



Evaluation of Emergency Obstetric Care Services in Primary Health Care Facilities in Niger State: A Mixed Methods Study

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Abstract

Background: Primary health care (PHC) is built on the principles of equity in the distribution of quality health care, active community participation in health care programmes and emphasis on prevention of illnesses rather than cure. The main objectives of maternal health services in the primary health care programme are to ensure that every expectant mother maintains good health throughout the maternity cycle. **Aim:** The main aim of this study is to evaluate the provision of emergency obstetrics care (EmOC) in Primary Health Care facilities. **Materials and Methods:** Utilizing the mixed research design, data were collected from 887 women, 69 male participants and 24 healthcare providers across 24 PHC facilities in Niger State selected through the multistage sampling technique using the questionnaire, focus group discussion, in-depth interview and facility assessment. Ethical approval and all necessary permission were obtained from the Niger State Primary Health Care Agency, stakeholders and the participants. Data were analyzed using descriptive statistics and transcription. **Results:** Findings from the study revealed that prolonged/obstructed labour, hypertension in pregnancy, bleeding in pregnancy, anaemia, retained placenta and breech presentation of the baby during childbirth were among the maternal health problems occurring in the study locations. Also, there were no facilities for the provision of EmOC services in the PHC facilities. **Conclusion:** Although prolonged/obstructed labour, hypertension in pregnancy, bleeding in pregnancy, anaemia, postpartum haemorrhage and retained placenta were among the frequently occurring maternal health problems, EmOC services were not provided in almost all the PHC facilities visited. It is therefore recommended that efforts should be made to improve the state of the PHC facilities.

Keywords: *Evaluation, Emergency, Obstetric Care*

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Introduction

Reduction in maternal mortality and morbidity has been a common goal in several international conferences and programmes. From the introduction of primary health care in 1978 through the Bamako Initiative, Safe Motherhood and the Millennium Development Goals, most programmes were aimed at improving quality, access and utilization of health services by all the people with special attention given to women and

children (Hiluf and Fantahun, 2008). Rather than improve access, quality and utilization of health services, the adoption of various health policies and programmes in many developing countries resulted in variations in terms of coverage of citizens and quality of services available to the people (Ha, Berman and Larson, 2002). These inequalities in the distribution of health services invariably work to the disadvantage of the poor citizens and

rural dwellers especially in the developing countries (Rosman and Graham, 2006).

Realising the inequalities in health services of many developing countries, the WHO in a world conference at Alma-Ata held in 1978 introduced primary health care whose uniqueness lies in its proposed comprehensiveness, global coverage, community participation and utilization of all relevant resources in pursuit of health for all (Whitehead and Dahlgren, 2006). The fundamental aim of PHC is to ensure universal access to available resources in order to provide adequate coverage of the most important health needs of the people (Ejembi *et al*, 2002). While PHC identified maternally and child health including family planning as one of its essential service components, it was until 1987 with the Nairobi Safe Motherhood Conference that the magnitude of problems women go through as a result of pregnancy was brought to the fore. Thus, several programmes were put in place to improve maternal health and to prevent maternal mortality and morbidity one of which is emergency obstetrics care (EmOC) is one of the programmes. However, it has been observed that there is no 2-way referral system between many PHC facilities and the neighbouring secondary or tertiary healthcare facilities (Nwaneri *et al* (2019)

Emergency obstetrics care is a component of maternal health services that must be available at all levels of the healthcare system. The need for provision of EmOC is very necessary, especially in the rural areas where access to quality maternal health services is grossly inadequate. Most of the morbidity and mortality related to pregnancy and childbirth could be averted with the provision of EmOC services in rural areas. This involves important basic and comprehensive functions needed to save the lives of mother and baby including the use of injectable antibiotics, oxytocic and anticonvulsant drugs, manual removal of the placenta, manual vacuum aspiration of retained products of conception

(MVA), assisted vaginal delivery, caesarean section and blood transfusion.

