

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY,
KUMASI, GHANA
COLLEGE OF HEALTH SCIENCES
SCHOOL OF PUBLIC HEALTH
DEPARTMENT OF HEALTH POLICY, MANAGEMENT AND ECONOMICS**

**AVAILABILITY AND USE OF ESSENTIAL EMERGENCY OBSTETRIC CARE
SERVICES IN THE BOSOMTWE DISTRICT IN ASHANTI REGION**

**BY
CHRISTIANA KONTOH**

**A THESIS SUBMITTED TO THE DEPARTMENT OF HEALTH POLICY,
MANAGEMENT AND ECONOMICS
COLLEGE OF HEALTH SCIENCES, SCHOOL OF PUBLIC HEALTH, IN
PARTIAL
FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER
OF PUBLIC HEALTH IN HEALTH SERVICES PLANNING AND
MANAGEMENT**

NOVEMBER, 2015

DECLARATION

I, Kontoh Christiana, the author of this dissertation, do hereby declare that with the exception of references made to the literature and works of other researchers which have been duly acknowledged, the content of this dissertation is the result of my original work.

SIGNATURE..... **DATE**.....

KONTOH CHRISTIANA

KNUST

SIGNATURE..... **DATE**.....

MR. PAUL OKYERE

ACADEMIC SUPERVISOR

SIGNATURE..... **DATE**.....

DR KOFI AKOHENE MENSAH

HEAD OF DEPARTMENT

DEDICATION

I wish to dedicate this work to my husband Johnny and my children Elijah, Esther and Priscilla for their deep support during my study. There is no doubt in my mind that without their continued support and counsel I could not have completed this project.

KNUST



ACKNOWLEDGEMENT

First of all I give sincere thanks to the Almighty God for Divine protection, guidance and help which enabled me achieve this feat. My appreciation also goes to my Academic Supervisor Mr. Paul Okyere for the great support and encouragement he gave me throughout the project work period. Again my sincere thanks go to the Head of department Dr. Kofi Akohene Mensah for his patience at lecturing, and to Mr. Emmanuel Nakua, Dr. Peter Agyei-Baffour and all my lecturers I bow in your honor for the time, and energy expended during training. I am indeed grateful to the staff of Bosomtwe district for all the help, guidance and encouragement given me during my research work. My special thanks go to Mr. Joseph Adomako (District Director), Mr. Benard Badu-Bediako (DP), Dr. Joseph Bonney (Divine Mercy Hospital) for their kind support given me. And then to my parents, I say God bless you to enjoy the first fruit of your labour.



LIST OF ABBREVIATIONS / ACRONYMS

ANC	Antenatal Clinic
C/S	Cesarean Section
CBSV	Community Base Volunteer
CHAG	Christian Health Association of Ghana
CHPS	Community Based Health Planning and Services
DHMT	District Health Management Team
EOC	Emergency Obstetric Care
EmOC	Emergency Obstetric Care
GHS	Ghana Health Services
LSS	Life Saving Skills
UN	United Nation
UNICEF	United Nations International Children's Emergency Fund
UNFPA	United Nation Fund for Population Activities
WHO	World Health Organization

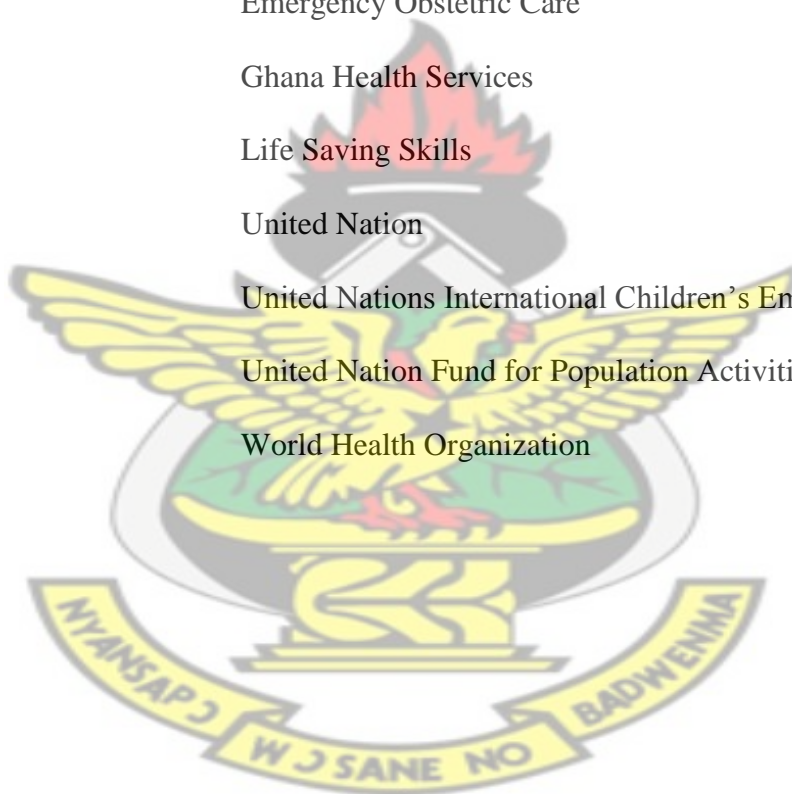


TABLE OF CONTENTS

DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
LIST OF ABBREVIATIONS / ACRONYMS	v
TABLE OF CONTENTS	vi
LIST OF TABLES	x
LIST OF FIGURES	xi
ABSTRACT.....	xii
CHAPTER ONE	1
1.0 INTRODUCTION	1
1.1 Background Information.....	1
1.2 Problem Statement.....	3
1.3 Rationale for the Study	5
1.4 Conceptual framework.....	6
1.4.1 Explanation of Conceptual Framework	6
1.4.2 Policy makers.....	7
1.4.3 The Facility Midwives' in-charges	7
1.4.4 The Clients.....	8
1.5 Research Questions.....	8
1.6 General Objective	8
1.7 Specific Objectives	9

