

**STATUS OF IMPLEMENTATION OF EMERGENCY OBSTETRIC
LIFE SAVING SKILLS IN THE HEALTH FACILITIES IN NSUKKA
LOCAL GOVERNMENT AREA, ENUGU STATE**

BY

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DEDICATION

This research work is dedicated to the Almighty God for His love, mercy, directives and abundant blessings throughout this programme,

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Ugwu Scholastica Nkechinyere

ABSTRACT

Emergency Obstetric Live-saving Skills (EmOLSS) are very important skills for doctors, midwives and Community Health Extension Workers (CHEWS). These skills improve their services in maternal and child health. The skills when applied enable the health worker to detect early, prevent and manage obstetric emergencies. This study was therefore designed to determine the status of implementation of EmOLSS among the midwives, and CHEWS working in the primary and secondary health facilities under Nsukka Local Government Area (LGA), Enugu State.

This is a descriptive cross-sectional study. Non probability convenience sampling method was used to select 167 midwives/CHEWS from the 14 health facilities under Nsukka L.G.A. The semi-structured questionnaire used for data collection includes: 30-point question on pattern of implementation of EmOLSS and 34 point questions on self-efficacy of the health workers in the implementation of EmOLSS. The health workers` related factors, the client`s social related factors as identified by the health workers and the institutional factors that influence the pattern of implementation of EmOLSS were also included. An observational checklist was used to assess the availability of necessary drugs, materials and equipment in the facilities. Pattern of implementation of EmOLSS score of ≤ 10 , 11-20 and 21-30 were rated low, moderate and high respectively. Their self-efficacy in the implementation of EmOLSS scores of ≤ 11 , 12-23 and >23 were categorized as low, moderate and high self efficacy. Data were analyzed using descriptive statistics: Chi-square and Fisher`s exact test at $P= 0.05$.

Respondents` mean age score was 39 ± 8.17 years. Midwives personnel were (57) while CHEWS personnel were (109). The respondents` highest qualifications were: RN/RM/RM (18), CHEWS/CHO (129) and BNSC (19). Majority of the respondents (94.4%) were females. About (61.5%) of the respondents had spent ≥ 11 years in the service while (38.5%) had spent 1-10 years in service. Respondents with poor, fair and good pattern of performance of EmOLSS were (19.8%), (73.1%) and (7.2%) respectively. Respondents with low, moderate and high confidence were (14.4%), (70.7%) and (15.0%). Factors that influence the pattern of performance of EmOLSS includes: Increase work load (65.9%),

forgetfulness of the steps in each EmOLSS (64.7%), inability of the client to understand her role during the implementation of these skills (76.0%), poor knowledge of the outcome of the skills (66.5%), inadequate staff in the labour ward (78.4%), poor electricity supply (80.8%), poor motivation of the health workers (72..5%), irregular payment of salaries of health workers (77.8%) and irregular supportive supervision (91.0%). From the observational checklist, almost half of the facilities (43%) did not have injection magnesium sulphate and (100%) ambulance while majority of the facilities had other essential drugs and equipment. There is significant association between the self-efficacy of the respondent and their pattern of implementation of EmOLSS,

The overall status of implementation of EmOLSS was moderate considering their self-efficacy, pattern of implementation of EmOLSS and availability of drugs and equipment.

Keywords: Status of Implementation, Emergency Obstetric Life Saving Skills, Primary and Secondary Health Facilities, Midwives/CHEWS.

Word count: 471

CERTIFICATION

I hereby certify that this project was carried out, under my supervision, by Ugwu, Scholastica N. in the Department of Health Promotion and Education, Faculty of Public Health, College of Medicine, University of Ibadan, Ibadan, Nigeria.

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ACRONYMS

ALSS:	Advanced Life Saving Skills
BEmOC:	Basic Emergency Obstetric Care
CEOC:	Comprehensive Emergency Obstetric Care
CHEWS:	Community Health Extension Worker
ELSS:	Expanded Life Saving Skills
EmOC:	Emergency Obstetric Care
EmOLSS:	Emergency Obstetric Life Saving Skills
EMONC:	Emergency Obstetric and Newborn Care
FANC:	Focused Antenatal Care
FMOH:	Federal Ministry of Health
MCHIP:	Maternal and Child Integrated Programme
MCH:	Maternal and Child Health
MDGs:	Millennium Development Goals.
MMR:	Maternal Mortality Rate.
MVA:	Manual Vacuum Aspirator
PAC:	Post Abortal Care
PATHS:	Partnership for Transforming Health Systems.
RCOG:	Royal College of Obstetrics and Gynaecology
UNICEF:	United Nation International Emergency Fund.

OPERATIONAL DEFINITION OF TERMS

- Status:** The pattern of performance of the midwives/CHEWS in implementation of EmOLSS, their self-efficacy and availability of necessary drugs, materials and equipment the health facility for the implementation of EmOLSS
- Emergency:** Incident that occurs suddenly and unplanned and most of the time is life-threatening.
- Obstetric:** This deals with the care of a woman During pregnancy, labour and six hours after delivery of the baby.
- Life Saving Skills:** All the activities carried out to detect early, prevent and manage life-threatening situations during labour and six hours after labour
- Labour:** This is the onset of regular and rhythmic contraction of the uterus with subsequent dilatation of the cervix for the expulsion of the product of conception

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Globally, there is progress in the reduction of Maternal Mortality Ratio, (MMR), that is, from 745 deaths per 100,000 live births in 1990 to 429 in 2010 and this is just 42%. Africa still had the world's largest burden of maternal deaths, at 56 percent of the global burden in 2010. At 429 deaths per 100,000 live births that year, or an estimated 164,800 maternal deaths, Africa has the world's highest maternal mortality ratio. (UN 2013),

Nigeria accounts for 1 in 6 maternal deaths globally, with approximately 50,000 maternal deaths occurring each year (Lim, Dandona et al 2010). Nigeria has made steady but slow progress in reducing maternal deaths and moving towards the achievement of MDG 5. From a high rate of 1000 deaths per 100,000 live births in 1990, maternal mortality came down to 800 deaths per 100,000 live births in 2004, 545 deaths per 100,000 live births in 2008 and 350 deaths per 100,000 live births in 2012. Maternal mortality declined by 20.0% between 1990 and 2004 and by 36.0% between 2004 and 2008. However, Nigeria's current status, estimated at 350 maternal deaths per 100,000 live births, is still 40.0% short of the 2015 target of 250 maternal deaths per 100,000 live births (UN 2013). Some of the major causes of high MMR in Nigeria include haemorrhage, obstructed labour, puerperal infection, malaria and complicated abortions (WHO 2012). Haemorrhage accounts for an estimated 23% of maternal deaths, sepsis for 17% and eclampsia, unsafe abortion, obstructed labour and anaemia constitute 11% each (FMOH, 2010).

Adindu et al., (2012) explained that most maternal and infant deaths are preventable and progress in this area is falling in terms of meeting the target in 2015 and that the real meaningful health related change at the grassroots level however had eluded many African countries and Nigeria is no exception.

The World Health Organization, (WHO) estimated that over a million children worldwide lost their mothers annually and stated that the children who lost their mothers are 10 times more likely to die prematurely. (Antor et al 2014).

The FMOH (2010) highlighted that one in every four child deaths in Nigeria is a newborn (first month of life), and each year 284,000 Nigerian newborns die. It further explained that despite the grim statistics, most of these newborn deaths are preventable. Birth asphyxia (27%), complications of preterm birth (25%), severe infections (23 %) and tetanus (8 %) are the leading causes of neonatal/infant death. (Antor et al 2014).

The UN (2013) posited that most neonatal deaths result from preterm birth or delivery complications and that home delivery without a skilled health care provider leaves women and infants at greater risk of complications. It further explained that high-impact interventions during delivery and the postnatal period, such as safe and clean delivery, skilled attendance at birth and exclusive breastfeeding, can drastically reduce neonatal morbidity and mortality.

The FMOH (2011) stated that the key approach to reduction in maternal and neonatal death has been the implementation of integrated essential maternal and newborn care interventions, focusing on antenatal care, comprehensive and basic Emergency Obstetric and Newborn Care (EmONC), postnatal care and family planning for healthy timing and spacing of pregnancies. Maternal and Child Health Integrated Program (MCHIP) recognizes the importance of systematically addressing maternal and newborn issues at the community and facility levels together using evidence-based interventions and best practices (Singh, et al 2012). Health professionals working together at the national and community levels can make a significant contribution towards the achievement of Millennium Development Goals (MDGs) and strengthening national and local commitment to improving access and quality of care. This is an essential component of promoting safe motherhood, newborn health and child survival (WHO. 2012).

Maternal death is highly preventable if the women have access to sufficient reproductive health care services. Reducing maternal deaths and meeting the MDG requires critical legislation to address structural barriers to universal health care, amending the midwifery and other health professions law, as well as consolidate local health systems at provincial level (Romulo, 2013). The UNFPA, (2011), stated that Emergency Obstetric and Newborn Care (EmONC) is an essential component in the reduction of maternal and newborn mortality. The organization had supported the EmONC improvement plan 2010-2015 to provide training to midwives, community health extension workers and doctors on life-saving skills and harnessing a high quality maternal and newborn care programme. This qualifies them as skill birth attendants.

Skilled attendance at all births is considered to be the single most critical intervention for ensuring safe motherhood, because it hastens the timely delivery of emergency obstetric and newborn care when life-threatening complications arise (Raven et al 2011). Skilled attendance denotes not only the presence of Midwives and Others with Midwifery Skills (MOMS), but also the enabling environment they need in order to be able to perform capably. It also implies access to a more comprehensive level of obstetric care in case of complications requiring surgery or blood transfusions (Raven et al 2011)/

According to Jolivet et al (2011), poor maternal health status in Nigeria, in general and indeed Enugu State is largely attributable to poor antenatal care practices, lack of access to and use of unskilled attendants at birth and a weak health care delivery system.. Available data indicate that maternal mortality ratio is high in Enugu State, with figures ranging from 1400 per100000 (DHS 2003). This is before the emergence of the intervention initiative of Partnership for Transforming Health System in the state (PATHS). In the state, PATHS safe motherhood interventions included identification, rehabilitation, equipping of Emergency Obstetric Care (EOC) facilities and establishment of Life Saving Skills (LSS) training centers (PATHS 2003). Life-Saving Skills (LSS) training equips frontline health service providers - especially the Community Health Extension Workers (CHEW) and the midwives with the competencies and tools needed to manage the emergencies that cause the majority of

maternal deaths during pregnancy, at delivery, and during the first six weeks after delivery (Jolivet et al (2011).

According to PATHS2, (2014), one hundred and ninety-one pregnant women's support groups were established across communities and churches in Enugu State, reaching a total of 2,332 pregnant women during their meetings. The information shared during the meeting, educated pregnant women on the benefits of facility delivery, importance of antenatal care, recognition of maternal danger/emergency signs and the prevention and treatment of diarrhoea. Five hundred and four facility deliveries linked to the intervention of these groups were recorded (PATHS2, 2014)

In order to improve access to quality EmOC and other Maternal and Child Health (MCH) services in PATHS2 supported health care facilities across the five states, a total of 168 midwives and Community Health Extension Workers (CHEWs) in Enugu state were trained on Advanced Life Saving Skills (ALSS) and Focused Antenatal Care (FANC) (PATH2 Annual Report, 2014).

The outcome of these efforts, are increase in the number of pregnant women that access health facilities in Enugu state. It is therefore important to examine the pattern of performance in implementation of EmOLSS in the primary and secondary health facilities in Nsukka Local Government Area (LGA) of Enugu state which is one of the LGA where training of midwives and CHEWS on these skills have been going on for 8 years now without investigating the status of their implementation.

1.2 Statement of Problem

The Millennium Development Goals (MDGs), formulated in 2000, are considered as international blueprints for meeting the needs of the world's most vulnerable people by 2015. The health and well-being of mothers, newborns, and children, as detailed by MDGs 4 and 5, are important component of many related policies and planning discussions (WHO UNICEF 2010).

The fifth MDG is to achieve a 75% reduction in maternal mortality between 1990 and 2015. Emergency obstetric care (EmOC), access to family planning, and skilled attendance at birth

are three key interventions that have been implemented globally to reduce maternal mortality and Nigeria had achieved only 40% (UN 2013).

An important indicator of the global personnel shortage in the health sector is the proportion of women assisted by skilled birth attendants.(UNICEF 2009) In most industrialized countries, skilled birth attendance is provided at almost all births while fewer than 50% of births in the majority of countries in South Asia and sub-Saharan Africa receive such support and estimates show that skilled birth attendance rates are only improving at less than 0.5% per year. By 2015 it is likely that it will still be fewer than 50% of births where there is the support of a skilled birth attendant. (Lawn , et al 2009). He further explained that mother's death carries profound consequences not only for her family, especially her surviving children, but also for her community and country and gave the reasons that it is because if the mother dies, the risk of death for her children under age 5 is doubled or even tripled.

The problem of poor organization and access to maternity health services has always been a major challenge in Nigeria (Mutale et al., 2013). Therefore, the burden of maternal mortality can be minimized if adequate timely emergency obstetric life saving skill care (EmOLSS) is provided. Anyaji et al., (2003) posited that Partnership for Transforming Health System (PATHS) in collaboration with Enugu state Ministry of Health (MOH) have invested in the training of health personnel in the primary and secondary health facilities relating to EmOC programs with special focus on life saving skills (LSS).

However an appraisal of the status of the implementation of the EmOLSS scheme has not been systematically investigated thus constituted the focus of this study.

1.3 Justification

The result of the study have potential in serving as agenda assessment which can be relied upon for re-training or organizing refresher training programs for the study population on EmOLSS. In addition, the result could be used to aid policy formulation and the schedule of strategies for promoting EmOLSS in the study area.

1.4 Research Questions

1. What is the pattern of performance of the skills relating to EmOLSS in primary and secondary health facilities in Nsukka local government area?
2. What are the midwife/CHEWS` related factors that influence the pattern of implementation of EmOLSS?
3. What are the perceived client`s social factors which influence the pattern of implementation of EmOLSS?
4. What are the institutional factors that influence the pattern of implementation of EmOLSS?
5. What are the strategies that will enhance the pattern of implementation of EmOLSS?

1.5.1 Broad Objective

The study is aimed at determining the status of implementation of Emergency Obstetric Life Saving Skills in primary and secondary health care facilities in Nsukka Local Government Area, Enugu State Nigeria.

1.5.2 Specific Objective

The specific objectives were to:

1. Determine the pattern of implementation of EmOLSS in primary and secondary health facilities in Nsukka local government area.
2. Identify the midwife/CHEWS` related factors that influence the pattern of implementation of EmOLSS.
3. Identify the perceived client`s social related factors which influence the pattern of implementation of EmOLSS.
4. Determine the institutional factors that influence the pattern of implementation of EmOLSS
5. Determine strategies that can enhance the pattern of implementation of EmOLSS?.

CHAPTER TWO

LITERATURE REVIEW

2.1 Incidence of maternal mortality

As the 2015 target date for the Millennium Development Goals (MDGs) nears, ending preventable maternal mortality (EPMM) still remains an unfinished agenda and one of the world's most critical challenges despite significant progress over the past decade.(WHO, 2015). Although maternal deaths worldwide have decreased by 45% since 1990, eight hundreds women still die each day from largely preventable causes before, during, and after the time of giving birth.(UNICEF,2009). Ninety-nine per cent of maternal deaths occur in low- and middle-income countries where the comparable risk in the developed world of maternal mortality since 1990 at the base year for the Millennium Development Goals mortality is 1 in 8,000 with an estimated 10 million women dying from complications related to pregnancy and childbirth, and of the estimated total of 536 000 maternal deaths worldwide in 2005, developing countries accounted for 99% (533 000) of these deaths (UNICEF, 2009).

Slightly more than half of the maternal deaths (270 000) occurred in the sub-Saharan Africa region alone, followed by South Asia (188 000). Thus, sub-Saharan Africa and South Asia accounted for 86% of global maternal deaths. (Omo-Aghoja et al 2010). The adult lifetime risk of maternal death (the probability that a 15-year-old female will die eventually from a maternal cause) is highest in Africa (at 1 in 26), followed by Oceania (1 in 62) and Asia (1 in 120), while the developed regions had the smallest lifetime risk (1 in 7300) (Bakare 2011).With an estimated 52,000 annual deaths, Nigeria contributes 10% to annual estimates of maternal mortality and is one country where progress must be made if the global Millennium Development Goals (MDG) target of reducing maternal mortality by 75% by the year 2015 would be achieved.(Omo-Aghoja et al. 2010).

