table 1).

Table 1. Socio-demographic and obstetric characteristic of respondents (n = 490)

		Rural (n ₁ = 250)		Urban (n ₂ = 240)		Total = 490	
		F	%	F	%	F	%
Socio-demographic characteristic							
Age group (years)	<20	70	28	8	3.33	78	15.92
	20 to <25	90	36	161	67.08	251	51.22
	25 to <30	70	28	59	24.58	129	26.33
	30 to <35	20	8	12	5.00	32	6.53
Monthly family income (BDT)	<15000	169	67.6	55	22.92	224	45.71
	15000 - 25000	73	29.2	106	44.17	179	36.53
	> 25000	8	3.2	79	32.92	87	17.76
Educational qualification	Illiterate	24	9.60	2	0.83	26	5.31
	Primary	63	25.20	21	8.75	84	17.14
	Secondary	95	38.00	58	24.17	153	31.22
	SSC	30	12.00	21	8.75	51	10.41
	HSC	28	11.20	96	40.00	124	25.31
	Graduate	8	3.20	38	15.83	46	9.39
	Maters	2	0.80	4	1.67	6	1.22
Occupation	Services	12	4.8	22	9.17	34	6.94
	Business	14	5.6	2	0.83	16	3.27
	Housewife	208	83.2	178	74.17	386	78.78

	Others	16	6.4	38	15.83	54	11.02
Obstetrics characteristic							
Married for (in years)	0 - 5	170	68	160	66.67	330	67.35
	5 - 8	50	20	60	25.00	110	22.45
	8 - 10	26	10.4	16	6.67	42	8.57
	10 - 15	4	1.6	4	1.67	8	1.63
Gravida	0 - 3	232	92.8	236	98.33	468	95.51
	4 - 5	18	7.2	4	1.67	22	4.49
Duration of pregnancy (trimester)	First	62	24.8	52	21.67	114	23.27
	Second	66	26.4	78	32.50	144	29.39
	Third	122	48.8	110	45.83	232	47.35

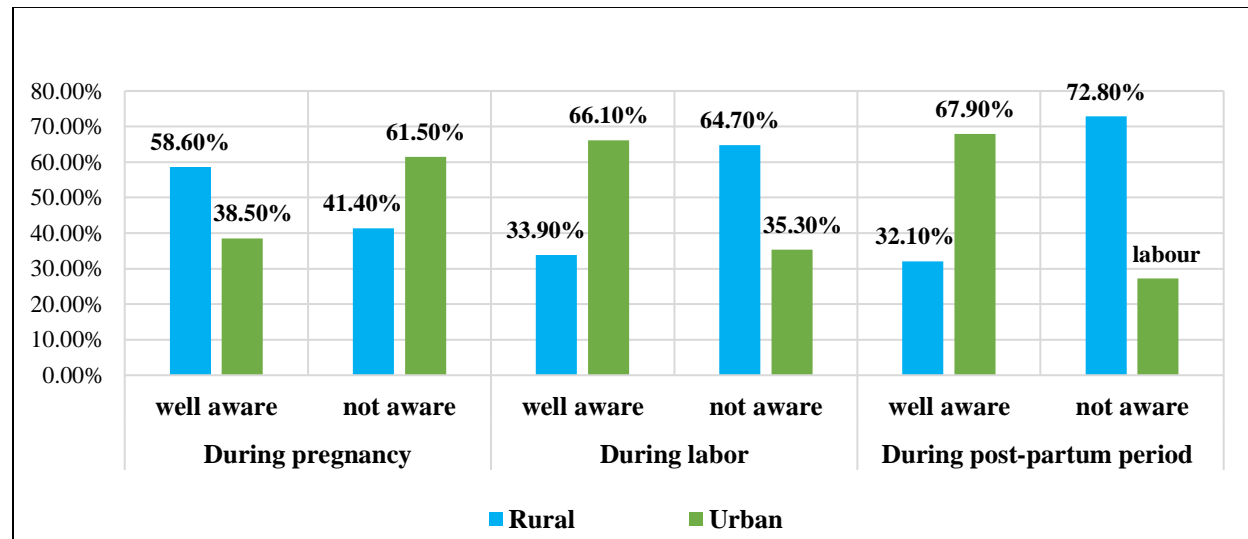


Figure 1. Awareness of possible complications during pregnancy, during labour and during post-partum period

In this study, it had been observed that, urban women were statistically significantly more aware of the danger signs of pregnancy, labour and postpartum period ($p < 0.001$). Here, 58.6% of the urban women compared to 41.4% of the rural women were aware about the danger signs during pregnancy period; 66.1% of the urban women compared to 33.9% of the rural women were aware about the danger signs during labour and 67.9% of the urban women compared to 32.1% of the

rural women were aware about the danger signs of postpartum period (Figure 1).