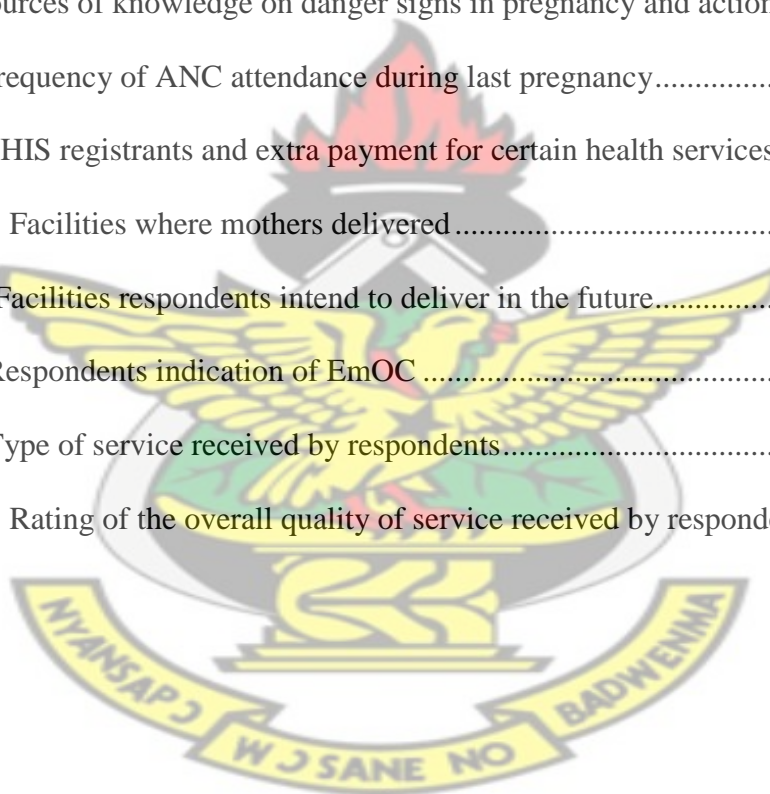
CHAPTER TWO	10
2.0 LITERATURE REVIEW	10
2.1 Introduction.....	10
2.2 Availability of EmOC services	12
2.3 Access of EmOC service	16
2.4 Knowledge of Mothers on EMOC Service.....	20
2.5 Determinants of and Utilization of EmOC services	23
2.6 Determining the Quality of EmOC Services	26
2.7 Conclusion	28
CHAPTER THREE.....	29
3.0 METHODOLOGY	29
3.1 Introduction.....	29
3.2 Study Design.....	29
3.3 Profile of the Study Area	29
3.4 Study population.....	33
3.5 Exclusion criteria.....	34
3.6 Sample Size Determination	34
3.7 Sampling Procedure.....	35
3.8 Data gathering tool	35
3.9 Pre-testing	36
3.10 Data analysis	36
3.11 Ethical consideration	36
3.12 Limitation	37
3.13 Assumptions	37

CHAPTER FOUR	38
4.0 RESULTS	38
4.1 Introduction.....	38
4.2 Socio-demographic characteristics of respondents.....	38
4.3 Availability of EmOC services	40
4.4 Accessibility of EmOC services	43
4.4.1 Time spent by mothers on the way and means of transport	43
4.5 The level of knowledge of mothers on EmOC services	43
4.5.1 Mothers' knowledge on danger signs in pregnancy	43
4.5.2 Sources of Knowledge on Danger Signs in Pregnancy and Action taken	44
4.6 Utilization of EmOC services in the Bosomtwe district.....	45
4.6.1 Antenatal clinic attendance.....	45
4.6.2 Frequency of ANC attendance during the last pregnancy	45
4.6.3 NHIS assessment	46
4.6.4 Respondents' choice of delivery site	46
4.6.5 Indications of EmOC and whether respondents were operated upon.....	47
4.7 Perception about quality of care	48
4.8 Attitude of health care providers	48
4.8.1 Description of the overall quality of care and services received	49
CHAPTER FIVE	50
5.0 DISCUSSION.....	50
5.1 Introduction.....	50
5.2 Availability of EmOC services in the Bosomtwe district.....	50
5.3 Accessibility of EmOC service provided	51

5.4 The level of knowledge of mothers on EmOC services	52
5.5 Utilization of EmOC services in the Bosomtwe district.....	53
5.6 Perception about quality of care	53
CHAPTER SIX	55
6.0 CONCLUSIONS AND RECOMMENDATIONS	55
6.1 Conclusion	55
6.1.1 Availability of EmOC services in the Bosomtwe district.....	55
6.1.2 Accessibility	55
6.1.3 The level of knowledge of mothers on EmOC services	55
6.1.4 Utilization of EmOC services in the Bosomtwe district.....	55
6.1.5 Quality of EmOC services	56
6.2 Recommendation	56
6.2.1 Ghana Health Service	56
6.2.2 Bosomtwe District Health Directorate.....	56
6.2.3 Bosomtwe district assembly	57
REFERENCES	58
APPENDICES.....	65
APPENDIX – I	65
APPENDIX – II.....	68
APPENDIX – III	70

LIST OF TABLES

Table 3.1 Representing delivery statistics in Bosomtwe district in 2013.....	32
Table 4.2 Providers / mothers ratio.....	40
Table 4.3: Frequency of training for midwives in life saving skills.....	41
Table 4.4. Treatment used for Pre-Eclampsia	42
Table 4.5 Distribution of Respondents by Time spent at home during the emergency and by means of Transport.	43
Table 4.6: Mothers knowledge on danger signs in pregnancy	44
Table 4.7 Sources of knowledge on danger signs in pregnancy and action taken.....	44
Table 4.8: Frequency of ANC attendance during last pregnancy.....	45
Table 4.9: NHIS registrants and extra payment for certain health services	46
Table 4.10: Facilities where mothers delivered.....	46
Table 4.11: Facilities respondents intend to deliver in the future.....	47
Table 4.12 Respondents indication of EmOC	47
Table 4.13 Type of service received by respondents.....	47
Table 4.14: Rating of the overall quality of service received by respondents.....	49



