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Perceived quality of antenatal care for pregnant women at a tertiary level hospital

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Abstract

Introduction: Antenatal care (ANC) helps in the effective management of pre-natal morbidities, and facilitates institutional delivery and postpartum care, that can improve maternal and newborn health. Patient perceived quality is defined as the subjective and dynamic perception of the extent to which expected health care is received by a person and it provides excellent feedback to healthcare providers.

Aim of the study: This study aimed to describe the perceived Quality of antenatal care for pregnant women at tertiary level hospitals in Bangladesh.

Methods: A descriptive study was conducted among 98 pregnant women who were attending the antenatal care unit at OPD in Dhaka medical college hospital, Dhaka. A convenience sampling technique was used to select study participants. Data was collected through face-to-face interviews through a structured questionnaire. Data were analyzed by using frequencies, percentages, the mean and standard deviation to describe the demographic characteristic. Inferential statistics two-sample t-tests and ANOVA were used.

Result: The mean age of pregnant mothers was 24.87(4.67) years, (ranging from 18 to 38). The total mean score quality of antenatal care was 3.77 ±.939. Only physical examination regarding fundal assessment rate was very poor (35.7%). There was a significant difference between education and perceived quality of antenatal care ($F= 4.571, p = 013$).

Conclusion: The results revealed that those who had more education; had a more perceived quality of antenatal care and those who got more than four visits, had a good quality of antenatal care. The results provide baseline information for providing antenatal care to pregnant women about increasing the rate of physical assessment. The authentic assessment helps to reduce maternal and infant mortality and morbidity which can help in achieving the SDGs3.

Keywords: Antenatal care; Quality of care; Pregnant women; Bangladesh

1. Introduction

Systemic supervision (examination & advice) of woman during pregnancy is called antenatal care (ANC) [1]. ANC helps in effective management of pre-natal morbidities, and facilitates institutional delivery and postpartum care, that can improve maternal and new-born health outcomes [2,3,4]. Antenatal care is a critical area in which quality can play a major role in ensuring the wellbeing of the mother and the child and the mother's perception of quality of services is considered as a factor that has a great influence on mother's behaviors (World Health Organization [WHO], 2004) [5]. Patient perceived quality is defined as subjective and dynamic perception of the extent to which expected health care is received by a person and it provides an excellent feedback to healthcare provider [6]. Bangladesh Maternal Mortality Survey stated that almost (74%) women received at least one ANC visit from a health care provider and only 9% received ANC from non-trained person. The private sector was the most important source of ANC, 58% client went to

