FACTORS RELATED TO TRAINING NEEDS OF SKILLED BIRTH ATTENDANTS IN EMERGENCY MATERNAL, NEONATAL, AND OBSTETRIC CARE

CASE STUDY: KABAROLE DISTRICT

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DECLARATION

I hereby declare that, to the best of my knowledge, this dissertation is my original work and has not been submitted to this University or any other institution of higher learning for any academic award**.**

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Date: 15-07-2020.

DEDICATION

I dedicate this dissertation to my mother Ms Grace Gloria Kembubi.

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I would like to express my sincere gratitude to my supervisor Dr. Miisa Nanyingi for providing invaluable guidance, comments, and suggestions. Thank you for encouraging me to work harder, your advice has been instrumental towards the success of my project.

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LIST OF ABBREVIATIONS AND ACRONYMS

ACCME	The Accreditation Council for Continuing Medical Education
AMA	American Medical Association
CME	Continuous Medical Education
CPD	Continuous Professional Development
EmONC	Emergency Obstetric and Neonatal Care
MMR	Maternal Mortality Rate
MNCH	Maternal and Neonatal Child Health
SBA	Skilled Birth Attendant
SGD	Sustainable Development Goal
SWAP	Sector Wide Approach
TNA	Training Needs Assessment
UDHS	Uganda Demographic Health Survey
UN	United Nations
UNFPA	United Nations Population Fund
UNICEF	United Nations Children Fund
UNMHCP	Ugandan National Minimum Health Care Package
WHO	World Health Organization

DEFINITIONS OF KEY TERMS

A training need: The knowledge and skill is assessed to be lacking for a cadre to perform a specific task (Goldstein and Ford 2002)

Emergency Maternal Obstetric and New-born Care (EmONC): includes a list of life saving services, or signal functions to treat and manage obstetric and new-born emergencies (WHO, UNFPA, UNICEF 2009).

Needs Assessment (NA): the activities that are involved in gathering information (Gupta 2007)

Performance gap: The difference between what providers already know and what they should know to be competent or an expert in their field (Vaughn 2005).

Skilled Birth Attendant (SBA):is an accredited health professional such as a midwife, doctor or nurse who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and new-borns(WHO, ICM, and FIGO 2004).

Training Needs Assessment (TNA): process of gathering information to determine where there is a training need, what needs to be taught and who needs to be trained (Gupta 2007).

ABSTRACT

BACKGROUND - According to the World Health Organization (2016), approximately 830 women in the world die every day from preventable causes related to pregnancy and childbirth. In 2015, 303,000 women around the world died due to complications during pregnancy and childbirth (Alkema et al., 2016) signifying an unmet need for optimal maternal health services .While Uganda has registered significant reduction in MMR from 438 (UDHS, 2011) to 336 per 100,000 (UBOS and ICF, 2017), Albeit the achievements, progress is rather slow. At facility level, 75% of maternal deaths in Uganda are due to preventable causes (Isabirye et al., 2017) these can be easily averted with appropriate provider knowledge and skills acquisition. Many programs advocate and indeed conduct trainings among providers with the hope to improve and attain desired skills. Trainings in EmONC have been associated with improved care but would be even more beneficial if training needs are assessed and trainings tailored to address the identified gaps.

OBJECTIVE : Examine the factors related to training needs (gaps) of Skilled Birth Attendants in Emergency Maternal and Neonatal Obstetric care in Kabarole District.

Methods: A cross sectional descriptive analytical study was used, all skilled birth attendants offering EmNOC care in Kabarole district were included and students on clinical rotation with less than one year of clinical experience were eliminated. Primary data was used and data was collected using self-administered questionnaires and analysed using STATA 14

RESULTS : The skilled birth attendants had training needs (gaps) mainly in in administration of Magnesium Sulphate, manual removal of placenta, and Assisted Vaginal Delivery. The individual and institutional factors r elated to EmONC training needs were cadre and level of education, type of facility and having not received training last years increased the chances of having training needs Participants with certificate level education were 10.7 times more likely to have training needs in EmONC than those with degree and Masters and this was strongly significant as shown by the p-value (<0.001) [OR=10.7: 95% CI 0.3.385 – 33.811: P <0.001]. Participants with diploma level education were 3.2 times more likely to have training needs

CONCLUSION: The findings of the study signify a need for skilled birth attendants need to receive continuous training and training needs assessments are relevant prior to trainings. This helps identify the actual needs to address existing gaps to improve their knowledge and ensure quality services.

Keywords: Training Needs (gaps) Emergency Maternal New-born and Obstetric care care(EmNOC), and Knowledge.

CHAPTER ONE

INTRODUCTION AND BACKGROUND OF THE STUDY

1.1 INTRODUCTION

Over the years, maternal mortality has proved to be a chronic problem worldwide with Sub Saharan Africa being the focus. Maternal Mortality Ratio (MMR) is defined as the number of maternal deaths per 100,000 live births. By the end of 2015, the Sub-Saharan region had a maternal mortality ratio of 546 maternal deaths per 100,000 live births (WHO 2016). Internationally, United Nations (UN) member countries signed up to frameworks such as the Sustainable Development Goals (SGD) in 2015 that stressed the urgent need to tackle MMR. The set target is that by 2030, there should be a reduction of global MMR to less than 70 per 100,000 live births from the current MMR of 216 per 100,000 live births (Alkema et al., 2015).

According to the World Health Organization (2016), approximately 830 women in the world die every day from preventable causes related to pregnancy and childbirth. In 2015, 303,000 women around the world died due to complications during pregnancy and childbirth (Alkema et al., 2016) signifying an unmet need for optimal maternal health services and more especially Emergency Maternal Obstetric and Neonatal Care (EmONC) that has been lacking for some time in many resource constrained settings (UNFPA, 2017). Emergency Maternal Obstetric and Neonatal care (EmONC) is a proxy indicator for monitoring maternal and perinatal mortalities therefore in order to achieve the MMR target for SDGs, governments of member countries have proposed and are carrying out new countrywide initiatives that aim at improving maternal health services. Seventy per cent of governments have expanded their coverage of essential post-partum and newborn care, comprehensive prenatal care, obstetric care and access to

contraception. In addition, 62% of governments around the world have adopted policies to recruit and train skilled birth attendants, while 39 per cent have increased access to safe abortion care, and post abortion care (UN, 2017). Reports to date indicate progress registered as far as improving MMR is concerned; these efforts translate in a slow reduction of MMR across a number of years with evidence showing that since 2000, the global MMR has declined by only 37%.

Although maternal deaths have been declining over the past decades, they remain a concern, particularly in the less developed regions. The recent Uganda Demographic and Health Survey (UDHS) report of 2016 showed that the country still has an unacceptably high MMR of 336 deaths per 100,000 live births (UBOS and ICF, 2017). The government of Uganda through the Ministry of Health (MOH) has in response, put in place a number of policies like the Sector wide approach (SWAP), the National Health Policy, Health Sector Development plan 2015-2020 in order to improve maternal health services. Other efforts include recruitment of skilled staff, equipping and renovating health facilities, support supervision and mentorship and developing Maternal and Neonatal Child Health (MNCH) guidelines and standards (MOH, 2017).

These Policies and strategic plans highlight the need for increased skilled Attendance to scale up EmNOC. Studies in Tanzania and Bangladesh have shown that increased access to good quality EmNOC services can lead to significant reductions in mortality and the role of skilled birth attendance has been well documented (Adegoke et al., 2010; Otorin et al., 2015; UNICEF 2015). Presence of SBA's has also led to increased utilization of EmONC (UNFPA, 2017), although this has not translated into expected reduction in maternal mortality. These findings seem to imply that probably skilled birth attendance does not conform to standards and expected competencies that save lives of mother in their care (Mirkuzie et al., 2014).

While Uganda has registered significant reduction in MMR from 438 (UDHS, 2011) to 336 per 100,000 (UBOS and ICF, 2017),this is partly attributed to improvement in pregnant women attending four or more antenatal care visits from 48% in 2011 to 60% in 2016 (MOH, 2017). Albeit the achievements, progress is rather slow and other targets like skilled birth attendance and contraceptive use remain behind, efforts that are more rigorous are required in order to meet the 2030 target.

In Uganda, there is focus on integrating new-born health with maternal health care. There has been an increase in skilled birth attendance (UBOS and ICF, 2017), by region; western region has 49%, Eastern region 50%, northern region 50% and central region 72% distribution of SBAs (WHO, UNICEF, UNFPA, 2015). By end of 2016, majority of deliveries (39.3%) occurred in HC III and (13%) occurred at HC II, these health facilities are predominantly managed by nurses and midwives. Of the maternal deaths that occurred during that period, 93% of the deceased had received skilled birth attendance while 5.7% had delivered at home and 1.4% had delivered at the TBAs (MOH 2016/2017). This suggests a need to scale up interventions especially towards EmONC to reduce maternal deaths that occur at health facilities. The Percentage of health facilities offering EmONC services is still low although they are staffed with nurses and midwives and less than 80% of HC IV meet the standards in terms of skills, knowledge, and resources to provide EmNOC services and few offer comprehensive EmONC (Mbonye et al., 2007;UNFPA, MOH 2017).

Of the health facility maternal deaths, haemorrhage contributed to 34% while ruptured uterus (18%) and (16%) eclampsia yet these are all preventable deaths with the right knowledge, skills and resources (Isabirye et al., MOH 2017). About 36.1% of maternal deaths presented during labour while in 7.5% were abortions whereas 58% of the cases occurred on the first day of admission in the health facilities (MOH, 2017). The National Annual Maternal and Perinatal Death Surveillance and Response (MPDSR) Report 2016/2017 states that 49% of mothers delivered their babies by caesarean section while in 46% by spontaneous vaginal delivery (SVD). About 52.5% women who gave birth were delivered by Medical officers; 35.8% deliveries were delivered by SBA's while 3.4% by TBAs. With majority of preventable deaths, occurring in health facilities and handled by SBA's it is imperative to implement strategies to curb morbidity and mortality (MOH 2017).

Faveauet al.,(2008), argue that rapid training of multiuse health workers in midwifery, but not limited to proficiency levels in all competencies has resulted in an influx of SBA's who are not truly skilled, which may be contributing to poor outcomes. These findings stress the need to improve the Quality of Care Intra partum and Post-partum period especially through finding the knowledge and skill gaps. A study to assess the availability and use of emergency obstetric services in Kenya, Rwanda, Southern Sudan, and Uganda emphasized the need to upgrade skills and competency of staff as an important part in reducing MMR in those countries (Pearson and Shoo, 2004).

