



P-ISSN: 2664-3685  
E-ISSN: 2664-3693  
[www.paediatricjournal.com](http://www.paediatricjournal.com)  
IJPG 2021; 4(1): 96-101  
Received: 05-03-2021  
Accepted: 08-04-2021

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## Utilization of ANC/PNC by the care receivers from community clinic and associated factors of the catchment area Gaibandha district

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**DOI:** <https://doi.org/10.33545/26643685.2021.v4.i1b.138>

### Abstract

**Background:** Antenatal Care and Postnatal Care are one of the major components of safe motherhood to prevent maternal and neonatal mortality and to lead healthy and safe outcome of pregnancy. This cross sectional study was conducted on factors associated with Antenatal Care and Postnatal Care coverage among married women.

**Methodology:** This cross-sectional study was undertaken in Gaibandha district on 320 married women with at least one children of age under 1 year age was taken.

**Results:** Most of the women (56%) under this study was married before 18 years age. About 37.50% women have two ANC visit and 21.88% has 3 ANC visit and 25% have 1 ANC visit. Only 6.25% women fulfill sufficient ANC visit (4 times). At least one PNC service receiving rate is 59.38%, at least two PNC visit was 18.75% and No PNC visit was 15.62%.

**Conclusion:** Most of the pregnant women were reluctant on ANC and PNC visit.

**Keywords:** ANC/PNC visit, age at marriage, educational status, family income

### Introduction

Pregnancy complication is one of the major cause of death of women according to World Health Organization (WHO) [1]. Every day around 800 women die due to pregnancy complications like excessive bleeding after birth, severe bacterial and fungal undetected infections, tuberculosis, tetanus or HIV/AIDS, hypertension, and abortion [2-6]. The scenario is worse in developing countries where 99% of this death occurs [1]. Being mother at premature (i.e.,  $\leq 19$  years old) or late stage (i.e.,  $\geq 35$  years old) is linked with greater risk of complications especially postpartum hemorrhage, eclampsia, and cephalopelvic disproportion, as well as adverse infant outcomes mainly, preterm birth, poor fetal growth, low birth weight, and neonatal mortality [7-10]. This responsible factors for this are poverty, malnutrition, inadequate prenatal care, weight gain during pregnancy, reduced hemoglobin level, and diseases like gestational diabetes [10-11].

This deaths could be avoided by ensuring proper healthcare systems. As the economic condition, educational level and social status is different in urban and rural areas, developed and developing countries; the maternal death is also different there. Although numerous efforts were taken by WHO to minimize maternal mortality ratio (MMR), the situation is not improved significantly in South Asian, Africa, Latin America and Oceania [12-14]. Every year around 3 million babies die during their first month of life and most of these especially in low and middle income countries could be easily preventable by practicing simple health care tools [15]. Birth preparedness helps to reduce mortality rates of both mother and babies because it minimizes the chances of complication. In addition it works as early warning system if any complexity exists [13-14].

Antenatal care (ANC) is an essential tools of basic healthcare services during pregnancy stages. It is the offered service which can prevent, detect and reduce risk factors. The risk factors can be detected on the basis of socioeconomic, medical and obstetrical factors. ANC also regulates maternal and child health status, immunization, nutrition, exercise, breastfeeding, counseling and educating the women [3-6]. Postnatal period (PNC) is a very critical period for every mother because most of them are unable to visit health care center due to geographical condition and unavailability of suitable transportation facility [1]. If delivery can be occurred in hospital, the mother and babies can have more access to the

health facilities. The objective of this study was to identify the socio demographic characteristics, knowledge, attitude, behavior, availability, accessibility and response on factors associated to the Antenatal Care and Postnatal Care Service utilization among the mothers of newborns from selected Community Clinics of Gaibandha District.