Emergency obstetric care involves a set of interventions called 'signal functions' that should be available in a health care facility that provides emergency care for women with pregnancy-related complications (Kusiako, Ronsmans and Van Der, 2000; UNFPA, 2011). These signal functions must be performed at a facility in order for such a facility to be recognized as an emergency obstetric care (EmOC) facility. A facility can either be classified as a basic EmOC or a comprehensive EmOC facility. The basic EmOC signal functions are the administration of parenteral antibiotics, oxytocic drugs and anticonvulsants; manual removal of placenta; manual vacuum aspiration of retained products of conception; and assisted vaginal delivery while the comprehensive emergency obstetric care (comprehensive EmOC) includes the six basic signal functions, plus performing caesarean section and blood transfusion (Isaac, 1998; Lawn, Cousens and Zupan, 2005). The signal functions include administration of parenteral antibiotics, parenteral oxytocic drugs the administration of parenteral anticonvulsants for pre-eclampsia and eclampsia. Others are manual removal of placenta, removal of retained products of conception and assisted vaginal delivery.

Therefore, basic and comprehensive emergency obstetric care should be available for every delivery, with as short a delay as possible. This basic EmOC includes parenteral antibiotics, magnesium sulphate for eclampsia, parenteral oxytocics, manual removal of placenta, removal of retained products and assisted vaginal delivery while comprehensive EmOC also includes Caesarean section and blood transfusion (Telfer, Rowley and Walraven, 2002). Carlough and McCall (2005) added that there should be a minimum of four basic EmOC facilities and one facility providing comprehensive EmOC per 500,000 populations. According to the World Data

Atlas (2020), Niger state had a maternal mortality ratio of 509/100,000 live births in 2017. This study is therefore set out to evaluate the provision of EmOC in primary health care facilities in Niger State.

Objectives of the Study

The study was conducted to achieve the following objectives:

1. To identify the most common maternal health problems reported in PHC facilities in Niger State
2. To examine the availability of emergency obstetrics care services in PHC facilities in Niger State

Materials and Methods

Research Design: A mixed research design was utilized for the study. This allowed for the collection of quantitative and qualitative data from the research participants

Research Setting: This study was conducted in Niger State, Nigeria. Located in the north-central geopolitical zone and created in 1976, Niger State has a population of 3,954, 772 people made up of 2,004, 350 males (50.7%) and 1,950,422 females (49.3%). The annual population growth rate of the state is 3.5% (National Population Commission, 2006). The population is spread across 25 Local Government Areas (LGAs). There are about 1,250 PHC facilities managed by the 25 LGAs under the supervision of the Niger State Primary Health Care Agency.

Population for the Study: This is made up of women of childbearing age, married men and healthcare workers in the PHC facilities.

Sample size and sampling technique: Multistage sampling technique was employed to select a sample of 903 women of childbearing age from 613 households, 69 married adult males and 24 PHC workers from 24 PHC facilities all across six (6) LGAs selected from the three (3) senatorial districts of the state.

Instruments of Data Collection: The researcher developed a questionnaire, an In-depth interview guide (IDI), Focus Group Discussion (FGD) guide and an evaluation checklist were used for data collection. The questionnaire was subjected to face and content validity as well as test-retest for validity and reliability while the IDI and FGD guides were exposed to face and content validity by a panel of three (3) experts.

Method of Data Collection: Data was collected with the help of 12 trained research assistants. The questionnaire was used to collect data from women of childbearing age. It was self-administered by literate women while the non-literate women were interviewed using the questionnaire. The women were visited in their homes. A total of nine (9) FGDs were conducted with the adult males while 24 in-depth interviews were conducted with the PHC workers who are either the officers in charge of their facilities or are involved in the provision of MCH services. One PHC worker was interviewed in each of the 24 PHC facilities

Data Analysis: Quantitative data were analysed using the IBM-SPSS version 23 and they were presented in frequency tables while the qualitative data was transcribed.

Ethical consideration: Permission to conduct the study was obtained from the Niger State Primary Health Care Agency and the Primary Health Care Departments of the LGAs involved. Similarly, informed consent was obtained from the respondents and confidentiality was ensured

Results

A total of 903 copies of the questionnaire was distributed and 887 were returned. Findings are presented using the objectives of the study as thematic areas. The socio-demographic characteristics are presented in Table 1.