2.2 Direct and indirect causes of maternal mortality

Maternal mortality strongly reflect the overall effectiveness of health systems, which in many low income developing countries suffer from due to weak administrative, technical and logistical capacity, inadequate financial investment and a lack of skilled health personnel especially in primary and secondary health facility in Nigeria.(WHO, 2012).

Globally, around 80% of maternal deaths are due to obstetric complications; mainly haemorrhage, sepsis, unsafe abortion, pre-eclampsia and eclampsia, and prolonged or obstructed labour. Complications of unsafe abortions account for 13% of maternal deaths worldwide and 19% of maternal deaths in South America (WHO, 2010).

The direct causes of maternal mortality will be reviewed briefly:

Maternal deaths usually occur from the third trimester to the first week after birth (with the exception of deaths due to complications of abortion). Studies show that mortality risks for mothers are particularly elevated within the first two days after birth. Most maternal deaths are related to obstetric complications – including post-partum haemorrhage, infections, eclampsia and prolonged or obstructed labour – and complications of abortion. Most of these direct causes of maternal mortality can be readily addressed if skilled health personnel with good attitude are on ground and key drugs, equipment and referral facilities are also readily available. (Omo-Aghoja et al. 2010).

The indirect causes of maternal mortality are many and these are also worth reviewing.

Many factors contributing to a mother's risk of dying are not unique to pregnancy but may be worsened by pregnancy and childbirth. Attributing these causes to pregnancy is difficult owing to the poor diagnostic capacity of many countries' health information systems. (UNFPA, 2011). Nonetheless, assessing the indirect causes of maternal deaths helps determine the most appropriate intervention strategies for maternal and child health and collaboration between condition-specific programmes – such as those to address malaria or AIDS – and maternal health initiatives may often be the most effective way to address some

of these indirect causes, including those that are highly preventable or treatable, such as anaemia. (UNFPA, 2011).

The detail causes of maternal mortality in Nigeria are Haemorrhage: Any bleeding before labour and during labour: placenta previa, abruptio placenta, postpartum haemorrhage, retained placenta, severe bleeding from lacerations (vaginal or cervical), (Bakare 2011). Prolonged/Obstructed labour, this is dystocia (abnormal labour) which include: prolonged established first stage of labour (>12 hours), prolonged second stage of labour (>1 hour) Cephalopelvic disproportion due to transverse lie, brow/face presentation etc. Postpartum sepsis: that is if a woman has temperature of about 38 degrees Centigrade or more, occurring more than 24 hours after delivery (with at least two readings because labour alone can cause some fever) (Bakare 2011).

2.3 Emergency obstetric care

Emergency obstetric care (EOC) is a package of medical interventions that has been developed to prevent and manage the five direct obstetric complications—obstetric hemorrhage, obstructed labor, septicemia, hypertensive disorders in pregnancy, and unsafe abortion—that cause 75% of maternal deaths (FMOH, 2010). The essence of these skills is because, while most pregnancies and births are uneventful, all pregnancies are at risk and around 15% of all pregnant women develop a potentially life-threatening complication that calls for skilled care, and some will require a major obstetrical intervention to survive (PATH 2, 2014).

Life Saving Skills (LSS) training package was designed and developed by the Liverpool School of Tropical Medicine (LSTM) and Royal College of Obstetricians and Gynaecologists (RCOG) in collaboration with the Department of Making Pregnancy Safer at World Health Organization. The training package was piloted extensively in 2007 and is now used in a variety of settings in both Africa and Asia (RCOG, 2010).

An estimated 15% of pregnant women will develop a complication during pregnancy, childbirth or the puerperium, which will require EmOC (WHO, 2010). The collective minimum set of medical interventions (or bundle of care) required to prevent or manage the

main obstetric complications (haemorrhage, pre-eclampsia or eclampsia, sepsis, complications of obstructed labour or abortion) is known as emergency obstetric care (EmOC) (WHO, 2012). These were first described and internationally agreed upon in 1997, and they consist of key interventions (or signal functions) that must be available at health-care facilities designated to provide either comprehensive (nine signal functions) or basic (seven signal functions) EmOC.

An additional signal function was introduced in 2009 for performing basic neonatal resuscitation with a bag and mask (emergency obstetric care and early newborn care, EmONC). Two levels of EOC can be distinguished: Basic Essential Obstetric Care (BEOC) with 7 'signal functions: Parenteral antibiotics, Parenteral oxytocics, Parenteral anti-convulsants, Manual removal of a retained placenta, Removal of retained products of conception by Manual Vacuum Aspiration (MVA), assisted vaginal delivery (vacuum extraction) and Resuscitation of the newborn (using bag and mask) and Comprehensive Essential Obstetric Care (CEOOC) with 9 'signal functions' All 7 BEOC functions, plus: Caesarean Section Blood Transfusion. The Nigerian BEmOC standard includes two additional signal functions in the guideline: 24-hour service coverage and a minimum of four midwives per facility (WHO, 2012).

More recently, new signal functions to measure the ability of health facilities to provide routine care and emergency obstetric and newborn care have been described, one general and three for obstetric and newborn care. These are as follows: (a) general requirements for health-care facilities such as 24/7 service availability, sufficient numbers of SBAs, functional referral systems and infrastructure; (b) routine care for all mothers and babies; (c) basic EmONC for mothers and babies with complications; and (d) comprehensive EmONC to include blood transfusion and caesarean section at the secondary level (Adedoke, et al., 2009).

A number of surveys have shown that the majority of health-care facilities in low- and middle-income settings, although designated to provide either basic or comprehensive

EmONC, may be unable to do so (Ameh, Msuya, Hofman, et al., 2012). In many cases, structures are in place, and equipment and consumables were noted to be available, but the staff reported that they lacked competency and skills and were therefore unable to provide all the signal functions of EmOLSS and essential NC (Adegoke, Utz, Msuga et al., 2009), (Utz, Siddiqui, Adedoke, et al., 2013) In other instances, the lack of knowledge and skills to provide EmONC is compounded by non-utilization of simple but proven health technologies and equipment (Ameh, Msuya, Hofman, et al., 2012).

2.4 Importance of emergency obstetric life saving skills

An Emergency obstetric life saving skills (EmOLSS) is defined as a set of life saving services that must be available in health facilities to respond to emergencies that arise during pregnancy, delivery or postpartum (WHO, UNICEF, UNFPA, 2014). The Safe Motherhood Programme in 1987 emphasized the importance of access to EmOLSS to manage the common causes of obstetric death: hemorrhage, obstructed labour, complications due to unsafe abortion, eclampsia, and infection.

If women are to receive prompt adequate treatment for complications that arise during these periods, then facilities for providing emergency obstetric life saving skill care (EmOLSS) must be available, accessible and equitably distributed; they should be used by women who really need them. Adequate coverage does not suggest that all births should take place in health facilities (WHO, UNICEF, UNFPA, 2014). It does mean that all pregnant women need access to functioning EmOLSS facilities, in case they need them. Once coverage is established, then questions of performance must be addressed. However, many women die in hospitals because they were not admitted until their condition was critical while many others, die because they did not receive timely treatment due to the nonchalant attitude and poor knowledge skills of some health workers or because the treatment they received were inadequate (UNFPA, 2011).

The availability and accessibility of Emergency Obstetric Care (EOC) services, thus, deserve particular focus in the review of maternal mortality situation. Findings from a recent study

conducted by FMOH and UNFPA between 2002 and 2003, which used internationally defined EOC signal functions showed inadequacy in the availability and utilization of EOC services, as only 18.5% of facilities offering maternal health care services meeting the EOC criteria.(UNICEF, 1997). A further breakdown of the facilities that met the EOC criteria indicated that only 4.2% of public sector facilities compared to 32.8 % of private sector facilities met the criteria. (FMOH, 2010).

Among the 12 states randomly selected for the study, and covering the 6 geo-political zones, whereas the availability criterion of 1 CEOC facility for a population of 500,000 by virtually all, only Lagos state met the criterion of 4 BEOC per 500,000 population (and that was achieved only with the combination of private and public sector facilities). Studies on maternal and neonatal health services conducted by Futures Group in 1999 in 49 developing countries rated the service capacity of Nigeria's health facility to provide emergency obstetric care services as 48 out of a possible score of 100 and, the country was rated as the 41st on its Maternal and Neonatal Program Index (which involves assessment of service capacity, access, care received, family planning and support functions) (FMOH, 2010).

2.5 Emergency obstetrics life saving skills programme implementation as a measure of maternal mortality reduction

The life saving skills (LSS) programme aimed at improving the availability and accessibility to skilled human resources who could competently handle cases of emergency obstetric conditions. The programme, originally designed by the American college of Midwifery and introduced into Nigeria and selected West African countries in the late 1980s/early 1990s under the Mother Care project (USAID 2015).

The conceptual trust of the LSS training is to increase the availability of and access to quality obstetrics care by equipping doctors, midwives and community health extension workers with critical skills for addressing emergency obstetrics problems and providing complimentary equipment and other supportive service logistics especially, the training addresses management issues relating to the five leading obstetrics causes of maternal

mortality viz, sepsis, hemorrhage, unsafe abortion, hypertensive disease of pregnancy and obstructed labour (USAID, 2015).

The programme helped to establish two training centers at Adeoyo Maternity Hospital, Ibadan and Specialist Hospital, Bauchi, and these have now been recognized as national training centre by FMOH. While the implementation of the LSS training in Nigeria commenced under the USAID funded Mother Care project, USAID funding for the programme ceased in 1994 following the decertification of Nigeria by the US government as a result of political problem in the country (Raven et al., 2011).

However, the United Nations Population Fund (UNFPA) took up the challenge of funding the LSS training programme at the request of the Federal Government of Nigeria. Till date, UNFPA has been in the forefront of funding LSS training in the country, with specific focus on their assisted states which currently numbers 12 under the forth country programme: Ogun, Osun, Edo, Delta, Anambra, Abia, Rivers, Plateau, Nassarawa, Bauchi, Gombe, Enugu and Borno (UNFPA, 2011). Specialist Hospital, Bauchi and Adeoyo Maternity, Ibadan, still remain the two national training centres till date. LSS training in Nigeria has continually been based on the curriculum produced by the American College of Nurse-Midwives, and covers issues of antenatal risk assessment and treatment, monitoring of labour progress with partograph form, episiotomies and repair of lacerations, prevention and treatment of lacerations, prevention and treatment of haemorrhage, resuscitation of infants and adults, prevention and management of sepsis, hydration and rehydration, and vacuum extraction (UNFPA, 2011).

In view of the continuing challenge of high incidence of maternal mortality and the national health human resources situation, there have been efforts to extend the frontiers of LSS activity to other group of health workers. In this regard, the country has witnessed the introduction of a complimentary training for doctors (Expanded Life Saving Skills Initiative – ELSSI) and Community Health Extension Workers (the modified LSS training programme – MLSS) between 2001 and 2003. Limited experience with the initiatives, which had mainly been in the 12 UNFPA supported states (with regards to ELSSI) and WHO demonstration

LGAs (with regards to MLSS), showed that by its current mode of programme operation, and to an extent, as part of inherent problem in its design, the ELSSI may not be able to achieve the desired level of competency in trainees (such as ability to competently undertake surgical interventions in cases of emergency obstetric conditions), except they are coupled with a system of strong technical support from mentors over a period of time and close monitoring. (UNFPA, 2011). The MLSS had, in addition, a different kind of challenge conceptually as its products did not likely to meet the technical definition of “skilled attendants”. Monitoring activities undertaken in 2002 on behalf of WHO had also shown that a large proportion of trained LSS-nurse has been deployed to other non-maternal health services, and some have not been able to apply the gained skills even years after training due to lack of required equipment. Lack of monitoring of the LSS trained personnel is one of the weakest dimensions of the programme. On the other hand, no rigorous evaluation or operation research has been undertaken regarding the programme to determine areas where it needs strengthening (WHO, UNICEF, UNFPA, 2014)

2.6 Pattern of Performance of Emergency Obstetric Life Saving Skills in Primary and Secondary Health Care Facility

The Nigerian public health system has been said to be characterized by “low sector funding, poor staff motivation, and inequitable access to health care”. Nigeria performance with regards to Maternal Mortality Ratio is significantly poorer than most developing countries in the world (Federal Ministry of Health, 2004).

Monitoring the performance of the EmOC functions reveals the capacity of the health system in a country to provide key interventions when obstetric emergencies occur. In 2000, the performance of Nigeria’s healthcare system was ranked 187th out of 191 United Nations member states by the World Health Organization.

Esan and Fatusi (2014) reported poor performance of health care providers both in the urban and rural facilities in terms of their knowledge of various Maternal and Newborn Health interventions of interest, with the exception of antenatal care which implies that most of the health care providers who assist in deliveries in the health facilities do not have sufficient

knowledge about maternal and newborn health care. Thus, while theoretically, these health workers are seen as being skilled birth attendants on the basis of their professional qualification, their capacity for addressing MNH challenges may be compromised. Also, only 21.4% in urban and none of the rural health facilities offered all the components of the basic emergency obstetric care services and monitoring labour using the partograph was reported in 64.3% in urban and 40.0% in rural health facilities and these were below the desired standards and this could have negative implications for maternal and newborn health outcomes (Esan and Fatusi, 2014).

Similar finding of an earlier study published from the same state which showed that only 56% of the maternal health workers in another Local Government Area had ever used a partograph (Orji, Fatusi, Adeyemi, Makinde, Onwudiegwu, 2007). Fatusi and Ijadunola (2003) reported that only 1.2% of public sector health facilities in Nigeria met the criteria for Basic Emergency Obstetric Care. In another study, Ijadunola et al (2007) in a study carried out in one LGA in Osun State also reported that none of the public sector health facilities met the criteria for offering Basic Emergency Obstetric Care. With the continued poor availability of BEmOC in Nigeria, maternal mortality is likely to remain a significant challenge as 5%-15% of all pregnancies are expected to need emergency obstetric services (Field, 2005).

In addition, A study by Bakare (2011) which also assessed pattern of performance of EmOC in two LGAs revealed that none of the PHC facilities in the Kaduna North LGA met with both the UN guidelines and Nigerian criteria for BEmOC and EmOC respectively and only one-third of the facilities had 24 hours coverage and less than a third of the facilities had at least 4 midwives. There was non-performance of manual vacuum aspiration for removal of retained product of conception and assisted vaginal delivery in the LGA. However, both the secondary and tertiary health care facilities met with the Nigerian standard of EmOC. In Ikara LGA, only 9.5 % of facilities met with UN guidelines for BEmOC, 14.3% of the facilities offered 24 hours coverage and 9.5 % (2) had at least 4 midwives. None of the facilities in Ikara LGA that have BEmOC met with the Nigerian criteria for BEmOC

services. The secondary health care facility in Ikara did not meet with the Nigerian standard for EmOC.

Findings from the study of Esan and Fatusi (2014) indicate that availability of BEmOC facility remains a continued challenge for MNH services. The facilities studied also had poor performance in the availability of basic infrastructure, inadequate equipment and supplies. The study concluded that the poor performance of the health facilities in terms of availability of infrastructure and equipment necessary for Maternal and Newborn Health service delivery in both the urban and rural health facilities pose the risk of third level delays for pregnant women seeking to deliver in the public health facilities, with the potential for high maternal mortality and stillbirth rates. Similarly, previous findings from other studies revealed inadequate equipment and supplies and lack of running water and functional toilets in various health facilities where Performance Needs Assessment (PNA) was carried out for reproductive health services (Combarry and Akpan, 2003; Fort, Gyuzalyan, Kohler and Volter, 2003).

In contrast, a study by Ogwang, Karyabakabo and Rutebemberwa (2009) in Uganda reported a higher level of partograph use with 69.9% of the deliveries recorded in eight facilities which were monitored using partograph.