LIST OF FIGURES

Figure 1: Conceptual Framework Showing The Factors Influencing Availability And Utilization Of EmOC Services.	6
Figure 2: Map of Bosomtwe District	31
Figure 4.1 Type of EmOC services available	42
Figure 4.2: Whether mothers attended Antenatal clinic	45
Figure 4.3 Length of Time Spent before Respondents were attended to at facility	48
Figure 4.4 Attitude of health care provider	49



ABSTRACT

Improving maternal health by reducing maternal mortality constitutes the fifth Millennium Development Goal that represents a key challenge in Ghana. All pregnant women are at risk of obstetric complications. In roughly 15 percent of deliveries, an unpredictable complication occurs, such as severe bleeding, hypertension, infection, and obstructed labour. Emergency obstetric care interventions carried out in the Bosomtwe district over the years remain fairly similar.

The objective was to investigate the utilization of essential emergency obstetric care services in the Bosomtwe district of the Ashanti Region. The survey was carried out in the months of August and September, 2014. The interviewer administered questionnaires and information was elicited from 398 selected respondents. These were nursing mothers in households who had their deliveries through cesarean section, vacuum and forceps and manual removal of placenta within the year 2013. The maternal and child health facility, delivery, antenatal and postnatal registers were used to select the women using simple random sampling. In addition, facility heads (policy makers) and one midwife each from all the fourteen facilities was included in the study.

This study has shown that percentage of expected deliveries in EmOC facilities gave 79% compared with the UN Guidelines minimum accepted threshold of 15%. There was high availability of Comprehensive EmOC (20%) and relatively high basic EmOC units (80%) in the district. However there is only one Gynaecologist in the district who super sees all referral cases of mothers in the district. The pregnant women (84%) in the district were highly knowledgeable on when to seek for EmOC services

The respondents who patronized private clinics reported that the quality of services rendered was very good and expressed the desire to use the same facility when the need

arises. On the perspective of those who used the government hospitals, they were of the opinion that the services rendered to them were poor and some also indicated that the quality of service was close to average.

The study indicated that there were availability of EmOC services. There were 3 and 11 comprehensive and basic EmOC facilities respectively per 101724 populations indicating a higher coverage of EmOC services in the district compared with the UN standard of 500,000 population and these were made accessible to pregnant women in the district. In addition, women's knowledge on EmOC services was found to be high and therefore utilized the services. Mothers rated attitude of midwives in the public facilities to be poor. It is recommended that the DHMT take steps to maintain the EmOC and keep it functioning. Also the DHMT should collaborate with RHD for additional Gynaecologist to support work done at the district.



CHAPTER ONE

1.0 INTRODUCTION

1.1 Background Information

Emergency Obstetric Care refers to the care of women and newborns during pregnancy, delivery and post-natal period (Rais, 2007). All pregnant women are at risk of obstetric complications. In roughly 15 percent of deliveries, an unpredictable complication occurs, such as severe bleeding, hypertension, infection, and obstructed labour. When this happens, it is essential that women have access to life-saving emergency obstetric care, including cesarean delivery. The leading causes of maternal death can be treated at a well-staffed, well-equipped health facility that is able to provide emergency obstetric care services. Many newborns who would otherwise die can also be saved at such a facility (Andrew Schroeder *et al.*, 2015). This means that acquiring the aid and skills in the management of these complications is both an effective means to reduce maternal mortality and key to improving maternal health (Esen and Sappor, 2013).

Furthermore, maternal mortality and morbidity can be reduced by ensuring that women with obstetric complications receive good quality medical care without delay (Meyers *et al.*, 2004). It is therefore important to improve the quality of care by ensuring receipt of adequate and appropriate care. These interventions when carried out will help achieve the Millennium Development Goals 4 and 5, thus reducing under-five mortalities by two thirds and maternal mortality by three quarters by 2015. It is generally accepted that, these goals are achievable, if, and when women have access to essential obstetric care services.

Access to appropriate maternity care includes skilled birth attendance that could significantly reduce both prenatal and maternal mortality and morbidity (Meyers *et al.*, 2004). In addition, Maine *et al.*, (2009) talks about how reducing maternal mortality has arrived at the top of health and development agendas, that to achieve the Millennium Development Goal of a 75% reduction in the maternal mortality ratio between 1990 and 2015 countries throughout the world are investing more energy and resources into providing equitable, adequate maternal health services. Therefore another way of reducing the maternal mortality is by improving the availability, accessibility, quality and use of services for the treatment of complications that arise during pregnancy and childbirth. These services are collectively known as Emergency Obstetric Care (EmOC).

Guidelines jointly issued in 1997 by WHO, UNICEF, UNFPA recommended that for every 500,000 people there should be four facilities offering basic and one facility offering comprehensive essential obstetric care. These guidelines were revised in 2009. The handbook details the newly revised indicators for assessing the availability, use and quality of obstetric services. When 5%-15% of births are achieved by caesarean section, it is an indicator of good access to, and utilization of care during child birth (WHO and UNICEF, 2009). In addition, UN Process Indicators for the Availability and Use of Emergency Obstetric Care also states that, for every 500,000 population, there should be at least four basic EmOC facilities and one comprehensive EmOC facility, (Unfpa/Nicaragua and Immpact, 2008).