Table 1: Socio-Demographic Characteristics of Female Respondents

Characteristics	Frequency	Percentage (%)
A. Age (years)		
Less than 18	9	1.0
18 – 25	322	36.3
26 – 33	344	38.8
34 – 41	171	19.3
42- 49	37	4.2
More than 49	4	0.4
Total	887	100
B. Religion		
Islam	653	73.6
Christianity	221	24.9
Traditional Religion	13	1.5
Total	887	100
C. Ethnic Group		
Gwari (Gbagyi)	212	23.9
Hausa	147	16.6
Kambari	138	15.6
Nupe	215	24.2
Others (Fulani, Igbo, Yoruba, Kadara etc)		
Total	175	19.7
Total	887	100
D. Marital Status		
Single	47	5.3
Married	749	84.4
Divorced	67	7.6
Widowed	24	2.7
Total	887	100
E. Level of Education		
No formal education	299	33.7
Primary education	140	15.8
Secondary education	216	24.4
Tertiary education	232	26.2
Total	887	100
F. Occupation		
Housewife	439	49.5
Farming	128	14.3
Civil service	281	31.7
Business/Trading	39	4.4
Total	887	100
G. Number of Children		
Less than 5	753	84.9
5-8	82	9.2
9-12	38	4.3
More Than 12	14	1.6
Total	887	100

Findings from Table 1 showed that 38.8% and 36.3% were within the age groups 18-25 and 26-33 years old respectively. The majority (73.5%) were Muslims who cut across the four major ethnic groups of Gwari, Hausa, Kambari and Nupe with others coming from

other ethnic groups like Fulani, Kadara, Igbo and Yoruba. It could also be seen that 84.4% were married, 5.3% are single mothers. In terms of formal education, 33.7% of the women of childbearing age had no formal education.

Table 2: Maternal Health Problems Reported by the Women During Most Recent Pregnancy

Maternal Health Problem	Frequency	Percentage (%)
1. No problem reported	607	68.4
2. Malaria	201	22.7
3. Prolonged labour	171	19.3
4. High blood pressure	168	18.9
5. Bleeding during pregnancy (antepartum haemorrhage)	112	12.6
6. Anaemia in pregnancy	102	11.5
7. Postpartum haemorrhage	78	8.8
8. Retained placenta	60	6.8
9. Intra-uterine foetal death/Stillbirth	23	2.6
10. Breech/Malpresentation of the baby	10	2.4

Note: Multiple responses were recorded

The findings in Table 2 showed that malaria in pregnancy (22.7%), prolonged labour (19.3%), hypertension in pregnancy (18.9%), antepartum haemorrhage (12.6%) and anaemia in pregnancy (11.5%) were the most frequently occurring maternal problems by some of the respondents. Others are retained placenta, intrauterine foetal deaths and breech presentation of the baby while more than two-thirds (68.4%) did not report any health problem during the most recent pregnancy.

Similarly, almost all the health workers interviewed mentioned maternal health problems like hypertension in pregnancy, haemorrhages, prolonged/obstructed labour, retained placenta, abortion, malaria in pregnancy, anaemia in pregnancy, sepsis and eclampsia as the main maternal health problems often brought to the health facilities for treatment. Also, most of the health workers revealed that some maternal deaths were recorded mostly at home. The health personnel identified ignorance, poverty, cultural beliefs and failure to attend antenatal clinics and childbirth at home as the main factors responsible for the health problems and their consequences in some of the communities.

