Assessment of Antenatal Care Services among Urban and Rural Pregnant Women in Bauchi-North Senatorial District, Bauchi State Nigeria

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Abstract: *The purpose of this study was to assess the antenatal care services among urban and rural pregnant women in Bauchi-Northsenatorial district. An ex-post facto research design was used to study 240 subjects drawn from seven local government areas in Bauchi-North senatorial district. The subjects were drawn through stratified random sampling techniques. A close ended questionnaire was used to obtain responses from the subjects. Data collected for this study were analyzed using descriptive statistics of mean and standard deviation and inferential statistics of one- way analysis of variance and Pearson product moment correlation analysis, 0.05 level of significance was used for all tests of significance. Two research questions were asked and two hypotheses were tested at 0.05 level of significance. Findings showed that, significance differences existed between urban and rural pregnant women in their utilization of antenatal care services in Bauchi-North senatorial district.; Significant relationship existed between level of utilization of antenatal care services and proficiency of antenatal care personnel among urban and rural pregnant women and in Bauchi-North senatorial district; Based on the findings above, the following recommendations were made: Health educators, nurses and other health professionals should regularly create awareness on antenatal care among pregnant women since it prevent maternal mortality. Pregnant women should be encouraged to utilize antenatal care services regularly in order to prevent maternal mortality.*

I. Introduction

Antenatal care is the care a woman receives throughout her pregnancy in order to ensure that women and newborns survive pregnancy and childbirth. A healthy diet and lifestyle during pregnancy is important for the development of a healthy baby and may have long-term beneficial effects on the health of the child. Antenatal care (ANC) among pregnant women is one of the important factors in reducing maternal morbidity and mortality. Unfortunately, many women in developing countries do not receive such care. Reports from neighboring countries show that a high utilization rate of the ANC service results in lowering the risk of maternal mortality. For example, in south East Asia (Yang Ye. et al; 2010).Fraser and Cooper (2003) defined antenatal care as the care giving to a pregnant woman from the time that conception is confirmed until the beginning of labour. Antenatal care is a key component of safe motherhood which lies on a foundation of basic services, equity, emotional and psychological supports; even through its direct relationship to the reduction of maternal mortality remains a subject of much debate (Federal Ministry of Health, 2008). Lucas and Gilles (2004) further stressed that, a major feature of maternal care was the assessment of the risk of each pregnancy base on the woman's previous obstetric history and health status. Special services were offered to high risk pregnancies including closer supervision during delivery. Antenatal care also provides the opportunity of monitoring the progress of pregnancy so that any deviation from normal can be detected at an early stage before serious complication occur.

The effect of antenatal care on maternal mortality is clear. However, there is broad agreement that antenatal care interventions can lead to improved maternal and newborn health, which can also impact on the survival and health of the infant. Additionally, the ANC visit, which many women in sub-Saharan Africa attend, is an opportunity to reach pregnant women with messages and interventions. A global evaluation of antenatal care has resulted in the recommendation to deliver antenatal services in 4 focused visits (Focused antenatal care; FANC), one within the first trimester and 3 after quickening, and this schedule is now endorsed by WHO(2010). Proven effective antenatal interventions include serologic screening for syphilis, provision of malaria prevention, anti-tetanus immunization, and prevention of mother to-child transmission of HIV. To fully benefit from these interventions, it is important that women start visiting the antenatal clinic (ANC) early in pregnancy (Ademola, et,tal; 2011).

The World Health Organisation (2010) initiated focused antenatal care in order to improve the care given to pregnant women. Initially, frequent routine visits were the norm and women were classified by risk category to determine their chances of complications. The level of care disregards these categories and focuses on an updated approach to antenatal care over number of visits. Each focused antenatal care visit includes interventions that are appropriate to the woman's stage of pregnancy, and which address her overall health and preparation for birth and care of the new born. This goal directed interventions are important because pregnancy is one of the most important periods in the life of a woman, a family and the society at large.

Antenatal care services were provided daily in all intervention clinics. However, the introduction of focused antenatal care was not accompanied with a reorganization of antenatal care services. Service delivery continues to follow the assembly line format where clients have to go through several access points during a single visit including: reception for cards to be numbered and recorded, weighing, health education, consulting room (for history taking, consultation and physical examination). Depending on the outcome of consultation and number of visits, clients may be sent to the laboratory or for counselling or pharmacy to collect medications like iron, folic acid (Ademola, et,al; 2011).

