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Accessibility of pregnant women to antenatal care at selected community clinics

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ABSTRACT

The low and middle-income countries are losing almost 1500 women each day due to pregnancy-related complications. Proper antenatal care (ANC) can reduce the number of mortalities. The present study was carried out to assess the accessibility of the pregnant women to antenatal care at selected Community Clinics. The present cross-sectional study was carried out at 9 selected Community Clinics at Madhupur, Tangail from 1st January to 31st December, 2020. A total of 196 pregnant women were selected purposively as study participants. Study participants were interviewed face to face with a semi-structured questionnaire. The mean age of the pregnant mothers was 22.5 (±4.9) years where 41.3% were from 20-24 age groups. The mean age of marriage was 16.7 (±2.9) years while the mean age at first pregnancy was 18.8 (±3.2) years. Among them, 181 (92.3%) took first ANC at 16-20 weeks. Majority of the pregnant mother's (71.4%) home was less than 1 kilometer away from health facility. Mode of transport of 68.3% pregnant mothers was on foot while 28.6% used public transport. One third of the pregnant mothers (31.1%) told that the waiting time was 10-20 minutes. All ANC services were provided by Community Health Care Providers (CHCP). While assessing the accessibility of services, 91.3% told that health care provider measured their height, weight and blood pressure during this visit. Abdominal examination was not done to any of the pregnant mother. Among them, 86.7% told that counseling was provided by service provider where 86.2% were advised about medicine and 59.7% were advised about danger sign. No one was advised about personal hygiene during this visit. Significant statistical difference was found between total number of ANC visit and age groups of the respondents (p=0.014) and monthly family income of the respondents (p=0.020). Physical accessibility of the pregnant women to antenatal care at selected Community Clinics was satisfactory while there were gaps in service accessibility. Implementation of policies to provide ANC visits by skilled healthcare providers may serve as an effective strategy to improve the service quality which could contribute to the reduction of maternal mortality.

INTRODUCTION

Antenatal care is a type of preventative care with the goal of providing regular check-ups that allow doctors or midwives to treat and prevent potential health problems throughout the course of the pregnancy while promoting healthy lifestyles that benefit both mother and child. During check-ups, women will receive medical information over maternal physiological changes in pregnancy, biological changes, and prenatal nutrition including prenatal vitamins. Recommendations on management and healthy lifestyle changes are also made during regular check-ups (Begum et al., 2014).

It also offers opportunity to inform women about the danger signs and symptoms which require prompt attention from a health care provider. Key components of antenatal care include the communication of health-related information, screening for risk factors, the prevention and management of complications, and planning for delivery in a safe place by skilled attendants, tetanus toxoid immunization, iron supplementation, preparation for transportation to a delivery site. The ultimate aim of antenatal care is to achieve healthy babies and healthy mothers at the end of pregnancy (Abou Zahr, 2003).

The antenatal care service inevitably requires necessary health infrastructure and health professionals with appropriate skills and experience particularly in poor countries where pregnant women are at increased risk of morbidity

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and mortality due to poverty, malnutrition and infections (Shajahan et al., 2012).

The use of antenatal care in developing countries is low compared to developed countries (97%). In developing countries, women spend more time on their multiple responsibilities for care of children, collecting water or fuel, cooking, cleaning, and trade than on their own health. They think it is a natural phenomenon and ignore in taking health care during pregnancy (Nigussie et al., 2004).

A physical examination is done which divided into three categories including general examination, which includes weight, height, heart rate, the color of mucous membranes, blood pressure, check for edema, and examination, of lymph nodes. In addition, asystematic examination includes examination of teeth, gums, breasts, thyroid, and heart and lung functions (Ali et al., 2018).

Primary health care system is a vital tool for functional health care services in any society. About 65% of people in Bangladesh are rural dwellers, while the majority of them are of low socioeconomic status (Alim et al., 2014). A rural level facility such as the community clinics becomes demanding to provide health care services to the most-at-risk and vulnerable women. Consequent upon this, the CCs system was developed to ameliorate the situation. But less awareness is available to describe the importance of utilizing the CCs (Normand et al., 2020). A key method to scrutinize the utilization of CCs could be by assessing the level of awareness of the women about the facilities.

