# Availability of Material Resources for Focused Antenatal Care in Health Facilities in Bauchi State, Nigeria.

Alhaji Adamu[1], RN, RPON, RM, RPHN, BNSC, MSCN
Lawali Yakubu[2,] RN, BNSC, MSCN

[1]*Federal Medical Center Azare, Nigeria*
[2]*Department of Nursing Sciences, Faculty of Clinical Sciences, College of Health Sciences, Usmanu DanFodiyo University, Sokoto, Nigeria*
*Corresponding Author: Adamu Alhaji*

**Abstract:** *The aim of this study was to assess the availability of material resources for focused antenatal care. A cross sectional descriptive design was adopted. A total of three hundred and eighty four pregnant women attended antenatal care clinic in twenty two health care facilities in Bauchi State were recruited. Multi-stage sampling technique was used. The data collected by used semi-structured questionnaire and observational checklist through face to face interview and audit observation check list during the period of first May to the end August 2016. All official approval was collected and all ethical considerations were kept. Donabedian Bruce quality model (1980) was adopted as a theoretical framework. The result revealed that: Eighty percent of the respondents were over 35 years old, 66% of them were Hausa/Fulani, almost half of them had secondary school certificate, and more than half of them had parity above six times. Eighty percent of the sample utilized focused antenatal care always. Only 43% of material resources in the health facilities were available and functioning. The human resources rate in the health facilities were 0.81, 0.5, 2.7 and 1.8 Doctors, Nurses, Midwives and CHEW respectively. Recommendations: Government should ensure adequate material resources for focused antenatal care services in each facility in Bauchi State.*
**Key Words**: *antenatal, care, focus antenatal, material, resources,* Healthcare services

--------------------------------------------------------------------------------------------------------------------

--------------------------------------------------------------------------------------------------------------------

## I. Introduction

Maternal mortality is a global issue as a result of low focused antennal care; approximately about 830 women die from pregnancy complications around the world every day[1]. The differences between regions are stark: There are currently 12 maternal deaths per 100,000 live births in developed regions compared with 546 in sub-saharan Africa. Nigeria is ranked the second in the world with maternal mortality rate (630 per 100,000 live births)[1.]

The goal established by united states to reduced the worldwide maternal mortality ratio (MMR) –the number of maternal deaths per 100,000 live births by 75% between 1990 and 2015 was not achieved, but significant progress has been made (43.9% decline). The 2015 global MMR is estimated at 216 deaths per 100,000 live births, down from 385 in 1990[2].

Maternal morbidity and mortality has remained high in sub-Saharan Africa as a result of poor antenatal cares, despite concerted efforts at its reduction, by various stakeholders and development partners[3], that it is possible to accelerate the decline, countries have now united behind a new target to reduce maternal mortality even further. One target under Sustainable Development Goal 3 is to reduce the global maternal mortality ratio to less than 70 per 100 000 births, with no country having a maternal mortality rate of more than twice the global average by focused antenatal care.

Focused Antenatal Care is a Goal oriented care that is client centered, timely, friendly, simple, beneficial and safe to pregnant women[4]. World Health Organization recommended a minimum of 4 visits antenatal care for pregnancies without complications scheduled as First visit: within 16 weeks or when woman first thinks she is pregnant, Second visit: At 20 - 24 weeks or at least once in second trimester, Third visit: At 28 - 32 weeks and Fourth visit: At 36 weeks or later. Limited resources of developing countries like Nigeria can be redirected to give better quality antenatal care services across the recommended four visits[5]. Currently, (WHO, 2016) Recommended eight visits of focused antenatal care with first contact at 12 weeks of gestation, with subsequent contacts taking place at 20,26,30,34,36,38, and 40 weeks of gestation.

The essential elements of a focused approach to antenatal care are; identification and surveillance of the pregnant woman and her expected child, Recognition and management of pregnancy-related complications, particularly pre-eclampsia, Recognition and treatment of underlying or concurrent illness and screening for

--------------------------------------------------------------------------------------------------------------------

conditions and diseases such as anemia[6]. The objectives of focused antenatal care as follows ; Maintenance of health of mother during pregnancy, Identification of high risk cases and appropriate management, Prevent development of complications, Decrease maternal and infant mortality and morbidity, Remove the stress and worries of the mother regarding the delivery process, Teach the mother about child care, nutrition, sanitation and hygiene, Advice about family planning, and Care of under fives accompanying pregnant mothers[7].