Numerous efforts were initiated to strengthen SBA's skills specifically targeted to EmONC in Uganda. Baylor through the saving mothers giving life program (SMGL), trained health workers in western Uganda including Kabarole in managing new-borns. Improved neonatal survival with a 24% increase in skills and knowledge in newborn care was observed (Baylor, 2017) after the

trainings. However, the trainings and evaluation for that year focused solely on new-borns and not the mothers. Evaluation of this project showed that refresher trainings can yield positive results, reduce neonatal deaths in the districts of implementation and similar efforts if done routinely can yield positive results in maternal health. There are no reports of a training needs assessment done prior to the trainings which would have otherwise increased the effectiveness of trainings (Blanchard and Thatcher 2003; Noe 2005).

In addition, during the financial year 2016/2017 there were efforts to train midwives and other cadres in comprehensive reproductive health in four districts (Soroti, Gulu, Iganga, and Pader). During the trainings gaps in long-term family planning, Goal oriented ANC, Patograph use and EmNOC among others were identified (MOH, 2017). These gaps highlighted the need to increase efforts towards assessing training needs prior to trainings in EmONC and maternal health. Findings from the evaluation of the training suggest poor quality and inadequate trainings to be poor especially when done before any training is carried out(MOH, UNFPA 2009) success of trainings is dependent on the accuracy of identified needs (Cogner, 2015).

There have been countrywide needs assessments for EmONC services funded by WHO, UNICEF, and UNFPA in many sub Saharan countries, Uganda inclusive but these have not focused on training needs but rather skills and knowledge competence of health workers in selected districts and regions. A training needs assessment is not only "relevant" but it also determines whether a deficiency can be corrected through training (Blanchard and Thatcher, 2003). The aim of this study is to assess the Training needs of skilled birth attendants in Emergency Maternal and Neonatal Obstetric care in Kabarole district, Western Uganda through a cross sectional study. The study further describes the standing Training needs, and advance

practical recommendations to the district health offices, ministry of health and other development partners in an effort to improve maternal health care delivery.

1.2 PROBLEM STATEMENT

Despite an increase in skilled attendance in Uganda, there has been an increase in facility based MMR from 119 to 148.3 per 100,000 (MOH 2017). At facility level, 75% of maternal deaths in Uganda are due to preventable causes (Isabirye et al., 2017) these can be easily averted with appropriate provider knowledge and skills acquisition. Many programs advocate and indeed conduct trainings among providers with the hope to improve and attain desired skills. Trainings in EmONC have been associated with improved care but would be even more beneficial if training needs are assessed and trainings tailored to address the identified gaps. There is no documentation that these skills gaps are identified before trainings. The skill gaps have often been related to cadre, years of practice, age, available resources and tools, team composition among others.

Training efforts have not have addressed the learning needs of health workers/ SBA's as is the case with management of complications such as Eclampsia management in Kabarole (Isabirye et al., 2017). With a growing need to prevent maternal deaths through expansion of EmONC services nationally, trainings play a central role if targeted to specific needs to address knowledge, skills and attitude gaps. Given that our pre service education does not focus on critical EmONC skills that are essential in practice (UNFPA 2009; WHO 2012). There are always gaps in skills and knowledge that health workers experience that an impact on how they conduct business. These gaps are related to learner (learner analysis) or the nature of the task that depends on task itself or the institutional environment. Factors related to the learner could be

subjective (attitude etc) or objective such age, duration of state etc. The deficiency can be corrected through training (Blanchard and Thacker, 2003; Noe et al., 2008) but success of trainings is reliant on accuracy of a prior needs assessment (Conger 2015). This creates a need to assess the training needs of SBA's in Kabarole and the factors related to the identified needs to inform future training efforts by determining close to ideal content and suitable approach to bridge the knowledge and skill gap in EmONC care.

1.3 THEORETICAL FRAMEWORK

Training needs assessment and training needs analysis are terms that can be used to refer to the process of identifying training needs. Barbazette (2006,) defines training needs assessment as the process of collecting information about an expressed or implied organizational need that could be met by conducting training while, Tobey (2005) maintains that though training undoubtedly provides skills and learning and development, training needs assessment is the initial process which ensure that training will resolve the organization's needs.

Kaufmann (1993) states that the purpose of needs assessment is to identify performance gaps, prioritize them and address the most important ones this is in line with Anderson (2000), who states that a needs assessment is the preliminary phase in the training process. It is the phase in which organization's needs are identified, forming the groundwork of successful training effort. Assessment of organizational (Institutional) training needs is the problem solving stage of a training plan, and takes into account issues relating to employee and organizational performance to establish whether training can help (Mathis and Jackson, 2010).

Needs analysis is a procedure for collecting information about learners (Nunan, 1988). It is an important component for designing a training and reducing gaps among learners, teachers, and

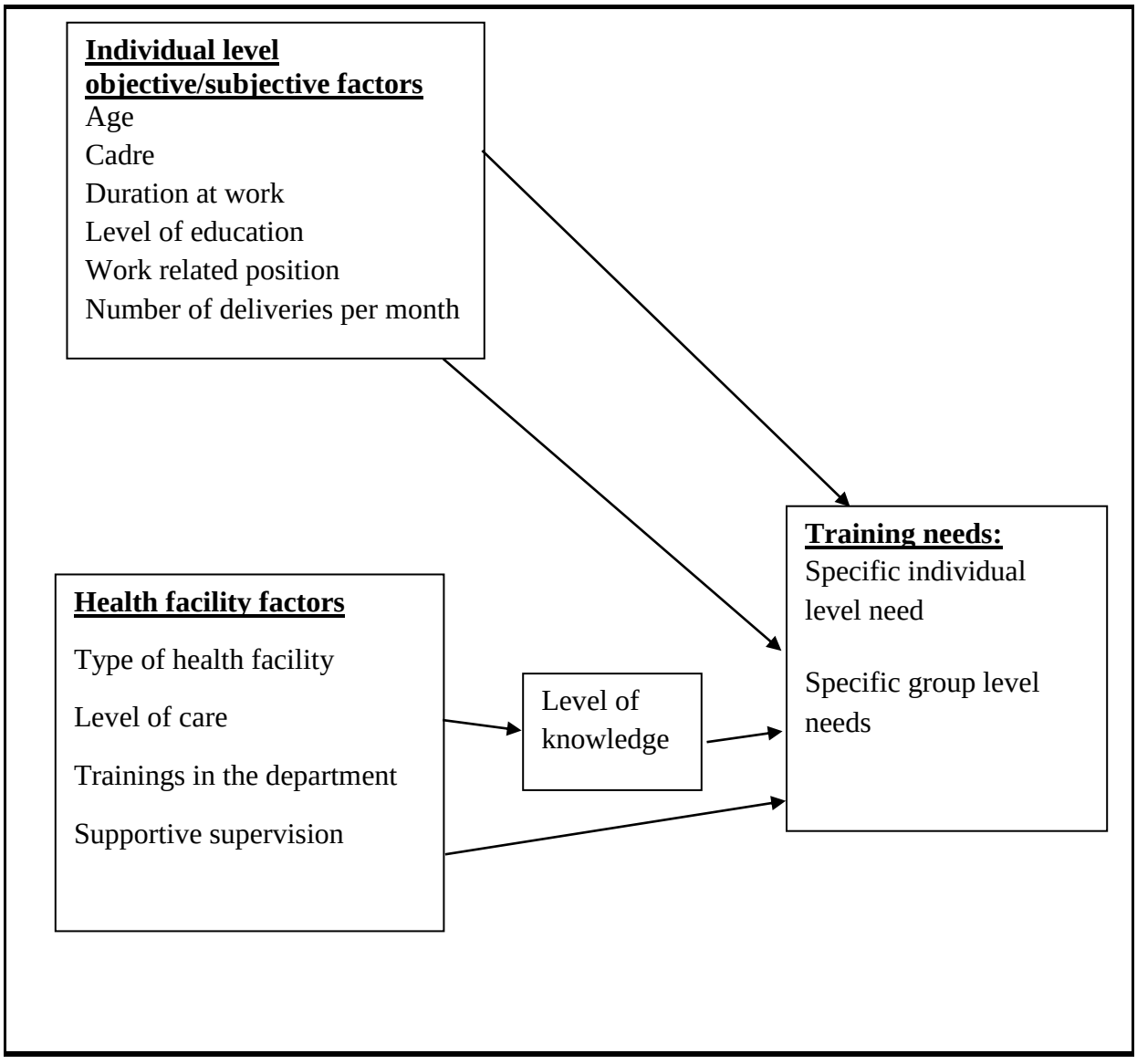
teaching materials. Nunan (1988) refers to two types of need analysis: learner analysis and task analysis, this study will use the learners and their tasks in order to assess gaps. However, Richterich (1983) lists types of need analysis as subjective needs analysis: information that reflects the perceptions, goals, and priorities of the learner. Objective Needs Analysis: includes the factual fact about the learner like biographical information on age, nationality, home language. Both Nunan (1988) and Richterich (1983) types of needs analysis will be relevant for this study.

Nunan& Burton (1985) proposed a Need Analysis model based on the subjective and objective information. Their model consists of information from the following parameters Occupation, Age, Nationality, Education, Proficiency, Communicative need and Learning goal. This model acts as a basis for this study.

1.4 CONCEPTUAL FRAMEWORK

Conceptual framework gives a guide and leads research by illustrating the relationship between independent variables and Dependent Variable (training needs). The figure below illustrates the conceptual framework that was used in this study.

FIGURE 1: CONCEPTUAL FRAMEWORK ADOPTED FROM NUNAN &BURTON (1985)



1.5 RESEARCH QUESTIONS

1.What is the level of knowledge of EmONC among SBA's in Kabarole District?

2.What are the EmONC training needs (gaps) of SBA's in Kabarole District?

3.What are the individual factors related to EmONC training needs in Kabarole District?

4.What are the institutional factors related to EmONC training needs in Kabarole District?

1.6 OBJECTIVE OF THE STUDY

1.6.1 General objective of the study

To examine the factors related to training needs (gaps)of Skilled Birth Attendants in Emergency Maternal and Neonatal Obstetric care in Kabarole District.

1.6.2 Specific objectives

1. To assess the level of knowledge of EmONC among skilled birth attendants in Kabarole.

2. To determine the training (gap) needs of SBAs in relation to EmONC in Kabarole district.

3. To establish the individual factors related to EmONC training needs in Kabarole district.

4. To assess the institutional level factors related to EmONC training needs in Kabarole.

1.7 SIGNIFICANCE OF THIS STUDY

The practice of TNA is marginally comprehended and is given minimal attention in developing countries. The purpose of this study is to inform future educational and training packages at the individual, group, and organizational levels by identifying gaps in performance and boosting future interventions. These findings will set a precedent in TNA and help planers within Kabarole District especially in MNH, set priorities and Customize trainings to meet the assessed needs of health workers in order to offer more specific trainings. Findings will also help inform policy development and stimulate discussions especially in the areas of continuous medical education, human resource management for health and recommendations for best practices in TNA especially in line with maternal health.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

The importance of literature review is to define and limit the research problem, put the study in academic and historical perspectives, avoid unintentional and unnecessary replication (McMillan and Schumacher 2001). Literature review is important to relate the findings to previous knowledge and suggest further research and finally to develop research hypotheses. This literature review will look at theoretical review, subthemes that will be developed in accordance with the study objectives and the researcher's opinions as well as the summary of literature review indicating literature review gaps that will be identified that justify the need to have carried out this study.