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the private sector and 36% utilize the public area [7]. In Tanzania, ninety four percent pregnant women had attended at ANC only one time (Tanzania National Bureau of Statistics [TNBS], 2005). Another study found in sub-Saharan Africa 90% of pregnant women had attended at least one visit (United Nations International Children's Emergency Fund [UNICEF], 2008) [8]. Globally, maternal mortality is very high which is not acceptable. In the world every day about 800 women die from pregnancy related complications. A large number (99%) of pregnant women deaths occur in developing country. Almost all of the death are preventable through good quality of antenatal care (ANC) and can reduce maternal mortality and morbidity and perinatal mortality (WHO, 2013) [10]. Annual maternal mortality rates in the developed countries such as United Kingdom and the United States of America are estimated at 8 and 16 per 100,000 live births respectively (WHO, 2010) [9]. The most common causes of maternal death were postpartum hemorrhage (31%), eclampsia and preeclampsia (24%), by indirect causes (20%), abortions (7%), and obstructed or prolonged labor (3%) [7]. These deaths and complications have to occur especially due to lack of proper antenatal care or inadequate management of pregnancy. There is few nursing study in this area. So, the researcher wants to describe the quality of antenatal care for pregnant women at a tertiary level hospital. The findings of the study will provide important information for the nurse midwife to develop nursing intervention for the pregnant mothers that can improve good health of mothers and newborns. In the health care system, quality is one criterion for good care. As well as quality of antenatal care, it reflects values and goals. Low quality of ANC contributes high maternal death [11]. Quality of antenatal care is the standard of care regularly monitored by trained health personnel. Pregnant women need to initiate antenatal consultations from the first trimester. At least four antenatal consultations are needed with a doctor or a nurse [12]. Bangladesh Maternal Mortality and Health Care Survey stated that almost 3 in every 4 (74%) women received at least one ANC visit by medical trained personnel and (9%) received ANC from non-medical trained personnel. A notable portion of pregnant women (22%) receiving ANC at home. A higher portion of urban women (82%). The private sector is now the most prominent source of ANC. Overall (58%) ANC client went to the private sector, while (36%) use the public sector [7]. A cross-sectional study in Bangladesh among 915 women at the three Upazila Health Complex's (PHC) of Bangladesh showed that ANC services delivery in the ANC centers were fairly satisfactory. The physical facilities were not quite satisfactory. Number of doctors and nurses were not very satisfactory and one of the centers, where ANC services were given by nurses [13]. Another previous study found that among 239 women at the university college hospital, the attitude of health personnel was a significant determinant of patients' perception and satisfaction regarding ANC visit [14]. One previous study revealed that older age, higher parity and higher levels of education and economic status of the women were predictors of both attendances at ANC visits and received good quality antenatal care. Women who did not smoke, whose husband had higher education and were involved in occupation were more likely to attend four or more visits [15]. Another study stated that the quality of services regarding assessment, treatment and counseling were extremely poor. The reasons were the distant location of facilities, deficiency of facility resources, indifferent attitude and non-availability of the staff, and lack of client awareness about ANC and self-empowerment for decision making to seek care [16]. Another study found that mothers were receiving only part of recommended components of care, which were: Venereal Disease Research Laboratory (VDRL) test, blood group and Rhesus factor, folic acid supplement, Tetanus Toxoid vaccine and conjunctiva checked. Lack of reagents partly explained the problems in the provision of recommended care components [17]. A previous study from demographic and health surveys conducted in 28 African countries that aimed to explore predictors of retention of antenatal care clients in skilled birth attendance across Africa, including sociodemographic factors and quality of antenatal care received. The findings stated that higher quality of ANC predicts retention in skilled birth attendance (SBA) in Africa. ANC clients that had their blood pressure checked, received information about pregnancy complications, had blood test, received at least one tetanus injection, and had urine tests [18]. One study revealed that women's satisfaction with antenatal care was associated with frequency of antenatal visit, advice on nutrition, advice on birth preparedness, and closeness of health center to mother's home test [19]. The overall satisfaction of antenatal care was low because of distance of health center, charge for service and lack of skilled personnel and not taking recommended laboratory test. This study aimed to describe the perceived Quality of antenatal care for pregnant women at tertiary level hospitals in Bangladesh.

2. Methodology & materials

This descriptive exploratory study design was used to describe the quality of antenatal care for pregnant mothers at Dhaka medical college hospital. The samples of this study were 98 pregnant women who met inclusion criteria and attended an antenatal unit at the outpatient department of DMCH were recruited conveniently. Power analysis was used to estimate the number of subjects in the study. The estimated sample size was calculated for an acceptable minimum level of significant alpha (α) of 0.05, an expected power of 0.80 1-beta (" 1β ", the power of the test), and an estimated population effect size of gamma 0.3 (γ) as the medium effect size used in the nursing studies. According to the power analysis, the estimated sample size was 84. By adding a 20% attrition rate, the sample was 98. The structured questionnaires were used based on the literature reviewed. The investigator modified the instruments for academic purposes based on expert opinion. The instruments of this study were constructed in two parts. The demographic Questionnaire for pregnant women consisted of eleven (11) items, including age, religion, marital status, educational

level, occupation, monthly family income, gestational age, number of antenatal visits, number of living children, weight, and height-quality of Antenatal Care Questionnaire. The researcher modified the Quality of Antenatal Care Questionnaire based on the purpose of the study by expert opinion. The original version had 65 items, and the modified version had 25 items on a 4-point Likert -scale. The rating scales were “Never, Often, Sometimes, and always.” All the questionnaires were scored from 1 to 4 in items 1= never, 2= often, sometime= three, and always= 4.

- Inclusion criteria
 - Normal pregnancy
 - Gestational age \geq 28 weeks and
 - Visit the antenatal care unit at least 2-3 ANC visits.
- Exclusion criteria
 - Severe ill and mentally retarded mother.