[8]Stated the goals of focused antenatal care as; Identification of pre-existing health conditions, Early detection of complications arising during the pregnancy, Health promotion and disease prevention and Birth preparedness and complication readiness planning. [4]Stated the services provided during FANC as; History taking; Personal information , Medical history- Medication, allergies, HIV status , Surgical history , Obstetrics and gynecological history ,Family and social history , Immunization.  Physical examination; General appearance, Blood Pressure, Weight, height, Pulse and Respiratory rates, Head to toe assessment. Laboratory investigations; Urine test for albumin and sugars, Hb, Blood grouping and Rhesus factor, VDRL/RPR for syphilis screening ,HIV testing,  CD4 count if indicated, Blood examination for malaria parasites where indicated.

Quality in FANC is based on performance standards that are safe and have capacity to improve quality of antenatal services within available resources[4].  The six domain of health care quality as follows;

i ) Safe: Avoiding harm to patients from the care that is intended to help them**.,** ii)Effective: Providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit (avoiding underuse and misuse, respectively), and iii)Patient-centered: Providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions, iv)Timely: Reducing waits and sometimes harmful delays for both those who receive and those who give care, v)Efficient: Avoiding waste, including waste of equipment, supplies, ideas, and energy, vi)Equitable: Providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location, and socioeconomic status[9].

Patient satisfaction is the extent to which specific client needs are met, Satisfied patients are likely to continue with care and compliance with visit time  and various factors including attitude of staff, cost of care, time spent at the hospital and doctor communication have been found to influence patient satisfaction in previous studies[10].

However, studies on level of client satisfaction with focused antenatal care and associated factors are lacking. How can we strengthen ANC to provide the priority interventions, especially given Africa's current critical shortage of human resources for health? Lacking in the resources. Are the pregnant women satisfied with level of quality services? How can the nurses play their roles to improve the quality of care in maternal child center? So the aim of the study was to assess the availability of material resources for focused antenatal care  at helath care facilities in Bauchi State.

## II.  Methods

The design used in the study was a descriptive cross-sectional design, quantitative parameter was used. A cross sectional study allows information about the target population to be obtained at that point in time, a descriptive study allowed collection of data that would provide answers on the current status of care (Kothari, 2004). This design was suitable because it explored all the necessary information regarding the study objectives and covered a good number of the target population to allow generalization of the information.

The population of the study comprises of all pregnant women attended focused antenatal clinic in Secondary and Tertiary hospitals in Bauchi State from May to August, 2016.

**Sample size**

A total of 384 pregnant women were recruited from a total population of 3003.664. This selection is accordance with krejcie and Morgan (1970) who stressed that (if the total population of the study is between 75,000 to 1,000,000 sample size will be 384).

**Inclusion criteria:**
* All normal pregnant women who reported for focused antenatal care and delivered at least once
* Those who consented**.**

**Exclusion Criteria:**
* All women of high risk and primigravida
* Clients that  refused to participate in the research were excluded
* Those who declined participation.

**Sampling Technique**

Multi-stage sampling technique was used.

Stage i. Bauchi State was taken as a unit

Stage ii. Bauchi State was divided in to three Senatorial Districts

Stage iii. Local Governments of each Senatorial District were used as follows; Bauchi south Senatorial District has seven Local Governments, Bauchi Central Senatorial District has six Local Governments and Bauchi North has seven Local Governments making total of twenty Local Governments in the State.

All the Local Governments in the three Senatorial districts were used and all facilities that render focused antenatal care services in all Local Government were purposively selected.

**Sample Size Distribution**

Sample was distributed to each facility based on proportion of the number of pregnant women attended the facility for FANCs. Using a sample size (384) divided by total number of utilization (53770) multiply by each variable's number.