In order to achieve sustainable development goal (SGD) 3.1 by 2030 focusing on key interventions like increasing Skilled Birth Attendance (SBA) is imperative. However, in sub-Saharan Africa a SBA attended only 51% of births in 2016, compared to 99 %of births in Europe and in Northern America (UNICEF 2017). Uganda's Skilled Birth Attendance has increased from 70% rural and 89.6% in urban areas (UNFPA 2017). Studies state that access to SBA will mitigate childbirth complications up to 87% (UNFPA, WHO 2014). If SBA has increased in the country, reducing maternal deaths requires that the SBA are equipped with skills in BEmONC. These skills and knowledge will translate into improved health service delivery that will eventual contribute to reduction in maternal deaths.

A skilled health personnel is an accredited health professional such as a midwife, doctor or nurse who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and new-borns (WHO, 2004). The Skilled personnel should perform signal functions of emergency maternal and new-born care Basic Emergency Maternal Obstetric and New-born care (BEmONC) and as part of a team for comprehensive emergency obstetric and new-born care (CEmONC) to optimize their health and wellbeing of the community (WHO, GENEVA 2003). Signal functions used to identify basic and comprehensive emergency obstetric care services include.

TABLE 1: TABLE SHOWING BASIC EMONC AND COMPREHENSIVE EMONC SERVICES

Basic EmONC services	Comprehensive EmONC services : All basic EmONC (1–7) plus (8-9)
1.IV/IM antibiotics 2.IV/IM oxytocic drugs 3.V/IM anticonvulsants 4.Manual removal of placenta 5.Removal of retained products of conception (e.g. by manual vacuum aspiration) 6.Assisted vaginal delivery 7.Resuscitation of the new-born baby using a bag and mask	Caesarean Section Blood Transfusion (grouping & cross-matching)

Source: WHO et al., 2009: Managing emergency obstetric care: a handbook

In 2017, a rapid needs assessment was carried out in 25 districts in East and Northern Uganda to determine competencies for provision of the key EmONC signal functions. Health workers in seven level four centres and five Hospitals did not report having received any training in comprehensive EmONC over the last 2 years (UNFPA, MOH 2017). This finding together with

the high-unmet need for EmONC services (98.45%) leaves Uganda at risk of poor maternal health outcomes (MOH, 2017).

2.2 KNOWLEDGE OF EMONC AMONG SKILLED BIRTH ATTENDANTS

Knowledgeable midwives working in a structured health system can offer up to 90% of needed maternal health care, reducing maternal deaths by two-thirds (Campbell & Graham, 2006). WHO (2009) reports that among countries with critical maternal health care; only 22% of them have near to sufficient number of midwives with adequate training to provide appropriate maternal health care. Only 18.5% of maternal health providers are equipped to provide obstetrical emergencies (WHO, 2009). Even with increased antenatal care services to predict and prevent some complications, these conditions are sudden in onset (Oliega et al.,2009).Therefore, it would be beneficial SBA's to have the right knowledge to handle complications.

Skilled birth attendance has been well acknowledged in terms of its effect on reducing maternal mortality (Adegoke et al., 2010). A key pertinent question that arises out of this argument is, why is the MMR still high with a big proportion occurring in health facilities despite the increased Skilled Birth Attendance? A number of reports have highlighted a number of reasons that could potentially explain this. Although midwives in Uganda have a high work load where each handles between 350-500 deliveries per year higher than the recommended 175 deliveries by WHO, there is still chance to maximize the effort to reduce deaths though better skills in management of complications (UNFPA, 2017). In some countries despite achieving high levels of SBA coverage, mortality has not reduced proportionally (WHO 2008). This implies that having many SBA's may not be useful if they are not equipped with the right skills, knowledge and resources to enhance their work.

Given that, 15% of expected births worldwide will result into life threatening complications (Mumtaz et al., 2014). It is important to improve maternal health care and status of EmONC service delivery by scaling up efforts in training skilled birth attendants (Sipsma et al., 2012; Lassi et al., 2014). Evidence suggests reduced maternal mortality after health care providers have received training to deliver high impact interventions (Lassi et al., 2014; Currie et al., 2007; Rasooly et al., 2014). This is in line other studies whose findings corroborate that EmONC training of midwives improved EmONC utilization greatly (Otorin et al., 2015; L.Gitonga et al., 2016;Aduragbemi et al.,2016).

A study on the knowledge health care providers on the quality of obstetric and newborn care in Malawi shows that knowledge regarding the management of routine labour was good, but knowledge of monitoring during routine labour was poor with participants scoring 35%. Also 70% of participants correctly answered emergency obstetric care questions (Bayley, 2013). While in Mali showed Knowledge deficit regarding management of post-partum infections and hypertensive complications were identified among PHC staffs (Traore, 2014). Management of Hypertension in pregnancy remains a theme in a study in Ethiopia on maternal and newborn health care providers' level of knowledge in performing EmONC services. This found that Out of 52 providers 19, (36.5%) had good knowledge preeclampsia diagnosis and 50% reported that they had good knowledge of emergency preeclampsia treatment. 38.5% reported that they had good knowledge of using MgSo4, identifying birth asphyxia (distress) and neonatal resuscitation (Girma 2016).

2.3 TRAINING (GAP) NEEDS OF SBA'S IN RELATION TO EMONC

Pre- service training does not guarantee proficiency and knowledge acquisition, while "skilled" implies competent use of skills. There are large gaps between international standards and the actual competencies possessed by existing birth attendants (WHO 2012; Nyango et al., 2012; Mirkuzie et al., 2014). Pearson and Shoo (2015) also argue that coverage does not mean quality unless the required knowledge and skills are built and maintained among SBA's. There is a great disparity between what health care professionals are trained to do and what populations actually need (WHO 2012). This creates a need to conduct trainings to bridge the gap and meet population needs.

A training need is the gap between where the person or organisation is now and where they want to be (Bramley, 1993). Training can be an effective tool for the organisation only if the training need analysis is done. This is on three distinct levels, a knowledge gap, a skills gap and an attitudinal gap. Analysing training needs is used to organise the delivery of training and development (Goldstein and Ford, 2002).

A training needs assessment in EmONC services would help identify key areas to focus trainings to direct efforts thus lead to better patient outcomes and in turn reduce the MMR. This will be achieved by specifically targeting the Knowledge and skill gaps of SBA's given that trainings would be aligned to bridge these gaps. The aim of this study is to assess the training needs of SBA in Emergency maternal and neonatal Obstetric care and the factors related to this need to ensure that future efforts are more significant to the SBA by meeting their training needs.

Literature describes different types of needs, formative needs are defined as the measured gap between the set standards and the individual's or group's current knowledge while normative

needs encompass knowledge, skills, attitudes and performance. Prescribed needs are those areas that educators or program planners determine as inadequate and that need educational intervention. Felt or perceived needs are what the individuals or the group have identified as what they want to learn. Their knowledge, experience, and the environment they work in influence most of these needs. Comparative needs are those learning needs identified by comparing two similar groups or individuals. Unperceived needs are discrepancies not perceived by learners as learning needs (Lawton 1999).This study assess felt or perceived needs of health care providers.

Various studies have been done to assess training needs for nurses and midwives. A study assessing learning needs of nurses in New Zealand, from the perspective of the RNs and senior nurses was carried out and results highlighted that the highest learning needs of RNs focused on direct client care activities rather than team work or professional issues. The study further recommended for those involved in planning trainings to consider: who decides the content, and are the needs of different subsets of nurses being met. Teaching methods used should support learning and variances in learning needs between different subsets of health workers to ensure training is appropriate to meet needs (Dyson et al., 2009). Literature highlights gaps in knowledge and skills especially in intra partum and post-partum care especially at community levels (Nyango et al.,2010;Okonofua et al., 2019).

A study was carried out using cross sectional study design by administering questionnaires to skilled health providers (doctors, nurses and midwives) working in the hospitals during and a total of 341 health providers participated in the study. The knowledge and reported skills on EMONC by health providers in referral facilities in Nigeria was lower than average. 46% of health care providers scored average in knowledge, with doctors scoring higher than the

nurses/midwives in both knowledge and self-reporting of confidence in carrying out specific EMONC functions. Health providers that scored higher in knowledge were significantly more likely to report confidence in performing specific EMONC functions as compared to those with lower scores (Okonofua et al., 2019).

While a descriptive study done in, Egypt to assess the educational needs among obstetrical and gynaecological nurses showed that 73.2%, of the nurses needed theoretical training and 56.2% clinical training. The study observed that 90.7% of the nurses in the study had not attended any training courses in obstetrical and gynaecological nursing. The top training needs identified were infection control, medical terminology, decision-making, treatments during labour, EmONC, insertion and removal of IUD, immediate care of new-born, pre and post-operative nursing management and CPR. The study recommended the development of continuing in service training programs based on training needs assessed.

Kabarole district, located in western Uganda, has continuously had one of the highest (fourth in ranking) maternal mortality ratios in Uganda at 319.8 per 100,000 live births (UBOS and ICF, 2017) and Fort Portal regional referral hospital had the highest number of maternal deaths recorded (MOH 2017). Insufficient skills and Knowledge in management of obstetric complications by health workers is evidenced by a baseline assessment in Kabarole regional referral hospital. This study and others established that SBA's had challenges managing eclampsia and identified skill gaps in EmNOC (Isabirye et al., 2017; Mirkuzie et al., 2014; UNFPA, MOH 2017). Further effort to improve training's requires that skill need assessments are carried out as well as the factors related to these needs to guide any upcoming trainings

2.4 INDIVIDUAL FACTORS RELATED TO EMONC TRAINING NEEDS

Providers skilled in EmONC services are essential, and the lack of SBA's contributes to more than two million maternal, stillbirth and new-born deaths each year worldwide. Profession and year of graduation were factors that associate with knowledge of obstetric care and Pre/in service training was associated with the practice of obstetric care providers towards active management of third stage of labour in south Ethiopia (Tenaw et al., 2017).

Health care provider competency influences the quality of care. As shown in a skill and knowledge evaluation where, EmONC professionals scored only 50% in the required skills (Campbell and Graham, 2006). Merkuzie et al.,(2014) assessed trainees' reaction and knowledge acquisition on BEmONC training in Addis Ababa. 95% of providers trained reported that the training updated their knowledge and skills as evidenced by post knowledge score of 83.5%. The midwives were more likely to achieve knowledge-based mastery than their nurses counterparts working in the labour ward ($P<0.05$).