2.7 Institutional Factors influencing Pattern of Performance of Emergency Obstetric Life Saving Skills

A health care system is made up of organizations, people and actions whose primary aim is to promote, restore or maintain health. Though it has several functions, the chief function of a health care system is service delivery, which can be termed health care delivery system (WHO, 2007; USAID, 2007).

Mojekwu and Ibekwe (2012) noted that institutional factors such as service quality, including unfriendly staff attitudes to patients, inadequate skills, decaying infrastructures, and chronic shortages of essential drugs, electricity and water supply affect the Nigerian health system. Harrison (2009) in his study in 2003 revealed that only 4.2 percent of public facilities in Nigeria met internationally accepted standards for essential obstetric care.

Mojekwu and Ibekwe (2012) noted that many pregnant women in Nigeria do not receive the care they need either because there are no services available where they live, or they cannot afford the services because they are too expensive or reaching them is too costly. Some women do not use services because they do not like how care is provided or because the health services are not delivering high-quality care. Availability of skilled professional birth attendants providing care during childbirth is also a predictor for maternal mortality. Further, cultural beliefs or a woman's low status in society and absence of formal education, especially education of women can prevent a pregnant woman from getting the care she needs. Approximately two-thirds of all Nigerian women deliver outside of health facilities and without medically skilled attendants present. They suggested that to improve maternal health, gaps in the capacity and quality of health systems as well as barriers to accessing health services must be identified and tackled at all levels, down to the community.

Similarly, Thorsen et al., (2014) in their study in Malawi reported that the skilled birth attendants' provision of care was suboptimal, treatment was inappropriate, delayed or not provided at all. Deficiencies, malfunctions and suboptimal quality of care characterized the health facilities which consequently result into maternal and child death. In addition, delays in seeking care or presenting for care by the patients might have contributed to the maternal deaths by further delaying the timely provision of care needed (Thorsen et al 2014). However, Thaddeus and Maine assert that "...blaming the patient for seeking care late obscures the fact that the health care system often fails the patient" Report also states that transport problem between health facilities, non-availability of blood and lack of essential obstetric drugs were the commonest institutional factors contributory to the maternal deaths in the Northern states (National Primary Health Care Development Agency, 2014).

2.8 Midwives/CHEW Factors influencing Pattern of Performance of Emergency Obstetric Life Saving Skills

The causes of maternal deaths can be classified into medical factors, health factors, reproductive factors, unwanted pregnancy and socioeconomic factors. According to him, medical factors include direct obstetric deaths, indirect obstetric deaths and unrelated deaths. Direct obstetric deaths result from complications of pregnancy, delivery or their management. Indirect obstetric deaths result from worsening of some existing conditions

(such as hepatitis) by pregnancy. Health service factors include deficient medical treatment, mistaken or inadequate action by medical personnel, lack of essential supplies and trained personnel in medical facilities, lack of access to maternity services and lack of prenatal care (Mojekwu, 2005).

Evidences from field-based studies and observation, have documented that the technical performance of most health care workers in Nigeria, irrespective of cadre, is below desired level of competence and expected standards (FMOH, 2004). To bridge the gap in terms of availability of skilled care for Essential Obstetric Care, the life-saving skills programme was introduced in Nigeria. However, the proportion of health workers who have had life-saving skills-related training, in the 12 states involved in the EOC study, was 9.9 percent for nurse/midwives (life-saving skills) for, 10.2 percent for doctors (expanded life-saving skills initiative), and 4.5 percent for community health extension workers (modified life-saving skills training)(FMOH, 2004). The National Primary Health Care Development Agency (2014) reported that lack of obstetric life-saving skills, delay in deciding to refer and inadequate monitoring were the commonest health work factors contributing to maternal deaths in the Northern states.

Mbaruku and Bergström's study in Kigoma, Tanzania (1995) noted that the staff tended to forget their potential capacity to solve obvious problems possibly losing confidence in their capacity. Other suggestive factors are lack of knowledge and technical competence, negative attitudes, burnout and human resource shortages (Bradley and McAuliffe, 2009; Thorsen et al., 2011; Human Rights Watch). Thorsen et al., (2014) reported that lack of regular technical and supportive supervision may have demotivated or reduced staff confidence in performing up to standard. Another identified factor that may have adversely affected the work environment, and consequently influenced the quality of care provided, is the staff's caseload (Sochalski, 2004; Bradley and McAuliffe, 2009; Chodzaza and Bultemeier, 2010).

2.9 Challenges in the implementation of emergency obstetric life saving skills

Most challenges faced during the implementation of EmOC were related to governance issues at different levels and included delays in disbursement of funds from the central

government, shortages of health workers, unclear mechanisms for accountability, lack of incentives to motivate overburdened staffs and lack of guidelines for partnership development (Dickson et al 2014). There may be no functioning theatre, clean water, electricity or adequate waste disposal. Facilities may lack equipment, drugs and sufficient numbers of professional staff able to provide EOC (Mutale, 2013). He further explained that many developing countries are facing a severe shortage of health staff. There are many reasons for this including poor planning and management of human resources, lack of incentives to work in rural areas and external migration. The quality of services provided is often substandard due to lack of knowledge, skills of staff who are often unsupervised and poorly motivated (Mutale, 2013). Anne Austin et al., (2015) in their study, found out that healthcare providers identified lack of transportation and communication infrastructure and overcrowding at the referral hospital as challenges for the smooth functioning of the referral network, as well as insufficient pre-service and in-service training in obstetric emergencies, and lack of supportive supervision as barriers to the provision of timely, quality emergency obstetric care.

The major constraint to performance was brain drain and the siphoning off of time and energy from government activity towards other income generating activities. The inability of the health system to pay for supplies, equipment, vehicles and training was another major constraint. In addition to that, they noted that there is low participation from the community on the political issues surrounding health care. In the public organizational context low salary levels, lack of effective performance standards, inability to fire people, no rewards for good performance, lack of recruitment procedures and promotion patterns were other constraints (Grindle and Hildebran 2013),

Workload of birth attendants is often heavy and devalued/undervalued. Salaries may be low and benefits few. In addition, birth attendants may face unrealistic expectations and limited appreciation and support from supervisors or from women and families whom they serve. Families expect healthy birth outcomes, and if something goes wrong, midwives as well as other providers may be held responsible and accused or attacked by family members. Skilled

birth providers feel vulnerable to workplace risks including fear of infection with HIV. Female providers in particular may experience “moral distress” leading to disengagement and “burn out” resulting in compromised ability to practice in accordance with accepted professional values and standard Workload of birth attendants is often heavy and devalued/undervalued (Lutzen et al 2012) .

Many skilled birth attendants, especially female providers, work in extremely difficult, stressful, isolated, and unsafe environments, and these working conditions are potentially a contributing factor to disrespectful and abusive care. Some work in 24-hour shifts without security and are vulnerable to physical and sexual abuse. Women’s visibility in male-dominated workplaces can also leave them vulnerable to a high degree of harassment (Mumtaz & Levay, 2012).

According to PMNCH (2012), women often have limited knowledge of reproductive and maternal and newborn health, especially those who become pregnant or get married at young ages, the emphasis was in South Asia and sub-Saharan Africa were 40 percent of girls are married by the age of 18 and this affect their decision-making power around reproductive and maternal and newborn health. Often men make the decisions around health care, especially when to become pregnant, how often pregnancies should occur, and what type of services can be accessed once pregnant (PMNCH 2013)

2.10 Strategies for enhancing Pattern of Performance of Emergency Obstetric Life Saving Skills

Thorsen, Meguid, Sundby and Malata (2014) recognized that supporting initiatives for the reduction of maternal and neonatal mortality and morbidity include the expansion of the Safe Motherhood Project with emphasis on increasing trainings in obstetric life-saving skills and maternal death audit sessions; human resources; infection prevention; providing information, education and communication materials; updating the nurse/midwife technicians’ curricula to include basic emergency obstetric care signal functions; and upgrading hospitals, health centers and maternity units.

Promoting public and private sector resource mobilization to transition to greater sustainability of health systems in Nigeria needs to be implemented through building the competency of health providers, with specific focus on the midwifery shortage, and promoting policies, budgets, and regulations to address the needed skill with good standard level (Mumtaz & Levay, 2012).

2.10.1 Supporting regulatory efforts, and ensuring the availability and quality of the essential maternal and newborn health materials

Specific quality issues may have attention to manufacturing of supplies and in instances, procurement of drugs for maternity care if necessary, with an agreed upon plan for financial sustainability; fostering quality of care through process improvement efforts and also through advocacy, legal, and regulatory mechanisms with both private and public sector providers. These mechanisms can include licensing/relicensing and accreditation of educational programs and improving referral capability at all levels to ensure women receive timely and appropriate quality emergency obstetric services. Persistent low density of skilled health providers for maternity care is an issue in most priority countries. (Chee et al., 2012).

The State of the World's Midwifery Report 2011 estimated that only 3 of the 21 priority countries for which there were data had adequate midwifery providers (6 or more midwives/1,000 births), 9 needed to double their midwifery workforce, and 6 to at least triple their workforce (UNFPA 2011; ten Hoop-Bender et al., 2011). Such calculations for obstetricians and other specialists to manage obstetric complications are not available but urgently needed. The State of the World's Midwifery 2014 documented improvements likewise efforts are to retain workforce, to increase recruitment and deployment, to develop and/or implement new regulatory frameworks, and to improve workforce data (UNFPA 2014).

Reasons for the midwifery shortage has always been difficult working conditions, relatively poor pay, difficult and even unsafe living conditions, migration out, lack of education and training opportunities, and chronic under-investment in human resources. Cost-effective

approaches are needed for pre-service and in-service education and to ensure competency is maintained. (Grindle and Hildebran, 2013).

2.10.2 Commodities for maternal Health

Recent attention to Maternal and Child Health (MCH) commodities (including pharmaceuticals, equipment, and consumables) by the United Nation Commission on Life Saving Commodities for Women and Children aims to ensure that essential, quality MCH commodities reach the women, newborns, and children who need them. Yet, a study in Ghana by Karikari-Boateng (2013) found out that more than 90 percent of necessary oxytocin and ergometrine samples for the prevention of postpartum hemorrhage had insufficient amounts of the active ingredient or were not sterile and that almost all injectable oxytocin and ergometrine were not stored as per the recommended refrigerated conditions, and only 3 of 26 products were officially registered with the Ghana Food and Drugs Authority (Labrique et al.2013).

2.10.3 Referral System

Studies of community efforts to raise funds for transport, provision of ambulance services, or ensuring available maternity waiting homes have shown some promise in moving women to the appropriate facility once the decision is made to move and in reducing neonatal deaths and stillbirth. However, coordination between families and facilities and between levels of providers or sectors is not typically well organized. Such coordination is even less well organized when the different levels of facilities report to different line ministries or different sectors.

Other barriers were drug procurement/logistics problems (65%), staff shortages (60%), lack of equipment (51%), and low staff motivation (44 %) (Knight et al.2013). Ensuring all the parts are in place to provide timely quality emergency care remains a major challenge in reducing maternal and fetal deaths. (Hussein et al.2012)

2.10.4 Improving Water, Sanitation and Hygiene

Lacking access to a safe water source and to sanitation facilities and poor hygiene behaviors can lead to severe risk of infection and death for both mothers and babies even in the presence of qualified medical care for maternal, fetal, and newborn health. Puerperal sepsis, one of the top four causes of maternal death, may be caused when clean water and adequate sanitation are not available or not used during labor and childbirth. (Benova et al., 2014).

In Tanzania, for example, only 24 % of the delivery rooms are water, sanitation and hygiene (WASH) safe (i.e., have improved facility water, running water in the delivery room, soap for hand washing, and a functioning latrine for clients) (Benova et al., 2014). A package of adequate safe water, sanitation, and improved hygiene behaviors is considered an essential tool for ending preventable maternal deaths and improving maternal and fetal health.

2.10.5 Provision of Data for Decision-Making and Accountability

The Commission on Information and Accountability for Women's and Children's Health has highlighted the need for improving data to more effectively track results at national and global levels through active engagement of global partners, national governments, communities, and civil society to allow for targeted monitoring, accountability, and action (COIA, 2013). To track progress toward global, national, and local goals and targets, there is a need to strengthen availability and quality of data on maternal and fetal mortality and health to inform decision-making and promote accountability. New technologies, including mobile and mapping applications, will assist in this effort. New technologies may help to improve both data collection and data use, especially for a relatively rare event such as maternal mortality. For example, mobile phones have been used to improve tracking of maternal and fetal health with some success (Labrique et al., 2013).

USAID's strategies to improve data for decision-making and accountability include: developing, testing, and refining metrics for maternal morbidity, disability, and mortality and fetal health (stillbirths and premature births) and care that assess norms and behaviors, service availability and use, equity, and quality of maternal and fetal care, and coverage of key interventions; supporting multiple data collection efforts for facility assessments, census, routine health information systems, civil and vital registration, and other efforts;

strengthening efforts to enumerate all maternal and fetal and neonatal deaths at community and facility levels, including cause of death, so that the magnitude and characteristics of mortality can be understood and addressed and improving use of data by decision-makers, community members, civil society, and professional organizations to improve the management and quality of programs and inform resource allocation (Labrique et al., 2013).

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2.11 Conceptual Framework

2.11.1 The Ecological Model

The ecological model was adopted to guide this study. This model, emphasizes the interaction between, and interdependence of, factors within and across all levels of a health problem. It highlights people's interactions with their physical and socio-cultural environments. Two key concepts of the ecological perspective help to identify intervention points for promoting health: first, behavior both affects, and is affected by, multiple levels of influence; second, individual behavior both shapes, and is shaped by, the social environment (reciprocal causation). McLeroy et al (1988) identified five levels of influence for health-related behaviors and conditions as below

2.11.2 Definition of the different levels

Intrapersonal Level: Individual characteristics that influence behavior, such as knowledge, attitudes, beliefs, and personality traits

Interpersonal Level: Interpersonal processes and primary groups, including family, friends, and peers that provide social identity, support, and role definition

Institutional Factors: Rules, regulations, policies, and informal structures, which may constrain or promote recommended behaviors

Community Factors: Social networks and norms, or standards, which exist as formal or informal among individuals, groups, and organizations

Public Policy: Local, state, and federal policies and laws that regulate or support healthy actions and practices for disease prevention, early detection, control, and management

2.11.3 Application of ecological model to the study

Intrapersonal Level: This might be years of experience in service, educational background as a health worker, age and knowledge of emergency obstetric life saving skills and his or her competency in implementing them.

Interpersonal Level: The extent of implementation of emergency obstetric life saving skills by the health provider can be influenced by discouragement from other health workers.

Institutional Factors: Many institutional factors affect the quality of service rendered by the health workers, for example: lack of drugs and equipment, poor working environment, irregular payment of salaries e.t.c.

Community Factors: Influence of relatives who supports the client during labour can affect the quality of service rendered by the health worker/

Public Policy: When the government makds favourable policies like free maternal and child services, it will encourage mothers to access public health services and indirectly improve the extent of implementation of these emergency obstetric life saving skills and also the competency of the health provider.

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CHAPTER THREE

METHODOLOGY

This chapter presents the description of the study area and describes the research design. The other components of the methodology include the study population, sample size and sampling technique, methods and instruments for data collection, validity and reliability, data collection process, data management and analysis, ethical consideration and limitations of the study.

3.1 Study Design and scope

The descriptive cross sectional design was adopted. It involved the use of quantitative method to obtain information on the status of implementation of EmOLSS in primary and secondary health facilities in Nsukka Local government area, Enugu state Nigeria .

3.2 Study Area

The study was conducted in Nsukka LGA. Nsukka LGA in Enugu state, is located approximately within latitudes 6° 30'N and 7° 30'N of the Equator. It covers a total land area of approximately 407.50km (Orji 2010), with an elevation of 1,810ft (552m). The climate of Nsukka LGA falls under the Tropical Wet and Dry climate (Phill Eze. 2004).

According to the national population census of 2006, Nsukka LGA had a total population of 309,633 persons, 149,241 males and 160,392 females (12). There are several socio-economic activities engaged in the inhabitants of LGA, but agriculture is the most dominant. Average daily minimum and maximum temperatures of the area are about 23.3°C and 27°C, respectively, while its average monthly maximum temperature is about 31.5°C (Phill Eze. 2004).