Table 3.1 Sample Size Distribution according to the total population

| S/N | Local Government | Facility | FANC utilization May.-Aug.2016. | Sampled |
|---|---|---|---|---|
| 1 | Dass | Gen. Hospital | 3160 | 23 |
| 2 | Bauchi | Gen. Hospital | 4770 | 34 |
| 3 | | Teaching Hospital | 5200 | 37 |
| 4 | Katagum | FMC Azare | 1080 | 8 |
| 5 | | Gen. HospitalAzare | 3340 | 24 |
| 6 | TafawaBalewa | Gen. Hospital | 1120 | 8 |
| 7 | Toro | Gen. Hospital | 3980 | 28 |
| 8 | Alkaleri | Gen. Hospital | 2130 | 15 |
| 9 | Warji | Gen. Hospital | 1620 | 12 |
| 10 | Ningi | Gen. Hospital | 1980 | 14 |
| 11 | Darazo | Gen. Hospital | 2180 | 16 |
| 12 | Giade | Gen. Hospital | 1120 | 8 |
| 13 | Shira | Gen. Hospital | 1400 | 10 |
| 14 | Jama'are | Gen. Hospital | 2100 | 15 |
| 15 | ItasGadau | Gen. Hospital | 3180 | 23 |
| 16 | Zaki | Gen. Hospital | 3000 | 21 |
| 17 | Gamawa | Gen. Hospital | 1660 | 12 |
| 18 | Kirfi | Gen. Hospital | 1780 | 13 |
| 19 | Dambam | Gen. Hospital | 3000 | 21 |
| 20 | Misau | Gen. Hospital | 2250 | 16 |
| 21 | Ganjuwa | Gen. Hospital | 2100 | 15 |
| 22 | Bogoro | Gen. Hospital | 1620 | 11 |
| | TOTAL | | 53770 | 384 |

**Tools and Instrumentation**

1) **Semi structured interview questionnaire;** It was developed by the researcher and has three sections as follows;

**Section one:** Socio-demographic Characteristics of the respondents**;** to collect the socio-demographic characteristics of the pregnant women. It has four items namely: Age, Ethnicity, level of education and parity of the respondents.

**2. Observational Checklist**; It is adapted from WHO, (2014)

**Section one:** Availability of materials resources for focused antenatal care; to determine the available material for focused antenatal care. It composed of the five items namely; physical infrastructure, equipments, drugs, supply of consumables and health education.

**Method of data collection**

The research ethical clearance from the ministry of health Bauchi State was collected

- The observational checklist was used to evaluate material, human resources and service quality for Focused Antenatal Care services
- SPSS version 23 was used in data analysis

**Ethical Consideration**

An official permission to conduct the research study was obtained from ethical committee ministry of Health of Bauchi State. Participation in the study was voluntary and the ethical issue considered includes; explaining the purpose and nature of the study, confidentiality and there was no risk of participation. The researcher informed the trainee that the purpose of the study was for academics and will be confidential.

**Method of Data Analysis**

The Data collected from the respondents were coded and entered in to the Statistical package for Social Sciences (SPSS) Version 23. The Data was presented using descriptive statistic in the form of frequency distribution, percentages and mean.

## III. Result

**Section one: Socio-demographic Characteristic**

In relation to respondents age table (1) shows that the majority of respondents (80 %) 301 were above 35 years, while 47 respondents (13%) were between 19-34 years, the mean age was (30 years old).With regards to the ethnicity also the same table shows that more than half of the respondents (66.2%) 249 of them were Hausa/Fulani while 34% divided among Igbo ,Yoruba, Kanuri, Jarawa, Seyawa 6.1%,7.2% 10.1%, 5.1% and 5.3% respectively. With regards to education level almost half of the respondents 45.5% had secondary school education, only 9% were had informal education, while 28.2% and 17.3% had primary school and tertiary education respectively. Less than half of the respondent 118(31%) were pregnant eight times, 92(25%) were pregnant six times in previous pregnancy, 88(23%) of the respondents were pregnant four times and 78(21%) were pregnant four times.