The reduction of maternal mortality requires early detection of high risk pregnancies through appropriate antenatal care at community level and the existence of a mechanism to ensure timely access to referral facilities (Anwar et al., 2009).

Antenatal care (ANC) utilization in developing countries is low (65%) when compared to that of the developed countries, which is 97%. Skilled attendance at delivery is 53% in developing countries and 99% in developed countries (Anwar et al., 2009).

About 13% of women in sub-Saharan Africa did not utilize antenatal care while 35%and 53% respectively partially and adequately utilized the service (Majrooh et al., 2013). In India, about three-fifths of rural women did not receive any antenatal check-up during their last pregnancy. The average number of antenatal visits was 2.4 and most visits were in the second trimester (Adedokun and Yaya, 2020). Therefore, the present study was conducted to assess the accessibility of pregnant women to antenatal care at nine Community Clinics of Madhupur, Tangail. The data revealed from the study might help policy makers to improve the antenatal care services in Community Clinics.

MATERIALS AND METHODS

Study design

This was a descriptive cross-sectional study was used to explore accessibility of pregnant women to antenatal care at selected community clinics. Study was conducted at 9 Community Clinics of Madhupur, Tangail. Study period was 1 (one) year from January 2020 to December 2020.

Study population and sampling technique

Pregnant women, who came at community clinic to receive ANC service during the study period. This cross-sectional study using purposive sampling technique to select sample from study population.

Sample size calculation

To determine the sample size, we used following formula:

The formula was: $n = z^2pq/d^2$

At 95 % confidence interval we have consider 5 % error and here p =50% (assumed). By using this formula the researcher was concluded in a sample size. The total sample size was 384.

Due to Unavoidable circumstances in COVID-19 pandemic, data were collected from only 196 participants instead 384 of participants. So, the sample size was 196.

Data collection techniques

Data were collected by face-to-face interview.

At first, purpose of the study was explained to the respondents. As a researcher I assured them privacy and confidentiality were maintained strictly. Informed written consent was obtained from respondents. Data was collected by face-to-face interview in Bangla version. Each respondent was interviewed separately. The right was being given to the participants not to participate and to discontinue participation at any time in study with consideration/without penalty. Their participation and contribution were acknowledged with due respects.

Data collection Instrument

Semi structured questionnaire consisted of four parts: 1) socio-demographic characteristics 2) Information Physical accessibility 3) Information related to Service accessibility to ANC and 4) Information related to obstetrical factors.

Data processing

Data was checked for consistency, relevancy and quality control. Data was compiled, coded cleared, categorized and edited according to objectives and variables.

Data analysis

At the end of the day of data collection, from individual questionnaire was edit through checking and rechecking to see whether it was fill completely and consistently. An analysis process was developed to keep in view with the objectives of the study. All the data was entering and analyze by using statistical packages for Social Science (SPSS) software version 25. Descriptive statistics includes frequency, percentage, mean and standard deviation. P value <0.05 was considered as a level of significant.

Ethical Implications

Formal approval of the study was obtained from Institutional Review Board of NIPSOM, Dhaka, Bangladesh.

The aim and objective of the study along with its procedure and benefits were explained to the respondents in easily understandable local language and then informed written consent was taken.

Each respondent was interview separately. All participants were treated equally. The respondents were informed about their full freedom to participate or refuse to involve in this study. Confidentiality of the data was maintained strictly. No physical or emotional harm was done to the participants.

RESULTS

This descriptive cross-sectional study was conducted among pregnant women came in the selected community clinic with the objective to assess the accessibility challenges of pregnant women to antenatal care at selected Community Clinics. Tangail, Bangladesh. The study result was expressed by using descriptive statistics and inferential statistic.