The sequencing of services varies across clinics, but on average, clients make a minimum of five contacts on a single visit. Focused antenatal care however, expects that a woman will receive individualized care primarily from one provider, consistently over the four visits. It was introduced in a context in which many critical antenatal care services were not being widely offered, such as monitoring the progress of a pregnancy, identifying complications, referring mothers for specialized care at an appropriate time, and promoting postpartum family planning. The function of antenatal care in preventing problems for mothers and newborns depends on an operational continuum of care with accessible, high quality care before and during pregnancy, childbirth and the postnatal period. It also depends on the support available to help pregnant women reach services, particularly when complications occur. An important element in this continuum of care is effective antenatal care. The goal of focused antenatal care is to prepare for birth and parenthood as well as prevent, detect, alleviate, or manage the three types of health problems during pregnancy that affect mother and newborns such as: complications of pregnancy itself, pre-existing conditions that worsen during pregnancy and effects of unhealthy lifestyles(Ademola, et al; 2011).

Objectives of the Study:
1. Find out if there is difference between urban and rural pregnant women in their utilization of antenatal care services in Bauchi-North senatorial district.
2. Find out the proficiency of ANC personnel among urban and rural pregnant women in Bauchi-North senatorial district.

Research questions:
1. Are there any differences between urban and rural pregnant women in their utilization of antenatal care services in Bauchi –North senatorial district?
2. What is the proficiency of antenatal care personnel among urban and rural pregnant women in Bauchi-North senatorial district?

Hypotheses:
1. There is no significant difference between urban and rural pregnant women in their utilization of antenatal care services in Bauchi-North senatorial district.
2. Significant relationship does not exist between utilization of antenatal care services and the proficiency of antenatal care personnel among pregnant womenin Bauchi-north senatorial district.

II. Methodology

Research Design:

An ex-post facto research design was adopted to assess antenatal care services urban and rural among pregnant women in Bauchi-North senatorial district. Asika (2009), stressed that, ex-post facto(after the fact) research design is a systematic empirical study in which the researcher does not in any way control or manipulate independent variable because the situation for the study already exist or has already taken place. The researcher cannot manipulate the independent variable because it cannot be manipulated. But researcher can indeed create or contrive a situation that will generate the requisite data for analysis. Therefore, ex-post facto is found suitable for this study since the data already existed.

Population of the Study:

The population of this study comprises of all pregnant women attending antenatal care services in Maternity clinics of Bauchi-North senatorial district. The estimated population size is 748 registered pregnant women attending antenatal care. This figure was obtained from the antenatal care registers of the maternity clinics of the study areas from January to July, 2015.

Sample and Sampling Techniques:

The researcher used stratified random sampling techniques to draw sample of 245 from the population of 748 registered pregnant women attending antenatal care in Bauchi-North senatorial district. This selection is in accordance with Krejcie and Morgan (1970) who recommended that 245 can be drawn from the population of 748. 35 pregnant women were randomly selected from the sampled maternity clinics. The researcher used the registration numbers of all registered pregnant women attending antenatal care in the sampled maternity clinics. This numbers were written on the pieces of papers and put in a container, after vigorous shaken to ensure randomization, 35 pieces of paper were taken out at random (one after another) from the container. The numbers on each of paper were recorded and the women whose numbers were picked and recorded constitute the sample for this study.In selecting the local government areas of this study,all the7 local government areas in the senatorial district were considered for the study.The above selection details were summarize in table 3.1 below

Table 1: Distribution of the Respondents by Local Government Areas and Sampled Size of Pregnant Women

L G A s	TOTAL NO OF MATERNITY CLINICS	SAMPLE MATERNITY CLINICS	TOTAL NO OF REGISTERED PREG. WOMEN			SAMPLED SIZE OF PREG. WOMEN	
K A T A G U M	2	URBAN MATERNITY	1	3	5	3	5
G I A D E	1	TOWN MATERNITY	8		9	3	5
G A M A W A	2	TOWN MATERNITY	1	0	8	3	5
S H I R A	2	TOWN MATERNITY	1	0	4	3	5
J A M A ' A R E	2	URBAN MATERNITY	8		4	3	5
I T A S / G A D A U	1	TOWN MATERNITY	1	1	5	3	5
Z A K I		TOWN MATERNITY	1	1	3	3	5
T O T A L			7	4	8	2	4	5

Research Instrument:

The researcher developed the instrument used in this research work in order to obtain the required information. A four (4) point modified likert's scale questionnaire was used to collect data for this study. The four (4) point'slikert's scale was scored as follows: Strongly agree, 4 points; Agree, 3 points; Disagree, 2 points; and Strongly Disagree, 1 point. The questionnaire consisted of Three sections A -C. Section A sought information on demographic characteristics of the respondents; section B concern with the level of utilization of Antenatal care services; section ; section C is concern with the

Reliability of the instrument:

Test-re-test reliability method was employed to establish the reliability of this research instrument. According to Asika (1991) in test-re-test reliability, the same measuring instrument was used to obtain two separate measurements on the same population at different times. The higher the degree of correlation between the two measurements, the higher the reliability of the instrument. In this study, the instrument was subjected to pilot study using 25 pregnant women in Misau Local Government. After three weeks of first administration, the same instrument was re-administered to the same respondents. The result of first and second test was statistically analyzed using Pearson product moment correlation coefficient and reliability index of (r-0.78) was obtained which indicate high reliability of the instrument.

