

Impact of Mothers Awareness Gained Through Antenatal Care on Mother and New Borne Health at Pabna District in Bangladesh

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ABSTRACT

Background: Antenatal care (ANC) serves as a critical component of maternal healthcare, providing pregnant women with essential medical services, information, and support to ensure a healthy pregnancy and childbirth.

Objective: The aims of this study was to examine the impact of rural and urban mothers awareness gained through antenatal care of which mothers admitted in the labour ward and postnatal wards of Pabna Medical College Hospital for child birth.

Methodology: A descriptive type of cross-sectional study was conducted among systemic randomly selected 442 postnatal mothers. Among them 241 mothers were selected from rural and 201 mothers from urban area. Data were collected by face to face interview through structured questionnaire from January to October 2022.

Results: The mean age of rural mothers was 24.82 ± 4.03 years and 24.68 ± 4.5 years of urban mothers. From the rural areas, 91.3% respondents know about meaning of antenatal care. On the other hand in urban areas 97.5% respondents know about meaning of antenatal care. It was found that in case of rural areas, 83.8% respondents replied that mother's condition after child birth was good and in case of urban areas 88.1% respondents replied that mother's condition after child birth was good. In rural areas 89.7% respondents replied that babies condition after birth was good and in urban areas 92.6% respondents replied that babies condition after birth was good.

Conclusion: The awareness gained through antenatal care plays a pivotal role in promoting maternal and neonatal health by facilitating early detection and management of complications, promoting healthy behaviors, and empowering women to make informed decisions about their health and the health of their newborns.

KEYWORDS: Awareness, Impact, Antenatal Care, New Borne, childbirth.

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INTRODUCTION

Antenatal care, a crucial component of maternal healthcare, plays a pivotal role in safeguarding the health of both mothers and newborns. It encompasses a range of medical interventions, education, and support provided to expectant mothers during pregnancy.

Maternal and infant morbidity and mortality is a serious public health problem globally (The State of the World's Midwifery: 2011, Datta, D.C. 2014). Both maternal and child health are interdependent and substantially contributing to high burden of mortality worldwide. Every year, 2,89,000 women die due to complications in pregnancy and childbirth, and 6.6 million children below 5 years of age die of complications in the newborn period and of common

childhood diseases (MDGs- 2015, WHO, 2014). 99% of these deaths occur in the developing countries. Not only that estimated 8 million more suffer serious illness and lifelong disabilities (WHO, UNICEF, UNFPA and the World Bank, 1990-2008, and WHO, 2010). Every year 2 million newborns die within first 24 hours of life. Each day 12,000 babies die among the 35,000 babies within their first month of life, 2.6 million stillbirths, of which approximately 45% occur during labour and birth. More over millions of newborns suffer birth trauma that impairs their development and future productivity. These deaths occur late in pregnancy, at birth, or soon after delivery due to poor maternal and newborn care or inadequate management of pregnancy related complications. The overwhelming majority of these deaths

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occur in developing countries (Lawn J, Cousens S, Zupan J, 2005, Stillbirth: An executive summary. 2011, Lozoff B, Beard J, Connor J, Barbara F, Georgieff M, Schallert T. 2006, and Projahnmo , 2008).

Bangladesh is one of the developing countries with in the world. The Maternal and infant morbidity and mortality are still high (Bangladesh progress report, 2007). Maternal Mortality Ratio (MMR) - 194/100000 live birth (BDHS, 2011), Neonatal Mortality Ratio (NMR)- 28/1000 (BDHS, 2014) live births, Infant Mortality Ratio (IMR)- 38/1000 (BDHS, 2014) live births and Under 5 mortality Rate (U5MR)-46/1000 (BDHS, 2014). More over every year 600,000 women suffer from maternal complications and 600,000 under-5 children suffer from various diseases. These deaths and complications have to occur especially during child birth, soon after delivery and within 6 weeks after birth due to lack of proper antenatal care and inadequate management of postnatal care (HPNSDP, 2009, Countdown, 2015).

For instance, a study conducted by Khan et al. (2019) found that women who received ANC were more likely to seek skilled birth attendance and postnatal care, leading to reduced maternal and neonatal mortality rates in Bangladesh. Similarly, research by Chowdhury et al. (2018) demonstrated that ANC attendance was associated with higher rates of institutional delivery, which is critical for ensuring safe childbirth and reducing the risk of complications for both mothers and newborns.

Therefore, it is very important to identify the existing outcome of mothers awareness gained through antenatal care who are living both rural and urban area, whether the ANC services successful achieve or not.

MATERIALS AND METHODS

Research design: This study was a descriptive cross sectional type of research design.

Study duration: The study was conducted from January 2020 to October, 2022.