Table 4.1 Distribution of the pregnant women according to their socio-demographic characteristics

| Variables | F | % |
|---|---|---|
| Age | | |
| • 18 | 19 | 5.0 |
| • 19-34 | 47 | 13.0 |
| • >35 | 301 | 80.0 |
| Ethnic Group | Mean age 26.5 | |
| • Hausa | 249 | 66.2 |
| • Igbo | 23 | 6.1 |
| • Yoruba | 27 | 7.2 |
| • Kanuri | 38 | 10.1 |
| • Jarawa | 19 | 5.1 |
| • Seyawa | 20 | 5.3 |
| Education | | |
| • Informal education | 34 | 9.0 |
| • Primary School | 106 | 28.2 |
| • Secondary School | 171 | 45.5 |
| • Tertiary education | 65 | 17.3 |
| Parity | | |
| • 1-3 times | 78 | 21 |
| • 4-5 times | 118 | 31 |
| • 6-7 times | 92 | 25 |
| • >7 times | 88 | 23 |
| • | | |

**Section two: Availability of material resources**

Table 4.2 Distribution of the availability of material resources and supply by observational check list in the studied facilities **N=22**

| Variables | Available and Functioning | | Available not functioning | | Not Available | |
|---|---|---|---|---|---|---|
| | N | % | N | % | N | % |
| • Waiting area with seat for patients | 16 | 73 | 6 | 27 | 0 | 0 |
| • Counseling room with table and two chairs | 2 | 9 | 3 | 14 | 17 | 77 |
| • A locked storage cupboard for drugs | 15 | 68 | 2 | 9 | 5 | 23 |
| • Patient's toilet | 4 | 18 | 18 | 82 | 0 | 0 |
| • Staff toilet | 18 | 82 | 4 | 18 | 0 | 0 |
| • Source of water (portable) | 6 | 27 | 10 | 46 | 6 | 27 |
| • Electricity | 16 | 73 | 6 | 27 | 0 | 0 |
| • Reliable source of light | 4 | 18 | 18 | 82 | 0 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| •        Examination Equipments | 5 | 23 | 2 | 9 | 15 | 68 |
| •        Drugs | 19 | 86 | 1 | 5 | 2 | 9 |
| •        Sustainable Supply of Consumables | 4 | 18 | 4 | 18 | 18 | 82 |
| •        Aggregate percentage | 43 | | 31 | | 26 | |

Table 4.2 Distribution of the availability of material resources in the studied facilities shows that: The available and functioning material resources had aggregate percentage of 43% while a total of 57% not functioning and not available. Showed shortage of material resources for focused Antenatal Care Services in the studied facilities

## IV. Discussion

**Socio-demographic characteristics of the pregnant women**

with regard to the age : more than three quarter of the respondents (80%) were above 35 years of age, this result was expected as the high fertility rate and the reproductive age of women in Nigeria. In 2013 Nigeria demographic survey Bauchi state has reported the largest number of pregnant women within this range Also this agrees with the findings of Adeniyi and Erhabor[11], in the research titled : Assessment of quality of antenatal care services in Nigeria found that 51% of 13410 pregnant women who claimed to have used the ANC facilities at least once within five year preceding the 2013 Nigeria Demographic and Household Survey (NDHS), Were between age of 30-40. It also conforms to the findings of Yeoh, Hornetz and Dahlui[12], in the research titled: Antenatal Care Utilization and Content between low- Risk and High-Risk pregnant Women. Found that the majority of pregnant women (76%) are of 35 years and above. Similarly, with the study conducted by Vain[5], in the research titled: study on antenatal and delivery care utilization in urban and rural contexts in Vietnam which found that more than half of the pregnant women were 35 years and above,in the same vain in a study conducted by[13], in the research titled: Factors influencing utilization of antenatal care services among pregnant women in Ife, Nigeria. Found that 32.4% of 102 respondents were between 35-44 years of age, Shows that more than half of the respondents were at risk (35 years). This advanced of age of pregnant women may be due to the cultural practice of early marriage and malty parity within women in Northern Nigeria and or lack of knowledge among them about the risks of pregnancy in elderly women.