Administration of Questionnaire

To collect data for this study, a total of 245 copies of questionnaire were distributed to pregnant women in maternity clinics of the seven local Government Areas in Bauchi-North senatorial district. The researcher employed seven research assistants (one research assistant from each maternity clinic) for the purpose of distribution and collection of the questionnaire. The research assistants were drawn from among the Health professionals. They were oriented on the purpose and nature of this research work. The researcher trained the research assistants in the techniques of administering the questionnaire. The researcher and the research assistant administered the questionnaire to the pregnant women. In the process of administering the questionnaire, those women who can read and write were given the questionnaire to respond while those who cannot read and read and write the questionnaire were administered to them by the researcher and the research assistants. Completed copies of questionnaires were retrieved after two days of administration. The data analysis was based on the responses of the 240 subjects whose questionnaire copies were correctly completed and retuned.

Statistical techniques:

Data for this study were analyzedusing statistical package for social science(SPSS) version 17. Descriptive statistics of frequencies, percentages, means and standard deviations was used to answer the research questions, while one-way analysis of variance (ANOVA) was used to test the hypotheses at 0.05 level of significance. The statistics is suitable for this study, because, attempt were made to fine out the differences between urban and rural pregnant women on antenatal care services

III.   Results

Table 2: Mean and Standard Deviation of Responses of Pregnant Women on the Level of Utilization of Antenatal Care SERVICES IN BAUCHI-NORTH SENATORIAL DISTRICT

S/N	Statements	Mean	Standard deviation
1.	Attending antenatal care during each pregnancy is a step in prevention of maternal mortality	2.07	0.761
2.	Accessibility to health facility offering ANC services enhance high utilization of ANC among pregnant women	2.29	0.933
3.	Attending ANC throughout the period of pregnancy helps in preventing maternal mortality before, during and after delivery	3.05	1.021
4.	Hospital delivery reduces maternal mortality	3.15	1.054
5.	Safe motherhood initiatives services offered in the hospital ensure adequate utilization of ANC by the pregnant women	2.34	0.901
6.	Health education programme offered during ANC visit encourages pregnant women to attend hospital for ANC services	3.34	1.343
	Aggregate mean score	**3.045**	**0.827**

The mean scores shown in table 4.3 above are based on the four points modified likers scale. The table shows that, item number 6, had the highest mean score (3.34) which indicate that, health education programme offered during ANC visit encourages pregnant women to attend hospital for ANC services. Next to item 6 is item number 4, which had a mean score of 3.15 which indicate that, hospital delivery, reduces maternal mortality.

This is followed by item number 3, with a mean score of 3.02, which indicate that, attending antenatal care throughout the period of pregnancy is a step in preventing maternal mortality before, during and after delivery. For all other items, the means score were relatively less than 2.5, which implies that the respondents disagreed with the suggested items. Among these were items 2, with mean score of 2.29, which indicated, that accessibility to health facility offering ANC services enhances high utilization of ANC among pregnant women. Item 5, with mean score of 2.34, indicates that safe motherhood initiative offered in the hospital ensure adequate utilization of ANC by pregnant women; and item 1, with mean score of 2.07, which indicates that, attending antenatal care during each pregnancy is a step in prevention of maternal mortality. The aggregate mean score of 3.0 was obtained which is greater than the acceptance mean of 2.5. This implies that, there is high utilization of antenatal care services among pregnant women

TABLE 3: Mean and Standard Deviation of Responses of Pregnant Women on the Proficiency of ANC Personnel IN BAUCHI-NORTH SENATORIAL DISTRICT

S/N	Statements	Mean	Standard deviation
1.	Antenatal care personnel Possess skills to prevent obstetric death.	3.28	1.262
2.	Antenatal care personnel Provide quality antenatal care to pregnant women.	2.33	0.901
3.	Antenatal care personnel Recognize and manage malaria in pregnancy	2.30	0.900
4.	Antenatal care personnel Recognize and manage anaemia in pregnancy	2.25	1.001
5.	Antenatal care personnel Recognize life threatening conditions above their capabilities and provide prompt referral	2.16	0.772
6.	Enlighten the community on influence of antenatal care and prevention of maternal mortality.	3.20	1.246
	Aggregate mean score	**3.02**	**1.013**

Table 4.5 above shows that, item number 1 had highest mean score (3.28), which indicates, that antenatal care personnel possess skills to prevent obstetric death. Next to item 1 is item 6, with mean score of 3.20 which indicates that, enlighten the community on influence of antenatal care and prevention of maternal mortality.

