

## **Relationship of Antenatal Care with the Prevention of Maternal Mortality among Pregnant Women in Bauchi State Nigeria**

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**Abstract:***The purpose of this study was to examine the relationship of antenatal care with the prevention of maternal mortality among pregnant women in Bauchi state. An ex-post facto research design was used to study 308 subjects drawn from six local government areas in Bauchi state. 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 person 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 relationship existed between level of awareness and the prevention of maternal mortality among pregnant women in Bauchi state; significant relationship existed between level of utilization of antenatal care services among pregnant women and prevention of maternal mortality in Bauchi state. Based on the findings above, the following recommendations were made: health professionals should intensify enlightenment campaign on the benefits of antenatal care in Bauchi state. Pregnant women should be encouraged to attend antenatal care services regularly as soon as possible for early detection of risk factors, resulting to maternal mortality. Government should provide adequate facilities and equipment of antenatal care in Bauchi state*

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### **I. Introduction**

Antenatal care is concerned with health of the mother and foetus. The purpose of antenatal care is to encourage good health in every expectant and lactating mother, to enable her to have normal delivery and a healthy baby and to teach the art of childcare. Antenatal care (ANC) refers to the care that is given to the pregnant women from the time that conception is confirmed until the beginning of labour (Fraser & Cooper, 2003). Antenatal care is the key component of safe motherhood which lies as the foundation for basic health services, equity, emotional and psychological support, even though the direct relationship between antenatal care and reduction of maternal mortality remains a subject of much debate (Federal Ministry Of Health, 2008).

Lucas and Gilles (2004) stressed that, previously, a major feature of maternal care was the assessment of the risk of each pregnancy based 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 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 woman is encourage to note and describe any symptom or sign that she has observed since her last visit to the clinic and she can be reassured when those signs and symptoms do not signify any serious abnormality. Ministry of Health ( 2008) shows that, over seventy percent (70%) of women worldwide have at least one antenatal care (ANC) visit with a skilled attendant .However, this percentage varies by region.

- In industrialized countries ninety eight percent (98%) of woman have at least one ANC visit.
- In developing countries, the percentage drop to approximately sixty eight percent (68%)
- South East Asia has the lowest ANC attendance rate, with fifty four percent (54%) of women attending at least one ANC visit.

Lucas and Gilles (2004) asserted that, maternal mortality is the death of a woman while pregnant or within 42days of termination of pregnancy, regardless of the site or duration of the pregnancy, from any cause related to aggravated by the pregnancy or its management. While WHO(2007) added to this that is not from accidental or incidental causes.

Maternal mortality is sub-divided into direct and indirect obstetric deaths. Direct obstetric death result from obstetric complication of pregnancy ,labour or the postpartum period .They usually due to one of the five major causes – hemorrhage(usually occurring post-partum ) sepsis, eclampsia, obstructed labour and complication of unsafe abortion as well as interventions, omissions, incorrect treatment or event resulting from any of these (WHO, 2008).

WHO (2008) further stressed that, indirect obstetric deaths result from previously existing diseases or from diseases arising during pregnancy (but without direct obstetric causes), which are aggravated by the physiological effect of pregnancy; examples of such diseases include malaria, anaemia, HIV/AIDS and cardiovascular diseases.

Generally, there is a distinction between a direct maternal death that is as the result of complication of pregnancy, delivery or their management, and an indirect maternal death such is pregnancy related death in a patient with a pre existing or newly developed health problem. Other fatalities during but unrelated to a pregnancy are termed as accidental, incidental or non-obstetrical maternal death ( WHO ,2008).United Nation Population Fund (2007) stressed that, the major causes of maternal mortality or death are infection, variants of gestational hypertension including pre-eclampsia, obstetric haemorrhage, ectopic pregnancy, puerperal sepsis amniotic fluid embolism, uterine rupture and complication of unsafe abortion or unsanitary abortions. Lesser known causes of maternal death include renal failure, cardiac failure and hyperemesis gravidarum. Nigeria has the second highest maternal death in the world – 52,000 Nigerian women die every year. Unsafe practices of childbirth cause an average death of 114 Nigerian women. This means that, every 10 minutes one Nigerian woman dies due to childbirth and pregnancy related causes (WHO, 2008). The rate was highly significant number of women of child-bearing age who does not survive pregnancy and child birth or immediately within six weeks of delivery. Only 43.8% of women of Bauchi state received antenatal care during pregnancy, while 14.6% give birth in health facility with trained personnel, such as doctors, nurses and midwives attending to only about one third of the deliveries (UNFPA, 2007). The result of the study further explained that, the increase in maternal mortality rate in Bauchi state is attributed to weak and poor primary health care system in the state, lack of skilled and motivated staff as well as in adequate drugs and equipment in health centres ( UNFPA,2007). It is on this basis that, the researcher intended to study the relationship of antenatal care with the prevention of maternal mortality in Bauchi state

### **Research Questions**

This study is conducted to answer the following specific questions:

1. Are pregnant women attending maternity clinics aware of the influence of antenatal care for the prevention of maternal mortality in Bauchi state?
2. Do pregnant women attending maternity clinics utilize the services of antenatal care for the prevention of maternal mortality in Bauchi state?

### **Hypotheses**

1. There is no significant relationship between level of awareness of pregnant women attending antenatal care clinics and the prevention of maternal mortality in Bauchi state.
2. There is no significant relationship between level of utilization of antenatal care services and prevention of maternal mortality in Bauchi state.

## **II. Methodology**

An ex-post facto research design was adopted to study the relationship of awareness and utilization of antenatal care with the prevention of maternal mortality among pregnant women in Bauchistate.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 the independent variable because the situation for the study already exist or has already taken place.