Furthermore, Essendi *et al.*, (2010) indicates that access to appropriate health care including skilled birth attendance at delivery and timely referrals to emergency obstetric care services can greatly reduce maternal deaths and disabilities. To manage obstetric

complications, the life-saving component of maternity care, a facility must have at least two skilled attendants covering 24 hours a day and seven days a week, assisted by trained support staff. To manage complications requiring surgery, the facility must have a functional operating theatre; more support staff must be able to administer blood transfusion and anaesthesia (Paxton *et al.*, 2006). In addition, Ten Hoope-Bender *et al.*, (2005) reported that majority of maternal deaths take place during childbirth and the immediate postpartum period. The major causes of maternal deaths due to direct obstetric complications are hemorrhage, sepsis, prolonged and obstructed labor, hypertensive disorders and abortion complications. At least 15 percent of all pregnancies are expected to require an emergency medical intervention; therefore, access to EmOC is crucial to saving women's lives and preventing disabilities. Furthermore, minimum level for amount of EmOC services is also met in sub-national areas and at least 15% of all births in the population take place in EmOC facilities. As a proportion of all births in the population, cesarean sections account for not less than 5% or more than 15%. A basic EmOC facility should be able to perform the following signal functions: administer parenteral antibiotics, oxytocic drugs and anticonvulsants; manual removal of placenta; removal of retained products; and assisted vaginal delivery. A comprehensive EmOC facility should be able to offer all the functions above, plus Cesarean section and blood transfusion (Ten Hoope-Bender *et al.*, 2005)..

1.2 Problem Statement

Most maternal deaths are avoidable yet more than 350, 000 women die every year because of complications during pregnancy and childbirth (Gabrysch *et al.*, 2012). The risk of a mother dying from these causes is 1 in 30 in sub-Saharan Africa, and the global target to reduce the maternal mortality ratio by 75% by 2015 – part of Millennium

Development Goal 5 is still far off' according to the United Nation (UN). Reducing maternal deaths requires better emergency obstetric care (EmOC), which in turn, depends upon better monitoring, of services (Gabrysch *et al.*, 2012).

Again, according to Fournier and Dogba, (2009) maternal mortality is a major public health problem, especially in West Africa where maternal mortality ratios are still very high. Most maternal deaths occur during or few hours after delivery. Haemorrhage, hypertension, obstructed labour and sepsis are the major direct obstetric causes. The treatments for those obstetrical complications are well known and appropriate emergency obstetric care should prevent most of these deaths. Situation analyses in various health facilities in West Africa underlined problems related to health services management and to staffs attitudes (Fournier and Dogba, 2009). A baseline study on Emergency Obstetric Care conducted by the Ministry Of Health, (2008) in the three northern regions of Ghana in 2005 revealed that, the majority of the health centers did not provide basic EMOC/ENC services, a scattered settlement pattern affected geographical access to maternal health services, referral services were poor, there was a lack of facility-based accommodation for essential staff, there were no 24 hour services.

The Ghana Health Service 2010 annual report indicated that institutional maternal mortality ratio decreased from 169.9 / 100,000LB in 2009 to 163.2/100,000 (GHS, 2010). However, Bosomtwe district in Ashanti region recorded 5 (149/100,000LB) maternal mortality in 2011, 6 (109/100,000LB) in 2012 and 7 (126/100,000LB) in 2013. Many health problems in pregnant women can be prevented, detected and treated during antenatal care visits with trained health workers.

At ANC centers, pregnant mothers are usually examined to identify any threat to their lives and that of their babies. This is done through routine laboratory and physical examinations. Emergency obstetric care interventions carried out in the Bosomtwe district over the years remain fairly similar. There were 435 women who accessed EmOC in 2011 out of 3530 deliveries. In 2012, a total number of 561 out of 3768 accessed EmOC services. In addition a total of 628 in 2013 out of 3862 accessed EmOC services. Mothers are also given medications to prevent major causes of deaths including eclampsia, irreversible hemorrhagic shock due to ruptured uterus, hypovolaemic shock, post- partum septicemia, respiratory failure due to right lobar pneumonia, and Post-Partum Haemorrhage that occurred. It is in the light of these that improving maternal health and reducing infant mortality were of major concern in outlining the Millennium Development Goals (MDGs). It is therefore essential to assess the availability of EmOC and to determine the factors that influence women to utilize EmOC in the Bosomtwe district.

1.3 Rationale for the Study

Provision of EmOC services during pregnancy and during labour is one of the interventions in helping to reduce maternal and infant morbidity and mortality with the aim of saving their lives. This study of the availability and use of essential emergency obstetric care services was therefore conducted to understand the preparedness of the Bosomtwe district in addressing the challenges related to the provision of comprehensive EmOC services. After completion of the study, the data will be made available to both the district and regional health directorate for the necessary action to be taken. The data can also be used by other districts which may be found in a similar position to help improve upon Emergency obstetric care programme.

