ASSESSMENT OF UTILIZATION AND QUALITY OF BASIC EMERGENCY OBSTETRIC AND NEWBORN CARE (BEMONC) SERVICES IN NORTH EAST AND NORTH WEST GEO-POLITICAL ZONES OF NIGERIA

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ABSTRACT

The modern trend is for an increasing proportion of births to take place in maternity Centres, hospitals and similar institutions. This is necessary to ensure provision of Basic Emergency Obstetric and Newborn Care (BEmONC). The objective of this study was to assess quality of BEmONC care services in North East and North West Geo-Political zones of Nigeria. Descriptive survey research design was used. Five hundred and twenty-four (524) questionnaires were administered; 450 (83%) questionnaires were returned. 424 (81%) were found to be good for analysis. This study revealed that the quality and utilization of BEmOC services in PHC centres of North East and North West geo-political zones of Nigeria is very low. Result also shows that there is no significant relationship between utilization and quality of BEmONC services in PHC centres of North East and North West geo-political zones of Nigeria, since the t-calculated of 1.29 is less than t-critical of 1.96, it was therefore recommended that more staff be employed and be trained continuously in the provision of basic emergency obstetric care services.

Keywords: Basic Emergency Obstetric and Newborn Care (BEmONC)), Quality.

Introduction

Maternal Mortality trends allow for certain amount of optimism in some areas of North Africa, Latin America, Asia and Middle East. But the situation in Sub-Saharan Africa and Nigeria in particular is still alarming. In fact, out of the health indicators, Maternal Mortality is where the differences between industrialized and developing countries are most evident, with levels twenty times higher in the latter than the former. In sub-Saharan Africa, one woman out of 37 dies for reasons relating to maternity, compared with only one out of 3,400 in industrialized countries (Kigotho, 2016).This led to the setting of targets for UN member countries to be achieved by 2030 as 70 per 100,000 live births for Maternal Mortality Rate (MMR).In Nigeria it remains 576 per 100,000 as of 2013 National Demographic and Health Survey (NDHS)(2013),with the northern regions recording remarkably higher death than the south. This marked difference between the two regions was recorded to be as high as 1,791/100,000 in the north to 460/100,000 in the south (Guerrier, Oluyide, Keramarou, and Grais, 2013).

Most maternal deaths can be prevented if births are attended by skilled health personnel – doctors, nurses and midwives – who are regularly supervised, have the proper equipment and supplies, and can refer women in a timely manner to emergency obstetric care services when complications are diagnosed. Complications require prompt access to quality obstetric services equipped to provide lifesaving drugs, antibiotics and transfusions and to perform Caesarean sections and other surgical interventions (WHO, 2010). Essential Obstetric and Newborn Care (EmONC) includes those services necessary for early detection and treatment or referral of major delivery complications such as anaemia, pre-eclampsia, and prolonged and obstructed labour (PATH 2013). Basic Emergency Obstetric and Newborn Care (BEmONC)is a subset of EmONC, the care that is needed to prevent the 5 major obstetric complications in our communities; haemorrhage, preeclampsia and eclampsia, sepsis, obstructed labour and unsafe abortion.

The services which include preventive and curative elements, can be provided at the first referral level (Primary Health Centre (PHC), maternity, or basic hospital) through non-physician providers, such as medically trained midwives. This approach does not demand highly trained obstetrics and gynaecology specialists or fully equipped operating theatres and, therefore, has the potential to bring services closer to women (Ellen, 2015). The services rendered under BEmONC in PHC centres have been outlined by the WHO to include:

BEmONC Service needed	To prevent/ manage
i. Administration of Intravenous (IV) / Intramuscular (IM) antibiotics	Sepsis and incomplete abortion
iii. Administration of IV/IM oxytoxics	Prolonged labour and haemorrhage
iv. Administration of IV/IM anticonvulsants	preeclampsia and eclampsia
v. Manual removal of placenta	Haemorrhage
vi. Removal of retained products of conception	Haemorrhage and incomplete abortion
vii. Assisted vaginal delivery	Prolonged labour and haemorrhage
viii. Neonatal resuscitation	Neonatal mortality