Table 1: Distribution of the respondents by socio-demographic status (n=196)

Variables	Categories	Frequency	Percentage	Statistics
Age group (in years)	15-19	52	26.5	Mean (± SD) 22.5(±4.9)
	20-24	81	41.3	
	25-29	40	20.4	
	≥30	23	12.4	
Religion	Muslim	178	90.8	
	Hindu	5	2.6	
	Christian	13	6.6	
	Illiterate	6	3.1	

Educational Qualification	Up to primary	68	34.7
	Up to secondary	95	48.5
	SSC Passed	17	8.7
	HSC Passed	3	1.5
	Graduate	7	3.6
Occupation	House wife	189	96.4
	Service holder	5	2.6
	Self employed	2	0.1
	Illiterate	21	10.7
Husband's educational qualification	Primary	68	34.7
	Secondary	72	36.7
	SSC Passed	19	9.7
	HSC Passed	9	4.6
	Graduate	7	3.5
Husband's Occupation	Agriculture	12	6.1
	Service holder	33	16.8
	Business	49	25
	Day labour	90	45.9
	Others	12	6.1
Types of family	Nuclear	189	96.4
	Joint	7	3.6
Number of family members	1-3 Members	67	34.2
	4-6 members	116	59.2
	Above 7 members	13	6.6
Type of house	Katcha	119	60.7
	Pucca	42	21.4
	Semi pucca	35	17.9
Monthly Family Income	Below 5000	41	20.9
	5001-10000	123	62.8
	10001-15000	26	13.3
	Above15000	6	3.1

Table 2: Distribution of the respondents by reproductive characteristics (n=196)

Variables	**Categories**	**Frequency**	**Percentage**	**Statistics**
Marriage age	12-15 years	76	38.8	Mean (± SD) 16.7 (±2.9)
	16-20 years	106	54.1	
	>20 years	14	6.2	
	Below 15	20	10.2	
Age at first pregnancy (in complete years)	16-20	135	68.9	Mean ((± SD) 18.8 (±3.17)
	21-30	41	20.9	
Number of Children	One	58	29.6	
	Two	29	14.8	
	No children	109	55.6	
When received first ANC	16-20 weeks	181	92.3	
	24-28 weeks	12	6.1	
	32-35 weeks	3	1.5	

The mean (±SD) age of the mothers was 22.5(±4.9) years. Among them, 178(90.8%) were Muslim. Among them, 95 (48.5%) had educational level up to secondary while 68 (34.7%) up to primary. Most of them 189 (96.4%) was housewives. Highest percentage of educational level of the respondent's husband was 36.7% has secondary education. The mean (± SD) monthly family income of pregnant women was 7948.98 (±3575.909) taka (Table 1).

The mean marriage of the pregnant women was 16.7(±2.9) years while the mean age at first pregnancy was 18.8 (±3.2) years. Among them, 58 (29.6%) had one child, 29 (14.8%) had two children and rest of them 109 (55.6%) had no child (table II). Among them, 181 (92.3%) were in 16-20 weeks, 12 (6.1%) were in 24-28 weeks, 3 (1.5%) were in 32- 35 weeks (Table 2).

Table 3: Distribution of the respondents by physical accessibility (n=196)

Variables	Categories	Frequency	Percentage	Statistics
Distance of community clinic from home (in Kilometer)	Up to 1.00	140	71.4	
	More than 1.00	56	29.6	
Mode of Transport	On foot	140	71.4	
	Public transport	50	25.5	
	Private transport	6	3.1	
Transport cost	<10 taka	31	15.8	
	11-20 taka	12	6.1	
	>20 taka	13	4.1	
	No cost	140	71.4	
Condition of Roads	Kutcha	122	62.2	
	Pucca	74	37.8	

Table 4: Distribution of the respondents by waiting times to get ANC (n=196)

Variables	Categories	Frequency	Percentage
Waiting time to get ANC	10 – 20 Minutes	123	62.8
	21 – 30 Minutes	61	31.1
	Above 30 Minutes	12	6.1
Physical examination	Performed	179	91.3
	Not performed	17	8.7
Type of Physical Examination	Measurement of height	179	91.3
	Measurement of weight	179	91.3
	Measurement of BP	179	91.3
	Abdominal examination	0	0
Counseling provided by health care provider	Yes	170	86.7
	No	26	13.3
Type of Counseling	About medicine	169	86.2
	About danger sign	117	59.7
	About rest	7	3.6
	About diet	6	3.1
	Personal hygiene	0	0

Among them, 140 (71.4%) pregnant women's home was less than 1 kilometer away from health facility and 140 (71.4%) pregnant women's mode of transport was on foot. Among them, 122 (62.2%) told their status of roads to community clinic was kutcha (Table 3).