**Methodology**

**Types of study:** This was a cross sectional descriptive study.

**Place of study:** This is study was carried out in Gaibandha district, Bangladesh.

**Duration of Study:** This research work was conducted from January 2019 to April 2019.

**Study population:** The mothers of newborn visited Community Clinic for EPI session

**Sample size:** The total sample size was 320.

**Determination of the sample size:** The sample size was determined by using following formula  $n = Z^2pq/d^2$ ,  $n$  = required sample size,  $z$  = Confidence Limit value in 95% value is 1.96,  $P$  = prevalence Rate (4 ANC Coverage in BD is 52%)  $q$ -(1-p): proportion of pregnant women not receiving ANC Service,  $d$  = Acceptable standard level at 5% or 0.05;  $n = (1.96)^2 \times 0.53 \times 0.48 / (0.05)^2 = 360$ .

**Sampling Technique:** Purposive sampling technique was followed.

**Data collection tools:** A partially structured questionnaire which was duly pre-tested was used to collect data from the respondents was examined by the researcher himself.

**Data Collection Procedure:** The study subjects were postnatal mothers and the Antenatal care practice information was collected from the same respondents. Study enrolled postnatal mothers who visited the Expanded Program on Immunization (EPI) for the vaccination of newborn babies.

**Data analysis:** After proper verification regarding consistency and validity data were analyzed by Microsoft Excel 2013.

**Ethical consideration:** Verbal consent was taken from the study samples.

**Results**

The study was conducted on women who have at least one children of under one year age, so there is no respondents below 15 years and above 35 years. Among the respondents, 88.50% were between 15-25 years and 12.50% were between the age of 26 and 35. This is a common practice in rural Bangladesh where girls are got married in their early childhood. But now a days the scenario is changing. It is matter of regret that yet a large number of girls are getting married below 18 year of age. Majority of respondent were married before 18 years of age i.e. 56% and 44% were married after 18 years of age. It was found that agriculture was the major source of family income. Majority of respondent mentioned agriculture as their main source of income i.e. 65.63%. Beside this 12.50% were said business, 3.13% mentioned service 6.25% were mentioned garments worker 3.13% mentioned auto rickshaw driver and 9.38% were day labor. The family income shows the poor socio-economic conditions of most of the respondents here. Most of the respondents (56.25%) has family income between 5000-8000Tk, followed by 8000-10000 Tk 28.13%, 10000-15000 Tk 6.25% and only 9.37% are in range of 15000-20000 Tk. From table 1 it can be seen that, most of the respondents (50%) have schooling up to class 10 but they did not pass the SSC exam. Next 18.75% are illiterates, 9.37% have schooling up to primary level 15.63% have completed SSC level and 3.125% HSC level. Only 3.125% have enrolled in higher studies i.e. Hons/Degree level.

**Table 1:** Demographic characteristics of patients

Variables	Frequency	Percentage (%)
<b>Age</b>		
15-25	280	88.50
26-35	40	11.50
<b>Age at Marriage</b>		
14-17	180	56.00
18-25	140	44.00
<b>Source of Income</b>		
Agriculture	210	65.63
Business	40	12.50
Service	10	3.13
Garments worker	20	6.25
Auto Rickshaw Driver	10	3.13
Day Labor	30	9.38
<b>Average Family Income (Tk)/ Month</b>		
5000-8000	180	56.25
8000-10,000	90	28.13
10000-15000	20	6.25
15000-20000	30	9.37
<b>Education level</b>		
Illiterate	60	18.75
Primary (class1-5)	30	9.37
Secondary (Class 6-10)	160	50
Secondary school certificate (SSC)	50	15.63
Higher Secondary School Certificate (HSC)	10	3.125
Hons/Degree	10	3.125

Television can play a positive role in knowledge generation and create a public awareness as well. It also acts as a

valuable tools for governments to spread health programs, counseling and messages about latest health facilities to

mass people. It was found that only 40.62% participants have own television. A positive sign is that about 97% women has a mobile phone which can be used in emergency purpose. It also helps them to communicate with family members, neighbors and healthcare providers.