The study was approved by the ethics committee of the National Institute of Advanced Nursing Education and Research (NIANER), Bangabandhu Sheikh Mujib Medical University (BSMMU), IRB No-Exp. NIA- S-2018-14. After obtaining permission from the authority of DMCH, Data were collected through face-to-face interviews through structured questionnaires from December 2018 to January 2019 during office time. The purpose of the study was explained to the participants, and confidentiality was maintained. The collected data were analyzed by using SPSS software program version 23. Descriptive and inferential statistics were used. In descriptive statistics; data were presented by frequency, percentage, the mean and standard deviation to describe the participant’s characteristics. Inferential statistic; t-test, ANOVAs and correlation was used to examine the relationship between study variables.

3. Results

The sample consisted of ninety-eight pregnant women who had visited at antenatal care unit and were selected from Dhaka medical college Hospital. The minimum ages of pregnant women were 18 years, the maximum age was 38 years old, and their mean age was 24.87(\pm 4.67) years. Most of them were married (100%), and most participants were Muslims (94.9%). Regarding educational level, 32.7% of pregnant women had primary, (31.6%) had secondary school, and (35.7%) of participants had College & university education. More than two third (72.4%) of the participant were homemakers, and more than half (65.3%) of participants’ family income was 2000-20000 BDT. The mean gestational ages of the pregnant women were 29.39 weeks. More than fifty percent of participants (63.3%) visited ANC thrice and forth, and 69.4% had one living child (Table-1). All participants (100%) responded that their health history was taken and blood pressure was continuously measured. More than fifty percent (64.3%) of participants always checked their pulse rate. Most participants (75.5%) always examined their eyes to detect anemia. Regarding leg examination to detect edema majority (94.9%) responded that they always examined. More than fifty percent (62.2%) responded to abdominal abnormality observation that they had often observed. Less than fifty percent (35.7%) of participants said that fundal height was measured sometimes. More than fifty percent (58.2%) of participants said fetal heart sound was checked often. The majority (98.0%) said their tests were always done regarding urine and blood. Most (94.9%) participants said that their given information about prenatal tests and procedures. Most (95.9%) of the participants said they always offered seats, and 96.9% of participants’ permission was taken before the examination. Most (91.8 %) participants said they had provided information about five danger signs of pregnancy, and 93.9% were always told about a nutritious diet. Regarding providing information about family planning for birth spacing, most (93.9%) participants said they were always informed. Information about breastfeeding, 91.8% of participants were always provided information. 92.9% of participants were always advised about regular follow-up, and more than half (64.3%) said they were always provided time to listen. Regarding confidentiality maintenance, they said that 92.9 % were always maintained. The majority (91.4%) of participants said that they were always advised regarding follow-up visits to a physician if any abnormality occurs during postpartum, and 95.9 % of participants said they were always advised to follow up on the baby. Most participants (90.8 %) were always advised to vaccinate the baby. Most participants (93.3%) were told they were always provided information about umbilical cord care. Most (90.8%) of the participants were always advised about maintaining personal hygiene, and more than fifty (69.4%) percent of participants said their beliefs were always accepted. (Table-2). This study found the differences in the quality of antenatal care and demographic and pregnancy-related characteristics. The total mean quality of antenatal care regarding education was significant at 3.80 (\pm .083), $F=4.571(.013)$, and quality was also different by occupation and monthly income 3.81(\pm .09), $F=1.996 (.142)$ but not significant. The result revealed that for those who had high BMI quality of ANC was lower but not significant by 3.77(\pm .09). There was a statistically negative correlation between BMI and quality of ANC ($r = -.11$, $p=.264$). This study result showed the different quality of ANC and the pregnancy-related characteristics. More than four ANC visits showed high quality 3.81 \pm (.05), $F=2.65(.076)$, and more than one baby showed high-quality ANC 3.80 \pm (.09), $F=1.283(.282)$ but not significant. (Table-3)

Table 1 Socio-Demographic and Pregnancy-Related Characteristics of the Participants. N= 98

Variable	Frequency	Percentage	Mean± SD
Age (years)	-	-	24.87± 4.67
BMI	-	-	25.11±2.864
Gestational age (week)	-	-	29.39±2.831
Religion			
Muslim	93	94.9	-
Hindu	5	5.1	
Education			
Primary	32	32.7	-
SSC	31	31.6	
College and university	35	35.7	
Occupation			
Housewife	71	72.4	-
Service holder	15	15.3	
Student	12	12.2	
Monthly income			
2000-200000 BDT	64	65.3	-
21000-360000	22	22.4	
More than360000	13	13.3	
ANC visit No			
First and2nd visit	22	22.4	-
Third and 4 th visit	62	63.3	
>four visit	14	14.3	
No of Living children			
No baby	17	17.3	-
One baby	68	69.4	
>one	13	13.3	