Provider competency also influences patient's perceptions of the quality of care and low rate of utilization of health centres providing EmONC. A review by Nyamtema et al., (2011) illustrated that training in emergency obstetric care was a component of up to 65% of programs to improve maternal and new-born health outcomes in resource poor settings. Providers who had moderate to high knowledge of EmONC were considerably more likely to report confidence in performing clinical skills unlike those with low knowledge, however in a study in Ethopia Majority (67.35%) of the providers reported that they did not take any of an in-service EmONC training within the past one year preceding the survey (Girma Alemu 2016).

Competence varied significantly by sex with females being less likely than males to report confidence in skills performance and the Number of hours spent on research per week significantly increased the likelihood of high competence in performance of skills (Okonofuaet al., 2019). In addition, a study based in Japan found the factors having the largest effect on professional competencies were experience, marital status, participation in off the job training, and experience, in job transfers or rotations. This study revealed that several factors needed to be considered during the TNA process in order to ensure its success (Saeki et al., 2007).

2.5 INSTITUTIONAL LEVEL FACTORS RELATED TO EMONC TRAINING NEEDS

Skilled attendance has two key components, namely skilled attendance and an enabling environment (Spangler 2012; Adegoke et al., 2010). An enabling environment means infrastructure and resources that support skilled birth attendance (WHO 2004). The analysis of organizational needs should look at the strategic plan of the hospital or health service and how this aligns with their future plan for themselves and the community (Pilcher, 2016). Kaufman (1979), advocates for a needs assessment before implementing any educational program. A successful training program begins with assessment of the needs of both the organization and the individual employee. Needs assessments are designed to provide input on how to best structure-training programs to enhance organizational performance.

A training needs assessment is used to determine whether training is the right solution to a workplace problem (Cekada 2010.). A systematic review of the literature by Fikre (2016) concluded those poor skills of health providers and the absence of essential equipment and shortages of health providers account for the inadequate delivery of EMONC in developing countries. Hennessy et al., (2006), assessed the training and development needs of nurses in

Indonesia and found that the most educated midwives recorded training needs for 24 tasks, while the less educated had training requirements for all 40 tasks. The job-related roles of the midwives varied significantly by province, but very little difference in the roles of hospital and community midwives. The most educated midwives attributed more importance to 35 out of the 40 tasks, suggesting a distinction level of activity. Also, few differences in training needs were revealed between hospital and community midwives. These results disagree with Jones (2008), who assessed training needs of nurses working in child and adolescent services. He found that training needs varied depending on the career trajectory of nurses, and where nurses were working

Staff trainings will not create a positive result if consumer needs of the organization are not included in the process institutional training gaps are associated with inadequate training methods, lack of equipment, inability to delegate tasks and variations in clinical protocols (Olsen et al., 2010). Other aspects of EmONC staff performance are organizational stability and staff productivity, which is hardly documented in studies (UNICEF, 2014). In Malawi a study reported that in health facilities surveyed CEmOC staffs were slightly more knowledgeable than BEmOC staffs and reported that confidence and training level had little impact on their knowledge (Bayley O, 2013).

2.6 THEORIES THAT APPLY TO ASSESSING TRAINING NEEDS

Theories are scientifically acceptable set of principles used to describe a phenomenon. They are helpful in interpreting and operate as bridges between research and education. Theories enable organization of research findings. Without theories, research findings would be disorganized sources of data, because there would not have been a predominant framework to which data

could be linked (Schunk 2009). There are many theories relevant to training such as Adult learning theory, Cognitive theory, self-directed learning theory, Kirkpatrick's theory among others. However, for this study needs assessment theories were used, as they are more relevant to the study and describe the phenomenon of training needs assessment.

Vaughn (2005) has presented a training needs analysis model, referred to as the Instructional System Design (ISD) model. Understanding the basics of training and adult learning, all types of resources can be limitations, such as time, tools, funds, space, management and trainer skills and human resources. In general, training needs analysis models can be grouped into two major categories: the organization, task and person analysis framework (McGehee and Thayer's three level OTP model) which is more popular among academicians. It also involves analysis of training needs to meet organizational needs, task or job needs, through to the particular needs of the individual or person.

The Mager, and Pipe's Performance Analysis Model is popular among practitioners, and gaps between expected and current performance are considered as needs for training. It also focuses on identifying discrepancy between desired and actual performance and their causes.

Gupta (1998) describes six of the most significant contributors of needs assessments models: Thomas Gilbert: human competency model, Joe Harless: front-end analysis model, Roger Kaufman: organizational elements model, Roger Mager: Analysing performance problems, Allison Rossett: training needs assessment, and Geary Rurnmler: performance improvement

Roger Kaufmann and Ryan Watkins; Organizational Elements Model (OEM) 1996 Model Kaufmann offers five elements to needs assessment: inputs, processes, product, output, and outcomes. This model was later expanded by Robert Mager 1997 who went ahead to analyse

performance problems by asking a systematic set of probing questions. Within this Mager asserts five areas with which to probe: describe the problem, explore fast fixes, check consequences, enhance competencies, and develop solutions. Task analysis or goal analysis; identify what needs to be learned while performance objectives further specify the outcomes and how they will be evaluated. According to Mager, learning objectives include what should the learner be able to do, under what conditions and how well must the learner be able to do thus performance must be observable or measurable.

Needs analysis (also known as needs assessment) has a vital role in the process of designing and carrying out any course, the term needs analysis usually refers to the activities that are involved in gathering information and will assist as the basis for developing a curriculum that will meet the needs of a particular group.

Nunan (1988) claims that information got through needs analysis can serve the following purposes; can set the goals of the course and guide the selection of contents. The gap between teacher and learners expectation can be minimized by modifying the syllabus and methodology. The gap between the teacher and learners expected teaching and learning approach could be identified. Nunan& Burton (1985) proposed a need analysis model based on the subjective and objective information. Their model consists of information from the following parameter. Name, Occupation, Age, Nationality, Education, Proficiency, Communicative need and Learning goal. This model will be modified and adopted for this study.

2.7 SUMMARY OF LITERATURE REVIEW

several literature sources were reviewed including journals, academic reports, health policy guidelines for several countries and continuous medical training reports specifically EmNOC trainings, and needs assessment studies among others. The literature creates a need for assessing needs prior to trainings, providers in Indonesia who engaged in self-assessment and peer review after training on client centred family planning counselling maintained improved performance after the course significantly better than the controls who received training only (Kim et al., 2000)

From a number of reviews done, there is evidence that trainings generally impact on performance and patient health outcomes (Forsetlund et al., 2009; Mansouri&Lockyer, 2007; Marinopoulos, et al., 2007; Davis et al., 2009;Ameh et al., 2019). Although a few studies are specific on its impact on maternal health outcomes. These point to the idea that in service trainings appears to be effective at acquisition and retention of knowledge, attitudes, skills, behaviours however many argue on the importance of a need's assessment as part of the training cycle and its significance in having fruitful trainings (Anderson 1999; Elbadri 2001; cogner 2015). Fleck 2014 further adds that assessing training needs ensures that transfer of learning actually takes place, as objectives set for learning are specific to learners needs. It is imperative therefore, to carry out a training need assessment of SBS's especially for EmNOC services given that no studies have been carried out in Uganda,

CHAPTER THREE

METHODOLOGY

3.1 INTRODUCTION

This section explains the approaches were adopted in the study. It describes the research design, study population, sample size and sampling technique, data types, sources and the data collection instruments used. It includes measurement of reliability and validity of the various instruments, and the data analysis procedures employed in the study.

3.2 RESEARCH DESIGN

The researcher adopted *"A cross sectional descriptive analytical study"* to find out the prevalence of the problem, attitude or issue in order to obtain an overall picture as it stood at the time of the study and offer preliminary evidence of a relationship between study variables (Kumar 2011). The results from this study will aim to describe the training needs of SBAs and factors related to these needs in line with EmNOC in Kabarole district, Western Uganda. The descriptive methods were preferred for they helped to simplify the findings while correlation was be adopted to explain the relationship between the study variables and the extent to which the independent variable explains the dependent variable.

3.3 STUDY AREA

Kabarole District lies between 00 15" N and 10 00" N latitudes and 300 00" E 310 15" E Longitudes. It is Located in Western Uganda, about 300 km from the city centre of Kampala. It has a total population of 469,236.

3.4 STUDY POPULATION

The study population involved Skilled Birth Attendants serving 19BEmONC and six CEmONC government and PNFP health facilities and three private health facilities in Kabarole district, Western Uganda. This study involved skilled birth attendants serving Kabarole according to data collected from the district bio statistician.

3.5 SAMPLE SIZE ESTIMATION AND SAMPLING PROCEDURE

3.5.1 Sampling procedure

Health facilities were purposively selected because these 28 health facilities offer EmNOC in Kabarole. These were 16 government HC III, 2 HC IVS, PNFP's, a regional referral and private hospitals. Simple random sampling was used for the health workers serving in these health facilities. This method gave each sampling unit an equal chance of being included in the sample. Numbers written on small pieces of paper were randomly placed in an envelope and those that picked odd numbers were selected to answer the questionnaires. Sampling was done without replacement as this approach allowed for a wider coverage of sampling units.

3.5.2 Sample size estimation

Sample size for quantitative data was determined using the Kish Leslie formula for simple random sampling for single proportions ($n = \frac{Z^2pq}{d^2}$).

Where n = Sample size

z = z value corresponding to a 95% level of significance = 1.96

p = Proportion of skilled birth attendants, since we do not know the proportion of skilled birth attendants in Kabarole district, we use 50% (P=0.5).

q = (1 - p) = (1-0.5) = 0.5

d = absolute precision (5%)

Therefore, from the above the sample size was:

$$n = \frac{1.96^2 \times 0.5 \times 0.5}{0.05^2}$$

$$n = \frac{0.9604}{0.0025}$$

$$n = 384$$

TABLE 2: SHOWING NUMBER OF RESPONDENTS FROM EACH LEVEL OF CARE

Level of care	Number of respondents	Percentage (%)
16 HC III	90	23.4
2 HC IV	37	9.6
PNFP	71	18.5
Regional referral	138	36
Private Hospital	48	12.5

3.6 INCLUSION AND EXCLUSION CRITERIA

3.6.1 Inclusion criteria

All skilled birth attendants offering EmNOC care in Kabarole district.

3.6.2 Exclusion criteria

Students on clinical rotation with less than one year of Clinical experience

3.7 DATA SOURCES

The primary data was main source and data were collected directly from selected participants targeted for this particular study. Data were collected through administering both open and closed ended questions.

3.8 DATA COLLECTION METHODS AND INSTRUMENTS

A questionnaire was used as primary method for collecting required data. The self-administered questionnaire was the main research instrument because it is more appropriate where the target population is literate and capable of answering the questions in the data collection tool (Moser, 1979). Questionnaire surveys are a popular form of need assessment because of their low cost and ease of administration, can address a wide array of topics, assess diverse educational needs, and sample a large population. Self-assessment using questionnaires is a low cost approach to monitoring the quality of care, and thus valuable in developing countries where providers often work without supervision. Health workers can easily reflect on performance strengths and weaknesses in order to identify learning needs, and reinforce new skills or behaviours to improve performance.