Participants in some of the FGDs identified haemorrhage, prolonged labour, retained placenta, stillbirth, fever and severe abdominal pain as the major health problems suffered by women during pregnancy and

childbirth. Most of the participants attributed the problems to physical work undertaken during pregnancy, poor nutrition, women's failure to attend antenatal clinic, sorcery, witchcraft and evil spirits intrusion. For instance, in one of the FGD sessions, a 60-year-old non-literate father of 11 children stated that:

Evil spirits, sorcery and witchcraft still affect the outcome of pregnancies. Sometimes men that lost the hands of women in marriage use charm to influence childbearing either by preventing the women from getting pregnant or by making them lose the babies after getting pregnant. (P41, FGD)

This view was also held by a group of young non-literate participants aged 25-30 years in another FGD session that women who deceive some men by initially promising to marry them and latter refusing to do so usually fall victims of some perceived "wicked men" during pregnancy and childbirth. For instance, in one of the FGDs, a 28-year-old HND holder stated that

Some deceitful women use to fall victims to wicked and unforgiving men who feel that the women had deceived them and later got married to other

men. They will block their wombs or make them lose their pregnancies or make them bleed severely during pregnancy. You knowsome

men are terribly mean (P28, FGD)

Findings of the study revealed that some forms of EmOC services are available in some PHC facilities as could be seen in Table 3.

Table 3: Availability of EmOC Services in the PHC Facilities

EmOC Services	Frequency	Percentage (%)
Don't know if available	521	58.7
Provision of injectable Oxytocin to aid labour	261	29.4
Blood transfusion	73	8.2
Manual removal of placenta	57	6.4
Assisted vaginal delivery	53	6.0
Caesarian section	16	1.8
Manual Vacuum Aspiration of retained products	16	1.8

Note: Multiple responses recorded

It could be seen from Table 3 that more than half (58.7%) of the female respondents indicated that they were not aware of EmOC services in the PHC facilities they attend while others indicated that injectibles antibiotics, oxytocin and anticonvulsants, blood transfusion, manual removal of retained placenta and caesarian section services were available.

We don't have doctors and midwives and our laboratory does not have a refrigerator and other facilities for blood transfusion. We don't even have regular electricity. Nobody train me for MVA and removal of retained placenta (P16, IDI)

The IDIs with the health personnel revealed that most of the facilities provided injectable antibiotics like Gentamycin, intravenous Flagyl and Ampiclox, Oxytocin and anticonvulsants like Largactil, Diazepam and Paraldehyde injections as well as assisted vaginal delivery. Most of the PHC facilities did not have trained staff and equipment for manual removal of retained placenta, manual vacuum aspiration (MVA) of retained products of conception, especially in the case of incomplete abortion, caesarean section and blood transfusion. Most of the personnel providing maternal health services indicated that they lacked the necessary skills and equipment to provide EmOC services as required. A 37-year-old CHEW in charge of MCH services in one of the facilities explained that:

Asked what they do when they receive cases that require EmOC services, She stated that:

We use to refer to the General Hospital which is about 35-40km away and we don't have an ambulance. The patients' relations usually make arrangements for transportation to the hospital. Sometimes some families cannot afford the cost of transportation and services at the hospital. So, they take their patients home and pray for a miracle to happen. My brother, the situation is terrible. (P16, IDI)

We only offer antenatal care, normal childbirth and immunization services here.

Similarly, findings from the FGDs confirmed that most of the facilities did not offer EmOC services to the women when the need arose. Most of the participants explained that cases of retained placenta, blood transfusion and

caesarean section were often referred to nearby General Hospitals and Medical centres for further management. However, participants from four (4) of the research communities indicated that cases that required manual removal of retained placenta, blood transfusion and manual vacuum aspiration (MVA) of products of conception were attended to in the PHC facilities in their communities. Only participants from one community indicated that selective caesarean section operations were conducted by mostly NYSC doctors posted to the facility in the past. There was no NYSC doctor at the time of the study. Explaining the situation in one of the FGD sessions, a 42-year-old primary school teacher stated that:

It is like the government has forgotten about us. Most of the women usually deliver their babies at home because the clinics don't offer satisfactory services. Those that require blood transfusion and those that could not deliver their babies have to be referred to the nearby hospital after several hours of labour or loss of blood. Some women died before arrival or after arrival at the hospital. It is not easy for us. (P19, FGD)

From the institutional assessment conducted, it was observed that only five (5) PHC facilities located in five of the six LGAs studied had midwives trained on MVA that provided MVA services and manual removal of retained placenta. Similarly, two experienced CHEWs in two other PHC facilities claimed they used their experience to remove the retained placenta. Other healthcare workers claimed they usually refer clients with such problems to the nearest General Hospitals for further management. Neither the communities nor the PHC facilities assessed had an ambulance or any vehicle or arrangement for conveying patients referred to other facilities. It was observed that only two

(2) PHC facilities offered blood transfusion services although, none of the two facilities had an equipped laboratory for proper screening of blood and other pre-transfusion blood tests. One of the health workers (a CHEW) claimed that they used the facilities of nearby health institutions for blood tests before transfusion.