**Table 2:** Access to electronic device

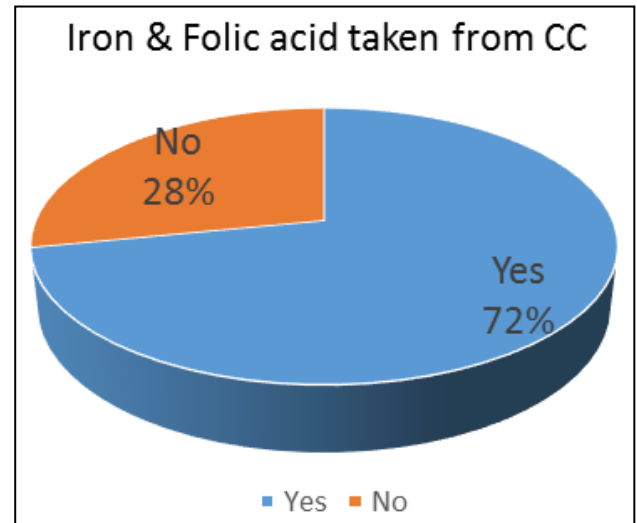
Types	Frequency	Percentage (%)
<b>Television set</b>		
Yes	130	40.62
No	190	59.38
<b>Mobile Phone</b>		
Yes	310	96.88
No	10	3.12

A positive outcome is that at present information about healthcare facilities is available to everyone. They are aware of free checkup at Community Clinic. About cent percent of the respondents were mentioned that (Figure 1).



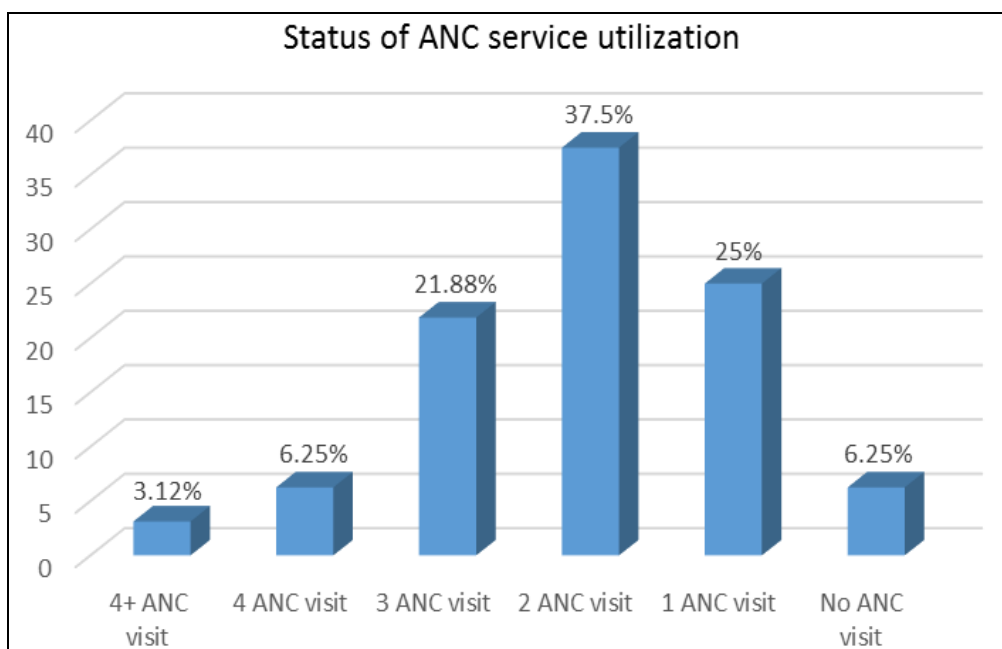
**Fig 1:** Information about free ANC/PNC checkup at Community Clinic

Free nutritional supplement such as iron and folic acid is provided from the community clinic. About 72% respondent were aware about it and they received it from the community clinic (Figure 2).