These were designed with reference to training needs and EmNOC as study variables and based on study objectives. The data collection instrument contained both and open closed ended questions. Self-assessed and self-reported needs were assessed.(Gutierrez 2018).This study used elements of the Hennessy Hicks Training Needs Analysis Questionnaire which was psychometrically tested for validity and reliability and was adopted by the WHO as a training assessment tool (Hennessy et al., 2006). The new questionnaire was pre-test/ re-test to establish reliability of research tool permitting the instrument to be compared with itself, thus avoiding the problems that could arise with the use of another instrument.

TABLE 3: SHOWING VARIABLE TABLE AND MEASUREMENT

Variable	Operational Definition	Scale of measurement
Dependent Variables		
Level of Knowledge	The SBA demonstrates knowledge and show proficiency in the in EmONC signal indicators	SBA know the antibiotics used in EmNOC s SBA demonstrate appropriate use of IV/IM antibiotics SBA knows medicine for in control of PPH used in EmNOC SBA has knowledge on appropriate use of IV/I.M oxytocin SBA has Knowledge on appropriate use of IV/IM anticonvulsant SBA has Knowledge on manual removal of placenta SBA has Knowledge MVA removal of retained products SBA has Knowledge Caesarean Section SBA has knowledge of blood grouping and cross-matching SBA can put up a blood line Fairly, good, and very good
Training (gap) need	Determination of the knowledge gap	Yes or NO and named according to the whether they believe they have the knowledge to perform task
Independent variables		
Individual level objective factors	Age	Numerical continuous (whole number) and Categorical ordinal (15-19, 20-24, 25-29. 30-34, 30+)
	Marital Status	Categorical ordinal (Single, Married/Cohabit, Separated, Widowed,)
	Religion	Categorical nominal (1=Anglican; 2=Catholic;3=Muslim,4= Other [specify]…)
	Health worker level of education	Categorical ordinal (1=certificate; 2=diploma 3=degree, 4= University
	duration in service	Numerical continuous (whole number)1. Less than one year, 2, 3, 4, 5, 6, 7,8, 9, …
	Cadre of staff	Midwife (Enrolled) 2. Midwife (registered) 3. Midwife (double trained) 4. Medical doctor 5. Degree midwife etc.
Individual level subjective factors	Attitude towards training	Categorical (1. Positive, yes 2. No, Negative)
Institutional factors	Level of care	Categorical nominal (1=level III; 2=Level IV; 3=Hospital (general), 4. Hospital RR
	Type of health facility	Categorical nominal (type of facility government-1, PNFP/NGO-2 private-3
	Training received in the last year	Have you received training in the last year? Dichotomous (yes =1 and No =2) If yes indicate the training here ……
	Supportive supervision	Have you received supportive supervision related to job performance? Dichotomous (yes =1 and No =2) If yes, who supervised you……
	If yes to supervision who supervised you?	Midwife (Enrolled) 2. Midwife (registered) 3. Midwife (double trained) 4. Medical doctor 5. Degree midwife etc
	Word load	How long is your shift? Numerical continuous(whole number) hour 1, 2,3,4,5…

3.9 LIMITATIONS

In today's fast paced environment, training requirements can change so rapidly that data collected during a need's assessment, especially if the assessment spans an extended time frame, can become outdated fairly quickly (Gupta, 1999). Use of a cross sectional descriptive study design to measure exposure and out come at the same time thus giving us data at that point in time. Training needs assessed were perceived needs creating a level of bias as SBA's reported and rated their level of knowledge.

3.10 VALIDITY

To ensure data quality the questionnaire was subjected to validity and reliability tests as recommended by Feldman, 2007

3.11 RELIABILITY

Reliability check was done to ensure that the instrument measured what it intended to measure consistently as per the definition and methodological approach recommended by Kothari, (2005). A pilot test was carried out using a sample of 10 respondents to whom the questionnaire was administered. Cronbach's alpha statistic was obtained from analysis of the data analysis SPSS. A score of above the 0.5 as recommended by Amin (2005) indicated that the instrument was reliable.

3.12 QUALITY CONTROL METHODS

The data collection tools were pre-tested before actual data collection to check whether variables of interest come out clearly. The necessary corrections were made to data collection tools before actual data collection. Measurement bias during data collection was avoided by training the

research assistants on data collection techniques and tools. Checking for completeness and accuracy of completed data abstraction forms was done on each day of data collection by the researcher.

3.13 DATA MANAGEMENT AND PROCESSING

Data checking and cleaning was done simultaneously during data collection. At the end of every day, data was checked for completeness and consistency. Data was backed up by saving in different folders in the computer and also on a removable flask disk. Data was exported to STATA 14 for final editing and analysis.

3.13.1 Data analysis

Data was analysed using STATA 14.

For objective one and two: the training (gap) needs and level of knowledge and skills of EmONC of SBAs was presented as percentages.

Socio-demographic data of study participants was presented as frequencies and means.

For objective three and four: individual factors and institutional level related factors associated with EmONC training needs. Initially, bivariate analysis was performed between training need and independent variables using the Pearson chi-square (χ^2) test. P-values were obtained and a p-value <0.05 indicated an association between the independent variable and training need. Then multivariate analysis was performed on the variables that were statistically significant at bivariate analysis using the logistic regression model to control for confounding and determine independent predictors of training needs. Statistical significance was set at p-value < 0.05 and 95% Confidence Interval (95% CI) was used.

3.14 ETHICAL CONSIDERATION

To conform to the acceptable standards of public health and professional behaviour of research, the study sought approval of Uganda Martyrs University. Permission from district health officer and proprietors of health facilities was obtained for the study to be conducted in the district.

In addition, participation in this study was entirely on a voluntary basis and the interviews were conducted after obtaining consent from each participant following a clear explanation of the purpose, procedure and any potential benefits as well as any inconveniences of the study to the participant. Above all, all the data obtained was anonymous and handled with maximum confidentiality and the purpose for academic purpose only.

CHAPTER FOUR

PRESENTATION OF RESULTS

4.1 INTRODUCTION

This chapter presents the results of the data collected from 384 health workers in Kabarole district to examine the factors related to training needs and associated factors in emergency maternal and neonatal obstetric care.

TABLE 4. 1: SUMMARY OF THE RESPONDENTS FROM EACH LEVEL OF CARE AND CADRES INTERVIEWED

Cadre	Number of participants at every level of care					Total
	HCIII	HCIV	PNFP Hospital	Private Hospital	Regional Referral Hospital	
Enrolled Nurse	16	4	10	6	20	56
Enrolled Comprehensive Nurse	9	3	5	3	12	32
Enrolled Midwife	32	12	26	16	47	133
Registered Nurse	1	1	2	1	5	10
Registered Midwife	16	7	22	18	26	89
Degree Nurse	0	0	0	0	9	9
Clinical Officer	16	6	4	3	7	36
Intern Doctor	0	0	0	0	2	2
Doctor	0	4	2	1	10	17
Total	90	37	71	48	138	384

TABLE 4. 2: BACKGROUND CHARACTERISTICS OF STUDY PARTICIPANTS

Variable	Category	frequency	Percentage (%)
Age (Years)	20 – 30	201	52.3
	31 – 40	105	27.3
	41 – 50	61	16.0
	>50	17	4.4
Gender	Female	316	82.3
	Male	68	17.7
Marital status	Single	162	42.2
	Married/Cohabiting	212	55.1
	Widow	4	1.1
	Divorced/Separated	6	1.6
Religion	Catholic	296	77.1
	Anglican	70	18.3
	SDA	6	1.6
	Pentecostal	8	2
	Moslem	4	1
Cadre	Enrolled Nurse/ Comprehensive/Midwife	221	57.7
	Registered Nurse/Midwife	99	25.8
	Degree Nurse	9	2.2
	Clinical Officer/intern/doctor	55	14.3
Educational Level	Certificate	217	56.5
	Diploma	138	36
	Degree	25	6.5
	Master degree	4	1

Source: Field data 2019

The mean age of the participants was 34 (+/- 12) years and age range was 20-60 years. Most of the participants were females 316 (82.3%) and married 211(55.1%). The majority of the participants 296(77.1%) were Catholics and most 216 (56.5%) participants had certificate level of education.

4.2 THE LEVEL OF KNOWLEDGE AND TRAINING NEEDS

TABLE 4. 3: SHOWING THE LEVEL OF KNOWLEDGE OF EMONC AND TRAINING NEEDS

Task	Level of knowledge			
	Not knowledgeable	Fair	Good	Very good
Administering anticonvulsant (Magnesium Sulphate)	108 28.1%	37 9.6%	173 49.7%	66 12.6 %
Manual removal of the placenta	186 48.4%	41 10.7%	107 27.9%	50 13%
Assisted Vaginal delivery (Vacuum extraction or forceps method)	335 87.2%	2 0.5%	22 5.7%	25 6.6%
Dilatation and Curettage	338 88%	6 1.6%	20 5.2%	20 5.2%
Manual Vacuum Aspiration (MVA)	299 77.9%	2 0.5%	43 11.2%	40 10.4%
Resuscitation of newborn using mask and Arm burg	4 1%	8 2 %	237 61.7%	135 35.3%
Administering Oxytocin	0	10 2.6%	203 52.9%	171 44.5%
Administering IV antibiotics	0	0	0	384 100%
Blood transfusion	0	0	224 58.3%	160 41.7%
Caesarean Section	0	365 95.1%	2 0.5%	17 4.4%

Source: Field data 2019

From table 4.1 above, all participants were able administer IV antibiotics, oxytocin and blood transfusion to the desired level of knowledge (good or very good). However, out of the 276 health, workers who were able to administer anticonvulsants 37 (13%) were performing the task fairly and the rest had good/ very good performance standard.

Out of 198 health workers who reported being able to perform manual removal of placenta, 41 (20.7%) had fair knowledge. It has been observed that out of the 49 health workers who could perform Assisted Vaginal Delivery (Vacuum extraction or forceps method) signal function, 47

(96%) were doing it good or very good and only 2 (0.4%) had fair knowledge to perform the task.

Results have shown that of 85 participants who reported being able to perform Manual Vacuum Aspiration, 2 (2.3%) had fair performance level of the task and 83 (97.7%) were doing it satisfactory.

Of the 46 participants who were able to carry out Dilatation and Curettage, 6 (13%) had fair knowledge of performing task and 40 (87%) were doing it to with the required knowledge.

All participants were able administer oxytocin, however 10 (2.6%) were performing the task fairly. It was further observed that out of the 384 participants who were able to resuscitate the newborn using mask and Arm burg 376 (97.9%) were performing the task with required knowledge.