The number of government health facilities in Nsukka Local Government Area 14 health facilities which constitute one district hospital (secondary facility) and 13 health centers (primary facilities). These are the facilities that are involved in EmOLSS. The private health

facilities are 12 and these are made up of 2 missionary hospital and 10 clinics. It is made of urban, semi urban and rural areas.

3.3 Study population

The total number of midwives and CHEWS that work in the health facilities are 202. The study population was among midwives and CHEWS that work in the labor ward of all the government health facilities in Nsukka LGA of Enugu State.

3.4 Inclusion criteria

All consenting midwives and CHEWS that work in the maternity ward of the government primary and secondary health facilities in Nsukka LGA of Enugu state.

3.5 Exclusion criteria

The following categories of staff were excluded in the study:

- Registered nurses without midwifery qualification in the government hospital.
- Midwives that do not work in the maternity ward.
- All midwives and CHEWS working in the private and mission hospital in Nsukka LGA.
- Non midwives and CHEWS that work in the maternity ward of the government hospitals under Nsukka LGA of Enugu state.

3.6 Variables and measures

Independent variables studied were the socio-demographic characteristics such as age, educational qualification, rank, marital status and years of experience in the service. The Dependent variables included the pattern of performance in implementation of EmOLSS in primary and secondary health facilities in Nsukka local government area, the midwife/CHEWS` related factors that influence their pattern of performance in implementation of EmOLSS, client`s social factors, that influence the pattern of performance in implementation of EmOLSS , the institutional factors that influence the pattern of performance in implementation of EmOLSS and the strategies that will enhance pattern of performance in implementation of EmOLSS

3.7 Sample Size Determination

The total population of midwives and CHEWS working in the government facilities in Nsukka LGA are estimated to be 200. The sample for this study will be determined using (Yamane, 1967) sample size formula below:

$$n = \frac{N}{1 + N(e)^2}$$

Where

n = required sample size

N= estimated population of midwives/CHEWS working in govt. facilities in Nsukka (200)

e = level of error tolerance at 5%

$$n = \frac{200}{1 + 200(0.05)^2}$$

$$n = \frac{200}{1.5}$$

$$n = 133$$

Adjusting the sample size for 20% Non-response rate

$$n_f = \frac{n}{1 - NR}$$

Where

n_f = adjusted sample size due to attrition

NR=Non-response rate

$$n_f = \frac{133}{1 - 20\%}$$

$$n_f = 166$$

3.8 Sampling Strategy

A non probability convenience sampling technique was used to select all consenting participants into the study and these involved those in the inclusive criteria that are available and ready to participate in the study.

3.9 Method and instrument for data collection

Data was collected using self-administered semi-structured questionnaire (see appendix 1) and observational checklist (see appendix 11). The questionnaire was developed after a review of relevant literature. The questionnaire consists of two main sections: sections A and B section. Section A included the socio demographic characteristics of the research participants, where as section B contained questions relating to the followings: Pattern of implementation of Emergency Obstetric Life Saving Skills (EmOLSS) by the midwife/community extension workers (CHEWS). Midwives`/CHEWS` related factors that affect the pattern of implementation of EmOLSS, Client`s social factors that affects the pattern of implementation of EmOLSS, the institutional factors that affect the pattern of implementation of EmOLSS and strategies to enhance implementation of EmOLSS. The observational checklist constituted variables to ascertain the availability of necessary drugs and equipment used in the implementation of EmOLSS. The observational check list was used to ascertain the availability of drug, material and equipment necessary for the implementation of EmOLSS.

3.10 Validity of the instrument

The instrument was reviewed by peers and experts in obstetrics and gynecology. The investigator`s supervisor also reviewed the instrument for its face and content validity to assess whether it will be capable of collecting the required data. My supervisor`s comments were used to readjust or modify the draft instruments and the corrected draft was subjected to pretesting.

3.11 Reliability of the instrument

The instrument used for the collection of data was pre-tested among midwives and CHEWS in one primary and one secondary health facilities under Igbo-Eze North LGA in Enugu state, considering the fact that these facilities, share the same characteristics with area of the

study. Twenty questionnaires were administered among 20 eligible respondents. Thereafter, the reliability was determined using the Cronbach's Alpha model technique. This was computed using the Statistical Package for Social Science (SPSS) software. The obtained Cronbach's alpha coefficient score obtained was **0.66**.

3.12 Data collection process

Data were collected using the semi-structured questionnaire and observational check-list. The investigator first visited the health district board to collect the names and numbers of the health officers in-charge of each health facility involved in EmOLSS after which appointments were scheduled for the visit to each health facility. Data collection, took place from 11am till 4pm during the week for 4weeks. Consent of the participants was sought before the administration of the questionnaire after explaining to them the purpose of the research, time that would be spent to complete the question and importance of the research. As a result of the busy schedule or nature of the participant's clinic assignment, it was not possible for some of them to complete and return the completed copies of the questionnaire immediately. A date and convenient time were fixed for the researcher go back to collect the completed copies of the questionnaire. Some of the participants dropped their completed copies in the facility depending on their duty roster. The principal investigator checked copies of administered questionnaire one after the other to ensure completeness and accuracy. One hundred and seventy of the copies of the questionnaires were administered but 167 copies were found to be well completed after a review due to attrition and incomplete responses. This yielded a response rate of 98.2%.

3.13 Ethical consideration

This study was approved by the UI/UCH ethical review committee (see appendix iv for the approval letter), Written informed consent was sought from each participant before interviewed. The informed consent form is presented in appendix v. the participants were assured of the confidentiality of their responses and their participation were voluntary.

3.14 Data management and analysis

Copies of the completed questionnaire were edited by the researcher. They were numbered serially for easy identification, control and recall of any copy with problems. The responses in each questionnaire were hand-coded, facilitated by the use of a coding guide developed by the investigator. A template was then designed on the Statistical Package for Social Science (SPSS), version 16.0 for entering of the coded data. The coded copies of the questionnaire were carefully entered into the computer one by one. Thereafter, the frequency distribution of responses was generated for each variable.

Respondents` pattern of performance in the implementation of EmOLSS was assessed using 30 point scale. The scores were categorized into: 0-10, 11-20 and 21-30 which represents low, moderate and high respectively. Similarly, a 34 point self efficacy scale was used to assess how confident the respondents were in performing EmOLSS tasks. Confidence scores 1-11, 12-23 and 24-34 were categorized as low, moderate and high self efficacy respectively. The frequency and percentage of the availability of drugs, material and equipment as observed with the checklist were also computed.

3.15 Limitation of the study

Findings may not be generalized beyond the LGA because the target population is small compare to midwives and CHEWS in Enugu state.

CHAPTER FOUR

RESULTS

4.1 Respondent`s socio-demographic characteristics.

The socio-demographic characteristics of the respondents are presented in table 4.1, the age distribution of the respondents ranges from 25-55years with a mean of 39.4 ± 8.2 years. Many of the respondents (43.7%) were between the ages of 35-44 years while 28.1% fell between ages 45-55 years. Only (0.6%) of the respondents was a male health worker that works in the maternity. Nine (5.4%) respondents did not indicate their sex. majority (61.7%) of the respondents were Community Health Extension Workers (CHEW) while only 11.4% had BSc as their highest qualification. Very few (1.8%) of the respondents had been in the service for 30-35 years while up to 26.3% had worked for 16-20years. Majority of the respondents (81.4%) were married while only 1.8% are separated (The detail of the socio-demographic characteristics are in table 4.1).

Table 4.1: Socio-demographic Characteristics of Respondents

Variables	N(%)
Age (N= 166)	
(25-34)	46 (27.5)
(35-44)	73(43.7)
(45-55)	47(28.1)
Sex (N= 159)	
Male	1(0.6)
Female	157(94)
Highest Qualification (N =166)	
BSc	19(11.4)
CHEWs	103(61.7)
CHO	26(15.6)
RN/M	18(10.8)
Cadre (N= 166)	
Staff Nurse	1(0.6)
Senior Nursing Officer/Supt.	12(7.2)
Principal Nursing Officer/Supt.	8(4.8)
Deputy Director of Nursing	15(9.0)
Community Health Extension Worker	81(48.5)
Junior Community Health Extension Worker	17(10.2)
Assistant Chief Nursing Officer/Supt.	4(2.4)
CNO/Supt.	17(10.2)
Chief Community Health Technician	11(6.6)
Years of Experience (N= 161)	
1-5	42(25.1)
6-10	20(12.0)
11-15	29(17.4)
16-20	44(26.3)
21-25	17(10.2)
26-30	6(3.6)
30-35	3(1.8)
Marital Status (N= 164)	
Single	25(15.0)
Married	136(81.4)
Separated	3(1.8)

*Non-responses were excluded

4.2 The pattern of performance of the core Emergency Obstetric Life-Saving Skills (EmLOSS) related activities among the respondents,

Table 4.2 shows respondents' pattern of performance of the core EmOLSS related activities among the respondents. More than half of the respondents sometimes used the partograph in monitoring first and fourth stage of labour or while only 8.4% always use it. Many 38.3% did not use it at all. Only 1.2% of the respondents did not use oxytocin in active management of third stage of labour while 38.0% sometimes use or use it when necessary. Majority (60.8%) always use it. (0.6%) did not indicate the pattern of implementation of this skill. Few (9.6%) of the respondents did not encourage the use of breathing exercise, in first and second stage of labour at all while 53.9% sometimes encourage its use or use it when necessary (See table 4. 2 for details).

Very few (9.6%) did not implement immediate newborn care e.g. delay in cord clamping for 2 to 3 minutes while 57.5% sometimes implement it when they felt it is necessary. A reasonable proportion (65.3%) of the respondents did not carry out external and internal bimanual uterine compression at all (See table 2 for detail).

Most respondents (95.8%) did not perform assisted vagina delivery using vacuum extractor at all; only 1.2% performed it always. Only 13.8% of the respondents did not manage bleeding of a woman after birth with 20 units of oxytocin in 500mls of 5% dextrose in water intravenously; 22.2% of the respondents sometimes managed bleeding of a woman after birth with 20 units of oxytocin in 500mls of 5% dextrose in water intravenously while 64.1% of the respondents always managed bleeding properly. Many 44.9% of the respondents did not apply the new method of suturing episiotomy at all while 38.3% applied the new method of suturing episiotomy sometimes/ when necessary and 16.8% always applied it. Over half (59.4%) of the respondents did not manage eclampsia with magnesium sulphate at all while 22.4% managed it sometimes/when necessary. (See table 4. 2 details).

Only 1.8% of the respondents did not support a woman in labour through rehydration to prevent maternal or fetal distress while 35.9% supported them sometimes/when necessary.

Majority (61.7%) always supported them. More than half of the respondents (52.7%) facilitated breastfeeding within 30 minutes of delivery of the baby sometimes/when necessary while 41.9% always facilitated it.(See table 4.2 for details). The respondents' pattern of implementation of the core EmOLSS was scored with a maximum expected group score of 30 points. The mean score was 15.7 ± 4.8 . Most (70.1%) of the respondents had moderate pattern of implementation of EmOLSS while 19.2% and 7.2% had low and high pattern of implementation respectively (see figure1 for details).

Table 4.2 The pattern of performance of the core Emergency Obstetric Life-Saving Skills (EmLOSS) related activities among the respondents,

Core EmOLSS Activities	Responses			Total n
	Not used at all n (%)	Sometimes Used/When Necessary n (%)	Always Used n(%)	
Use of partograph in monitoring first and fourth stage of labour	64(38.3)	89(53.3)	14(8.4)	167
Active Management of third stage of labour using oxytocin	2(1.2)	63(38.0)	101(60.8)	166
Encouragement of the use of breathing exercise, in first and second stage of labour	16(9.6)	90(53.9)	61(36.5)	167
Immediate newborn care e.g. delay in cord clamping for 2 to 3 minutes	8(4.8)	96(57.5)	63(37.7)	167
Newborn resuscitation using the six steps	4(2.4)	110(66.3)	52(31.3)	166
Manual removal of retained placenta and membrane	71(42.5)	82(49.1)	14(8.4)	167
External and Internal bimanual uterine compression	109(65.3)	46(27.5)	12(7.2)	167
Assisted vaginal delivery using vacuum extractor	159(95.8)	5(3.0)	2(1.2)	166
Use of 20 units of oxytocin in 500mls of 5% dextrose in water intravenously to manage bleeding of a woman after birth	23(13.8)	37(22.2)	107(64.1)	167
Allowing relatives to help position the woman in the new delivery position during second stage of labour	41(24.6)	59(35.3)	67(40.1)	167
New method of suturing episiotomy	75(44.9)	64(38.3)	28(16.8)	167
Management of eclampsia using magnesium sulphate	98(59.4)	37(22.4)	30(18.0)	165
Supporting a woman in labour through rehydration to prevent maternal or fetal distress	3(1.8)	60(36.1)	103(62.1)	166
Initiation of breastfeeding within 30 minutes of delivery of the baby	9(5.4)	88(52.7)	70(41.9)	167
Blood screening and transfusion	108(64.7)	50(29.9)	9(5.4)	167

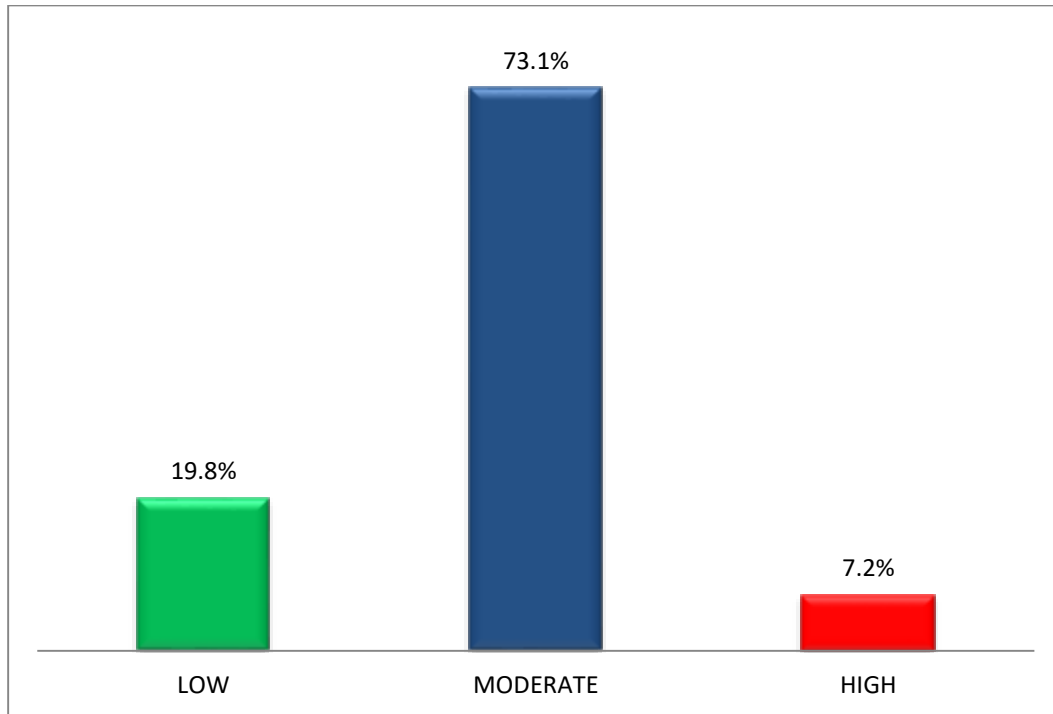


Figure 1: Distribution of Respondents based on their pattern of performance of the core EmOLSS related activities

key

≤10.....low

11 to 20....moderate

21 to 30....high

4.3.: Self-efficacy related to performance of core intrapartum EmOLSS activities among respondents

Table 3 shows respondent`s self-efficacy related to their performance of core intrapartum care activities. Almost half of the respondents (49.7%) had little confidence in using the partograph in monitoring first and fourth stages of labour, 44.3% were not confident in doing so while only 6.0% were very confident in demonstrating the skill. More than half of the total respondents (67.1%) were very confident in active management of third stage of labour using oxytocin at 1 minute of delivery of baby, while 23.4% had little confidence in demonstrating the skill and only 9.6% were not confident in demonstrating the skill. Many (41.9%) of the respondents were very confident in encouraging the use of breathing exercise, in delivery of the baby during second stage of labour, while 38.3% had little confidence in using the skill.. Only 22.8% of the total respondents were very confident in practicing manual removal of placenta and membrane; 32.3% had little confidence in practicing the skill and 44.9% were not confident in practicing the skill (See table 4.3).