**Fig 2:** Information about Iron and Folic acid receiving from Community Clinic

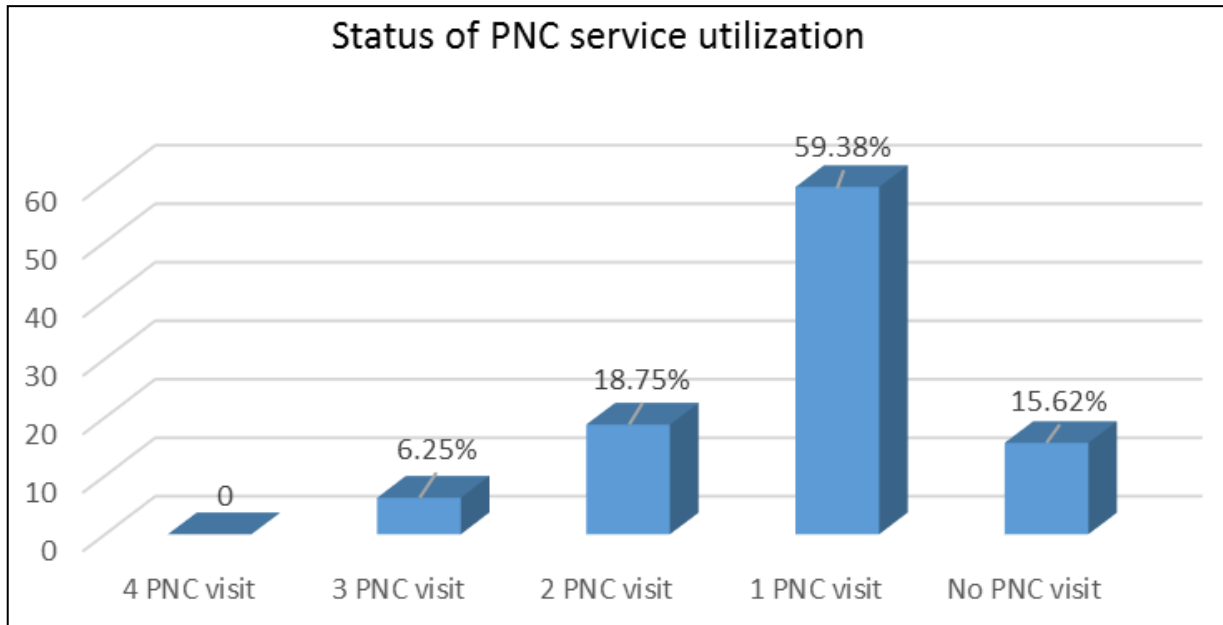
The ANC has been considered as a key entry point for pregnant women to get a broad range of health promotion and disease prevention services. The key point for pregnant women of getting a range of health promotion and disease prevention is to take ANC [16]. The main focus of the study was to see the tendency of utilizing ANC service from community clinics. According to WHO, four ANC visit is necessary to have a normal delivery [17]. As we see here 37.50% have two visit and this is maximum ANC visit. Next 21.88% three ANC visit and 25% have at least one ANC visit. The quality ANC visit is four and here only 6.25% visited that quality ANC and 4+ visit was 3.12%. Among the respondents 6.25% never visited for ANC at community clinic (Figure 3).



**Fig 3:** Status of ANC service utilization by patients

Here at least one PNC service receiving rate is 59.38%, at least two PNC visit was 18.75% and No PNC visit was

15.62%. Only 6.25% was received three PNC service. There was no quality PNC service receiver among the respondents.



**Fig 4:** Status of PNC service utilization by patients

It has been observed that illiterate pregnant mother mostly prefer 1 ANC and PNC visit which accounts for 50% (of illiterate women), followed by 2 ANC/PNC visit 33.34%. Among the mother of primary educational level most of them prefer 2 ANC/PNC visit (66.66%) and interestingly

class 6-10 group shows a wide range of ANC/PNC visit. Pregnant mothers with SSC educational level visit more than 1 ANC/PNC. Surprisingly all the mothers with HSC level visit 2 ANC/PNC and all graduate mothers visit 1 ANC/PNC (Table 3).