Table 2 Quality of Antenatal Care of the Participants (N=98)

Variables	Never	Some times	Often	Always	Mean±SD
	N (%)	n (%)	n (%)	n (%)	
My health history has been taken	0	-	-	100(100.0)	4.0(0.00)
My Blood pressure has been measured	0	-	-	100(100.0)	4(0.00)
My pulse rate has been measured	0	-	35(35.7)	63(64.3)	3.64(0.48)
My eye has been checked to detect anemia	0	1(1.0)	23(23.5)	74(75.5)	3.81(0.32)
My leg was examined to detect edema	0	2(2.0)	3(3.1)	93(94.9)	3.93(0.32)
My abdominal abnormality has been observed	0	18(18.4)	61(62.2)	19(19.4)	3.00(0.62)
Fundal height has been measured	0	35(35.7)	33(33.7)	30(30.6)	2.94(0.81)
My fetal heart sound has been checked	0	16(16.3)	57(58.2)	25(25.5)	3.07(0.67)
My blood and urine test has been done	0	1(1.0)	1(1.0)	96(98.0)	3.97(0.22)
I was given adequate information about prenatal tests and procedures	0	2(2.0)	3(3.1)	93(94.9)	3.96(0.24)
I am offered to have a seat	0	2(2.0)	2(2.0)	94(95.9)	3.96(0.24)
My permission was taken before all examination	0	1(1.0)	2(2.0)	95(96.9)	3.95(0.26)
I was provided information about 5 danger signs of pregnancy	0	4(4.1)	4(4.1)	90(91.8)	3.88(0.43)
I provided information about nutritious food	0	2(2.0)	4(4.1)	92(93.9)	3.92(0.33)
I was provided information about family planning for birth spacing	0	2(2.0)	4(4.1)	92(93.9)	3.89(0.39)
I was given enough information about breastfeeding	0	3(3.1)	5(5.1)	90(91.8)	3.89(0.39)
I was advised about regular follow up	0	2(2.0)	5(5.1)	91(92.9)	3.59(0.57)
I am provided time to listen	0	3(3.1)	32(32.7)	63(64.3)	3.89(0.39)
My confidentiality was maintained	0	3(3.0)	4(4.1)	91(92.9)	3.88(0.43)
I was advised to visit a physician if any abnormality occurs after postpartum	0	4(4.1)	4(4.1)	90(91.8)	3.95(0.26)
I was advised to follow up with the baby	0	1(1.0)	3(3.1)	94(95.9)	3.88(0.40)
I was advised to vaccinate the baby	0	3(3.1)	6(6.1)	89(90.8)	3.90(0.38)
I was provided information about umbilical cord care after birth	0	3(3.1)	3(3.1)	92 (93.9)	3.87(0.44)
I was advised to maintain personal hygiene	0	4(4.1)	5(5.1)	89(90.8)	3.80(0.55)
My beliefs were accepted	0	4(4.1)	26(26.5)	68(69.4)	3.80(0.55)
Total mean ANC	-	-	-	-	3.78(0.939)

Table 3 Relationship between sociodemographic and pregnancy-related characteristics and quality of antenatal care

Variables	Frequency	Mean±SD	t/f/r (p)
Age	-	3.77± (.094)	-0.171(0.093)
BMI	-	3.77±.094	-0.114(0.264)
Gestational age	-	3.77±(.094)	0.008(0.515)
Religion			
Muslim	93	3.77±.096	0.173(0.869)
Non-Muslim	5	3.77±.059	
Education			
Primary ^a	32	3.74±.112	4.571(0.013) a<b, c
SSC ^b	31	3.78 ±.073	
College & university ^c	35	3.80±.083	
Occupation			
Housewife	71	3.76±.095	1.996(0.142)
Service holder	15	3.80±.080	
Student	12	3.81±.095	
Monthly income			
2000-20000 BDT	64	3.76±.101	1.156(0.319)
21000-36000	22	3.80±1.070	
More than 36000 BDT	12	3.78±.093	
Number of ANC visit			
First and 2nd visit	22	3.74±(0.083)	2.65(4.076)
3 rd and 4 th visit	62	3.78±(0.102)	
>four visit	14	3.81±(0.055)	
Number of the living child			
No baby	17	3.80±(0.095)	1.283(0.282)
One baby	68	3.76±(0.080)	
>one	13	3.78±(0.148)	