Only 1.8% of the respondents were very confident in practicing assisted vagina delivery using vacuum extractor, and majority of the respondents (81.0%) were not confident in practicing the skill. Few (27.7%) of the total respondents were very confident in using any new position to enhance delivery in second stage of delivery, while (38.6%) had little confident in using it (See table 4.3 for details). Only 5.4% of the respondents were very confident in managing eclampsia using magnesium sulphate and majority (76.5%) were not confident doing so. Majority (85%) of the respondents were very confident in supporting a woman in labour by giving fluid e.g. water, glucose drinks, soft drinks e.t.c. one hourly to prevent maternal or fetal distress. Some (32.3%) of the respondents were very confident in using two way referral system for complicated cases, while nearly half (49.1%) had little confidence in doing so.

Majority of the respondents (88.0%) were very confident in using the standard precautions in carrying out procedures (e.g. putting on apron, gloves and washing of hands before and after each procedure) to avoid the spread of infection. (See table 4.3 for details).

The respondents' level of confidence (self-efficacy) was scored with a maximum expected group score of 34. The mean score was 17.2 ± 5.1 . Most of the respondents had moderate level of confidence (70.7) while 15.5% and 14.4% had high and low level of confidence respectively.

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Table 4.3.: Self-efficacy relating to performance of core intrapartum EmOLSS activities among respondents

Core EmOLSS activities	Not confident n (%)	A little confidence n (%)	Very confident n (%)	Total n
Use of partograph in monitoring first and fourth stages of labour	74(44.3)	83(49.7)	10(6.0)	167
Active management of third stage of labour using oxytocin at 1 min of delivery of baby	16(9.6)	39(23.4)	112(67.1)	167
Use of breathing exercise, in delivery of the baby during second stage of labour	33(19.8)	64(38.3)	70(41.9)	167
Manual Removal of placenta and membrane	75(44.9)	54(32.3)	38(22.8)	167
Assisted vagina delivery using vacuum extractor	133(81.0)	31(18.9)	3(1.8)	164
Management of eclampsia using magnesium sulphate	127(76.0)	30(18.0)	9(5.4)	166
Use of any new position to enhance delivery in second stage of delivery	56(33.7)	64(38.6)	46(27.7)	166
Use of two way referral system for complicated cases	31(18.6)	82(49.1)	54(32.3)	167
Supporting a woman in labour by giving of fluid e.g. water, glucose drinks, soft drinks e.t.c.1 hourly to prevent maternal or fetal distress	1(0.6)	24(14.4)	142(85.0)	167
Use of standard precaution in carrying out procedures e.g. putting on apron, gloves and washing of hands before and after each procedure to avoid spread of infection	18(10.0S)	2(1.2)	147(89.0)	165

*Non-responses were excluded

4.4 Self-efficacy related to performance of core postpartum EmOLSS activities among respondents

Table 4.4 shows respondents' self-efficacy relating to their performance of core postpartum care activities among respondents. Some (32.5%) of the respondents were very confident in practicing immediate newborn care (e.g. delay in cord clamping for 2 to 3 minutes after birth), while over half (56.0%) had little confidence in performing the skill.

Very few (13.2%) of the respondents were very confident in performing newborn resuscitation using the six steps, while 62.3% had little confidence in doing so. The proportion of respondents who could not do so, constituted 24.0%. The proportion of respondents who were very confident in manual removal of placenta and membrane was 22.8%, while 32.3% had little confidence in performing the skill. Many (44.9%) of the respondents were not confident in performing the skill. Very few 18.0% of the total respondents were very confident in practicing external and internal bimanual uterine compression. Majority (61.1%) of the respondents were not confident in performing the skill. (See table 4.4 for details).

Majority (70.7%) of the respondents were very confident in using 20 units of oxytocin in 500mls of 5% dextrose in water intravenously to resuscitate a woman having postpartum haemorrhage. Very few (7.2%) were not confident in doing so. Only (9.0%) of the respondents were very confident in using new methods of suturing episiotomy with uninterrupted and subcutaneous stitches for the skin, while 46.7% had little confidence in doing so; 44.3% were not confident in doing so. Only (32.3%) of the respondents were very confident in using vacuum extractor in post abortal management, while 49.1% had little confidence in using it. (See table 4.4 for details).

The respondents' level of confidence was scored with a maximum expected group score of 34. The mean score was 17.2 ± 5.1 . Most (70.7%) of the respondents had moderate level of confidence while 15.0% and 14.4% had high and low level of confidence respectively.

Table 4.4 Self-efficacy relating to performance of core postpartum EmOLSS activities among the respondents

Core EmOLSS activities	Not confident n (%)	A little confidence n (%)	Very confident n (%)	Total n
Active management of third stage of labour using oxytocin at 1 min of delivery of baby	16(9.6)	39(23.4)	112(67.1)	167
Immediate newborn care e.g. delay in cord clamping for 2 to 3 mins after birth	19(11.5)	93(55.7)	54(32.5)	166
Newborn resuscitation using the six steps	40(24.0)	104(62.3)	22(13.2)	166
New methods of suturing episiotomy with uninterrupted and subcutaneous stitches for the skin	74(44.3)	78(46.7)	15(9.0)	167
Instrument processing using 0.5% chlorine (jik) solution	19(11.5)	37(22.2)	110(66.3)	166
Use of 20 units of oxytocin in 500mls of 5% dextrose in water intravenously to resuscitate a woman having postpartum haemorrhage	12(7.2)	37(22.2)	118(70.7)	167
Use of manual vacuum aspirator in post abortal management	133(80.1)	21(12.7)	12(7.2)	166

*Non-responses were excluded

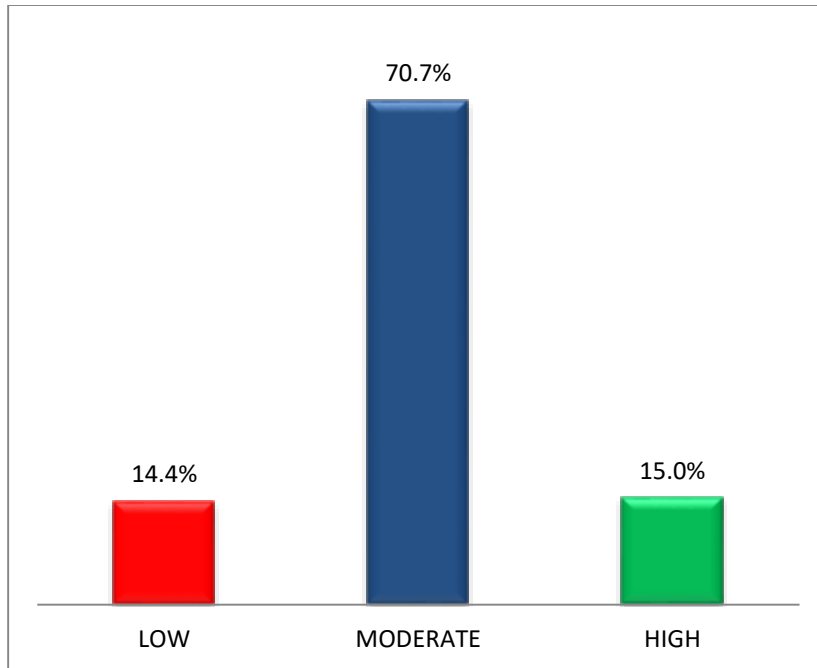


Figure 2: Distribution of Respondents based on Self-efficacy relating to their performance of core intrapartum and postpartum care activities among the respondents

key

1 to 11....low

12 to 23...moderate

24 to 34...high

4.5: Health workers` (midwife/CHEWs) relating factors that influence the pattern of implementation of EmOLSS

Table 4.5 presents responses concerning midwives/CHEWS related challenges in the implementation of EmOLSS. Majority of the respondents (66.3%) considered increased workload which leads to divided attention and thus reduces time for the care of each patient as a factor affecting the implementation of EmOLSS. This was followed by mention of forgetfulness (65.1%). Only 38.2% of the total respondents, considered poor basic knowledge of maternal and child`s care, as a factor affecting the implementation of EmOLSS. About one third (35.5%) of the respondents considered lack of time to carry out the skills step by step as written in the manual as a factor affecting the implementation of EmOLSS (Table 4.5 for details).

Table 4.5: Health workers` (Midwives/CHEWS) relating factors which influence the pattern of their implementation of EmOLSS

Statement	Yes n (%)	No n (%)	Total n
Poor basic knowledge of maternal and child care which enhances learning of skills because they are related	63(38.2)	102(61.8)	165
Lack of time to carry out the skills step by step as written in the manual	59(35.5)	107(64.5)	166
Lack of interest on the EmOLSS	35(21.2)	130(78.8)	165
Poor knowledge of the outcome of EmOLSS	43(25.9)	123(74..1)	166
Forgetfulness of the steps in each EmOLSS	108(65.1)	58(34.9)	166
Increased workload which leads to divided attention and reduces time for the care of each patient	110(66.3)	56(33.7)	166
Believe that old methods are better	31(18.7)	135(81.3)	166

*Non-responses were excluded

4.6: Responses on clients` social factors as identified by the health workers that affect the pattern of performance of the core EmOLSS related activities.

Table 4.6 presents respondents` perceived clients` social factors that the pattern of performance of the core EmOLSS activities. Majority (77.0%) of the respondents considered inability of the client to understand her own role during the implementation of the skill as a factor e.g. the use of breathing exercise in second stage. This was followed by mention of the client`s exaggeration of pain (83.1%) during labour (which prevents the health provider from examining her as scheduled in the partograph). Majority (67.3%) of the respondents considered belief of the client in the old method of delivery as a factor affecting the implementation of EmOLSS.

A higher proportion (66.3%) of the respondents considered poor cooperation of the client (e.g. refusal to assume the new position in the second stage of labour) as a factor affecting the implementation of EmOLSS. Respondents, who considered clients` belief that there is no breast milk immediately after birth, could make them not to initiate breastfeeding 30minutes after birth constitute 63.9%. Many respondents (66.3%) considered competition with traditional birth attendants in the community as a factor affecting the implementation of EmOLSS. This practice was perceived to reduce the number of clients who visit health care faculties. This situation adversely affects retention of required EmOLSS skills by the health workers. Another factor mentioned by the respondents the influence of relatives who discourage early access to hospital during labour (73.5%), which limit the time for effective application of the skills. (See table 4.6 for details).

Table 4.6: Responses on Clients` social Factors as identified by the health worker which affect the Implementation of EmOLSS

Statement	Yes n (%)	No n (%)	Total n
Inability of the client to understand her own role during the implementation of the skill, (e.g. the use of breathing exercise in second stage)	127(77.0)	38(23.0)	165
Poor cooperation of the client (e.g. refusal to assume the new position in the second stage of labour.)	110(66.3)	56(33.7)	166
Belief that there is no breast milk immediately after birth which stops some clients from initiating breastfeeding 30minutes after birth which predisposes them to bleed	106(63.9)	60(36.1)	166
Belief in the old method of delivery as the best	111(67.3)	54(32.7)	165
Competition with traditional birth attendants in the community which reduces the number of clients in the facility for practice leading to poor retention of the skills	110(66.3)	56(33.7)	166
Influence of relatives who discourage early access to hospital during labour, limiting the time for effective application of the skills (e.g. some are admitted with 8cm.)	122(73.5)	44(26.5)	166
Exaggeration of pain by the client who prevents the health provider from examining her as scheduled in the partograph	138(83.1)	28(16.9)	166

*Non-responses were excluded

4.7: Responses on the institutional factors which affect the pattern of implementation of EmOLSS

Table 4.7 presents responses on the institutional challenges in the implementation of EmOLSS. Most of the respondents (91.0%) considered irregular supportive supervision from the agency that conducts the training to ensure that the skills are being carried out as taught as a factor affecting implementation of EmOLSS. Majority (81.3%) of the respondents considered poor electricity supply as a factor affecting implementation of EmOLSS. This was closely followed by mention of inadequate staff 78.4% in the labour ward. Inadequate training of midwives and CHEWS was mentioned by 76.6% of the respondents as another factor. Poor motivation was a factor which affects implementation of EmOLSS by 72.5%. Irregular payment of salaries was a factor mentioned by 78.3% that affect attitude to work including implementation of EmOLSS.

Slightly over half of the respondents (50.9%) considered non-harmonization of salaries of health workers in Enugu state as a factor that influence the pattern of implementation of required skills. Majority of the respondents (76.6%) considered inadequate training of midwives/CHEWs in EmOLSS as a factor affecting implementation of EmOLSS. (See table 4.7 for details).

Table 4.7: Reported Institutional Factors which affect the pattern of implementation of EmOLSS

Statement	Yes n (%)	No n (%)	Total n
Inadequate staff in the labour ward	131(78.4)	36(21.6)	167
Poor electricity supply	135(81.3)	31(18.7)	166
Insecurity of the facility which discourages 24 hours service and reduces clients for practice	79(47.3)	87(52.1)	166
Lack of equipment in the labour ward	39(23.4)	128(76.6)	167
Lack of drugs in the labour ward	33(19.8)	134(80.2)	167
Internal transfer of trained workers to another department thereby preventing her from passing on the skills to other workers in the labour ward	78(47.0)	88(53.0)	166
Poor motivation (e.g. appreciation or gifts to those who implemented the skills effectively and saved live in an emergency condition in order to encourage others)	121(72.5)	46(27.5)	167
Discouragement from other staff	76(45.8)	91(54.8)	166
Poor working condition e.g. no toilet e.t.c	81(48.8)	85(51.2)	166
Lack of residential houses or quarters in the facilities that will enhance 24 hours service for easy accessibility to the facility which will increase more client for practice	73(44.0)	93(56.0)	166

Non-harmonization of salaries of health workers in Enugu state which affect their putting extra efforts to ensure effective implementation of these skills	85(50.9)	82(49.1)	167
Inadequate training of midwives/CHEWs in EmOLSS	128(76.6)	39(23.4)	167
Irregular supportive supervision from the agency that conducts the training to ensure that the skills are being carried out as taught	152(91.0)	15(9.0)	167
Irregular payment of salaries which affect attitude to work	130(78.3)	36(21.7)	166
Apathy from other departments	1(0.6)	166(99.4)	167

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4.8: Results from the observational check list on the availability of drug necessary for the implementation of EmOLSS in each facility

Table 4.8 presents results from the observations made relating to the availability of drugs necessary for the implementation of EmOLSS in each facility. A total of 14 facilities were observed using a checklist.

All the facilities have injection oxytocin, hydrocortizone, syringes and needle and different types of infusion so its availability was 100% and their potency were confirmed by the workers. majority(75.0%) of the facilities had different anti hypertensives while 15.0% had none. Majority (79.0%) of the 14 facilities had lignocain and misoprostol. Facilities that had injection ergometrine were 64.0%. Many (43.0%) of the facilities had injection magnesium sulphate and 15.0% had expired ones. Only 15.0% had calcium lactate.(see table 4.9 for details)

Table 4.8: Observed pattern of availability of drug necessary for the implementation of EmOLSS in each facilities

Drugs	Availability			Total Facilities observed
	Yes n(%)	No n(%)	Comments	
Oxytocin injection	14(100.0)	0 (0.0)	potent	14
Ergometrin injection	9(64.0)	5(36.0)	Rarely used	14
Misoprostol tablet (cytotec)	11(79.0)	3(21.0)	Rarely used	14
Magnesium-sulphate injection	6(43.0)	6(43.0)	Expired 2(14.0)	14
Syringes and needles 5, 10 and 20mls, e.t.c	14(100.0)	0(0.0)	Enough	14
Infusions e.g 5% dextrose in water, e.t.c	14(100.0)	0(0.0)	Enough	14
Antihypertensives	12(86.0)	2(14.0)	Different types	14
lignocaine injection	11(79.0)	3(21.0)	Potent	14
calcium lactate injection	2(14.0)	12(86.0)	Never used	14
hydrocortizone injection	14(100.0)	0(0.0)	potent	14

4.9: Results from the observational check list on the availability of equipment necessary for implementation of EmOLSS in each facility

Table 4.9 presents results from the observations made relating to the availability of equipment necessary for implementation of EmOLSS in each facility.