Study place: This study was conducted at labour wards and Gynaecology wards of the Pabna Medical College Hospital in Bangladesh.

Population: The population of this study was postnatal mother who came to receive postnatal care at Pabna medical college hospital.

Sample and Sample size: The sample size in this study was 442 postnatal mothers. Among them 241 mothers from rural and 201 mothers from urban area as considered their living place. Those mothers were living outside the Pabna or far from Pabna city, they are considered as rural mothers and those mothers were living within the Pabna city or near the Pabna city, they are considered as urban mothers. Systematic random sampling were done by distribution of patients' bed i.e. two alternative bed selection to prevent bias. If the selected patient of the bed is unable to meet the selection

criteria then next patient of the bed were included for sampling.

Inclusion criteria

- Mothers were delivered at least one day before
- Agreed to participate.

Exclusive criteria

- Mother whom baby was not alive
- Mothers who disagree to participate in this study.

Research Instrument: Data were collected by using structured questionnaires. Questionnaire was divided into three sections: The Demographic data questionnaire, knowledge related questionnaire and Impact related questionnaire.

Validity & Reliability of the Instruments: The researcher conducted a pilot study, using the Bengali version of the instruments with 30 postpartum mothers who had the same inclusion criteria as the subjects of this study. The purpose of the pilot study was to assess the validity and reliability of the instrument.

Data Collection technique: Face to face interview was conducted. The researcher gave the questionnaire to the mothers who decided to participate in this study. The researcher read the questions to the mothers 'word by word' and asked them to provide the answers in accordance with the questions being asked.

Ethics:

- Permission of concerned authority of the hospital was taken.
- Objectives of the study explained in brief to the respondents.
- Informed consent taken from each and every respondent before collection of data.
- Privacy and confidentiality was ensured and maintained strictly.
- Respondents have the right to withdraw themselves from the study any time during data collection period.
- They assured that there would be no physical and mental harm to them during the study as there is no invasive procedure applied.

RESULTS

Table 1: Demographic characteristics of mothers (N=Rural-241, urban-201).

Most of the rural mothers had a primary education 57.3% and almost half of the urban had a primary level education 41.3%. Among the total respondents, 96.7% rural mothers were House wife, 93.0% urban mothers were House wife, 1.2% rural mothers were Public service holder, 1.0% urban mothers were Public service holder, 1.7% rural mothers were NGO employees, 3.5% urban mothers were NGO employees and 0.4% rural mothers were Worker,

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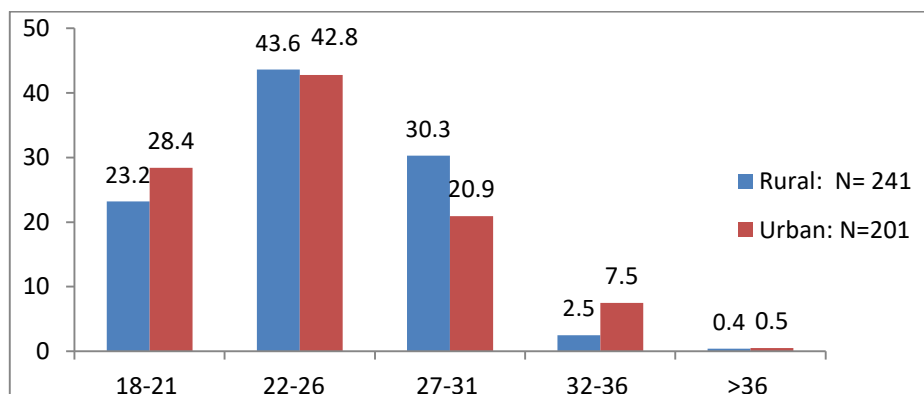
2.5% urban mothers were Worker. It was found that 64.7% rural and 56.7% urban mother's monthly family income were 5000-10000 taka. The average monthly family Income of those mothers was 7500 taka. Here, 59.3% rural mother's number of children was 2-3 and 50.2% urban

Mothers have less than 2 children. On the other hand 39.4% rural mothers had less than 2 children and 1.2% rural mothers had 4-5 children. 46.8% urban mothers had 2-3 children and 3.0% urban mothers had 4-5 children.