The population of this study comprises of all pregnant women attending antenatal care in Maternity clinics of Bauchi state. The estimated population size is 1400 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 September 2011.

The researcher used stratified random sampling techniques to draw sample of 312 from the population of 1400 registered pregnant women attending antenatal care in Bauchi state. This selection is in accordance with Krejcie and Morgan (1970) who recommended that 302 can be drawn from the population of 1400.52 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 randomisation, 52 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 order to allow for equal number of samples and convenience in each of the sampled local Government 312 was used as the sample of this study.

In selecting the local government areas of this study, the state was stratified into three senatorial districts that is Bauchi-south senatorial district, Bauchi-central senatorial district and Bauchi-north senatorial district. Two local Government Areas were randomly selected from each senatorial district. The names of the local Governments in each senatorial district were written on a slip of paper; the slips were folded and put in a container. After thorough reshuffling, the researcher, not looking in to the container, dips his hand and picks one slip, He unfolds the slip and records the name of the local Government it contains. This process was repeated until the required numbers of local Governments in each of the senatorial districts were drawn. The selection from the senatorial districts and maternity clinics was done in order to ensure that the data collected provides unbiased, suitable close estimates of the characteristics of the sampled population pertaining the problem being studied.

The above selection details were summarize in table 3.1 below

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

SENATORIAL DISTRICT	TOTAL NO OF LGA	SAMPLE LGA	TOTAL NO OF MATERNITY CLINICS	SAMPLE MATERNITY CLINICS	TOTAL NO OF REGISTERED PREG. WOMEN	SAMPLED SIZE OF PREG. WOMEN
BAUCHI-NORTH	7	KATAGUM	2	URBAN MATERNITY	2 9 4	5 2
		G I A D E	1	TOWN MATERNITY	1 4 0	5 2
BAUCHI-CENTRAL	6	M I S A U	2	TOWN MATERNITY	2 6 8	5 2
		N I N G I	2	TOWN MATERNITY	2 4 2	5 2
BAUCHI-SOUTH	7	B A U C H I	2	URBAN MATERNITY	3 0 0	5 2
		D A S S	1	TOWN MATERNITY	1 5 6	5 2
T O T A L	2 0		1 0		1 4 0 0	3 1 2

**Instrument for Data Collection**

The researcher developed the instrument used in this thesis 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’s likert’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 contains information on the level of awareness of pregnant women on the influence of ANC on the prevention of maternal mortality and section C concern with the level of utilization of ANC for the prevention of maternal mortality.

**Statistical techniques**

The statistical techniques that were used in analyzing the data collected for this study were:

- a. Descriptive statistics of frequencies, percentages, means and standard deviations.
- b. Inferential statistics of Pearson Product Moment Correlation Coefficient analysis was used to test the hypotheses. All tests were carried out at 0.05 alpha level of significance. This statistics is suitable for this study, this is because, and the study is on relationship between antenatal care and prevention of maternal mortality among pregnant women. The purpose of correlation analysis to establish the relationship between the dependent and independent variables.

**III. Results**

**Table 2: Correlation Analysis on Relationship between Levels of Awareness of Pregnant Women Attending Antenatal Care and Prevention of Maternal Mortality in Bauchi state**

V a r i a b l e s	N	M e a n	Standard deviation	Calculated correlation index	Critical R	D f	P
Level of awareness of antenatal care	308	9.1003	1.65597	0.386**	0.195	300	0.000
Prevention of maternal mortality	308	10.3358	1.97741				

$R = (308) = 0.386 P < 0.05$  significance

\*\* Correlation is significant at 0.05 levels (2 tailed)

The results as indicated in table 4.2.1 above shows that, there is significant relationship between level of awareness of pregnant women attending antenatal care clinics and the prevention of maternal mortality in Bauchi state. The observed r- calculated (0.386) is greater than the critical value (0.195). The null hypothesis is therefore rejected.

**Table 3: Correlation Analysis on Relationship between Level of Utilization of Antenatal Care Services and Prevention of Maternal Mortality among Pregnant Women in Bauchi State**

V a r i a b l e s	N	M e a n	Standard deviation	Calculated correlation index	Critical R	D f	P
Utilization of ANC services	308	10.33358	1.97741	0.261**	0.195	300	0.000
Prevention of maternal mortality.	308	10.2695	1.87393				

$R = (308) = 0.261 P < 0.05$  significance

The results of correlation analysis as indicated in table 4.2.2 above shows that, there is significant relationship between level of utilization of antenatal care services and the prevention of maternal mortality among pregnant women in Bauchi state. 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 determine the relationship of antenatal care with the prevention of maternal mortality among pregnant women in Bauchi state. The outcome of this study revealed that significant relationship existed between level of awareness of pregnant women attending antenatal care and prevention of maternal mortality in Bauchi State. This finding is in line with WHO (2004) which stressed that antenatal care provides an opportunity to educate the pregnant woman about pregnancy and childbirth. Under usage of antenatal care has been repeatedly associated with adverse maternal outcomes. However there is controversy about the impact of antenatal education on pregnancy outcome. Antenatal education programs are a very important component of antenatal care worldwide since it makes women contribute to the maximum for a better pregnancy outcome and care of the neonate. Antenatal care provides advice, reassurance, education on nutrition during pregnancy, danger signs of pregnancy, and it detects the problems that make the pregnancy a high risk one.

The outcome of this study also revealed significant relationship between the level of utilization of antenatal care and prevention of maternal mortality among pregnant women in Bauchi state. 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 modern maternal health facilities. This is because it has been indicated that despite the introduction of modern health facilities, studies have shown that majority of children in developing areas are born by Traditional Birth Attendants (TBAs).

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