In relation to the parity: Half of the pregnant women (69%) were multi-parous (2-7 pregnancies)It is the same with the study of Nwagha and Anyaehie[15], in Enugu, Nigeria that found majority of the respondents (62.07%) were multiparous. In the same vain[13] in Ife, Nigeria that majority of the respondents (72.5%) were multiparous. It is also in line with the study of Emelumadu, Ukegbu, Ezeama, Kanu, Ifeadike and Onyeonoro[14], in Anambara found that majority of respondents (64.6%) were multiparous. Similarly, in a study conducted in Indonesia majority of the respondents (66%) were multiparous. It is also in the same line with the study of Grace,Oyin, Muyideen and Charles[16], in Nigeria found that majority of the respondents (87%) were multiparous. It could be as a result of early marriage in the state that led to have more children.

**Availability of material resources for focused antenatal care**

Materials resources are one of the important aspects to maintain high quality of antenatal care and have been identified as the main intervention strategy with the highest impact on maternal health[5]. The result revealed that more than half of the materials resources in the studied facilities were not functioning (57%); only less than half (43%) were functioning. It is the same with the finding of WHO, 2015[17], that there was shortage of material resource for health care services in Africa. In the same vain[18] Found shortage of material resources for focused antenatal care services in South-eastern Tanzania, Similarly, in a study conducted in Burkina Faso, Uganda and Tanzania[19], found that health care workers in the three countries failed to perform most of the procedures stipulated in focused antenatal care due to the shortage of material resources for focused antenatal care services. Similarly, it was found that some essential equipment like sphygmomanometer were in poor quality leading to short durability contributing to the shortage, Shortage of qualified staff and irregular supply of essential equipment, drugs and consumables were considered by 91% and 64% of the respondents respectively as the major underlying factors for substandard ANC[7]. Likewise in Enugu[9], Nigeria found that most facilities (77.8%) had inadequate water and power supply, as well as inadequate sanitary toilet facilities. In addition, 44.4% of the health facilities reported lacked basic equipment and some had no maintenance plan. Ambulance service was available in only 11.1% of the facilities. Only 33% of the facilities could be accessed easily by public transportation. Stewardship was unsatisfactory as no facility had a regular work schedule for its workers, none had a copy of the Essential Drugs List, and only 22.2% of the facilities enjoyed community participation in planning and management. In the same line in Nnewi[20], Nigeria found that that none of the health facilities is equipped with the minimum equipment package, essential drugs nor staffs complement required enabling them offer quality maternal health services. Shows that there was shortage of material resources for focused antenatal care services in Bauchi State. this lacking in facilities had really affect the quality of care, It could be as a result of the services delivery point may not be open at the right time or supplies may not be adequate, as such, clients

do not receive services of their choices or due to poor maintenance culture in the state or sub standard materials were used in the health facilities.

## V. Conclusion

Based on the findings of the study the following conclusions were made;

- In comparing to the WHO (2014) standard for focused antenatal care, there were lacking in the availability of materials resources for Focused Antenatal Care Services.