Educational qualification of mothers	Rural: N= 241		Urban: N=201	
	Frequency	%	Frequency	%
Illiterate	37	15.4	38	18.9
Primary School	138	57.3	83	41.3
Secondary School	51	21.2	48	23.9
Higher secondary	10	4.1	25	12.4
Bachelor degree	3	1.2	4	2.0
Masters	2	.8	3	1.5
Occupation				
House wife	233	96.7	187	93.0
Public service	3	1.2	2	1.0
NGO	4	1.7	7	3.5
Worker	1	.4	5	2.5
Family income				
<5000	25	10.4	12	6.0
5000-10000	154	64.7	114	56.7
11000-15000	41	17.0	47	23.4
16000-21000	10	4.1	18	9.0
21000-25000	3	1.2	4	2.0
>25000	6	2.5	6	3.0
Number of children				
<2 child	95	39.4	101	50.2
2-3 child	143	59.3	94	46.8
4-5 child	3	1.2	6	3.0
Total	241	100	201	100

The mean age of rural mothers was 24.82 ± 4.03 years and 24.68 ± 4.5 years of urban mothers. The bar diagram showed, most 43.6% of rural mothers and 42.8% of urban mothers age

group was 22-25 years. Mean age: 24.82 ± 4.03 years rural & 24.68 ± 4.5 years urban.



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Table 2: Antenatal care knowledge related information of mothers (N=Rural-241, urban-201).

From the rural areas, 91.3% respondents know about meaning of antenatal care but 8.7% respondents don't know about meaning of antenatal care. On the other hand in urban areas 97.5% respondents know about meaning of antenatal care but 2.5% respondents don't know about meaning of antenatal care. In case of rural areas, 43.2% respondents replied that they knew from relatives which was maximum about antenatal care but in case of urban areas. 39.8% respondents replied that they knew from relatives about antenatal care. From the result it was found that in case of rural areas 96.3%

respondents taken antenatal care and 3.7% did not take antenatal care. On the other hand in case of urban areas 90.5% respondents taken antenatal care and 9.5% did not take antenatal care. From the rural areas, 81.3% respondents replied that antenatal care is important for mother and child and in case of urban areas, 74.1% respondents replied that antenatal care is important for mother and child and in case of rural areas, 78.4% respondents replied that they got advices about PNC during ANC. But in case of urban areas 69.7% respondents replied that they got advices about PNC during ANC.

Meaning of antenatal care	Rural: N= 241		Urban: N=201	
	Frequency	%	Frequency	%
Know	220	91.3	196	97.5
Don't know	21	8.7	5	2.5
From where knew about antenatal care				
Relatives	104	43.2	80	39.8
Neighbor and relatives	60	24.9	55	27.4
Relative and media	22	9.1	23	11.4
Media	14	5.8	18	9.0
Neighbor	41	17.0	25	12.4
Taken antenatal care				
Yes	232	96.3	182	90.5
No	9	3.7	19	9.5
Importance of antenatal care				
Mother and child benefit	196	81.3	149	74.1
Child benefit	32	13.3	45	22.4
Mother benefit	3	1.2	1	.5
Child and family benefit	5	2.1	4	2.0
Don't know	5	2.1	2	1.0
Advice got about PNC during ANC				
Yes	189	78.4	140	69.7
No	52	21.6	61	30.3
Total	241	100	201	100

Table 3: Antenatal care impact related information of mothers (N=Rural-241, urban-201).

Among the total respondents it was found that, in case of rural areas 94.2% respondents replied that place of delivery was hospital. But in case of urban areas, 92.0% respondents replied that that place of delivery was hospital. From the result it was found that in case of rural areas, 20.7% respondents replied that they gave normal vaginal delivery but in case of urban areas 24.4% respondents replied that they gave normal vaginal delivery. On the other hand in case of rural areas 79.3% respondents replied that they gave caesarean section delivery but in case of urban areas 75.6% respondents replied that they caesarean section delivery. In

case of rural areas 23.2% respondents faced problems during child birth but in case of urban areas 22.9% respondents faced problems during child birth. On the other hand in case of rural areas 76.8% respondents did not face problems during child birth but in case of urban areas 77.1% respondents did not face problems during child birth. It was found that in case of rural areas 83.8% respondents replied that mothers condition after child birth was good. But in case of urban areas 88.1% respondents replied that mother's condition after child birth was good. From the result it was found that in case of rural areas 89.7% respondents replied that babies condition after birth was good. But in case of urban areas 92.6% respondents replied that babies condition after birth was good.

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Place of delivery	Rural: N= 241		Urban: N=201	
	Frequency	%	Frequency	%
Hospital	227	94.2	185	92.0
Home	12	5.0	4	2.0
Clinic	2	.8	12	6.0
Way of delivery				
Normal vaginal delivery	50	20.7	49	24.4
Caesarean section	191	79.3	152	75.6
Problems faced during child birth				
Yes	56	23.2	46	22.9
No	185	76.8	155	77.1
Mothers' condition after child birth				
Poor	39	16.2	24	11.9
Good	202	83.8	177	88.1
Babies' condition after birth				
Poor	24	10.3	14	7.4
Good	209	89.7	176	92.6
Total	241	100	201	100

Table 4: Spearman correlation between impact of mothers awareness by awareness score (N=442).