Among the components of birth preparedness, selecting the place of delivery with identifying the means of transport and saving money found to be most important according to both urban and rural respondents. Identifying blood donor found to be statistically significantly more recognized among urban respondents (33.33%) than rural respondents (14.40%) ($p = 0.001$) (Table 2).

	Rural (n ₁ = 250)		Urban (n ₂ = 240)		p value
	F	%	F	%	
Identify a place of delivery	24	9.60	6	2.50	0.001
Identify means of transport	12	4.80	12	5.00	
Save money	22	8.80	14	5.83	
Identify blood donor	10	4.00	14	5.83	
Identify skilled provider	10	4.00	8	3.33	
Identify family member to call in case of emergency	10	4.00	16	6.67	
Identify a place of delivery with Identify means of transport and Save money	120	48.00	86	35.83	

Identify a place of delivery, Identify means of transport, Save money, Identify blood donor	36	14.40	80	33.33	
Identify a place of delivery and Identify means of transport	6	2.40	4	1.67	

Selection of place of delivery, arrangement of transportation, emergency fund and blood donor was the most important action taken as part of birth preparedness both in rural and urban respondents (urban: 34.17% and rural: 30.4%) followed by selecting skilled birth attendant (urban: 30.0% and rural

33.6%). Urban respondents arranged blood donors significantly higher in proportion (25.83%) than the rural respondents (1.6%) ($p < 0.001$). No birth preparedness was observed in 28.0% of the rural respondents compared to 2.50% of the urban respondents ($p < 0.001$) (Table 3).

Table 3. Distribution of the respondents according to their actions regarding birth preparedness and complication readiness

	Rural (n ₁ = 250)		Urban (n ₂ = 240)		p value
	F	%	F	%	
Place of delivery	6	2.4	16	6.67	0.000
Emergency fund	4	1.6	8	3.33	
Blood donation	4	1.6	62	25.83	
Place of delivery, arrangement of transportation, emergency fund, blood donation	76	30.4	82	34.17	
Identified skilled provider	84	33.6	72	30.00	
No preparation	70	28	6	2.50	

Table 4. Decision making authority regarding birth preparedness and complication readiness

		Rural (n ₁ = 250)		Urban (n ₂ = 240)		P value
		F	%	F	%	
Discussed with	Husband	166	69.17	162	64.80	0.001
	Mother in law	58	24.17	46	18.40	
	Other relative	6	2.50	0	-	
	Friend	10	4.17	18	7.20	
	Community health worker	8	3.33	14	5.60	
	Others	2	0.83	0	-	
Decision of place of delivery	Respondent	6	2.4	36	15.00	0.000
	Respondent's husband	218	87.2	170	70.83	
	Mother in law	26	10.4	22	9.17	
	Friend	0	0	8	3.33	
	Others	0	0	4	1.67	

Where to go if any emergency arise during pregnancy, in this matter, respondents spoke to their husband in most cases (urban: 64.80% and rural: 69.17%), followed by their mother in law (urban: 18.40% and rural: 24.17%). The decision regarding the place of delivery was taken mostly by their

husband (urban: 70.83% and rural: 87.2%). In very low proportion, respondents themselves took the decision regarding the place of delivery, which was significantly higher in urban respondents (15.0%) than in rural respondents (2.4%) ($p < 0.001$) (Table 4).