In one of the IDIs, a 34-year-old midwife in one of the PHC facilities explained the situation in their facilities thus:

Our healthcare facility is in a bad situation. Sir, we don't have equipment for basic MCH care and you are talking about EmOC. No facilities for blood transfusion, some drugs are not available and no laboratories for basic services let alone blood transfusion. (P11, IDI)

Discussion of Findings

The study identified prolonged labour, hypertension in pregnancy, bleeding in pregnancy (ante-partum haemorrhage), postpartum haemorrhages, anaemia in pregnancy, retained placenta and breech presentation of the foetus as the most frequently occurring maternal health problems affecting the women in the rural areas. This finding is consistent with earlier studies conducted in northern and southern parts of Nigeria which identified hypertension, anaemia, prolonged labour and haemorrhages as the major cause of maternal morbidity and mortality in most parts of Nigeria (Garba *et al* 2008, Garba *et al* 2011, Makinde *et al*, 2012).

There was no adequate provision for emergency obstetrics care (EmOC) in almost all the PHC clinics. Similarly, only 29.4% of the female respondents indicated that the clinics had Oxytocin injection, 8.2% had provision for blood transfusion and 6.4% had provision for manual removal of retained placenta. However, the health care providers reported that most of the PHC facilities

provided injectable antibiotics like Gentamycin, intravenous Flagyl and Ampiclox. They also reported that they administered anticonvulsant drugs like Largactil, Diazepam and Paraldehyde injections to eclamptic women while only 5 PHC clinics provided MVA services. This implies that some levels of EmOC services were provided by the clinics in the rural areas although mostly by unskilled personnel which may lead to increased maternal mortality and morbidity. Thus, lending credence to the Marxist political economy which explained that inequalities exist in the quality of health services offered between the rich and the poor, the rural and the urban residents leading to increased morbidity and mortality. Fournier *et al* (2009) reported that one proven effective strategy for reducing maternal mortality and morbidity is the provision of basic and comprehensive EmOC by qualified personnel, especially in the rural areas. Similarly, Rejuoro *et al* (2018) reported that although about 71% of Nigerians have access to PHC facilities located within a 5km radius of their homes, many of these PHC centres are not functional due to frequent stock-outs, lack of equipment and lack of qualified staff

Conclusion

The main objectives of maternal health services in the primary health care programme are to ensure that every expectant mother maintains good health throughout the maternity cycle and beyond. The woman is also expected to receive antenatal, intranasal, postnatal, child family planning and EmOC services from well-equipped health facilities and adequately trained health personnel.

From the findings of this study, maternal health problems like prolonged/obstructed labour, hypertension in pregnancy, bleeding in pregnancy, anaemia, postpartum haemorrhage, retained placenta, sepsis and breech presentation of the baby during childbirth were most frequently occurring in the study locations. Thus, there were several cases of maternal morbidity and mortality in the rural areas that were not reported because they

mostly occurred at home due to the non-utilization of healthcare services. It was discovered that EmOC services were almost not available in all the PHC facilities evaluated as a result of poor infrastructure, inadequate manpower and lack of basic equipment for EmOC services.

Recommendations

- i. Complete renovation of the PHC facilities should be undertaken by the Niger State Ministry of Health to make the environment more conducive for health care delivery through increased funding of the health sector and active involvement of the community.
- ii. The PHC facilities should be adequately supplied with equipment, drugs and consumables by the State and Local Governments to improve the quality of maternal health services in the PHC centres.
- iii. The government should employ more midwives to ensure that there is at least one qualified midwife in each PHC facility while the existing CHEWs should be regularly trained in the area of basic maternal health services to complement the activities of the midwives.

Conflict of interest: None

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