**Table 3:** Relation of ANC/PNC service with Educational level

Education and ANC/PNC Cross tabulation							
			ANC/PNC				Total
			1.00	2.00	3.00	4.00	
Education	Illiterate	Count	30	20	10	0	60
		% within Education	50.0%	33.3%	16.7%	0.0%	100.0%
	Class 1-5	Count	0	20	10	0	30
		% within Education	0.0%	66.7%	33.3%	0.0%	100.0%
	Class 6-10	Count	60	40	40	20	160
		% within Education	37.5%	25.0%	25.0%	12.5%	100.0%
	SSC	Count	0	30	10	10	50
		% within Education	0.0%	60.0%	20.0%	20.0%	100.0%
	HSC	Count	0	10	0	0	10
		% within Education	0.0%	100.0%	0.0%	0.0%	100.0%
	Hons/ Degree	Count	10	0	0	0	10
		% within Education	100.0%	0.0%	0.0%	0.0%	100.0%
Total		Count	100	120	70	30	320
		% within Education	31.3%	37.5%	21.9%	9.4%	100.0%

This study does not find any direct correlation between television watching and ANC/PNC visit. Most of pregnant mother of having habit of watching TV, prefers to

ANC/PNC visit 2 times while those women having no TV in home has 1 ANC/PNC visit (Table 4).

**Table 4:** Relation of ANC/PNC service with Watching TV

Watching TV and ANC/PNC Cross tabulation							
			ANC/PNC				Total
			1.00	2.00	3.00	4.00	
Watching TV	Yes	Count	20	60	30	20	130
		% within Watching TV	15.4%	46.2%	23.1%	15.4%	100.0%
	No	Count	80	60	40	10	190
		% within Watching TV	42.1%	31.6%	21.1%	5.3%	100.0%
Total		Count	100	120	70	30	320
		% within Watching TV	31.3%	37.5%	21.9%	9.4%	100.0%

## Discussion

This study showed numbers of factors that have influence on ANC/PNC visits. It was reported that at least one ANC visit with one skilled provider decreases 1.07% neonatal mortality. Therefore, one ANC visit is associated with decreased 3.82% of low birth weight baby<sup>[18]</sup>. Mother's education is the best predictor and most important factor that influence antenatal care visits. Regular ANC visit helps to boost up the confidence of the pregnant mother and reduces the tension about the delivery. In this study ANC/PNC visit increases up to the high school level and then it decreases. A study in Nepal in 2001 to 2006 was found that highly educated women are more likely utilized health facility during pregnancy. They also like to take more PNC checkup whereas uneducated and lower educated women were less likely to consult with a healthcare professional. Urban educated women more likely to visit maternal health services compared to other regions<sup>[19]</sup>. There were direct correlation between educational level and ANC and educated women were more willingly take ANC than uneducated women<sup>[20-23]</sup>. A study in Tanzania found that the first ANC visit time is 15 minutes and second ANC visit is 9 minutes<sup>[24]</sup>. In this study 93.75% women have at least one ANC visit which is considerably higher than previous published data (73%)<sup>[25]</sup>. But this study found that only 9% women fulfill the required ANC visit.

PNC visit reduces risk of disease of the newborn baby. Regular PNC visit ensures smooth growth of the baby. It also helps to reduce gender differences in the family. Urban women uses PNC 2.7 times more than rural women<sup>[26]</sup>. The main barriers to utilize the PNC services were lack of awareness about maternal health, distance to health facility, lack of trained health professional and lack of health facility in a particular village concluded by Simkhada, *et al.*<sup>[27]</sup> and Dhakal, *et al.*<sup>[28]</sup>. In this study most of the pregnant women prefers only 1 PNC visit which is not sufficient.

## Conclusion

This study provides an important contribution in the fight against maternal and neonatal mortality. A further study is needed to determine why the pregnant women did not take sufficient preparation before and after taking baby. Some of initiatives should be taken to increase ANC and PNC visit. The recommendations are distribution of delivery plan leaflet, advertise in media, increasing women education program and provides more access to women.

## Author's Contribution

G.M. Masud Parvez is responsible for analyzing the data and preparing him manuscript, Chowdhury Abdullah Us Shams Tilak collects and analyzes the data, Parmita Zaman design the conceptual framework and data collection of the work.

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