4.3 THE TRAINING GAPS (NEEDS) OF HEALTH WORKERS IN EMONC

TABLE 4. 4: THE TRAINING GAPS IN EMNOC

Cadre	Able to administer anticonvulsant (Magnesium Sulphate)		Able to perform manual removal of placenta		Able to perform AVD (vacuum extraction or forceps method)		Able to perform MVA	
	No	Yes	No	Yes	No	Yes	No	Yes
Enrolled Nurse	42 75%	14 25%	46 82%	10 18%	54 96%	2 4%	56 100%	0
Enrolled Comprehensive Nurse	26 81%	6 19%	30 94%	2 6%	32 100%	0	32 100%	0
Enrolled Midwife	28 21%	105 79%	46 35%	87 65%	127 95%	6 5%	116 87%	17 13%
Registered Nurse	4 40%	6 60%	8 80%	2 20%	10 100%	0	10 100%	0
Registered Midwife	8 9%	81 91%	30 34%	59 66%	77 87%	12 13%	59 66%	30 34%
Degree Nurse	0	9 100%	8 89%	1 11%	8 89%	1 11%	8 89%	1 11%
Clinical Officer	0	36 100%	16 44%	20 56%	27 75%	9 25%	18 50%	18 50%
Intern Doctor	0	2 100%	0	2 100%	0	2 100%	0	2 100%
Doctor	0	17 100%	4 24%	13 76%	0	17 100%	0	17 100%
Total	108 28.1%	276 71.9%	186 48.4%	198 51.6%	335 87.2%	49 12.8%	299 77.9%	85 22.1%

Source: Field data 2019

From table 4.2 above, it has been observed that all participants were able to administer Intravenous antibiotics, oxytocin, blood transfusion and resuscitation of newborn using Mask and Arm burg.

It was also observed that all the doctors were able to perform caesarean section, dilatation and curettage and Manual Vacuum Aspiration. However, only 3.7% of the Clinical Officers were able to perform dilatation and curettage.

It was observed that 108 (28.1%) of the participants were unable to administer anticonvulsants (Magnesium Sulphate), and 186 (48.4%) are not able to perform manual removal of placenta.

Majority of the participants 335 (87.2%) were not able to perform Assisted Vaginal Delivery (vacuum extraction or forceps method) and it was also observed most 299 (77.9%) of the health workers are not able to perform Manual Vacuum Aspiration.

The areas with training needs because staff were unable to perform/had inadequate knowledge were in administration of anticonvulsant (Magnesium Sulphate), manual removal of placenta, Assisted Vaginal Delivery (vacuum extraction or forceps method) and Manual vacuum aspiration.

4.4 INDIVIDUAL FACTORS ASSOCIATED WITH TRAINING NEEDS IN EMONC

TABLE 4. 5: INDIVIDUAL FACTORS ASSOCIATED WITH TRAINING NEEDS IN EMONC

Variable		**Training need in EMOC** No	Yes	Total	**χ2, P-value**
Age	20 – 30	34 (8.9%)	167 (43.4%)	201 (52.3%)	χ2 = 14.3550
	31 – 40	26 (6.7%)	79 (20.6%)	105 (27.3%)	
	41 – 50	21 (5.4%)	40 (10.5%)	61 (16%)	P = 0.002*
	>50	8 (2.1%)	9 (2.3%)	17 (4.4%)	
Sex	Female	102 (26.6%)	214 (55.7%)	316 (82.3%)	χ2 = 1.3862
	Male	17 (4.4%)	51 (13.3%)	68 (17.7%)	P = 0.239
Cadre	Enrolled Nurse	9 (2.3%)	47 (12.2%)	56 (14.5%)	
	Enrolled Comprehensive Nurse	5 (1.2%)	27 (7%)	32 (8.2%)	χ2=99.6426
	Enrolled Midwife	18 (4.6%)	115 (29.9%)	133 (34.5%)	P<0.001*
	Registered Nurse	0	10 (2.6%)	10 (2.6%)	
	Registered Midwife	14 (3.7%)	75 (19.5%)	89 (23.2%)	
	Degree Nurse	3 (0.7%)	6 (1.5%)	9 (2.2%)	
	Clinical Officer	22 (5.7%)	14 (3.7%)	36 (9.4%)	
	Intern Doctor	2 (0.5%)	0	2 (0.5%)	
	Doctor	16 (4.2%)	1 (0.2%)	17 (4.4%)	
Educational level	Certificate	32 (8.3%)	185 (48.5%)	217 (56.5%)	
	Diploma	36 (9.4%)	102 (26.6%)	138 (36%)	χ2=50.7859
	Degree	17 (4.4%)	8 (2.1%)	25 (6.5%)	P<0.001*
	Master degree	4 (1%)	0	4 (1%)	
Number of deliveries per month	1 – 10	43 (11.2%)	119 (30.9%)	162 (42.1%)	χ2=2.3735
	11 – 20	30 (7.8%)	118 (30.7%)	148 (38.5%)	
	21 – 30	16 (4.1%)	56 (14.6%)	72 (18.7%)	P=0.499
	>30	0	2 (0.5%)	2 (0.5%)	

*Source: Field data 2019 *statistically significant factor, df=(n-1)*

It was observed (table 4.3) that the following individual characteristics were statistically significantly associated with training needs; cadre of the health worker {χ2=99.6426, df=8; p <.001}; Educational level of the health worker χ2=50.7859, df=3; p<.001); Age ({χ2 = 14.3550,

df=3; p =.002}. The number of deliveries conducted by the health worker per month was not statistically associated with training needs in EmONC given the p-value (0.499) was greater than >0.05.

4.5 INSTITUTIONAL FACTORS AND TRAINING NEEDS IN EMONC

TABLE 4. 6: THE INSTITUTIONAL FACTORS ASSOCIATED WITH TRAINING NEEDS IN EMONC

Variable		Training need in EMOC			χ2, P-value
		No	Yes	Total	
Type of facility	Government	76 (19.8%)	223 (58%)	299 (77.8%)	χ2=5.7480
	PNFP/NGO	11 (2.9%)	44 (11.4%)	55 (14.3%)	
	Private	2 (0.5%)	28 (7.3%)	30 (7.8%)	P=0.056
Facility level	HC III	39 (10.1%)	160 (41.7%)	199 (51.6%)	χ2=9.2679
	HC IV	12 (3.1%)	44 (11.6%)	56 (14.7%)	
	General Hospital	24 (6.3%)	73 (19.1%)	97 (25.4%)	P=0.026*
	Regional Referral Hospital	14 (3.6%)	18 (4.7)	32 (8.3%)	
Last year trained Health worker in EmNOC	No	78 (20.3%)	277 (72.1%)	355 (92.4%)	χ2=3.8350
	Yes	11 (2.9%)	18 (4.7%)	29 (7.6%)	P=0.05*
Received support supervision last year	No	3 (0.3%)	21 (5.5%)	24 (6.3%)	χ2=1.6391
	Yes	86 (22.4%)	274 (71.4%)	360 (93.7%)	P=0.200

*Source: Field data 2019 *statistically significant factor df=(n-1)*

Bivariate analysis results using Pearson chi-square (χ2) test from table 4.4, indicate that there is significant relationship between facility level and training need in EmONC {χ2=9.2679, df=3; P=0.026} The institution training health workers last year in EmONC was also statistically associated with need needs {χ2=3.8350, df=1; P=0.05}

Type of health facility and receiving support supervision were not significantly associated with training needs in EmONC as shown by the p-values >0.05

4.6 MULTIVARIATE ANALYSIS

The variables included in the logistic regression model were participant's age, cadre of participant, educational level, health facility level, and received training in EmONC last year. The results of the model used are shown in table 4.5. The logistic regression model that best predicts training need in EmONC from the various predictors considered has p-value <0.001. In the model, 384 observations are included.

Table 4. 7: Odds ratios and p-values obtained from the logistic regression model of the predictors of training needs in emonc among the health workers.

Predictors of training needs in EmONC	**Crude OR**	**P-value**	**95% CI**	**Adjusted OR**	**P-Value**	**95% CI**
20 -30 years old	2.11	0.003*	1.298 – 3.430	1.5	0.275	0.724–3.112
31 – 40 years old	0.89	0.652	0.525 – 1.497	1.22	0.582	0.601– 2.475
Enrolled Midwife	2.52	0.001*	0.781-1.026	1.4	0.374	0.666 – 2.944
Registered Midwife	1.1	0.04*	0.975-3.422	4.9	<0.001*	1.443 - 5.563
Certificate	3.0	<0.001*	1.830-4.905	10.7	<0.001*	3.385- 33.811
Diploma	0.79	0.312	0.473-1.266	3.2	0.034*	1.096 – 9.570
General Hospital	0.9	0.673	0.520-1.525	1.06	0.961	0.540 – 1.910
Regional Referral Hospital	0.3	0.005*	0.166-0.732	1.1	0.865	0.416- 3.300
Received training last year	1.2	0.017*	1.033-1.390	1.2	0.719	0.416–3.560

*Source: Field data 2019**statistically significant factor. Comparison groups 41-50yrs, enrolled nurse, level III facilities, and did not receive training last year.

From table 4.5 above, participants aged between 20 and 30 years were 1.5 times more likely to have training needs in EmONC than those who were aged 41 – 50 years and > 50 years, however, this was not statistically significant as shown by the p-value (0.275) [OR=1.5: 95% CI 0.724 – 3.112: P=0.275].

The participants who were aged between 31 and 40 years were 1.2 times more likely to have training needs in EmONC than those who were aged 41 – 50 years and > 50 years, however, this was not statistically significant as shown by the p-value (0.582) [OR=1.22: 95% CI 0.601 – 2.475: P=0.582].

Registered Midwife were 4.9 times more likely to have training needs in EmONC [OR=4.9: 95% CI 1.443 – 5.563: P <0.001] than those other cadres, this is statistically significant since the p-value (<0.001) is less than 0.05. Enrolled Midwife were also 1.4 times more likely to have training needs in EmONC, however this was not statistically significant as shown by the p-value (0.374) [OR=1.4: 95% CI 0.666– 2.944: P = 0.374].

Participants with certificate level education were 10.7 times more likely to have training needs in EmONC than those with degree and Masters and this was strongly significant as shown by the p-value (<0.001) [OR=10.7: 95% CI 0.3.385 – 33.811: P <0.001]. Participants with diploma level education were 3.2 times more likely to have training needs in EmONC than those with degree and Masters and this was statistically significant as shown by the p-value (0.034) [OR=3.2: 95% CI 1.096– 9.570: P=0.034].

Participants from General hospital hospitals were 1.1 times more likely to have training needs in EmONC than those from other from Health Centre III and IV. However, this was not statistically significant with a p- value of 0.961. [OR=1.06: 95% CI 0.540 – 1.910: P=0.961].

It was also observed that participants from Regional Referral hospitals were 1.1 times more likely to have training needs in EmONC than those from other from Health Centre III and IV. However, this was not statistically significant with a p- value of 0.865. [OR=1.1: 95% CI 0.416 – 3.300: P=0.865].