All the facilities had adult/fetal stethoscope, kidney dishes and artery forceps. The facilities that had non-toothed dissecting forceps, drip stand, blood pressure apparatus and episiotomy scissors were 93.0%. Majority (86.0%) of the facilities had Sutures. Majority (79.0%) of the facilities had thermometer. Cord clamps (71.0%), antiseptic lotions (71.0%) and needle holder (71.0%) were found in a majority of the health facilities.

Majority (64.0%) of the facilities also had Two-way referral forms, while 36.0% did not have but explained that they normally referred without the two-way referral form. Over half (57.0%) of the facilities had Partograph forms. Half (50.0%) of the facilities had Clock with Second hand in the labour ward. Many (43.0%) had Standby generators though they explained that they do not usually use them due to fuel related challenges.. None of the health care facilities, had an ambulance that can assist in referral cases.(see table 4.9 for details)

Table 4.9: Observed pattern of availability of equipment necessary for implementation of EmOLSS in the facility

Equipment	Yes n(%)	No n(%)	Comments	Total facilities
Artery forceps	14(100.0)	0(0.0)	Enough	14
Non-toothed dissecting forceps	13(93.0)	1(7.0)	Few	14
Kidney dishes	14(100.0)	0(0.0)	Enough	14
Needle holder	10(71.0)	4(29.0)	Some prefer using hand	14
Ambubag	1(7.0)	13(93.0)	Most never had one	14
Antiseptic lotion	10(71.0)	4(29.0)	Got finished	14
Clock with Second hand in the labour ward	7(50.0)	7(50.0)	Not in the labour ward	14
Babies drapes	1(7.0)	13(93.0)	They use wrappers	14
Episiotomy scissors	13(93.0)	1(7.0)	Broken	14
Cord clamp.	10(71.0)	4(29.0)	Got finished	14
Fetal stethoscope	14(100.0)	0(0.0)	Enough	14
Blood pressure apparatus	13(93.0)	0(0.0)	Spoilt 1(7.0)	14
Adult stethoscope	14(100.0)	0(0.0)	Not enough	14
Thermometer	11(79.0)	1(7.0)	Broken 2(14.0)	14
Measuring jug	1(7.0)	13(93.0)	Sight estimation	14
Drip stand	13(93.0)	1(7.0)	Enough	14
Standby generator	6(43.0)	8(57.0)	Lack of fuel	14
Ambulance	0(0.0)	14(100.0)		14
Two-way referral forms	9(64.0)	5(36.0)	Most, do not refer with the form	14
Partograph forms	8(57.0)	6(43.0)	Not always available	14
Sutures e.g chromic 2 0	12(86.0)	2(14.0)	Always available	14

4.10.: Respondents` opinion on training and curricula related strategies that will enhance the pattern of implementation of EmOLSS

Table 4.10 presents respondents` opinion on training and non training curricula related strategies that can enhance implementation of EmOLSS. A very high proportion of the respondents (99.4%) were of the view that emergency obstetric life-saving skills should be included in midwifery curriculum so that they can acquire basic knowledge relating to implementation of EmOLSS.

A very high proportion of the respondents (94.6%) were also of the view that emergency obstetric life-saving skills should be integrated into CHEWs' curriculum so that they acquire the practice as abasic knowledge. A very high proportion of the total respondents (98.8%) were of the perception that training of more CHEWs in the local government health facilities on emergency obstetric live saving skills will enhance effective implementation of EmOLSS. (See table 4.10 for details).

All the respondents (100.0%) were of the perception that educating the clients on their roles during labour in relation to these skills during antenatal clinic sessions will enhance effective implementation of EmOLSS. All the respondents (100.0%) also noted that teaching other workers in the facilities by the participants after training on EmOLSS will enhance effective implementation of EmOLSS. The other details relating to respondents` opinions are contained in table 4.10.

Table 4.10: Opinion of respondents on training curricula related strategies that can improve the extent of Implementation of EmOLSS

Statement	Yes n (%)	No n(%)	Total n
Inclusion of all the emergency obstetric life-saving skills in midwifery curriculum so that they acquire it as a basic knowledge	165(99.4)	1(0.6)	166
Inclusion of the emergency obstetric life-saving skills in CHEWs' curriculum so that they acquire it as a basic knowledge	158(94.6)	9(5.4)	167
Training of more midwives in the state health facilities on emergency obstetric live saving skills	166(99.4)	1(0.6)	167
Training of more CHEWs in the local government health facilities on emergency obstetric live saving skills	165(98.8)	2(1.2)	167
Educating the clients on their roles during labour in relation to these skills from antenatal clinic	167(100.0)	0(0.0)	167
Teaching other workers in the facilities by the participants after training on EmOLSS	167(100.0)	0(0.0)	167

*Non-responses were excluded

4.11: Opinion of the respondents on non training curricula related strategies to enhance the pattern of implementation of EmOLSS

The opinions of the respondents on non-training curricula related strategies which can improve the level of implementation of EmOLSS are presented in table 4.11. Majority (85.6%) of the respondents were of the opinion that harmonization of health workers salaries in Enugu state will enhance health workers` dedication. All the respondents (100.0%) were of the opinion that sensitization of community members on the importance of the new skills and early access to health facility by the client during labour through education will enhance effective implementation of EmOLSS. The opinion of all the respondents was that the provision of adequate equipment and drugs is necessary for effective implementation of the life-saving skills in the labour ward.

Most respondents (99.4%) opined that recruitment of more midwives and CHEWs in the secondary/primary health care facilities, to reduce workload for each of them and increase time to apply these skills for each client during labour will enhance effective implementation of EmOLSS. Similarly, most respondents (98.8%) were of the opinion that regular follow-up (supportive supervision) by the agency at least monthly, will enhance implementation of EmOLSS. (see table 4.11 for details)

The opinion of all the respondents (100.0%) was that provision of conducive working conditions with steady light supply, good ventilation and good toilet facility will enhance effective implementation of EmOLSS. Most of the respondents (99.4%) were of the opinion that provision of adequate security to enhance relaxation and concentration while implementing these skills will enhance effective implementation of EmOLSS.

The opinion of all (100.0%) the respondents was that continuous counseling and support to client and their relatives on their roles throughout labour will enhance effective implementation of EmOLSS. All the respondents (100.0%) agreed that accepting and adopting changes in the trends of health care deliveries by the midwives and CHEWs in the health facilities will enhance effective implementation of EmOLSS. Details of other opinion expressed by the respondents are shown in the table under reference (See table 4.11).

Table 4.11: Opinion of respondents on non-training curricular related strategies that can enhance the pattern of Implementation of EmOLSS

Statement	Yes n (%)	No n (%)	Total n (%)
Harmonization of health workers salaries in Enugu state, that is paying the correct allowance to everybody and not paying some and leaving others behind	143(85.6)	24(14.4)	167(100.0)
Sensitization of community members on the importance of the new skills and early access to health facility by the client during labour through education	167(100.0)	0(0.0)	167(100.0)
Provision of adequate equipment and drugs necessary for effective implementation of the life-saving skills in the labour ward	167(100.0)	0(0.0)	167(100.0)
Recruitment of more midwives and CHEWs in the secondary/primary health facilities, to reduce workload for each of them and increase time to apply these skills for each client during labour	165(99.4)	1(0.6)	166(100.0)
Regular supportive supervision by the agency at least monthly, to follow up the training and ensure effective implementation of the skills	165(98.8)	2(1.2)	165(100)
Provision of adequate security to enhance relaxation and concentration while implementing these skills	166(99.4)	1(0.6)	167(100.0)
Provision of conducive working conditions with steady light supply, good ventilation and good toilet facility	167(100.0)	0(0.0)	167(100.0)
Subsequent review of EmOLSS handout by the participants after training to enhance remembrance of these skills	167(100.0)	0(0.0)	167(100.0)
Continuous counseling and support to the client and their relatives on their roles throughout labour	167(100.0)	0(0.0)	167(100.0)
Accepting and adopting changes in the trends of health care deliveries by the midwives and CHEWs in the health facilities	167(100.0)	0(0.0)	167(100.0)
Regular payment of workers' salaries	167(100.0)	0(0.0)	167(100.0)
Weekly nurses forum on patients issues to strengthen health care delivery	1(0.6)	166(99.4)	167(100.0)

Association between respondents` socio demographic characteristics and pattern of performance of EmOLSS/self efficacy

4.12 Association between Highest Qualification of Respondents and Pattern of Performance EmOLSS

The association between the respondents' highest qualification and their pattern of performance was pretested with fisher`s test. It revealed that out of 19 respondents with BNsc as their highest qualification, 5 of them had high pattern of performance while out of 129 respondents that had community health extension workers` certificate as their highest qualification, only 2 of them had high pattern of performance of EmOLSS related activities. Thus table 4.12 shows that there is significant association between the respondents' highest qualification and their pattern of performance of EmOLSS. (Fisher`s test score =30.474, p= .000)

4.13: Association between pattern of performance of the core EmOLSS related activities and the cadre of the respondents

In relation to the test on association between the respondents` pattern of performance of the core EmOLSS related activities, out of 109 respondents that had only community health extension worker as their carder 35 of them had low pattern of performance of these skills while out of 45 nursing personnel that participated, only one of them had low pattern of performance of these skills thus Table 4.13 shows that respondents' pattern of performance of the core EmOLSS related activities was significantly associated with their cadre ($X^2 = 32.836$, $df = 4$, $p = .000$).

4.14: Association between Years of Experience of Respondents and Pattern of Performance of the core EmOLSS related activities

The association between pattern of performance of the core EmOLSS related activities with their years of experience was also tested and out of 62 respondents that had 1 to 10years experience, only 2 of them had high pattern of performance of the core EmOLSS related activities while out of 99 respondents that had more than 10 years working experience, 10 of them had a high pattern of performance of these skills. Table 4.14 confirms that

respondents' pattern of performance of the core EmOLSS related activities was significantly associated with their years of experience ($X^2 = 17.293$, $df = 4$, $p = .002$).

4.15 Association between respondents' highest qualification and self-efficacy in relation to performance of EmOLSS

The association between respondents' highest qualification in relation to performance of EmOLSS is presented in table 4.15. The result showed that out of 129 respondents who had CHEWS certificate which was the lowest qualification of the health workers, only 13 of them had high self efficacy in the performance of EmOLSS while out of 19 respondents who had Bsc/BNsc as the highest qualification, 7 of them had high self efficacy and this concluded that there is significant association between the highest qualification of the respondents and their level of confidence in performance of EmOLSS. (fisher's exact score, $p = .003$).

4.16: Association between the cadre of the respondents and their self-efficacy

In relation to the test on association between cadre of the respondents and self efficacy in the performance of EmOLSS, table 4.16 shows that out of 109 CHEWS, 24 of them had low self efficacy while out of 57 nursing personnel, none of them had low self efficacy in the performance of EmOLSS related activities hence there is significant association between the cadre of the respondents and their self-efficacy in the implementation of EmOLSS. (fisher's test score 4.311 $p = .000$).

4.17: Association between Years of Experience of Respondents and their self-efficacy in the implementation of EmOLSS

The association between respondents' years of experience in relation to self efficacy in performance of EmOLSS is presented in table 4.17. The result revealed that only 3 out of 99 respondents had more than 10 years working experience had low self efficacy while 20 out of 62 of the respondents who had less than 11 years working experience declared their low self efficacy in the performance of EmOLSS related activities. This showed that respondents' self-efficacy in the implementation of EmOLSS was significantly associated with their years of experience (Fisher's test score = 32.554, $p = .000$).

4.18: Association between pattern of performance of respondents and their self-efficacy in implementation of EmOLSS

The association between the respondents' self efficacy in relation to pattern of performance was also ascertained and presented in table 4.18. From the result, out of 24 respondent that had low self efficacy, 15 of them equally had low pattern of performance of EmOLSS related activities while out of 118 respondents that had moderate self efficacy, 94 of them also had moderate pattern of performance of EmOLSS. Hence there is significant association between the respondents' self-efficacy in implementation of EmOLSS and their pattern of performance (fisher's exact score 31.317), $p = .000$).

Table 4.12: Association between Highest Qualification of Respondents and Pattern of Performance of EmOLSS

Highest Qualification	Pattern of Performance			Total n(%)	Fishers Test 30.474	P- value .000
	low n	moderate n	high n			
RNM/RM	0	13	5	18(10.8)		
CHEWs/CHO	32	95	2	129(77.7)		
BSc/BNSc	1	13	5	19(11.5)		
Total(%)	33(19.9)	121(72.9)	12(7.2)	166(100)		

Table 4.13: Association between Cadre of Respondents and Pattern of Performance of EmOLSS

Cadre	Pattern of Performance			Total n(%)	X ² 32.836	d f 2	P -value .000
	low n	mod n	high n				
Community Health Personnel	32	76	1	109(65.7)			
Nursing Personnel	1	45	11	57(34.3)			
Total(%)	33(19.3)	121(72.9)	12(7.2)	166(100.0)			

Table 4.14: Association between Years of Experience of Respondents and Pattern of Performance of the core EmOLSS related activities

Years of Experience	Pattern of Performance			T Total(%)	X ² 17.293	df 4	P-value .002
	low n	mod n	high n				
1-10 years	22	38	2	62(38.5)			
≥ 11 years	10	79	10	99(61.5)			
Total(%)	32(19.9)	117(72.7)	12(7.2)	1161(100.0)			

Table 4.15 Association between respondents' highest qualification and self-efficacy in relation to performance of EmOLSS Qualification

Highest Qualification	Self Efficacy			Total(%)	Fishers Test 17.424	P-value .003
	low n	mod n	high n			
RNM/RM	0	13	5	18(10.8)		
CHEWs/CH O	24	92	13	129(77.1)		
BSc/BNSc	0	12	7	19(11.44)		
Total(%)	24(14.4)	117(70.5)	25(15.1)	166(100)		

Table 4.16: Association between the cadre of the respondents and their self-efficacy in the implementation of EmOLSS

Cadre	Self Efficacy			Total	Fishers Test	P-value
	low n	mod n	high n			
Community Health Personnel	24	81	4	109(65.7)	44.311	.000
Nursing Personnel	0	36	21	57(34.3)		
Total(%)	24(14.4)	118(71.1)	25(15.1)	166(100)		

Table 4.17: Association between Years of Experience of Respondents and their self-efficacy in the implementation of EmOLSS

Years of Experience	Self Efficacy			Total(%)	Fishers Test	P-value
	low n	mod n	high n			
1-10 years	20	39	3	62(38.5)	32.554	.000
≥ 11 years	3	76	20	99(61.5)		
Total(%)	23(14.3)	115(71.4)	23(14.3)	161(100)		

Table 4.18 Association between pattern of performance of respondents and their self-efficacy in implementation of EmOLSS

Pattern of Performance	Self Efficacy			Total(%)	Fishers Test	P-value
	low n	mod n	high n			
Low	15	17	1	33(19.8)	31.317	.000
Moderate	9	94	19	122(73.1)		
High	0	7	5	12(7.9)		
Total(%)	24(14.4)	118(70.7)	25(15.0)	167(100)		

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CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATION

5.1 Socio-demographic Characteristics

The ages of the respondents ranged from 25-55 years with a mean of 39.45 ± 8.17 . This age range is very similar to the findings of study conducted by Mutale et al (2013) among health workers in Zambia. In the Zambian study, it was noted that majority of the health workers were between 30 to 40 years of age (29/96 (30%)). This age range should be the best for better performance of these EmOLSS. Crispin. et al (2012) confirmed this in his study among health workers and found out that there are strong relationships between age and health workers` performance in good record keeping ($p = 0.0001$), appropriate use of job aids ($p = 0.0001$), client satisfaction ($p = 0.018$) and client enablement ($p = 0.001$).