4. Discussion

A descriptive study design was used to explore the quality of antenatal care for pregnant women at tertiary level hospital in Bangladesh. The samples were consisted 98 pregnant mothers who met the inclusion criteria and visited ANC unit at OPD of Dhaka medical college hospital. The findings were discussed in two parts: Demographic and pregnancy related characteristics; Quality of antenatal care for pregnant women and the relationship between these variables. In this study, the mean age of the respondent was 24.87(±4.67) years and the minimum age of pregnant women were 18 years and the maximum age was 38 years old. Similarly the previous study found that young age group was seeking quality of antenatal care [20]. The current study showed that there was significant difference between the quality of antenatal care and education, (F= 4.571, p=0.013). Consistently the previous study found that women who had high level of education they received good quality of ANC [15]. High level of education can improve quality of antenatal care. This study also showed that mother from high income family has better quality of antenatal care compared to low family income. Similarly the previous study found that women from higher income households had better attending ANC visits and received good quality ANC [15]. The finding of this study also showed the mean gestational age was 29.39±2.831,

majority 63.3% completed 3rd and 4th ANC visits and 14.3% covered more than 4 ANC visits and 17.3% experienced no baby and 69.4% experienced one baby and 13.3% experienced more than one baby and their quality of ANC was also different. More ANC visits shows different quality of antenatal care and no baby showed comparatively different quality. Consistently the previous study found that younger women, who had high education, lower parity and high income they attend more ANC and receive high quality of antenatal care [21]. The result of the current study also described services and advices in relation to ANC received by the respondents. It was seen that most of the services were received always by more than 80% of the respondents. Rates of blood pressure measuring and history taking were always taken which were higher (100%) compared to other services. Measuring of pulse rate of mother, observation of abdominal abnormality, fundal height measurement and checking of fetal heart sound were slightly lower as compared to other services. Regarding checking eye to detect anemia and examining leg to detect ankle edema more than 80% respondents always had been checked. The current study found that 93.9% respondents reported that they had received information on family planning and child spacing. In contrast the previous study found that 45% participants reported that they always had been receiving information (WHO, 2002) [22]. The present studies found that 90% women were reported always got advised about good diet and 91.8% mother got advice on breast feeding. Another previous study found that 34% mother got advice on breast feeding [23]. The study showed that most of the clients (92.9%) reported that their confidentiality was maintained. In contrast another study found that nearly half (48%) reported about privacy [24]. This findings indicate that better patient-provider interactions improve the quality of antenatal care. The present study revealed that more than half (64.3%) respondents reported that they had provided time to listen. Similarly the previous study revealed that nearly half (48%) respondents reported that they had given time to express their feelings [25]. The fact that the health care provider at public ANC unit suffer from shortage of staff and high work load. Such conditions probably limit the care providers chance to provide enough time to each client.

Limitations of the study

Every study has limitations, and the present study undertaken is no exception. The limitations of the present study are mentioned: Selection of only one public medical college hospital, Convenient sampling method, and Small sample size. This may limit the generalization of the findings to private and non-medical college hospitals.

5. Conclusion and Recommendations

This study showed that those with more education had more quality antenatal care, and those with more than four visits had good quality ANC. Quality of antenatal care can improve the satisfaction of pregnant mothers, which will strengthen the healthcare-seeking behavior of women that ensures early risk diagnosis and other medical conditions during the pregnancy period, and ANC can effectively manage such conditions. In this regard, this study will provide information for care providers to provide antenatal care to pregnant mothers about increasing the rate of physical assessment that helps reduce maternally and infant mortality and morbidity, which can help achieve SDGs3. This study was conducted on public medical college hospitals in urban areas. The future study will be conducted in a rural setting with a large sample size to generalize the findings. A comparative study may be conducted between Bangladesh's urban and rural areas.

Compliance with ethical standards

Statement of ethical approval

The study was approved by the Institutional Ethics Committee.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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