Participants who had not received training last year were 1.2 times more likely to have training needs in EmONC [OR=1.2: 95% CI 1.417 – 3.560: P=0.719] than those who received training, this was not statistically significant since the p-value (0.719) is greater than 0.05

The factors that independently define the training needs after adjusting at multivariate level includes cadre of health workers with certificate and diploma holders.

CHAPTER FIVE

DISCUSSION OF RESULTS

5.1 THE TRAINING GAPS (NEEDS) OF HEALTH WORKERS IN EMONC

It was observed that the health workers mainly had training needs (gaps) in administration of anticonvulsant (Magnesium Sulphate), manual removal of placenta, Assisted Vaginal Delivery (vacuum extraction or forceps method) and Manual Vacuum Aspiration. These findings are similar to a study conducted in Burundi and Uganda by Che Chi et al., (2015) which reported that skilled birth attendants had the training gaps/need reported in this study.

The possible reasons for the skilled birth attendants having these training needs in emergency obstetric and neonatal cares could be due to lack of routine mentorship through refresher trainings and technical support supervision.

Another possible reason could be due to limited continuous professional development programs which could enable the health workers to improve their competency levels and this could also help them to bridge the training need (gaps) in performing EmONC services signal functions.

The other reasons for some health workers having training needs could be due to the fact that some do not perform EmONC signal functions regularly as some facilities lack equipment and drugs such as Oxytocin and anticonvulsants. Similar reason was given in a study by Che Chi et al (2013) in which one of the key informants reported that lack of equipment in some facilities affected the performance of EmONC services.

5.2 THE LEVEL OF KNOWLEDGE AND TRAINING NEEDS IN EMONC

It was observed that some EmONC services were performed at a fair level which compromises the quality of services being offered to the mothers and these has serious consequences on the health outcome of the women and new born babies.

It was indicated that EmONC services signal functions such as administering anticonvulsant (Magnesium Sulphate), manual removal of the placenta, assisted Vaginal delivery (Vacuum extraction or forceps method), Dilatation and Curettage, Manual Vacuum Aspiration (MVA), resuscitation of newborn using mask and Ambu bag and administering Oxytocin were performed fairly by some skilled birth attendants. This agrees with earlier study by Echoka et al (2013) which indicated that some health workers were not performing the EmONC services to the recommended standard and suggested that skilled birth attendants need to have continuous mentorship through trainings and coaching.

Given the fact that some signal functions are not being performed to the satisfactory level by some skilled birth attendants, this indicates that there is training needs in the EmONC services that are being offered. Therefore, skilled birth attendants' training needs (gaps) need to be addressed through routine trainings and technical support supervision in order to improve the quality of services being offered to the mothers. Improved quality of services will increase the utilization of the EmONC services by women since they will be satisfied of the services being offered to them and this will directly contribute to the reduction of maternal morbidity and mortality as well as neonatal mortality.

5.3 INDIVIDUAL FACTORS ASSOCIATED WITH TRAINING NEEDS

5.3.1 Age of health worker

The relationship between the age of the health worker and training needs in EmONC was not statistically significant. However according to the study findings, health worker aged between 20 and 30 years were 1.5 times more likely to have training needs in EmONC than those who were aged 41 – 50 years and > 50 years [OR=1.5: 95% CI 0.724 – 3.112: P=0.275].

The health workers who were aged between 31 and 40 years were 1.2 times more likely to have training needs in EmONC than those who were aged 41 – 50 years and > 50 years [OR=1.22: 95% CI 0.601 – 2.475: P=0.582].

This is in line with previous findings as indicated by Ajeani et al (2017) who showed that all skilled birth attendants required mentorship irrespective of their age. The possible reason for this is due to the fact that all skilled birth attendants need continuous mentorship to improve their level of competence so that the beneficiaries get quality services which are responsive to their needs.

5.3.2 Cadre of the health worker

There was a significant relationship between the cadre of the health worker and training needs in EmONC. These findings are similar to a study by Echoka et al (2013). Registered Midwife were 4.9 times more likely to have training needs in EmONC than other cadres [OR=4.9: 95% CI 1.443 – 5.563: P <0.001].

Enrolled Midwife were also 1.4 times more likely to have training needs in EmONC, however this was not statistically significant as shown by the p-value (0.374) [OR=1.4: 95% CI 0.666–

2.944: P = 0.374]. These findings are similar to a study by Harvey et al., 2004 which assessed the competency of skilled birth attendants. The possible reason for the registered midwife having training needs in EmONC could be due to the fact that they perform procedures more frequently than other cadres and they need to be fully equipped with skills so that the quality of the signal functions of EmONC services meets the expectations of mothers.

5.3.3 Educational level

The relationship between educational level of the health workers and training needs in EmONC was statistically significant. Participants with certificate level education were 10.7 times more likely to have training needs in EmONC than those with degree and Masters and this was strongly significant as shown by the p-value (<0.001) [OR=10.7: 95% CI 0.3.385 – 33.811: P <0.001]. Participants with diploma level education were 3.2 times more likely to have training needs in EmONC than those with degree and Masters and this was statistically significant as shown by the p-value (0.034) [OR=3.2: 95% CI 1.096– 9.570: P=0.034].

These findings are similar to previous studies which indicated that health professionals with certificate and diploma were more likely to have training needs than those with degree and master level education (Steven et al., 2007). The possible reasons for health workers with certificate and diploma mostly having training needs in EmONC is because most complex tasks are performed by degree or master level and additional during their training they perform simple tasks.

5.4 INSTITUTIONAL FACTORS AND TRAINING NEEDS IN EMONC

5.4.2 Type of health facilities

There was no significant relationship between the type of health facility and training needs in EmONC. However, health workers from General hospital hospitals were 1.1 times more likely to have training needs in EmONC than those from other from Health Centre III and IV [OR=1.06: 95% CI 0.540 – 1.910: P=0.961].

It was also observed that health workers from Regional Referral hospitals were 1.1 times more likely to have training needs in EmONC than those from other from Health Centre III and IV [OR=1.1: 95% CI 0.416 – 3.300: P=0.865]. This agrees with a study by Adegoke et al (2011) which indicated that skilled birth attendants at any level of health facility had training needs in provision of EmONC services.

The possible reason for this is due to the fact that all skilled birth attendants will always need to improve their competency level in order to provide quality services which are responsive to the needs of the beneficiaries.

5.4.3 Having trained last year and training needs in EmONC

Having trained last year was not statistically associated with training needs in EmONC. However, Participant who had not received training last year were 1.2 times more likely to have training needs in EmONC than those who received training [OR=1.2: 95% CI 1.417 – 3.560: P=0.719]. Similar findings were reported by earlier studies (Paxton et al., 2006; Kongnyuy et al., 2009) which reported that health workers who usually do not have routine trainings are likely to have training gaps (needs).

The reason for this is because routine trainings improve the competency level of skilled birth attendants and this enables them to perform the tasks satisfactory. Satisfactory performance of EmONC signal functions ensures the mothers get quality services hence reducing the risks of maternal complications and death as well.

5.5 CONCLUSION

The level of knowledge of EmONC among SBA's, some skilled birth attendants were performing the above EmONC signal functions fairly which is below the required standard of performing these tasks and in turn compromises the quality of service offered to the mothers and community.

The skilled birth attendants had training needs (gaps) mainly in in administration of anticonvulsant (Magnesium Sulphate), manual removal of placenta, Assisted Vaginal Delivery (vacuum extraction or forceps method) and Manual Vacuum Aspiration.

The individual and institutional factors related to EmONC training needs were further analysed using multivariate analysis indicated the predictors of training needs being cadre and level of education of the skilled birth attendant. It was also observed that the type of facility and having not received training last years increased the chances of having training needs.

5.6 RECOMMENDATIONS

Basing on the findings of the study, skilled birth attendants need to be trained in EmONC services in order to improve their knowledge and skills so that the mothers get quality services in order to prevent maternal and neonatal complications as well as death.

It was also observed that even the skilled birth attendants who reported being able to perform EmONC signal functions still were not performing to required standard, therefore there is need for continuous mentorship through coaching and refresher trainings.

The findings also indicated that lower cadres with low education had training needs compared to their counterparts with higher education, I recommend these cadres to be given an opportunity of continuous professional development so that they can improve their level of competency and career growth. This in turn will also benefit the mothers so that they get quality services hence preventing health complications and death.

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APPENDICES

APPENDIX I

Budget

ITEM	UNIT	UNIT COST	TOTAL COST(UGX)
PRINTING	1200 pages	100	120,000
TRANSPORT	10 days	30,000	300,000
INTERNET	5gb/ month for 10 months	30,000	300,000
ALLOWANCES	2 Data collectors/10 days	50,000	1,000,000
			1,720,000

APPENDIX II

SKILLED BIRTH ATTENDANTS QUESTIONAIRE

NAME OF RESEARCHER: PEACE AHUMUZA

INSTITUTION: UGANDA MARTYS UNIVERSITY NKOZI

PROGRAM: MASTERS OF PUBLIC HEALTH

RESEARCH TOPIC: Assessing the training needs of skilled birth attendants in emergency maternal and neonatal obstetric care: a case study of Kabarole district

PURPOSE: To assess the training needs of skilled birth attendants in emergency maternal and neonatal care.

Instructions; Please answer all questions carefully, all questions are relevant to you and this study and will be helpful in data analysis. The questionnaire will take only 20 minutes to complete.

1. Sex Male ☐ Female ☐

***2. Age*……**

3.Religion; Anglican------- Catholic ----------Muslim------- Other (Specify) ……

4. Marital Status ☐ Single ☐ Married ☐ Divorced.

5. Cadre (Tick)

Enrolled nurse ------ Enrolled Comprehensive-------Enrolled Midwife---------- Registered nurse-------Registered nurse-midwife Other (specify) ……

6.Health Facility (tick) Government ------ PNFP/NGO -------Private -----

7.level of health facility (tick). level III ----------level IV------ General Hospital---------- Regional referral----------

8. What is your highest level of education?
Certificate------- Diploma------ Degree--------- PGD/Masters---------

9. Average number of deliveries per month……..

Number of years in service……..
Department
ANC----------Immunization-------- maternity-------- other (specify)-----
Position held ……

14.Number of hours per shift……

15. Do you think you need training in eMONC services to improve your knowledge and skills? 1 yes 2 No

16. In order to perform your job effectively you need these signal basic Emergency Maternal Obstetric and Neonatal Care functions (EmONC). These are a range of skilled activities many of which you regularly implement. Look at each of these activities and then rate each one by writing the appropriate number in the box. (A) can you perform task Yes use 1/ No use 2 .(B) Level of performance 1-Fair 2-Good 3-Very good

Signal function	Tasks/ Activities	A	B
1	Administering IV antibiotics		
2	Administer oxytocic		
3	Administer IV/IM magnesium sulphate and anticonvulsants		
4	Manually remove placenta		
5	Perform removal of retained products		
6	Suture an episiotomy		
7	suture vaginal and cervical lacerations		
8	Apply vacuum extractor and forceps		
9	Resuscitate an adult		
10	Resuscitate a new-born with ambu bag and mask		
11	Carry out caesarean section		
12	Administer blood transfusions		

13	Administer anti-retroviral for EMTCT		
14	Use of Patograph to monitor labour		
15	Bimanual compression of uterus (external and internal)		
16	Do AMTSL(Active Management of third stage of labour)		
17	Manages new-born infection (sepsis)		
18	Sterile cord cutting and appropriate cord care.		
19	Performing Dilatation and Curettage		
20	Perform Manual Vacuum Aspiration (MVA)		

15. a, have you received any EmNOC trainings in the last year? (tick) Yes No

16. *What* was the Mode and duration of training?
17.Have you received support supervision in EmONC the last year? Yes No

b, if yes by who……..