1.4 Conceptual framework

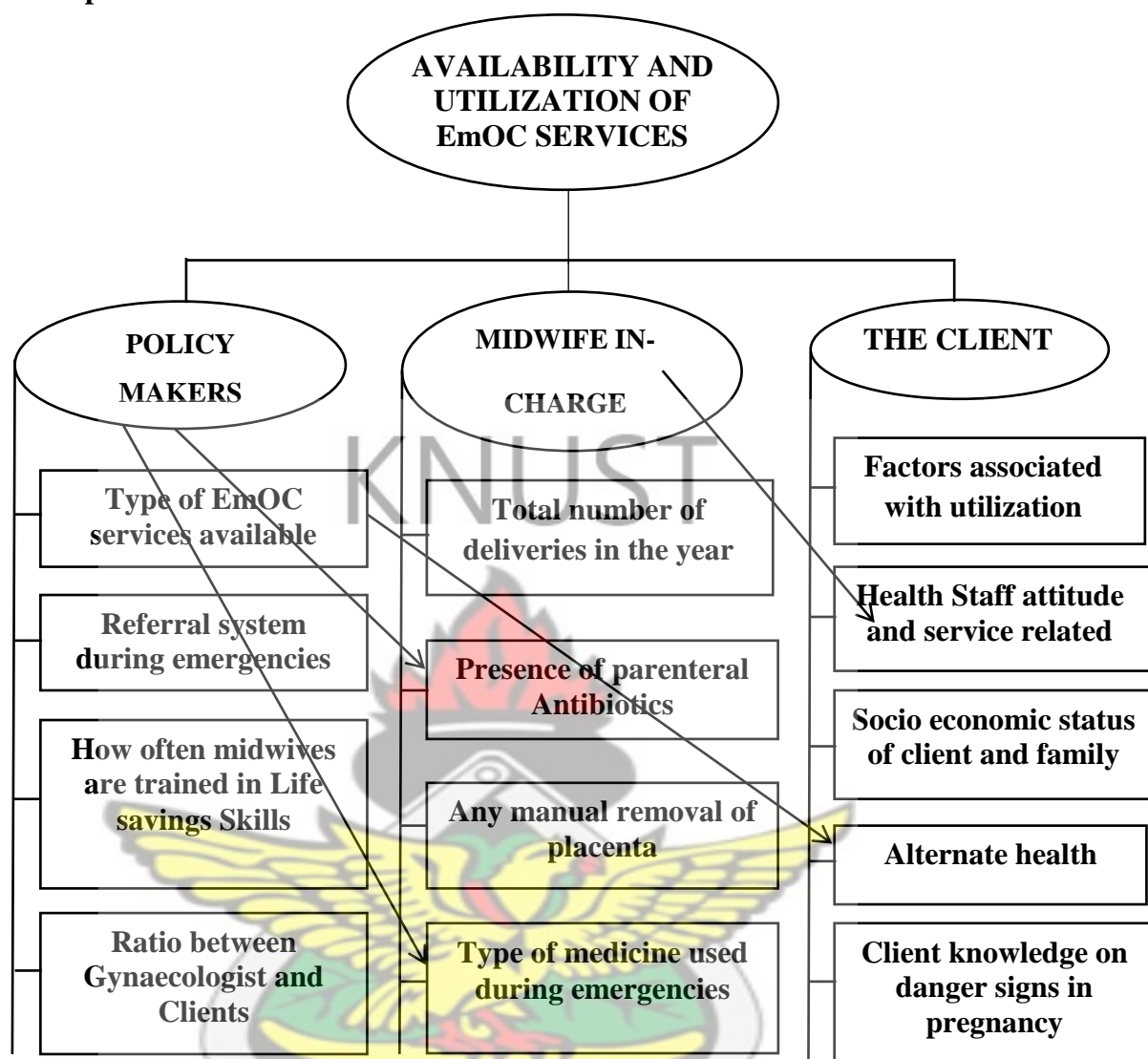


Figure 1: Conceptual Framework Showing the Factors Influencing Availability and Utilization of EmOC Services.

Source: Authors Construct, 2015

1.4.1 Explanation of Conceptual Framework

Availability and utilization of EmOC services is determined by three main factors: actions/inactions of policy makers, and factors that relate to the Midwives and the Clients. All these could influence the decision of healthcare users to utilize health services.

1.4.2 Policy makers

The first factor that can affect utilization of EmOC services are those that relate to policy makers who are responsible for the facilities. The policy makers can influence the health system because they influence the quality of the facility that determines whether or not people will access the services. Lack of infrastructure can affect service delivery and poor referral system. For example, the number of health providers needed by the facility, attitude of staff towards work, time spent by clients whether there should be an Ambulance, laboratory and blood bank services and whether equipment to work with should be purchased for the facility as well as how often midwives and doctors must have training in certain skillful areas. In short they are the overall overseers who determine whether the facility should provide basic emergency obstetric services or comprehensive obstetric services. These factors in a way determine whether clients would access the facility or not.

1.4.3 The Facility Midwives' in-charges

These are the factors that emanate from the service delivery point and that can affect the use of the services. Midwives in facilities can influence EmOC services because, the competency, skills and knowledge of a midwife can determine how many women are provided with emergency obstetric services. For example, a midwife trained in all Lifesaving skills is capable of providing EmOC such as, management of Eclampsia, as well as giving parenteral Antibiotics. That is, she can provide parenteral oxytocin, management of PIH and also perform manual removal of placenta. Again attitude of midwives can influence mothers to access services as early as possible when they realize any danger signs in pregnancy.

1.4.4 The Clients

The third factor will be those attributed to the clients and her immediate family. This may include her socio-economic status, for example a married woman could be supported by the husband during emergency, and again level of education of a client could influence her decision to access EmOC services when there is any danger sign. This is because an educated person is very unlikely to wait to be told to seek health service when there is a danger sign and may not attribute the danger signs to superstitious beliefs but will rather seek health services. In addition, income level of a woman, for instance a woman who earns an income may not wait for the husband to give her money when she is in danger but will rather seek health service before the husband comes home. All these could influence the health seeking behaviour of the clients as well.

1.5 Research Questions

1. Are there EmOC services in the district?
2. What type of EmOC service is available in the district?
3. How do women access the EmOC services?
4. What is the level of knowledge of mothers on EmOC?
5. How is the quality of care perceived by the women as they use the services?

1.6 General Objective

To investigate the utilization of essential emergency obstetric care services in the Bosomtwe district of the Ashanti Region.

1.7 Specific Objectives

1. To determine the availability of EmOC services in the Bosomtwe district.
2. To determine the accessibility of EmOC services provided.
3. To examine the level of knowledge of mothers on EmOC services.
4. To determine the extent of utilization of EmOC services
5. To assess the quality of care perceived by the women who used the EmOC services.



CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

Maternal Mortality is a burdensome issue confronting developing and middle income countries including Ghana. Frantic interventions have been put in place to curb this menace of which EmOC services is found to be another appropriate measure.

The World Health Organization (WHO) estimates that in 2005 over 500,000 women died from pregnancy and birth-related causes. A woman in a developing country is 97 times more likely to die as a result of pregnancy than a woman in a developed country. The majority of these deaths occur during and immediately following birth (WHO and UNICEF, 2009).

Antenatal care is the name of the particular form of medical supervision given to a pregnant woman and her baby starting from the time of conception up to the delivery of the baby. The care is important because it helps to maintain the mother in good health during pregnancy, informs the parents about pregnancy, labour and child care and, in particular, it provides a means of detecting problems with the pregnancy at an early stage when the problems are treatable (Nmihi, 2015).