For the rest of the items, their mean scores are less than 2.5; this indicates that, the respondents disagreed with the suggested items. These include item 4, with mean score of 2.25, which indicates that, the antenatal care personnel recognized and manage anaemia in pregnancy; item 2, with mean score of 2.33, which

indicates that, they provide quality antenatal care to pregnant women in health institution she find herself; item 5, with mean score of 2.16 which indicates that, they recognizes life threatening condition above their capabilities and provide prompt referral; item 3, with mean score of 2.30, which indicates they recognizes and manage malaria in pregnancy. The aggregate mean score of 3.02 was greater than 2.5; this implies that, the antenatal care personnel are proficient in providing antenatal care services and prevention of maternal mortality on the general perspective.

Test of hypotheses
Hypothesis 1:
1. There is no significant difference between urban and rural pregnant women in their utilization of antenatal care services in Bauchi-North senatorial district.

Table 4: ANOVA summary of urban and rural pregnant women in their utilization of Antenatal care services

Source of variance	SS	MS	df	Crit. F P<0.05
Between Group	25845.015	84976.553	1238	2.74
Within Group	441026.59	357.286		
Total	72992.61			

Results in table 4 showed that, the F calculated 1238 is relatively greater than the Critical F. Which indicate significant difference. Therefore, the null hypothesis which stated that, there is no significant difference between urban and rural pregnant women in their utilization of antenatal care services in Bauchi-North senatorial district is rejected.

Hypothesis 2:
Significant relationship does not exist between utilization of antenatal care services and the proficiency of antenatal care personnel among pregnant women in Bauchi-north senatorial district.

Table 5: Correlation Analysis on Relationship between Utilization of Antenatal Care Services andthe proficiency of antenatal care personnel among pregnant women in Bauchi-north senatorial district.

Variables	N	Mean	Standard deviation	Calculated correlation index	Critical R	Df	P
Utilization of ANC services	240	10.33358	1.97741	0.261**	0.195	238	0.05
Proficiency of ANC personnel	240	10.2695	1.87393				

R= (240) = 0.261 P< 0.05 significance

The results of correlation analysis as indicated in table 5 above shows that, there is significant relationship between level of utilization of antenatal care services and the proficiency of antenatal care personnel among pregnant women in Bauchi-north senatorial district.The observed r- calculated (0.261) is greater than, the critical value (0.195). The null hypothesis is therefore rejected.

IV. Discussion

This research work was specifically designed to assess antenatal care services among urban and rural pregnant women in Bauchi-North senatorial district. The outcome of this study revealed that significant differences existed between urban and rural in pregnant women in their utilization of antenatal care service in Bauchi-North senatorial district.This finding coincide with UNFPA (2007) which stressed that Utilization of maternal health facilities by women of child bearing age has direct bearing on maternal and infant morbidity and mortality. This feature is noticeable in most third world countries including Nigeria. The high rate of maternal morbidity and mortality therefore

Indicates that majority of Nigerian women do not have good maternal health as captured by the United Nations. For women to have good maternal health there must be availability and accessibility of these women to modem maternal health facilities. This is because it has been indicated that despite the introduction of modem health facilities, studies have shown that majority of children in developing areas are born by Traditional Birth Attendants (TBAs).

These are untrained midwives who often do not refer complications to appropriate quarters as a result; several women and children are subjected to preventable deaths.

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Finding of this study also revealed that, significant relationship existed between the proficiency of antenatal care personnel and prevention of maternal mortality among pregnant women in Bauchi state. This outcome is in agreement with WHO (2008)which stated that, skilled maternity care throughout pregnancy, childbirth, and the postpartum period is globally recognized as one of the most promising strategies for reducing maternal mortality. Rates of skilled attendance at childbirth are being used as the main indicator to measure progress toward the Millennium Development Goal of reducing maternal mortality by three-fourths by the year 2015 (MDG 5). Currently, almost half of women in developing countries go through childbirth without such care. Moreover, there has been little evidence-based research available to help guide efforts to increase skilled attendance rates (Miller et al;2008)

It is also in line with WHO(2005)which stated that, globally, it is estimated that 34% of the mothers deliver with no skilled attendant; this means there are 45 million births occurring at home without skilled health personnel each year. Skilled attendants assist in more than 99% of births in developed countries compared with 62% in developing countries. In five countries including Ethiopia the percentage drops to less than 20%. Skilled attendance at delivery is one of the key indicators to reflect progress towards the Millennium Development Goal of improving maternal health. The agreement set the goal of 40% of all births to be assisted by a skilled attendant by 2005, with 50% coverage by 2010 and 60% by 2015 among countries with very high maternal mortality. Globally, the goal is to have 80% of all births assisted by skilled attendants by 2005, 85% by 2010 and 90% by 2015 (Stanton et al, 2006).

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