## Reference

[1]. WHO, Global Atlas of the Health Workforce [online database] retrieved November 11,2015 from http://www.who.int/hrh/resources/wisn_user_manual/en/ 2005
[2]. Zolot and pa Trend in maternal mortality. American journal of Nursing.vol 116 issue 2:p17 Retrieved from http://www.journals.lww.com/ajnonline/_layouts/15oaks.journals.mobile/articleviewer.aspx?year=2016&issue=02000&article=000 10/2008/3acf/en/index html 2016
[3]. Sholeye O, Abosede A, and Jeminusi A Client Perception of Antenatal Care Services at Primary Health Centers in an Urban Area of Lagos, Nigeria. World Journal of MedicalSciences 8 (4): (2013) 359-364, retrieved August 15,2015 from http://www.idosi.org
[4]. USAID Focused Antenatal Care Malaria And Syphilis In Pregnancy. Retrieved May 20,2015 from http://www.pdf.usaid.gov/pdf_docs/pnaea268.pdf 2009
[5]. Villar J, Bergsgo P., Scientific basis for the content of Routine Antenatal care. Acta ObstetricaetGynacologica. 76(1): 2001 1-14.
[6]. Ademola M. A, Adenike M .D, Adebo M .T, Motunrayo FA Study on the Acceptance and Practice of Focused Antenatal Care by Healthcare Providers in the South-West Zone, Nigeria; Archives of Applied Science Research, 3 (1): (2011) 484-491
[7]. Johnson Objectives Of Antenatal Care; Retrieved February 11,2016 From https://pgblazer.com/objectives-of-antenatal-care/ 2015
[8]. Global HealthTechnical brief on focused antenatal care. Retrieved February 13,2016 fromhttp://www.who.int/globalatlas/autologin/hrh_login.asp 2014
[9]. Institute of Medicine (IOM) Crossing the Quality Chasm: A New Health System for the 21st Century. Washington, D.C: National Academy Press. 2001
[10]. Nweze ,Enabor , Oluwasola , and Aimakhu Perception And Satisfaction With Quality Of Antenatal Care ServicEs Among Pregnant Women At The University College Hospital, Ibadan, Nigeria.Ajol.Info Vol.11, No.1 22-28 Retrieved May 21,2016 From http://www.ajol.info/index.php/aipm/article/viewFile/92990/82402 2013
[11]. Adeniyi F and Erhabor S Assessment of quality of antenatal care services in Nigeria: evidence from a population-based survey,12:88 DOI: 10.1186/s12978-015-0081-0 retrieved December 16,2015 fromhttp://reproductive-health-journal.biomedcentral.com/ articles/10.1186/s12978-015-0081-0 2015
[12]. Yeoh P, Hometz K and Dahlui Antenatal Care Utilization and Content between low- Risk and High-Risk pregnant Women. PloS One (2016) 11 (3):e0152167.doi:10.1371/journal.pone.0152167.Retrieved November 12,2016 from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4807004/
[13]. Onasoga O, Afolayan J, and Oladimeji B Factors influencing utilization of antenatal care services among pregnant women in Ife.Advance applied science research,3(3): 2012 1309-1315. Retrieved 12 september,2016 from http://www.pelagiaresearchlibrary.com
[14]. Emelumadu O, Ukegbu A, Ezeama N, Kanu O, Ifeadike C and Onyeonoro U Socio-demographic determinants of maternal health care service Utilization among rural women in Anambra. Pubmed 4(3): 2014 374-382. Dol: 10. 410/2141-9248.133463. Retrieved June, 2016 Fromhttp://www.amhsr.org/article.asp?issn=2141-9248.133463
[15]. Nwagha O, NwaghaT,Anyaehie B The influence of parity on the gestational age among pregnant women in Enugu. Nigerian journal of physiological Science, 23(2) 2008 67-70. Retrieved August,2016 from http://www.bioline.org.br/nps
[16]. Grace A, Oyin O, Muyideen H, and Charles E Nugent Scores of pregnant women in tertiary institution in Nigeria. Scientific Research Journal. 2012 Vol 2, pp 531-536. Doi:10.4236/aim.2012.24068. Retrieved June, 2016 from http://www.scirp.org/journal/aim
[17]. WHO maternal mortality retrieved December 11,2016 From http://www.who.int/mediacentre/factsheets/fs348/en/ 2015
[18]. Karin G, Joanna A, Flora K, Constanze P and Brigit O Antenatal care in practice: an exploratory study in antenatal care clinics in the Kilombero Valley, south-eastern Tanzania 2011
[19]. Paul C, Gerhrd S, Justin T, Arinaitwe M, Silva K, Florian N, Olaf M andMalabiki S Compliance with focused antenatal care services: do health workers in rural Burkina Faso, Uganda and Tanzania perform all ANC procedures?European Journal:doi: 10.11911/j.1365-3156.2011.02923.xRetrieved on 7th October,2016 from http://onlinelibrary.wiley.com/doi/10.1111/j.1365-3156.2011.02923.x/full(2011)
[20]. Chanthanom M, Kerstin E, Amphoy S, Rolf W, Hans W Poor quality of antenatal care services.Sweden.Elsevier Ltd. doi:10.1016/j.midw.2011.12.010 n Retrieved August 12, 2016 from http://anothersample.net/poor-quality-of-antenatal-care-Services-is-lack-of-competence-and-support-the-reason-an-observational-and- interview-study-in-rural-areas-of-lao 2013