Antenatal checkups prevent most medical problems. Even if there is a problem, early detection helps to control the problem better. For example, there is a condition called pre-eclampsia in which there is weight gain, high blood pressure and stress on the kidney. This is detected by regular blood pressure checks and checking the urine for protein. A urinary tract infection during pregnancy can be detected by a simple urine analysis and its treatment helps the normal growth of the baby in the womb (Medindia, 2015).

Quality Antenatal Care is serious concern in Ghana and can be achieved through a planned set of actions designed to provide clients with the services they expect (Degley, 2012). However, complications of pregnancy and childbirth are the leading causes of death among women of reproductive age in many developing countries, accounting for an estimated 529,000 maternal deaths each year. About half of the nearly 120 million women who give birth each year experience some kind of complication during their pregnancies and between 15 million and 20 million develop disabilities such as severe anemia, incontinence, damage to the reproductive organs or nervous system, chronic pain, and infertility (Ashford, 2002).

Emergency Obstetric Care refers to the care of women and newborns during pregnancy, delivery and post-natal period. All pregnant women are at risk of obstetric complications. In roughly 15 percent of deliveries, an unpredictable complication occurs, such as severe bleeding, hypertension, infection, and obstructed labour. When this happens, it is essential that women have access to life-saving emergency obstetric care, including cesarean delivery (Rais, 2007).

This Chapter of the study is about review of relevant literature under the following topics;

1. Availability of EmOC services
2. Access of EmOC services
3. Knowledge of Mothers on EmOC Services
4. Utilization of EmOC services quality of care perceived by the women who used the EmOC services.

2.2 Availability of EmOC services

The WHO monitoring emergency obstetric care indicators state that the availability of EmOC services is measured by the number of facilities that perform the complete set of signal functions in relation to the size of the population. When staff has carried out the seven signal functions of basic EmOC in the 3-month period before the assessment, the facility is considered to be a fully functioning basic facility. The facility is classified as functioning at the comprehensive level when it offers the seven signal functions plus caesarean section and blood transfusion (Bailey *et al.*, 2009).

However, Unicef, (2015) states that almost half of births in developing countries take place without a skilled birth attendant. That ratio rises to 65 percent in South Asia. Research shows the single most important intervention for safe motherhood is to make sure that a trained provider with midwifery skills is present at every birth and transport is available to referral services, and that quality emergency obstetric care is available (Unicef, 2015).

A report by GHS, (2008) stated that Emergency Obstetric Care (EMOC) is poor in many regions, with the three northern regions facing the greatest challenges. The northern sector of the country observed a lack of basic infrastructure such as water and power supplies, blood transfusion services and theatres, poor geographical access to facilities and referral services. It stated that, some or all of these challenges undermine EMOC in other parts of the country. On the other hand assessing the availability and components of maternity services according to providers and users perspectives in North Gondar, Northwest Ethiopia by Worku *et al.*, (2013), antenatal and delivery care were available in most of the visited facilities. However, majority of them were not fully functioning for

EmOC according to their level. Signal functions including administration of anticonvulsants and assisted vaginal delivery were missing in eleven facilities. Only one hospital met the criteria for comprehensive emergency obstetric care (Worku *et al.*, 2013). In addition few Zambian health facilities provided all basic EmOC signal functions and had qualified health professionals available on a 24-hour basis. Of the 1131 Zambian delivery facilities, 135 (12%) were classified as providing EmOC. Zambia nearly met the UN EmOC density benchmarks nationally, but EmOC facilities and health professionals were unevenly distributed between provinces. Gabrysch *et al.*, (2011) on a study about availability and distribution of, and geographic access to emergency obstetric care in Zambia. A study conducted by Fournier and Dogba, (2009) on human resources and the quality of EmOC in developing countries revealed that: (1) staff shortages are a major obstacle to providing good quality EmOC; (2) women were often dissatisfied with the care they received during childbirth; and (3) the technical quality of EmOC has not been adequately studied. That the first two conclusions provide lessons to consider when formulating EmOC policies, while the third point is an area where more knowledge is needed (Fournier and Dogba, 2009).

Nevertheless a survey conducted by Bowelo *et al.*, (2008) in Botswana on type of EmOC services provided in four (4) sub-districts hospital revealed that three were identified to be providing comprehensive emergency obstetric care and one was providing basic emergency obstetric care. The results have indicated that in some hospitals staff do not perform some of the procedures such as manual removal of the placenta and cesarean section due to lack of training though the necessary equipment are available and shortage of essential drugs due to stock out though reported to have been ordered. In those situations their only options was to refer to the next highest level, yet if they were trained

and equipment available there would have been little or no indication for some of their clients to be referred (Bowelo *et al.*, 2008).

In Ghana, a safe motherhood task force is operational and government is supporting increased production of midwives through direct midwifery training yet the country continues to experience inadequate midwives in health facilities causing unavailability of EmOC services in some facilities. A study conducted by Oiyenmhonlan *et al.*, (2013) on Identifying Obstetrical Emergencies at Kintampo Municipal Hospital: a perspective from Pregnant Women and Nursing Midwives came up with the result that service challenges included insufficient staffing as well as inadequate equipment and physical space in the maternity ward.

In addition, a survey conducted in Kenya, Rwanda, Southern Sudan, and Uganda by Pearson and Shoo, (2005) to assess the availability and use of obstetric care found that not all primary healthcare facilities were able to provide all basic Emergency Obstetric Care (EmOC) services. In general, they lack clinical staff needed to dispense maternal and neonatal care services, ambulances and uninterrupted electricity supply whenever there were obstetric emergencies. Secondary healthcare facilities fared better, but, like their primary counterparts, lack neonatal care infrastructure. Among patients, most lived within 30 minutes of the visited facilities and still reported some difficulty getting there. Of those who had had two or more childbirths, the conditional probability of a delivery occurring in a healthcare facility was 0.91 if the previous delivery occurred in a healthcare facility and 0.24 if it occurred at home. The crude risk of an adverse neonatal outcome did not significantly vary by delivery site or birth attendant, and the occurrence of such an outcome during an in-facility delivery may influence the mother to have her

next delivery outside. Such an outcome during a home delivery may not prompt a subsequent in-facility delivery (Pearson and Shoo, 2005a).