The objectives of this study are to:

1. identify the level of utilization of Basic Emergency Obstetric and New born Care Services in North East and North West Geo-Political zones of Nigeria
2. determine the quality of Basic Emergency Obstetric and New born Care Services in North East and North West Geo-Political zones of Nigeria

Hypothesis:
There is no significant relationship between the utilization and quality of basic emergency obstetric care (BEmNOC) services in PHC centres of North East and North West geo-political zones of Nigeria.

Materials and Methods
Descriptive survey research design was used. This design utilizes data collection and analysis techniques that yield reports concerning the measures of central tendency, variation, and correlation (The Association for Educational Communications and Technology, 2001). The population of this study consisted of PHC centres health care providers and the maternal health care clients. The PHC centres health care providers could be a medical doctor, community health officer, nurse or a midwife, and community health worker extension worker, while the clients are women of child bearing age that are attending the PHC Centres for maternal health care services. The North East Geo Political Zone has a total population of 4,271,467.275 women of child bearing age, while North West Geo Political Zone has 8,080,980.075 women of child bearing age (NDHS, 2013). The PHC centres health care providers were drawn from the total number of health care providers in Nigeria.
Stratified random sampling technique was used for this study. The two geo-political Zones have 13 states; 6 states from the North East geo-political Zone &7 states from the North West Geo-Political Zones respectively. Each geopolitical Zone constitutes a stratum for the purpose of this study. Based on Isaac and Michael, (2008) statement: If the study population is 1000 or under, the sample ratio need to be 30%. Hence 30% of the 13 states in the North East and North West Geo Political Zone = 4 states. The selected states (Adamawa, and Bauchi; Kano and Kebbi from North East and North West Geo Political Zones respectively). These states served as second stratum for this study, each of the state selected has 3 Senatorial Districts which served as the third stratum for this study.

The PHC health care providers were sampled based on the number of PHC centres visited in the two geo-political zones as follows: There are 2,618 PHC centres in the 13 states of North East and North West geo-political zones of Nigeria. Based on "Rule of thumb" from Rick, 2006: Population of: 1,001-5000, 5% is required as a sample size: 5% of 2,618 (Total number of PHC centres in the North East and North West Geo Political zones) = 139. The selected states for this study have a total of 748 PHC centres, as follows: Adamawa State, 111; Bauchi State, 223; Kano State, 399, and Kebbi State, 15 (National Primary Health Care Development Agency, 2013).

The number of PHC centres health providers used for the study were based on the proportionate distribution of the PHC centres in the study areas. Thus, a total of 139 PHC centres health care providers were used for this study; 62 and 77 from North East and North West Geo Political zone respectively. The respondents for this study were sampled in line with the suggestion of sample size selection Chart of Isaac and Michael, (1981); Smith, (1983) who stated that, 384 sample sizes should be use for a population of 100,000. (172 and 213, from North East and North West Geo Political Zone respectively).

In each of the PHC centre selected, the respondents of this study comprised of a health care provider who was the most senior maternal health care providers. As stated earlier the clients were women of reproductive age group who attend the PHC centres for maternal health care services. The populations of this study were homogenous (similar) in

many variables like Ethnic groups and level of education.

The instrument used for this study is a structured questionnaire. The questionnaire consists of two sections on: section A 5 items on, respondents 'socio-demographic profiles and Section B 7 items on quality of BEmONC services and Section C 7 items on clients' utilisation of the BEmONC service. Responses were given numerical score of 2 points; 1 point; and 0 as follows: options of Available/Effective and functional 2 points, Available 1 point; and Not available 0 point, while provision of services and clients' utilisation of BEmOC services provided by the PHC staff; responses were given a numerical scores of 3 when Fully Provided, 2, when Partially Provided, and 1 when Not Provided.