Majority 123 (62.8%) respondents told that the waiting time was 10 – 20 minutes and 91.3% (179) told health care provider performed physical examination. Among them, 179 (91.3%) told that health care provider measured their height, weight and BP while 196 (100%) told health care provider didn't perform their abdominal examination during this visit. Among them 170 (86.7%) told that counseling was provided by health care provide (Table 4).

Table 5: Association between respondent's age group and monthly family income with their number of ANC visits

Variables	Categories	No of ANC visit, Mean (± SD)	Statistics
Age groups (in years)	15-19	1.77 ±0.92	
	20-24	1.98 ±0.93	F=3.223
	25-29	2.33 ±1.07	p=0.014
	≥30	2.18 ±1.07	
Monthly family income	Below 5,000	2.12 ±1.005	
	5001-10,000	1.85 ±0.906	F=3.35
	>10,000	2.46 ±1.104	p=0.020

Table 6: Association between respondent's educational status and their number of visits and educational status of the respondents

Variables	Categories	No of ANC visit, Mean (± SD)	Statistics
Educational Status	Illiterate	1.8(1.16)	F=0.83 p=0.441
	Primary	1.9 (.96)	
	Secondary	2.06 (.93)	
	SSC	1.9 (1.05)	
	HSC	1.7 (1.15)	
	Graduate	2.5 (1.27)	

Respondents from age group 25-29 years took more ANC visits than others. Significant statistical difference was found between total number of ANC visit and age groups of the respondents (p=0.014; obtained from one way ANOVA test). Respondents with monthly family income up to 5000 taka and respondents had monthly income >10000 taka took more ANC visits than others. Significant statistical difference was found between total number of ANC visit and monthly family income of the respondents (p=0.020; obtained from one way ANOVA test) (Table 5).

Table VI shows the association between total number of visit and educational status of the respondents. No significant statistical difference was found between total number of ANC visit and educational status of the respondents (p=0.441; obtained from one way ANOVA test).No significant statistical difference was found between total number of ANC visit and distance from the residence of the respondents (p=0.140; obtained from one way ANOVA test).

DISCUSSION

This cross-sectional study was carried out to assess the accessibility of the pregnant women to antenatal care at selected Community Clinics at Madhupur, Tangail.

The result of the present study showed that 41.3% were from 20-24 years age group and 20.4% were

from 25-29 years age group. Begum et al. (2014) aimed to find out the utilization of antenatal care services in a selected rural area in Bangladesh where they found that ANC service was highest (45.72%) among the age group 23-27 years which was close to the present study. Unfortunately, 26.5% pregnant women of the present study were from 15-19 years age group. Despite signs of progress, Bangladesh continues to have one of the highest child marriage rates worldwide and the highest rate of marriage involving girls under 15 (Bangladesh -Child Marriage, 2017).

Among the 196 respondents, 34.7% had educational level up to primary, 48.5% had educational level up to secondary while 3.6% was graduate which was consistent with the results of Begum et al. (2014).

Most of the respondents of the current study were house wives. As the study place of this study was rural area, so the percentage of house wives was high.

Majority of the respondents lived in kutcha and semi pucca house. As the study was conducted in rural area, the proportion of semi-pacca and katcha house were higher than pucca house.

One fifth of the respondents had monthly family income below 5,000 taka and only 3.1% had above 15,000 Tk. The study of Begum et al. (2014) found that 13.6% respondents had monthly family income below 5,000 taka and 28.14% had above 15,000 Tk. This dissimilarity of results might be due to the devastating effect of COVID-19 pandemic which had a negative effect on workers and businesses across the country. The economy almost came to a standstill and debilitating effects are being observed in almost all sectors.