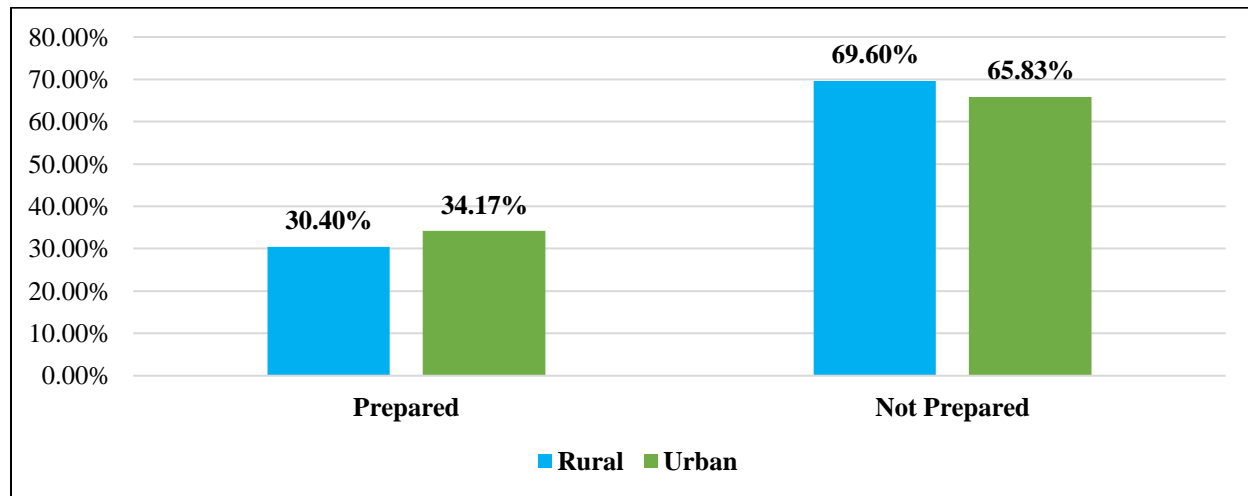


Figure 2. Birth preparedness among the respondents

As a whole, birth preparedness and complication readiness was evident in 34.17% of the urban and 30.4% of the rural respondents in this study (Figure 2).

Discussion

Knowledge about birth preparedness and complications readiness (BPACR) is a gathered knowledge of signs of obstetric complications, knowledge of antenatal care followed by childbirth preparation. A timely access to required obstetric care can save the mother and neonate which can be achieved by adequate birth preparedness and complications readiness. Thus, BPACR has an important role on maternal and neonatal outcome.¹³

Observation from this study showed marked disparities among urban and rural women regarding knowledge and practice of BPACR. This study showed that, urban women were statistically significantly more aware of the danger signs of pregnancy, labour and postpartum period which is substantial with other study findings from developing countries.¹⁴⁻¹⁸ The level of knowledge and practice of BPACR observed to be significantly higher among the urban participants. Moreover, it has been observed that, the knowledge about BPACR is higher than the practice of BPACR both in urban and rural communities. Null preparedness for birth had been observed significantly higher among the rural respondents compared to the urban respondents. This study findings was similar to other studies.^{41, 42} This can be explained by the fact that, due to lagging behind in educational acquisition, the cultural belief of the rural community often doesn't let them adopt new treatment strategies.¹⁹

Selecting the place of delivery with identifying the means of transport and saving money found to be more concerning components of birth preparedness both in urban and rural community in this study. Similarly, other study findings also revealed these components of BPACR to be most commonly practiced ones.⁹ Urban respondents found to had an arrangements of blood donors significantly higher in proportion than the rural respondents. In other studies, arrangements of blood donors found to be poor.²⁰

For both groups of women decision making regarding pregnancy and delivery was primarily taken by their husbands,

similar findings have been found in other studies,^{21,22} indicating the fact that, both parents should be targeted for disseminating knowledge regarding BPACR. Husbands found to play the key role for decision making. The age of marriage and childbearing is low for women in rural areas which leave them powerless to take decisions regarding their own health. Less involved with income generation and the patriarchal system also cease the decision making power where they can utilize the acquired knowledge to decide what is best for them and their newborn.¹⁹

Conclusion

The practice of birth preparedness and complication readiness was poor compared to the knowledge the respondents acquire. Furthermore, rural people were lagging behind than urban people to take actions about preparation of delivery or obstetric complications. A very minimal proportion of respondents take decision by themselves about the place of delivery. Thus, this study findings suggest requirement of strengthening the knowledge and awareness build up regarding practice of BPACR both in urban and rural area.

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