Result

As presented in Table 1, out of 139 Maternal Health Care Providers that were selected as respondents, 42.4% were within the ages of 15-24 years, about 42.4 % were within the ages of 25-34 years too, 12.9% were within the ages of 35-44 years, and 2.2% were within the age of 45-49 years. 3.6 % had Quranic/Non formal education, 3.6% completed primary education, 37.4% completed secondary education and 50.4% completed tertiary education. 46.0% were single, 53.2% were married, and 1% was divorced. All the respondents were civil servants.

Table 1: Demographic Profile of Maternal Health Care Providers in The Studied Primary Health Care Centres N = 139

		N	%
Age	15-24	59	42.4
	25-34	59	42.4
	35-44	18	12.9
	45 and above	3	2.2
Qualification	Quranic/Non formal	5	3.6
	Completed primary Education	5	3.6
	Completed Secondary Education	52	37.4
	Completed Tertiary Education	70	50.4
	None	7	5.0
Marital	Single	64	46.0
	Married	74	53.2
	Divorce	1	.7
Occupation Profession	Civil servant	139	100.0
	Medical Doctor	10	7.2
	Registered Nurse/ Midwife	32	23.0
	Community Health Officer	20	14.4
	Community Health Extension Worker	57	41.0
	Others	20	14.4

Table 2 shows that out of 285 respondents, 44.4% were within the ages of 15-24 years, 42.5% were within the ages of 25-34 years, 9.5% were within the ages of 35-44 years, and 2.8% were within the age of 45 and above years. 22.1% had Quranic/Non formal education, 15.1% completed primary education, 24.9% completed secondary education and 33.0% completed tertiary education. 26.3% were single, 65.6% were married, and 7.4% were divorced. 8.0% were farmers, 21.4% were Business persons, 32.7% were civil servants and 37.7% were full time house wives.

Table 3 shows the statements to responses on provision of quality of BEmONC services to clients in the PHC centres of North East and North West geo-political zones of Nigeria. The desirable mean value is 1.5. All the statements on provision of BEmONC services for clients obtained a mean value of less than 1.5 except item 7; Perform basic neonatal resuscitation. This study implies that the quality of BEmOC services in PHC centres of North East and North West geo-political zones of Nigeria is very low.

Table 2: Demographic Profile of The Maternal Health Care Clients in Primary Health Care Centres N= 285

		N	%
Age	15-24	128	44.9
	25-34	121	42.5
	35-44	27	9.5
	45 and above	8	2.8
Qualification	Quranic/Non formal	63	22.1
	Completed primary Education	43	15.1
	Completed Secondary Education	71	24.9
	Completed Tertiary Education	94	33.0
	None	14	5
Marital	Single	75	26.3
	Married	187	65.6
	Divorce	21	7.4
Occupation	Farming	23	8.4
	Business	61	21.4
	Civil servant	93	32.7
	Full House wife	107	37.7

Table 3: Quality of Bemonc Services in Primary Health Care Centres

Provision of BEmONC Services:	Mean	SD
Administration of parenteral antibiotics	1.29	.94
Administration of uterotonic drugs	1.12	.94
Administer parenteral anticonvulsants for preeclampsia and eclampsia.	1.08	.89
Manual removal of the placenta	.90	.95
Remove retained products	.83	.94
Perform assisted vaginal delivery	.15	.90
Perform basic neonatal resuscitation	1.67	.71

Table 4 shows the results of responses to utilization of quality BEmONC services by clients in the PHC centres of North East and North West geo-political zones of Nigeria. The desirable mean value is also 1.5. All the statements on utilization of quality of BEmONC services for clients obtained a mean value of less than 1.5, except administration of parenteral anticonvulsants for preeclampsia and eclampsia that obtained a mean value of 1.5 thus, this study observed that the level of utilization of BEmONC services is very low in PHC centres of North East and North West geo-political zones of Nigeria.