Managing EmOC services means the presence of medicines and supplies for all maternal health emergencies during pregnancy and during labour. Survey done by (Mkoka *et al.*, 2014) on availability of drugs and medical supplies for emergency obstetric care: experience of health facility managers in a rural district of Tanzania revealed that participants reported on the unreliability of obtaining drugs and medical supplies for EmOC.

Although the availability of the facility is important for the management of EmOC service, the components in them counts on availability, accessibility, utilization and quality of emergency obstetric care services. Leigh *et al.*, (2008) found in Malawi that almost twice the minimum number of recommended comprehensive emergency obstetric care facilities exists (1.8 facilities per 500,000 population) but ironically, only 2% of the recommended number of basic emergency obstetric care facilities were found. Met needs were therefore only 18.5%, caesarean delivery rate was less than 3%. The case fatality rate was 3.4% indicating poor quality of care attributable partly to the absence of skilled birth attendants, motivated staff and the frequent shortage of drugs and medical supplies (Leigh *et al.*, 2008).

Furthermore, a survey in four districts in West Bengal India in 408 facilities came up with a result of which only 17 and 48 provided comprehensive and basic EmOC services respectively. The only medical college hospital, three district hospitals, and eight sub-divisional/state general hospitals were found to provide either basic or comprehensive

EmOC facilities. Forty-two of the 96 rural hospitals/block primary health centres qualified as basic EmOC and none of 256 primary health centres rendered EmOC services (Biswas *et al.*, 2005).

In the year 2007, Mbonye *et al.*, conducted a study in Uganda to determine the availability of EmOC services and identified that maternal mortality ratio of 671/100,000 live births was recorded. Hemorrhage, 42.2%, was the leading direct cause of maternal deaths, and malaria accounted for 65.5% of the indirect causes. Among the obstetric complications, abortion accounted for 38.9% of direct and malaria 87.4% of indirect causes. Removal of retained products assisted vaginal delivery and blood transfusion were the missing signal functions contributing to maternal deaths. In this, Mbonye *et al.*, (2007) realized that most health facilities expected to offer basic EmOC services to 349 (97.2%) women were not offering them, meaning people were not having access to the services (Mbonye *et al.*, 2007).

2.3 Access of EmOC service

The Ghana Health Service is of the view that everyone should have access to quality health care. Access refers to the ability of the individual to obtain health services. Some of the factors that can affect access are distance that is where health facility is sited far away or it is difficult to get transport to the facility access to quality health care becomes a problem. The challenge of barriers to access to critical health services by families and communities, mainly due to inadequate financial capabilities of families or mothers, long distance to the health facility and low female literacy rate as well as poor health-seeking behaviours among the poor and socio-cultural factors such as men's influence in healthcare decision making it very crucial in achieving MDG 4&5 (GHS, 2014).

Access to appropriate health care including skilled birth attendance at delivery and timely referrals to emergency obstetric care services can greatly reduce maternal deaths and disabilities, yet women in sub-Saharan Africa continue to face limited access to skilled delivery services (Essendi *et al.*, 2010). (Sappor and Esena). A study by Van den Boom *et al.*, (2004) noted that access to these facilities remained a problem since medical facilities are not evenly distributed across the country and most rural areas lack such facilities. Van den Boom *et al.*, (2004) said Ghanaians on average live about 16 km from a health care facility. That the Ghana government embarked on a health sector reform in the early 1990 to improve the accessibility and quality services. However “the health situation in Ghana is still far from satisfactory.” And many patients in the country still rely on self-medication (Van den Boom *et al.*, 2004).

Munjanja *et al.*, (2012) had a survey done and realized geographical access, transport and referral systems under utilization of health facilities for labour and delivery, had poor geographical access and greatest influence on the potential of women to reach a health facility during labour. Once a woman is in labour, there is a limit to how far she can travel if she has to walk, or be carried by others. They said the situation is compounded if there are complications or if the woman needs emergency care. On Maternal and perinatal outcomes they said poor access to maternity care can lead to higher morbidity and mortality. In addition, they also cited Wagle *et al.*, (2004) that, in Nepal, a distance of more than 1 hour to the maternity hospital was significantly associated with an increased risk of home delivery by almost eight-fold. In many varied, low income settings, poor geographical access has consistently been found to be associated with decreased use of health facilities for labour and delivery (Munjanja *et al.*, 2012). Ten Hoope-Bender *et al.*, (2005) had an assessment on Reproductive Health Response in

Conflict (RHRC) that the RHRC Consortium promotes sustained access to comprehensive, high quality reproductive health programs in emergencies and advocates for policies that support the reproductive health of persons affected by armed conflict, and the assessment was that on access to EmOC economic constraints could affect equitable access to and use of available EmOC services (Ten Hoope-Bender *et al.*, 2005). In assessing barriers to hospital delivery in a rural setting in Coast Province, Kenya on community attitude and behaviors, Mwangome *et al.*, (2012) state that lack of resources (monetary, transport and access), customer care (lack of partnership between mother and health professional), and knowledge and beliefs lack of knowledge about pregnancy and maternal health) were the results (Mwangome *et al.*, 2012a). In Ghana, a study conducted in 2003 by Overbosh *et al.*, found that, household income, distance to a health facility and charges for services significantly influenced demand for early seeking of emergency obstetric care services.

Sharan *et al.*, (2010) assessed services in Eritrea indicated that there were only 18 national referral hospitals located in the capital Asmara and the Zoba region. They realized the rural areas, especially the peripheral were grossly underserved. Only hospitals could perform complex emergency obstetric procedures including caesarean deliveries. The spatial distribution of the emergency obstetric care facilities where caesarean section deliveries are offered shows that those hospitals were mostly concentrated in the central part of the country. There was no emergency obstetric care available in the rest of the country. The mean distance from a referral hospital to the nearest referral facility was 191km. Similarly on average, a patient had to travel 81km to reach a referral facility from a community hospital and 42km from a health center. The time taken to reach a referral facility from a referring source varied from 1.5 to 9.6 hours.