The result shows that mothers awareness on ANC and birth weight of newborn was found positive correlation ($r=.174$) and statistically highly significant ($p=000***$). Mothers awareness and babies condition during child birth was also found positive correlation ($r=.145$) and statistically highly significant ($p=002***$). The result also shows that mothers awareness and babies condition after child birth was found

positive correlation ($r=.128$) and statistically highly significant ($p=.007***$). On the other hand, mothers awareness and mothers condition during and after delivery was found positive correlation ($r=.055$, $r=.034$) but statistically not significant ($p=.247$, $p=.475$) respectively. Relationship between first feeding after birth and exclusive breastfeeding with mothers awareness was found positive correlation ($r=.032$, $r=.066$) but not statistically significant ($p=.497$, $p=.169$) respectively.

Impact of mothers and newborn health	Spearman correlation	
	r	P value
Birth weight	.174	.000***
Babies condition during child birth	.145	.002***
Babies condition after child birth	.128	.007***
Mothers condition during delivery	.055	.247
Mothers condition after delivery	.034	.475
First feeding after birth	.032	.497
Exclusive breastfeeding	.066	.169

DISCUSSION

Antenatal care (ANC) is a crucial component of maternal and child health services globally, aimed at promoting healthy pregnancies and reducing adverse outcomes for both mothers and newborns. In Bangladesh, where maternal and child health indicators have been improving steadily but still face significant challenges, the impact of mothers' awareness gained through ANC on maternal and newborn health is of paramount importance. This discussion explores the significance of ANC in Pabna District, Bangladesh, and its effects on maternal and newborn health outcomes.

ANC serves as a platform for providing essential health information, preventive interventions, and early detection of risks during pregnancy. A study conducted in Pabna District found that mothers who attended ANC services were more likely to receive information about proper nutrition, danger signs during pregnancy, childbirth, and postpartum care (Ahmed S, et al., 2017). This knowledge equips mothers with the necessary skills to make informed decisions about their health and that of their newborns. For instance, awareness about danger signs enables women to recognize complications early, seek timely care, and ultimately reduce

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maternal and neonatal mortality rates (Tripathi A, et al., 2016).

Moreover, ANC facilitates the identification and management of maternal health conditions such as anemia, hypertension, and gestational diabetes, which if left untreated, can lead to adverse outcomes for both mother and child. By monitoring maternal health parameters and providing appropriate interventions, ANC contributes to improving birth outcomes and reducing the risk of complications during childbirth (Shahabuddin ASM, et al., 2019). Studies have demonstrated a positive association between ANC attendance and birth preparedness, including the use of skilled birth attendants and institutional delivery, which are crucial for ensuring safe deliveries and reducing maternal and neonatal morbidity and mortality (Belayneh T, Adefris M, Andargie G., 2014).

Furthermore, ANC plays a vital role in promoting newborn health by emphasizing essential newborn care practices, such as early initiation of breastfeeding, thermal care, and hygiene measures. Mothers who receive ANC are more likely to adopt these practices, leading to improved neonatal survival and reduced risk of infections (Sarker BK, et al., 2017). Additionally, ANC offers opportunities for the early detection and management of conditions affecting newborns, such as birth defects and low birth weight, through routine screenings and referrals to specialized care when necessary. In conclusion, the awareness gained through ANC significantly influences maternal and newborn health outcomes in Pabna District, Bangladesh, and beyond. By providing essential health education, screening, and interventions, ANC enhances maternal knowledge, promotes healthy behaviors, and ensures timely access to healthcare services during pregnancy and childbirth. However, despite its proven benefits, challenges such as access barriers, quality of care, and cultural factors continue to hinder optimal utilization of ANC services. Addressing these challenges through targeted interventions and community engagement is essential for maximizing the potential impact of ANC on maternal and newborn health in resource-constrained settings like Pabna District.

CONCLUSION

In Pabna District, Bangladesh, the impact of maternal awareness gained through antenatal care (ANC) on maternal and newborn health is profound. ANC serves as a vital platform for equipping mothers with essential knowledge and skills necessary for navigating pregnancy, childbirth, and postnatal care. Additionally, ANC plays a crucial role in promoting newborn health by emphasizing essential care practices and facilitating early detection of newborn conditions. Mothers who attend ANC are more likely to initiate breastfeeding early and practice proper newborn care, leading to improved neonatal survival and reduced risk of infections.

In conclusion, ANC plays a pivotal role in enhancing maternal and newborn health in Pabna District, Bangladesh, by providing essential health education, monitoring, and interventions. Continued efforts to strengthen ANC services and address existing barriers are crucial for achieving sustainable improvements in maternal and newborn health outcomes in the district and beyond.

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CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

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