Table 4: Utilization of BEmONC services

Utilization of BEmONC Services:	Mean	SD
Administration of parenteral anti-biotics	1.00	.97
Administration of uterotonic drugs	1.35	.92
Administer parenteral anti-convulsants for preeclampsia and eclampsia.	1.50	.82
Manual removal of the placenta	.64	.88
Remove retained products	.80	.92
Perform assisted vaginal delivery	.41	.89
Perform basic neonatal resuscitation	1.11	.95

Hypothesis:

There is no significant relationship between the utilization and quality of basic emergency obstetric care (BEmNOC) services in PHC centres of North East and North West geo-political zones of Nigeria. The population t-test was used to test this hypothesis and the result presented in Table 5.

Table 5: Population T-Test of Utilization And Quality of Basic Emergency Obstetric Care (Bemoc) Services in Primary Health Care Centres:

Variable:	Mean	SD	t-value
Sample mean	0.99	0.90	1.29
Population mean	10.5	2.12	

t (423)1.96 ≤ 0.05

The result of the population t-test as presented in Table 5 shows that, there is no significant quality of basic emergency obstetric care (BEmNOC) services in PHC centres of North East and North West geo-political zones of Nigeria, this is because the t-calculated of 1.29 is less than t-critical of 1.96, therefore, the null hypothesis was accepted. This means that there is no significant relationship between utilization and quality of BEmOC services in PHC centres of North East and North West geo-political zones of Nigeria.

Discussion

This study revealed that the quality of BEmOC services rendered is very low. The finding agrees with the statement of Mselle, Kohi, Mvungi, Evjen-Olsen and Moland, (2011), that poor quality of emergency obstetric care at health facilities contributes to delays that lead to severe birth injuries. This study also support Mselle, Moland, Mvungi, Evjen-Olsen and Kohi, (2013) who reported that there was a relationship between women who have suffered serious birth injuries and nurse midwives staffing in the maternity wards who offered to women inadequate quality care. This finding is also similar that of Ziraba, Mills , Madise, Saliku, and Fotso, (2009) who reported that, the quality of emergency obstetric care services in Nairobi slums is poor and needs improvement. Traore et al, (2014) also attributed deficiency of competency among healthcare workers to the quality of services rendered.

This study observed that utilization level of services falls below acceptable 1.5 level of agreement and those services that need more technical skills are the ones with lower mean. This study does not agree with that of Bhutta, Darmstadt, Haws, Yakoob and Lawn (2009) who reported that Manual removal of placenta, removal of retained products and assisted vaginal delivery has the highest mean. Although in this study, the use of magnesium sulphate as an anti-hypertensive has been on the fore front of several maternal life-saving programs that renew the competency and zeal of health care providers in Nigeria, as such, improvements are not unrelated to government and non-governmental activities that are taking place especially in northern Nigeria and this is similar to the findings of PATH (2012) and Broek (2007). Kumar and Sharma (2010) observed that the more the competency of

health personnel the better the improvement on the quality of services rendered in India.
The quality of BEmOC has a direct link with quality of maternal health care providers and based on the situation on ground and the findings of studies, there is insignificant qualified maternal health care providers in most of PHC centres in Africa, North East and North West Nigeria inclusive, thus the insignificant quality of BEmOC in the study areas.

Conclusion and Recommendations

Based on the results and limitations of this study, it is concluded that basic emergency obstetric care services in PHC centres of the North East and North West geo-political zones of Nigeria are of poor quality. Based on the findings of this study, the following recommendations are made for effective and efficient improvement in quality of BEmOCservices in PHC centres of North east and North West geo-political zone of Nigeria. Recruitment of qualified human resource for maternal health care from every part of the country should be encourage, as it found out that one of the problems of human resource in Nigeria is there is a lot of the qualified human resource that are not employed in other zones of the country especially south West zone. Retraining of health workers through conferences, workshops, further education should be encouraged and spread to all cadres of health workers to enhance their productivity and this in turn will reduce maternal mortality. The people in the communities where the primary health centres are located should collaborate with the PHC centres staff for the appropriate up keep of adequate material resources for quality maternal health care services in their community.

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