THANK YOU VERY MUCH FOR YOUR PARTICIPATION

APPENDIX III

Consent Form

RESEARCH TOPIC: ASSESSING THE TRAINIG NEEDS OF SKILLED BIRTH ATTENDANTS IN EMERGENCY MATERNAL AND NEONATAL OBSTETRIC CARE: A CASE STUDY OF KABAROLE DISTRICT

Consent to take part in research

I---------- voluntarily agree to participate in this research study.

I understand that even if I agree to participate now, I can withdraw at any time or refuse to answer any question without any consequences of any kind. I understand that I can withdraw permission to use data from my interview within two weeks after the interview, in which case the material will be deleted. I have had the purpose and nature of the study explained to me in writing and I have had the opportunity to ask questions about the study. I understand that I will not benefit directly from participating in this research.

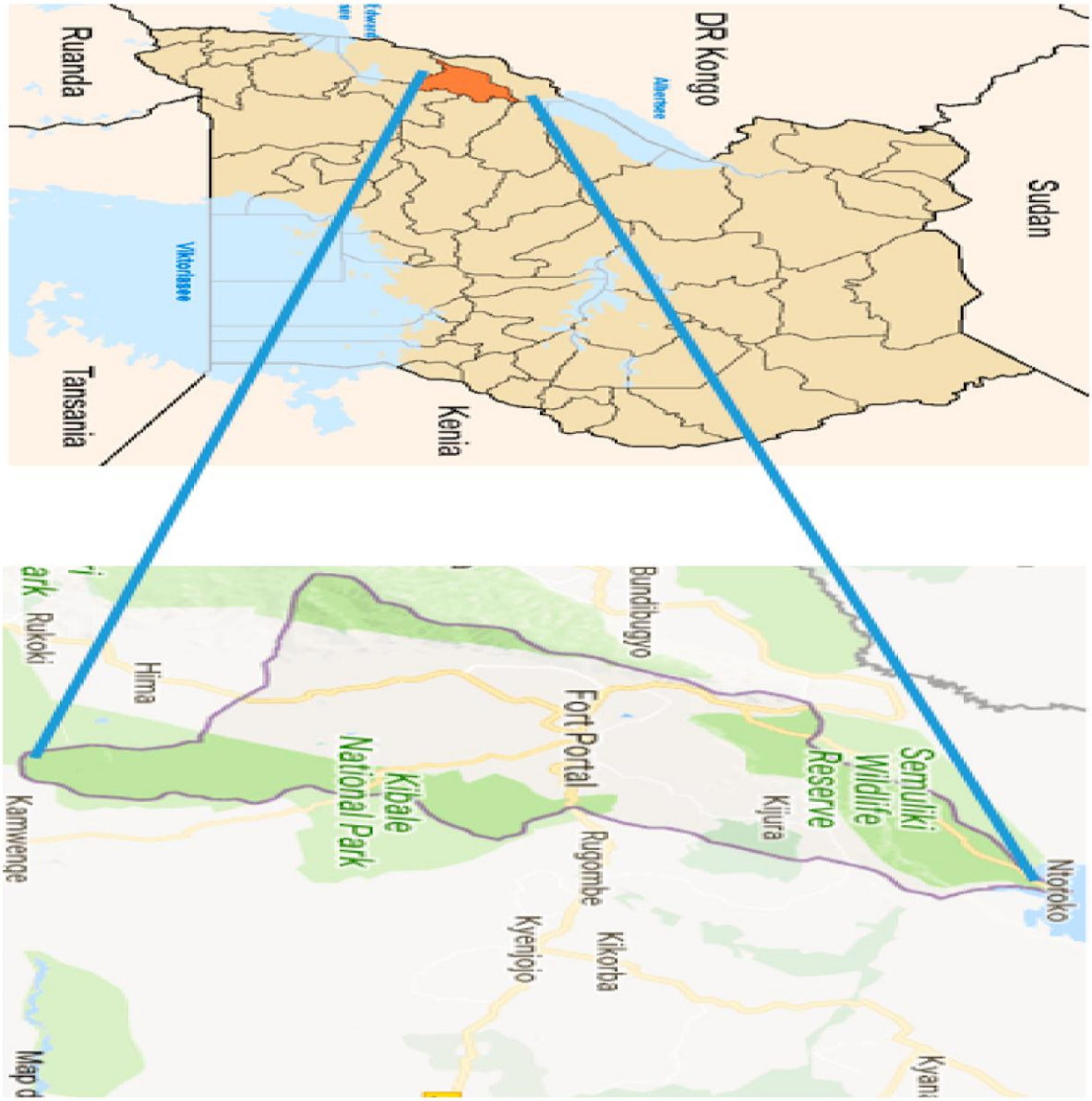
I understand that all information I provide for this study will be treated confidentially and my identity will remain anonymous. I understand that I am free to contact any of the people involved in the research to seek further clarification and information.

Signature of participant ---------- Date ----------

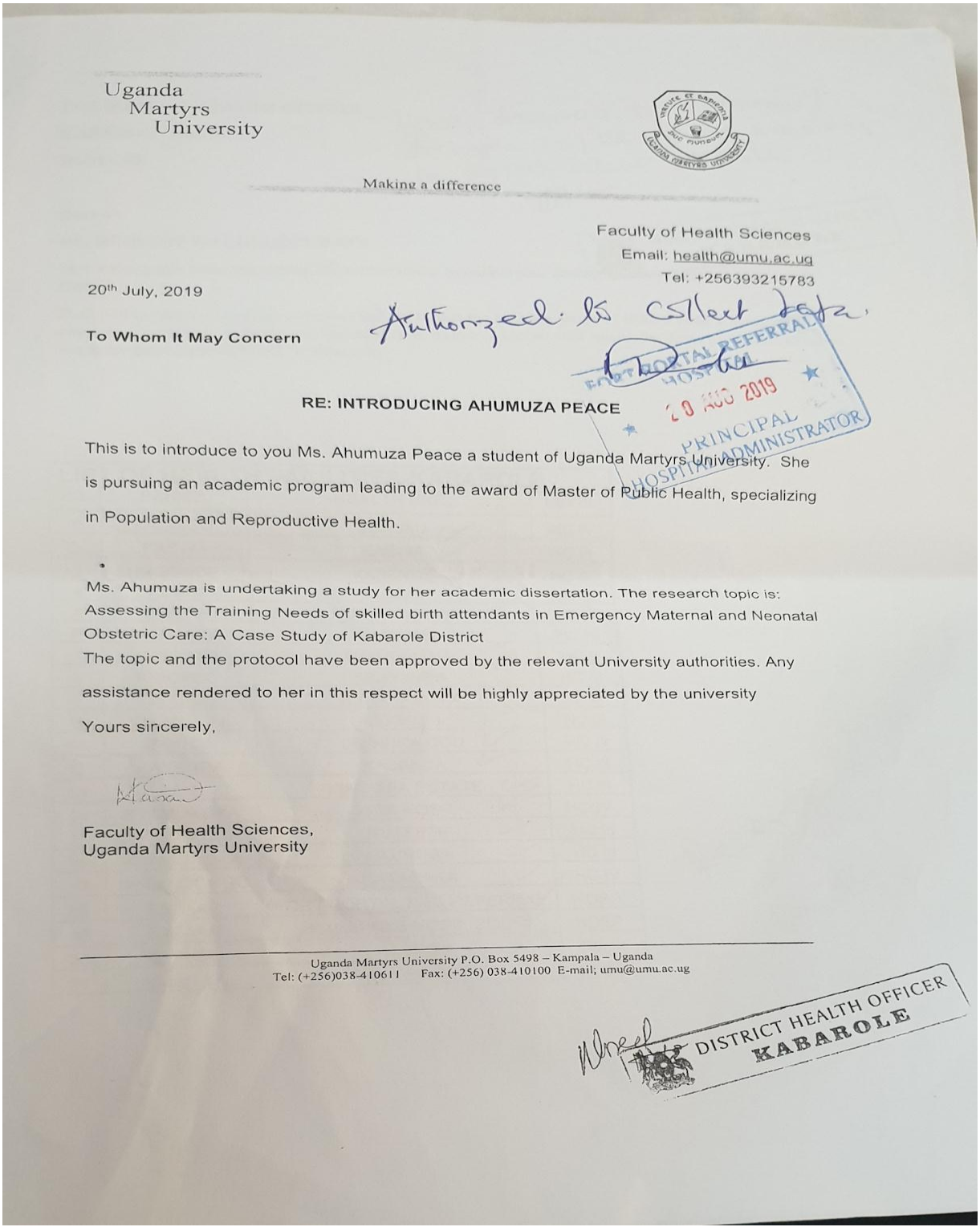
Signature of researcher ----------Date----------

APPENDIX IV

LOCATION OF KABAROLE DISTRICT ON THE UGANDAN MAP (SOURCE: GOOGLE MAPS)



APPENDIX V. LETTERS OF INTRODUCTION FOR DATA COLLECTION



Uganda
Martyrs
University

Making a difference

Faculty of Health Sciences
Email: health@umu.ac.ug
Tel: +256393215783

20th July, 2019

Authorized by College Dean.

To Whom It May Concern

RE: INTRODUCING AHUMUZA PEACE

This is to introduce to you Ms. Ahumuza Peace a student of Uganda Martyrs University. She is pursuing an academic program leading to the award of Master of Public Health, specializing in Population and Reproductive Health.

Ms. Ahumuza is undertaking a study for her academic dissertation. The research topic is:
Assessing the Training Needs of skilled birth attendants in Emergency Maternal and Neonatal Obstetric Care: A Case Study of Kabarole District
The topic and the protocol have been approved by the relevant University authorities. Any assistance rendered to her in this respect will be highly appreciated by the university

Yours sincerely,

Faculty of Health Sciences,
Uganda Martyrs University

REFERRAL HOSPITAL
20 AUG 2019
PRINCIPAL HOSPITAL ADMINISTRATOR

Uganda Martyrs University P.O. Box 5498 – Kampala – Uganda
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DISTRICT HEALTH OFFICER
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Yours sincerely,

Faculty of Health Sciences,
Uganda Martyrs University

DISTRICT HEALTH OFFICE
KABAROLE