Almost all the respondents (94.4%) were females, this is the same in the finding of the study by Crispin et al (2012), where there were more female respondents compared to males, this means that there should be adequate security for them to concentrate and perform these skills. This finding is supported by Mumtaz et al., (2012) who stated that “female professional workers have specific needs to be able to work, particularly due to security at work, their traditional role as family caretaker and their reproductive role”

More than half of the respondents had community health extension worker`s certificate as their highest qualification. Holders of the qualification also form a sizable proportion of cadre for almost half of the respondents in the study. This is because EmOLSS is mostly for them because they are frontline public health workers who have a close understanding of the community they serve. This trusting relationship enables them to serve as a liaison/link/intermediary between health/social services and the community to facilitate access to services and improve the quality and cultural competence of service delivery, they also build individual and community capacity by increasing health knowledge and

self-efficiency through a range of activities such as outreach, community education, informal counseling, social support and advocacy (American Public Health Association, 2008).

Majority of the respondents had a working experience from between 16-20years. Chi square inferential statistics was employed to ascertain whether there is any relationship between it and the health worker`s self-efficacy in the implementation of EmOLSS, this revealed that there is a relationship with p value of (.002). The data presented here is in tandem with what have been done by Cripin et al., (2012) which proved that experienced people do have better work performance due to their huge amount of knowledge on the tasks needed to be done. This is also supported by a research conducted by Borghans and Nelen (2009) who noted that younger employees have lower work performance compared to older workers.

5.2.0: The pattern of performance of the core Emergency Obstetric Life Saving Skill (EmOLSS) related activities among the respondents.

The findings under the pattern of implementation of core EmOLSS related activities revealed evidences which showed that training on EmOLSS is going on in the state and the health workers of Nsukka Local Government health facilities were not left out. It was observed that majority of the respondents 73.1% had a moderate pattern of performance of these skills. This is because more than half of respondents, sometimes implement the use of partograph in monitoring labour, encourage breathing exercise in the first and second stage of labour, apply immediate new born care especially delay in cord clamping, new born resuscitation using the six steps in EmOLSS and initiate breast milk within the 30minutes of delivery of the baby instead of implementing them always. This is contrary to the findings in the study of Ameh et al, (2011), in which there is high pattern of performance of the above skills.

The contributory factor to the moderate pattern of performance was that a reasonable proportion of the respondents did not implement some of the core EmOLSS at all in their facilities. Take for instance, more than half of the respondents did not implement external

and internal bimanual uterine compression, management of eclampsia using magnesium sulphate and almost half of the respondents do not carry out manual removal of retained placenta, new method of suturing episiotomy and use of vacuum aspiration in post abortal care. These findings are similar to that of Dickson et al (2014) but not in line with the list of EmOLSS that must be available in the primary and secondary health facilities where some of these health workers have been trained in EmOLSS. (UNICEF, WHO, UNPF 2010) A number of surveys have shown that the majority of health-care facilities in low and middle-income settings, although designated to provide either basic or comprehensive Emergency Obstetric and Neonatal Care (EmONC), may be unable to do so (Ameh, Msuya, Hofman, et al., 2012)

The encouraging aspect of these finding is that a higher percentage of the respondents, always implement the following EmOLSS in their facilities; active management of third stage of labour with the use of oxytocin to prevent post partum bleeding, supporting a woman in labour through rehydration to prevent maternal or fetal distress and use of 20 units of oxytocin in 500mls of 5% dextrose in water intravenously to manage bleeding of a woman after delivery of the baby. This is not far from what Boel & Brutel (2012) obtained in their own study in Zambia. This is encouraging because bleeding is one of the major causes of maternal and neonatal death globally and contributes to about (23%) and parenteral oxytocin is the first line of drug for the prevention and management of bleeding during and after labour (FMOH 2010).

5.2.0: Self-efficacy related to performance of core intrapartum/postpartum EmOLSS activities among the respondents

Self-efficacy is the belief a person holds about whether or not he can successfully attain a desired level of performance (Henry et al, 2015). The result showed that majority of the respondent, have moderate level of confidence in the performance of these skills. This is better than the low self-efficacy obtained from Gonaz`s study among athletes in relation to sports activities. Level of confidence was used to determine their self-efficacy because self-efficacy can be seen as a situationally specific self confidence, influencing the types

of activities individuals choose to approach, the effort they put forth and the degree of persistence they demonstrate in situations of failure (Henry et al., 2015).

Specifically, the findings showed that more than half of the respondents are very confident in implementing the following: active management of third stage of labour with the use of 10 units of oxytocin parenterally at 1 minute of the delivery of the baby, supporting a woman in labour through rehydration hourly to prevent maternal and fetal distress, instrument processing using 0.5% chlorine (jick) solution, use of standard precaution in carrying out procedures e.g putting on apron, washing of hands before and after each procedure to avoid the spread of infection and use of 20 units of oxytocin in 500mls of 5% dextrose in water if indicated to resuscitate a woman having postpartum bleeding. These were not different from the findings of Oyerinde et al., (2012). This means that two major causes of maternal mortality (haemorrhage and sepsis) according to WHO are confidently being taken care of by the midwives and CHEWS that work in the primary and secondary facilities in this local government area.

On the other hand, the findings also revealed some of the EmOLSS activities that almost half of the respondents exhibit little confidence such as: in the use of the partograph in monitoring first and second stages of labour, use of two-way referral system in complicated cases, immediate newborn care e.g delay in cord clamping for 2 to 3 minutes after birth, newborn resuscitation using the six steps and in the use of the new methods in suturing episiotomy. These confirmed the reason behind some incident of fresh still births in this area which was noted during one of the supportive supervision which prompted this research. The above finding was supported by (Anne Austin et al., 2015) in his study.

Furthermore, those who do not have confidence at all in the implementation of some of these skills were not left out in these findings. It showed that a reasonable proportion of the respondents, declared their lack of confidence in the implementation of the following EmOLSS: the use of injection magnesium sulphate to manage eclampsia, assisting vaginal delivery with the aid of vacuum extractor, external and internal bimanual uterine compression and manual removal of retained placenta and membranes. Although

conditions that indicate the use of some of these skills are rare, even with the two weeks clinical practice on these skills during training, they will not be able to implement them whenever the need arises, these findings supports the statement by Hussein, Kanguru, Astin and Munjanja (2012) that the impact of any training depends on the motive and determination of the participant.

5.2.1: Midwives/CHEWS-related factors which influence the pattern of their implementation of EmOLSS

The study pointed out some of the midwives/CHEWS` related factors that influence the pattern of implementation of EmOLSS. The major ones are poor retentive memory in relation to the steps in the EmOLSS, this was supported in the finding of Nicholas et al (2010) he found out that people tend to forget acquired skills after a long time of non use of the skills. The next one is increase work load which lead to brain drain and this corresponds to the findings of (Grindle and Hildebran, 2013), in which he concluded that brain drain and siphoning of time and energy affect performance. Workload of birth attendants is often heavy and devalued/undervalued (Lutzen et al., 2012).

Also in the findings was poor basic knowledge of maternal and child care which enhances learning of these skills. majority of this particular finding were from the community health extension workers who were not exposed to detailed maternal and child care, this is why obstetric life saving skills training are mainly for them to boost their knowledge in maternal and child care, Serious deficiencies in providers' knowledge regarding monitoring during routine labour and management of emergency newborn care were documented. These may contribute to maternal and neonatal deaths in Malawi. The knowledge gap cannot be overcome by simply providing more training (Bayley et al., 2013)

5.3: Clients` social related factors that affect the pattern of implementation of EmOLSS

Some of the major clients`social factors were identified in this study through the health workers and these include: Poor knowledge of their roles and the outcome of emergency obstetric life saving skills which lead to poor cooperation of these clients with the health workers thereby hindering the implementation of these EmOLSS and also negative influence of the relatives and believe towards the outcome of these skills. Women often have limited knowledge of reproductive and maternal and newborn health care, especially those who become pregnant or get married at young ages (PMNCH, 2012).

5.4: Institutional factors that affect the respondent`s pattern of implementation of EmOLSS

Among the major institutional factors that were detected in this study are: inadequate staff in the labour ward, poor electricity, poor motivation, inadequate training, irregular supportive supervision and irregular payment of salaries. This shortage of skilled birth attendants is even more severe in rural compared to urban areas (WHO, 2014). These findings were supported`by other study which detected that other barriers were drug procurement/logistics problems, staff shortages, lack of equipment and low staff motivation (Knight et al., 2013). Ensuring all the parts are in place to provide timely quality emergency care remains a major challenge in reducing maternal and fetal deaths (Hussein et al., 2012).

The State of the World`s Midwifery Report 2011 estimated that only 3 of the 21 priority countries for which there were data had adequate midwifery providers (6 or more midwives/1,000 births), nine needed to double their midwifery workforce, and six to at least triple their workforce (UNFPA 2011; Ten Hoope-Bender et al., 2011). (Adegoke, Utz, Msuga et al., 2012; Utz, Siddiqui, Adegoke, et al., 2013) concluded in their research that not all health workers are trained to the required standard and/or supported and legislated to carry out all tasks required of a Standard Birth Attendant according to the international definition.

From the observational checklist, there was 100% availability of potent oxytocin, which is the main drug for the prevention and management of bleeding during and after labour. This is contrary to a study in Ghana by (Karikari-Boateng, 2013), in which he found out that more than 90 percent of necessary oxytocin and ergometrine samples for the prevention of postpartum hemorrhage had insufficient amounts of the active ingredient or were not sterile and that almost all injectable oxytocin and ergometrine were not stored as per the recommended refrigerated conditions, and only 3 of 26 products were officially registered with the Ghana Food and Drugs Authority (Labrique et al., 2013). On the other hands, there were lack of vehicle for easy referral and also magnesium sulphate for the management of eclampsia, a similar finding by Hussein et al., (2012) pointed out that improvements in the referral system studies of community efforts to raise funds for transport, provision of ambulance services is very necessary

5.5: Opinion of the respondent, on training and non training curricula strategies that will enhance implementation of EmOLSS

This study also revealed the respondents' opinion on the training and the non training curricula strategies that will enhance implementation of EmOLSS. Almost all the respondents opined that implementation of these skills can be improved though training of more health workers and public enlightenment on the new skills, provision of enabling environment, recruitment of more health workers, formulation of health policies that will favour them and provision of adequate drugs and equipment. This was supported by the World Health Organization in 2012. Skilled birth attendants need to be trained to have the required competencies and should be provided with an 'enabling environment' that includes drugs, supplies, appropriate policies and a functional referral system (Adegoke and Van den Broek, 2009).

5.6: Implication of Findings for Health Promotion and education

Findings from this study have health promotion and education implication, they suggest the need for multiple intervention strategies to address the phenomenon. Health education is any combination of learning experiences designed to help individuals and communities,

improve their health, by increasing their knowledge or influencing their attitudes (WHO, 2012) with the moderate status of implementation of EmOLSS in this study area, it will definitely affect the outcome of deliveries in this area. As the contributory factors are related to the health workers, the client and the government, the health promotion strategies like health education, advocacy to the stake holders, counseling, trainings on EmOLSS e.t.c should be used appropriately to address these issues

In terms of health education, there should be community outreach to this area in other to enlighten the community on the essence of these skills to the reduction of maternal and neonatal death in the area. This could be aided by using behavioral change communication materials to enhance communication of the message. Places where the community can be seen together should be used for easy access, e,g the market, churches, and different social groups in the community. This can be positively influenced by the identification of the relevant stakeholders in the community. Health workers should create time for the clients during the antenatal visit in order to educate them on time on the essence of EmOLSS and their role for a successful implementation of these skills during labour. There should also be more trainings on EmOLSS for the health workers especially the community health extension workers to boost their knowledge in this skills.

Among the findings in this study are inadequate staff, lack of equipment and drugs necessary for the implementation of EmOLSS. This should involve the health promoting strategies like advocacy and lobbying to the appropriate stakeholders which are the representatives of Enugu state government. This is to influence recruitment of more health workers and procurement of magnesium sulphate and vehicles necessary for the implementation of EmOLSS.

5.7: Conclusion

The findings from this study revealed that majority of the respondents have moderate pattern of implementation of EmOLSS and also moderate self-efficacy in the implementation of EmOLSS. Also from the observational check list results, almost all the facilities have the essential drugs, equipment and materials necessary for the implementation of these skills. These findings leads to the conclusion that there is moderate status of implementation of emergency obstetric life saving skills among the health workers in both primary and secondary health facilities under Nsukka Local Government Area of Enugu state. The above are evidence that training on EmOLSS is going on in the study area. In the other hand, some short comings in the implementation of some of these skills were detected. These areas as discussed, need to be addressed properly in order to improve the status.

Some challenges to the implementation of these EmOLSS were also highlighted and they are not far from the findings from related previous studies. In summary, these challenges are related to the health workers, clients and the health institution in the area of study. This means that all of them should be involved in the development of strategies that will improve the status of implementation of EmOLSS among the health workers of both primary and secondary health facilities under Nsukka LGA, Enugu state. Most of the health worker`s related challenges comes from the community health extension workers who mostly admitted that they have poor basic knowledge of maternal and health care. This is why the training on these skills focused more on them than the midwives.

Strategies to improve the implementation of these skills, were also elicited among the respondents and the most pressing ones should be on training of more health workers on EmOLSS, recruitment of more health workers and public enlightenment on the importance of these skills especially to the clients and their relatives.

5.8: Recommendation

The recommendations based on the study are as following:

1. Public enlightenment intervention in relation to the availability and importance of Emergency Obstetric Life Saving Skills in the study area should be carried out. This intervention should be targeted at potential clients and relatives of potential clients in the community in order to improve their awareness and knowledge of EmOLSS.
2. There should be continuous counseling of clients from antenatal care period and throughout labour on their role in the implementation of EmOLSS.
3. Emergency Obstetric Life Saving Skills should be added to the community extension workers` curriculum. This will enable them to acquire basic knowledge.
4. The Partnership for Transforming Health System that are conducting the program in collaboration with Enugu state Government should train more health workers especially the CHEWS on EmOLSS, and pay regular supportive supervision to them.
5. There is need for recruitment of more health workers, regular payment of health workers` salaries, procurement of adequate drugs(magnesium sulphate and calcium lactate) and requirements (functioning ambulance) necessary for the implementation of EmOLSS.

Suggestion for further study

A descriptive cross sectional studies on perception, knowledge and practice of EmOLSS among midwives/CHEWS is needed.

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APPENDIX I

QUESTIONNAIRE

A DRAFT OF QUESTIONNAIRE ON THE STATUS OF IMPLEMENTATION OF EMERGENCY OBSTETRIC LIFE SAVING SKILLS (EmOLSS) IN THE PRIMARY AND SECONDARY HEALTH FACILITIES UNDER NSUKKA LOCAL GOVERNMENT AREA, ENUGU STATE

Dear Respondent,

I am a student from Department of Health Promotion and education in the area of population and reproductive health – College of Medicine, University of Ibadan. I am interested in the status of implementation of EmOLSS) in the primary and secondary health facilities under Nsukka local government area, Enugu state.

This is a research survey for academic purpose and involves group response and not individual. Name and address is not required, a code number is provided for each individual to conceal the identity, your participation is very important in achieving the goal of this study. There is no right or wrong answer to the question asked or the statement made, instead what is desired of you is honest response.

The time needed to complete the questionnaire is approximately 10 minutes. Please completion of this form is entirely voluntary. All information gathered as a result of your participating in this study will be treated confidentially.

Your willingness to complete the questionnaire implies you have given consent to participate.

Thanks for cooperating.

Signature of participant

SECTION A: SOCIO DEMOGRAPHIC INFORMATION

Please tick any of the response that apply to you in the boxes () provided or complete the blank spaces provided as applicable.

1. Age as at last birth day specify.....
- 2 Sex male () Female ()
- 3 What is your highest educational qualification as a health worker
RN (), RM (), BSC/BNSC (), CHEWs (), RN/M, CHO () Others specify.....
- 4 What is your Cadre?
a) Staff Nurse(), b) Senior nursing officer/supt (), c) Principal nursing officer/supt ()
d) Deputy director of nursing(), e) Community Health extension worker(),
f) Junior community health extension worker (), g) Assistant chief nursing officer/supt,

- h) CNO/supt (), i) Chief community health technician () j)staff midwife()
 Others specify.....
5. How many years experience have you in active services specify.....
- 6 Marital status
 a), Single () b Married () c) Separated () d) Divorce (), e) others specify.....

SECTION B

Please tick any of the responses that apply to you or complete the blank spaces provided as applicable.