Child marriage has many effects on girls' health: increased risk for sexually transmitted diseases, cervical cancer, malaria, death during childbirth, and obstetric fistulas. Girl's offspring are at increased risk for premature birth and death as neonates, infants, or children. Despite significant progress in recent years, Bangladesh has the highest prevalence of child marriage in South Asia and ranks among 10 countries in the world with the highest levels. The current study found that 38.8% respondents were married within 12- 15 years and 10.2% got pregnant below the age of 15 years.

Community Clinics (CC) were to provide services for around 6000 people, and it was envisaged that their location would make them accessible for 80 % of the population within less than 30 min walking distance. Majority of the respondents had distance of the CC from their residence <1 kilometer away and they reached the CC on foot and they did not need any transport cost. This indicated that the CC was easily accessible to the pregnant women. However, one third of the respondents (31.1%) told that they had to wait for 21-30 minutes to get the services.

All services were provided by Community Health Care Provider (CHCP). Out of 196 pregnant women, most of the respondents (91.3%) told health care provider performed physical examination during this visit which included mainly measurement of height, weight and blood pressure. All respondents told that health care provider didn't perform any other examination during this visit. During ANC visit, the pregnant women should examine for anemia, fetal presentation, uterine height, swollen glands, vaginal examination, breast examination etc. This lacking of examination might be due to the type of health care provider. As these services were provided by CHCP, it was not possible for them to do all these examinations. Moreover, these CHCP were male person which also hinders the examination.

A study showed that the proportion of receiving the items of ANC contents was three times higher for mothers who attended skilled providers of ANC services (i.e. qualified doctor, nurse/ paramedic, FWV), compared with the unskilled providers (FWA and community health care provider) (Islam and Masud, 2018). Interms of service contents, other studies (Mansur et al., 2014) including a study based on a large and nationally representative dataset (USAID 2021) showed similar trends and gaps, as blood pressure and weight measurement and abdominal examination are the most common ANC contents delivered, while counseling on danger signs, urine testing, blood screening and ultrasound were

conducted less than half of the time during the ANC contacts.

Among the respondents, 86.7% told that counseling was provided by health care provider during this visit. They were counseled mainly about medicine. All of them were explained about the purpose of iron or folic acid, gave them iron or folic acid and explained about the purpose of tetanus toxoid. Majority told that they were counseled about danger sign. Only 3.1% told that health care provider provided counseling about diet and 3.6% told that health care provider provided counseling about rest. All of them told that health care provider didn't provide counseling about personal hygiene during this visit.

Respondents from 25-29 years age group took highest no. of ANC visit than others while respondents >34 years age took lowest no. of ANC visits. Results from various studies have found mixed evidence of an association between age and utilization of ANC services. In some studies, young age of women has been identified as a predisposing determinant for utilization of ANC services. However, few studies suggest contrary to these studies, few studies suggest that increased age is associated with more utilization of ANC services (Ali et al., 2018)

Respondents with monthly family income 10,000-15,000 taka took maximum no. of ANC visit while respondents with monthly family income >15,000 taka took minimum no. of ANC visit. Respondents with more wealth might visit higher level of health facilities for ANC. Again a significant no. of respondents with monthly family income <5,000 taka took more than 2 ANC visit. As they were from low socio-economic group, they could not afford other higher level of health facilities for ANC.

CONCLUSION

Majority of the pregnant mother's (71.4%) came to community clinics less than 1 kilometer distance from their house. Mode of transport of 68.3% pregnant mothers was on foot while 28.6% used public transport. About one third of the pregnant mothers (31.1%) told that the waiting time was 10-20 minutes. All ANC services were provided by Community Health Care Providers (CHCP). While assessing the accessibility of services, 91.3% told that health care provider measured their height, weight and blood pressure during this visit. Abdominal examination was not done to any of the pregnant mother. Among them, 86.7% told that counseling was provided by health care provider where 86.2% were counseled about medicine and 59.7% were counseled about danger sign. No one was counseled about personal hygiene during this visit. Significant statistical difference was found between total number of ANC visit and age groups of the respondents (p=0.014) and monthly family income of the respondents (p=0.020). Implementation of policies to provide ANC visits by skilled healthcare providers may serve as an effective strategy to improve the service quality which could contribute to the reduction of maternal mortality.

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