QUESTION 7 What is the extent of implementation of EmOLSS in your facility

Specific life saving skills	Extent of implementation		
	Not used at all	Sometimes used/when necessary	Always used
7.01 Use of partograph in monitoring first and fourth stage of labour			
7.02 Active management of third stage of labour using oxytocin.			
7.03 Encouragement of the use of breathing exercise, in first and second stage of labour			
7.04 Immediate newborn care e.g. delay in cord clamping for 2 to 3 minutes.			
7.05 New-born resuscitation			
7.06 Manual removal of retained placenta and membrane.			
7.07 External and internal bimanual uterine compression			
7.08 Assisted vaginal delivery using vaccum extractor			
7.09 use of 20 units of oxytocin in 500mls of 5% dextrose in water intravenously to manage bleeding of a woman after birth			
7.10 Allowing the relatives to help position the woman in the new delivery position in second stage of labour			
7.11 New method of suturing episiotomy.			
7.12 Management of eclampsia using magnesium sulphate			
7.13 Supporting a woman in labour through rehydration to prevent maternal or fetal distress			
7.14 Initiation of breast feeding within 30minutes of delivery of the baby			

7.15 Use of vaccum aspiration in post abortal management			
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QUESTION NO 8 How confident are you in the implementation of these skills

Specific life saving skills	Extent of confidence		
	Not confident in doing it	A little confidence in doing it	Very confident in doing it
8.01 Use of partograph in monitoring first and fourth stages of labour			
8.02 Active management of third stage of labour using oxytocin at 1 min of delivery of baby			
8.03 use of breathing exercise, in delivery of the baby during second stage of labour			
8.04 Immediate newborn care e.g. delay in cord clamping for 2 to 3 minutes after birth.			
8.05 New-born resuscitation using the six steps.			
8.06 Manual removal of retained placenta and membrane.			
8.07 External and internal bimanual uterine compression			
8.08 Assisted vaginal delivery using vaccum extractor			
8.09 Use of 20 units of oxytocin in 500mls of 5% dextrose in water intravenously to resuscitate a woman having postpartum haemorrhage.			
8.10 Use of any of the new positions to enhance delivery in second stage of labour.			
8.11 New methods of suturing episiotomy with uninterrupted and subcutaneous stitches for the skin.			
8.12 Management of eclampsia using magnesium sulphate			

8.13 Supporting a woman in labour by giving of fluids e.g water, glucose drinks, soft drinks e,t,c 1 hourly prevent maternal or fetal distress.			
8.14 Use of two way referral system for complicated cases			
8.15 Use of vaccum extractor in post abortal management			
8.16 instrument processing using 0.5% chlorine (jik) solution			
8.17 use of standard precaution in caring out procedures e.g putting on apron, gloves and washing of hands before and after each procedures to avoid spread of infection.			

QUESTION 9: What factors in you affect effective implementation of EmOLSS

MIDWIFE/CHEW FACTORS	Yes	No
9.1 Poor basic knowledge of maternal and child care which enhances learning of the skills because they are related.		
9.2 Lack of time to carry out the skills step by step as written in the manual.		
9.3 Lack of interest on the new skill.		
9.4 Not sure of the outcome of the skills		
9.5 Forgetfulness of the steps in each skill.		
9.6 Increase work load which leads to divided attention and reduces time for the care of each patient.		
9.7 Beleive that the old methods are better		
9.8 Others,please specify		

QUESTION 10: What are the client/community factors that affect effective implementation of EmOLSS

CLIENT/COMMUNITY FACTORS	Yes	No
10.01 Inability of the client to understand her own role during the implementation of the skill, e.g the use of breathing exercise in second stage.		
10.02 Poor cooperation of the client, e.g. refusal to assume the new position in second stage of labour,		

10.03 Belief that there is no breast milk immediately after birth which stops some client from initiating breast feeding 30min after birth. This predispose them to bleeding after delivery.		
10.04 Belief in the old method of delivery as the best		
10.05 Competition with traditional birth attendants in the community which reduces the number of client in the facility for practice leading to poor retention of the skill		
10.06 Influence of relatives who discourage early access to hospital during labour and this limits the time for effective application of the skill e.g some are admitted with 8cm dialation.		
10.07 Exaggeration of pain by the client who prevents the health provider from examining her as scheduled in the pathograph.		
10.08 Others, please specify		

QUESTION 11. What are the institutional factors that affect effective implementation of EmOLSS

Institutional factors	Yes	No
11.01 Inadequate staff in the labour ward.		
11.02 Poor electricity supply.		
11.03 Insecurity of the facility which discourages 24 hours service and reduces clients for practice		
11.04 Lack of equipment in the labour ward		
11.05 Lack of drugs in the labour ward		
11.06 Internal transfer of trained worker to another department thereby preventing her from passing on the skills from othe workers in the labour ward.		
11.07 Poor motivation e.g appreciation or gift to those who implemented the skills effectively and saved life in an emergency condition in order to encourage others		
11.08 Discouragement from other staff		
11.09 Poor working condition e.g , no toilet,e.t.c		
11.10 Lack of residential houses or quarters in the facilities that will enhance 24 hours service for easy accessibility of the facility which will increase more client for practice,		
11.11 Non harmonization of salaries of health workers in Enugu state which affect their putting extra effort to ensure effective implementation of these skills		
11.12 Inadequate training of midwives / CHEWS in EmOLSS.		

11.13 Irregular supportive supervision from the agency that conducts the training to ensure that the skills are being carried out as taught.		
11.14 Irregular payment of salaries which affect attitude to work		
11.15 Others, please specify		

Question 12. What strategies will enhance effective implementation of EmOLSS in clients care during labour.

Strategies	Yes	No
12.01 Inclusion of all the emergency obstetric life saving skills in midwifery curriculum so that they acquire it as a basic knowledge.		
12.02 Inclusion of the emergency obstetric life saving skills in CHEWS` curriculum so that they acquire it as a basic knowledge. .		
12.03 Harmonization of health workers salaries in Enugu state, that is paying the correct allowance to everybody and not paying some and leaving other groups behind.		
12.04 Training of more midwives in the state health facilities on emergency obstetric life saving skills.		
12.05 Training of more CHEWS in the local government health facilities on emergency obstetric life saving skills.		
12.06 Sensitization of community members on the importance of the new skills and early access of health facility by the client during labour through education.		
12.07 Provision of adequate equipment and drugs necessary for effective implementation of the life saving skills in the labour ward.		
12.08 Recruitment of more midwives and CHEWS in the secondary/primary health facilities, to reduce work load for each of them and increase time to apply these skills for each client during labour		
12.09 Regular supportive supervision by the agency at least monthly, to follow up the training and ensure effective implementation of the skills.		
13.10 Educating the clients on their roles during labour in relation to these skills from antenatal clinic.		
12.11 Provision of conducive working conditions with steady light supply, good ventilation and good toilet facility.		
12.12 Provision of adequate security to enhance relaxation and concentration while implementing these skills.		
12.13 Teaching other workers in the facilities by the participants after training on EmOLSS.		

12.14 Subsequent review of EmOLSS hand out by the participant after training to enhance remembrance of these skills.		
12.15 Continuous counseling and support to the client and their relatives on their roles throughout labour.		
12.16 Accepting and adopting changes in the trends of health care deliveries by the midwives and CHEWS in the health facilities.		
12.17 Regular payment of workers` salaries		
Others specify		

Thanks for participating.

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APPENDIX II

OBERVATIONAL CHECK LIST FOR THE AVAILABILITY OF DRUGS AND EQUIPMENT IN EACH FACILITY

Level (primary or secondary).....

Question No 12: Which drugs and equipment necessary for the implementation of emergency obstetric life saving skills are available or not available in the facility.

Drugs	Availability		
	Yes	No	comment
12.01 Oxytocin injection			
12.02 Ergometrine injection			
12.03 Misoprostol tablet(cytotec)			
12.04 Magnesium sulphate injection			
12.05 Syringes and needles 5, 10 and 20mls scalp vein needles and drip giving set.			
12.06 Infusions e.g 5% dextrose in water, Normal saline, ringer`s lactate anddextrose in saline			
12.07 Antihypertensives			
12.08 lignocaine injection			
12.09 calcium lactate injection			
12.10 hydrocortizone injection			
EQUIPMENT			
12.11 Artery forceps			
12.12 Non toothed dissecting forceps			
12.13 Kidney dishes			
12.14 Needle holder			
12.15 Ambu bag			
12.16 Antiseptic lotion			
12.17 Clock with Second hand in the labour ward			
12.18 Babies drapes			
12.19 Episiotomy scissors			
12.20 Cord clamp.			

12.21 Fetal stethoscope			
12.22 Blood pressure apparatus			
12.23 Adult stethoscope			
12.24 Thermometer			
12.25 Measuring jug			
12.26 Drip stand			
12.27 standby generator			
12.28 ambulance			
12.29 two-way referral forms			
12.30 partograph forms			
12.31 sutures e.g chromic 2 0			

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APPENDIX III

Categorization of respondents' pattern of performance using 30point scale

POINTS	PERCENTAGE RESPONDENTS (%)	CLASSIFICATION	CODE
≤ 10	19.8	LOW	0
11-20	73.1	MODERATE	1
21-30	7.2	HIGH	2

APPENDIX IV

Classification of the respondents' self-efficacy in the implementation of EmOLSS
using 34 point scale

POINTS	PERCENTAGE RESPONDENTS (%)	CLASSIFICATION	CODE
1-11	14.4	LOW	0
11-22	70.7	MODERATE	1
23-34	15.0	HIGH	2

APPENDIX V

INFORMED CONSENT FORM

Title of the research: status of implementation of emergency obstetric life saving skills in the primary and secondary health facilities under Nsukka Local Government Area, Enugu state.

Names and affiliation of researcher: This study is being conducted by Mrs Ugwu Scholastica Nkechinyere of the department of Health promotion and education, faculty of public Health, University of Ibadan.

Sponsor(s) of research: Self-sponsored.

Purpose of research: The purpose of the study is to determine the status of implementation of obstetrics life saving skills in the primary and secondary health facility under Nsukka local government area, Enugu state. This will help to identify the root cause of maternal and neonatal death in these areas.

Procedure of the research, what shall be required of each participant and approximate total number of participants that would be involved in the research: A total number of 166 participants will be recruited into the study. The participants must be working in the labour ward of the health facility. Research Participants shall be recruited from all the primary and secondary health facilities under Nsukka local government area of Enugu state. All the midwives and CHEWS under the inclusive criteria shall be given equal chances of participating in the research so long as they are willing to participate. You are expected to voluntarily fill a questionnaire where he or she is expected to provide honest response to the questions that would be asked. Also an observational checklist shall be used in recording some observations about the availability of drugs and equipment necessary for the implementation of emergency obstetric life saving skills in each health facility.

Expected duration of research and participants involvement: I am expecting to spend at least 2 to 4 weeks for the data collection using the questionnaires and the observational checklist. You would not spend more than 10 minutes in filling the questionnaire.

Risk(s): There is no risk involved in this study as you will only fill a questionnaire voluntarily in the comfort of their facilities.

Cost to the participants if any, of joining the research: Your participation in this research will not cost you anything other than their time that will be spent in filling the questionnaire.

Benefits: The findings will be published in the state journal so that the government will address them mostly in favor of participants in order to enhance effective implementation of EmOLSS through good working conditions. It will also help to increase competence in the health providers.

Confidentiality: All information collected in this study will be given code numbers and no name will be recorded. This cannot be linked to you in any way and your name or any identifier will not be used in any publication or reports from this study.

Voluntariness: Your participation in this research is absolutely voluntary and you have the right to withdraw at any time you wish to do so.

Consequences of participants' decision to withdraw from the research and procedure for orderly termination of participation: You have the right to withdraw from the research at any time you wish to do so. Please note, that some information that has been obtained about you before you choose to withdraw may have been modified or used in reports and publications. These cannot be removed anymore. However we shall make effort in good faith to comply with your wishes as much as is practicable.

Modality of providing treatments and actions to be taken in case of injury or adverse events: If you suffer any injury as a result of your participation in this research, you will be treated at your facility where the research will be carried out.

What happens to research participants and communities when the research is over? I shall inform them of the outcome of the research through journals.

Statement about sharing of benefits among researchers and whether this includes or excludes research participants: I shall make special recommendations to the Enugu state government on my findings which will inform formulation of more effective policies that will promote effective implementation of emergency obstetric life saving skills.

Any apparent or potential conflict of interest: NONE

Statement of person obtaining informed consent:I have fully explained this research to..... and have given sufficient information, including about risks and benefits, to make an informed decision.

DATE.....SIGNATURE.....

.....NAME.....

.....**Statement of person giving consent:** I have read the description of the research. I have also discussed with the doctor to my satisfaction. I understand that my participation is voluntary, I know enough about the purpose, methods, risks and benefits of the research study to judge that I want to take part in it. I understand that I may freely stop being part of this study at any time. I have received a copy of this consent form and additional information sheet to keep for myself.

DATE.....SIGNATURE.....

.....NAME.....

Detailed contact information including contact address, telephone, fax, e-mail and any other contact information of researcher(s), institutional HREC and head of institution:

This research has been approved by the Ethics committee of the University of Ibadan and the chairman of this committee can be contacted at Boide Building, Room 210,2ndFloor, institute for advanced medical research and Training, college of Medicine, University of Ibadan,E-mail:uiuchire@yahoo.com.

In addition, if you have any question about your participation in this research, you can contact the principal investigator,

NAME: UGWU Scholastica Nkechinyere, **DEPARTMENT:** Health Promotion & Education

PHONE: 08064855580, **EMAIL:**stica_u@yahoo.com OR

Dr. F. O Oshiname

Address: Department of Health Promotion and Education, Faculty of Public Health, University College Hospital Ibadan.

08035001060 E-mail: foshiname@yahoo.com



INSTITUTE FOR ADVANCED MEDICAL RESEARCH AND TRAINING (IAMRAT)
College of Medicine, University of Ibadan, Ibadan, Nigeria.



Director: **Prof. Catherine O. Falade**, MBBS (Ib), M.Sc, FMCP, FWACP
Tel: 0803 326 4593, 0802 360 9151
e-mail: cfalade@comui.edu.ng lillyfunke@yahoo.com

UI/UCH EC Registration Number: NHREC/05/01/2008a

NOTICE OF FULL APPROVAL AFTER FULL COMMITTEE REVIEW

Re: Status of Implementation of Emergency Obstetric Life Saving Skills in the Primary and Secondary Health facilities in Nsukka local government area, Enugu State

UI/UCH Ethics Committee assigned number: UI/EC/15/0213

Name of Principal Investigator: **Scholastica N. Ugwu**
Address of Principal Investigator: Department of Health Promotion & Education,
College of Medicine,
University of Ibadan, Ibadan

Date of receipt of valid application: 21/07/2015

Date of meeting when final determination on ethical approval was made: 12/11/2015

This is to inform you that the research described in the submitted protocol, the consent forms, and other participant information materials have been reviewed and *given full approval by the UI/UCH Ethics Committee.*

This approval dates from **12/11/2015 to 11/11/2016**. If there is delay in starting the research, please inform the UI/UCH Ethics Committee so that the dates of approval can be adjusted accordingly. Note that no participant accrual or activity related to this research may be conducted outside of these dates. *All informed consent forms used in this study must carry the UI/UCH EC assigned number and duration of UI/UCH EC approval of the study.* It is expected that you submit your annual report as well as an annual request for the project renewal to the UI/UCH EC early in order to obtain renewal of your approval to avoid disruption of your research.

The National Code for Health Research Ethics requires you to comply with all institutional guidelines, rules and regulations and with the tenets of the Code including ensuring that all adverse events are reported promptly to the UI/UCH EC. No changes are permitted in the research without prior approval by the UI/UCH EC except in circumstances outlined in the Code. The UI/UCH EC reserves the right to conduct compliance visit to your research site without previous notification.



Professor Catherine O. Falade
Director, IAMRAT
Chairperson, UI/UCH Ethics Committee
E-mail: uiuchec@gmail.com

Research Units • Genetics & Bioethics • Malaria • Environmental Sciences • Epidemiology Research & Service
• Behavioural & Social Sciences • Pharmaceutical Sciences • Cancer Research & Services • HIV/AIDS