In Bosomtwe district, women living at far end of Lake Bosomtwe had to travel 7 kilometers for service delivery even in times of emergency. Maternal complications are claiming the lives of millions of pregnant women in sub-Saharan Africa which includes Ghana (Kusi, 2006). Efforts to reduce the burden of maternal mortality to meet the Millennium Development Goal 5, (to reduce maternal deaths by 75% by 2015) appear to have had little impact. Kusi said at December 2005 to June 2006, four maternal deaths had occurred in Suntreso hospital in Bantama sub metropolitan area. Complications resulting in maternal death can occur anytime without forewarning. This calls for prompt access to quality obstetric services. Kusi also said barriers that hinder access to emergency obstetric care in Bantama appeared to be missing in the reduction of maternal mortality and these were the barriers that hinder access to emergency safe motherhood services.

A study conducted by Hu *et al.*, (2007) on implementing comprehensive emergency obstetric care services in Mexico described their most effective strategy of reducing maternal mortality as that of enhancing access to EmOC. They said this strategy reduced mortality by 75%, morbidity by 47%, cost less than previous practice, and had an incremental cost-effectiveness.

Furthermore, Atogemero, (2005) on improving access and utilization of emergency obstetric care in Tano District, Ghana revealed that utilization of obstetric services in the district is generally poor. In spite of 100% antenatal coverage, 52% of the women interviewed had home deliveries with the assistance of traditional birth attendants about half of whom were untrained. The high cost of emergency transport made it difficult for community members to access emergency obstetric care. More than half (54%) of women who visited a hospital due to pregnancy complication or childbirth paid transport

cost at a higher rate between ₺40,000 and ₺80,000, while 22% paid above ₺80,000. Majority (70.8%) of respondents do not receive an average monthly income above ₺200,000. This low level of income made it difficult for most of the respondents to pay the high emergency transport cost. The district hospital has only one medical doctor instead of two as required by the hospital administration. In some cases Atogembero (2005) said women with complications were referred to other hospitals in the region which contributed to the delay in seeking emergency obstetric care. The results also showed that waiting time and attitude of health staff towards clients were not major factors affecting access and utilization of emergency obstetric care in the district. It can be concluded from the findings that lack of knowledge of danger signs in pregnancy and high cost of transport were the major factors affecting access and utilization of emergency obstetric care in the district (Atogembero, 2005).

2.4 Knowledge of Mothers on EMOC Service

Health education is the key to ensuring a better understanding of the importance and need for seeking early care during danger signs in pregnancy among women. Improving knowledge of obstetric danger signs and promoting birth preparedness practices are strategies aimed at enhancing utilization of skilled care in low-income countries. In other words Knowledge of danger signs of obstetric complications during pregnancy, labour and postnatal period is the first essential step for appropriate and timely referral. It is also strategy aimed at enhancing the utilization of skilled care during low risk births and emergency obstetric care in complicated cases in low income countries (Bogale and Markos, 2015). Therefore raising awareness of women on danger signs of pregnancy, childbirth and the postpartum period is crucial for safe motherhood. This is because, the knowledge level of pregnant women about obstetric danger signs (during pregnancy,

childbirth and postpartum period) in Ethiopia was low and affected by residential area. Out of Seven hundred forty three pregnant women who participated in the study only few knew at least two danger signs during pregnancy, childbirth and postpartum period, respectively (Hailu *et al.*, 2010).

A research conducted in Bangladesh by Collin *et al.*, (2007) on a decade of inequality in maternity care and antenatal care states that, utilization of antenatal care increased substantially, from 24% in 1991 to 60% in 2004. Despite a relatively greater increase in rural than urban areas, utilization remained much lower among the poorest rural women without formal education (18%) compared with the richest urban women with secondary or higher education (99%). The study focused on professional attendance at delivery and cesarean section revealed that education of the woman and her husband remained important determinants of utilization of obstetric services.

A study done in Tano District, Ghana by Atogembero and Anawine, (2005), on accessing knowledge of women on danger signs in pregnancy identified more than half (57%) of 100 women interviewed had poor knowledge of danger signs in pregnancy. This indicates that the larger the proportions of pregnant women who do not have the knowledge about obstetric danger signs the higher they may delay in deciding to seek care.

In addition majority of pregnant women and their families do not know how to recognize the danger signs of complications. When complications occur, the unprepared family will waste a great deal of time in recognizing the problem, getting organized, getting money,

finding transport and reaching the appropriate referral facility study carried out by (Bogale and Markos, 2015).

Furthermore, a cross-sectional study carried out on knowledge of safe motherhood among women in rural communities in northern Nigeria: implications for maternal mortality reduction reported that over 90% of respondents in both states showed poor knowledge of the benefits of health facility delivery by a skilled birth attendant. More than 80% of respondents in both states displayed poor knowledge of the benefits of ANC visits. More than half of the respondents across both states had poor knowledge of maternal danger signs. In analysis, Okereke *et al.*, (2013) noted that ever attending school by a respondent increased the likelihood of knowing maternal danger signs by threefold among respondents in Kaduna State. Also, attendance at ANC visits during most recent pregnancy increased the likelihood of knowing maternal danger signs by twofold among respondents in Kano State and threefold among respondents in Kaduna State (Okereke *et al.*, 2013).

The district also ensures focus antenatal care in all maternal and child health facilities. In addition, the midwives educate and examine the pregnant women on danger signs in pregnancy as well as the need to report early to health facilities on seeing any of them. A study conducted by Essendi *et al.*, (2011) on barriers to Formal Emergency Obstetric Care. Services' utilization realized the major barriers faced include the inability to identify danger signs in time, poor health decision making, unaffordability of health care seeking, and poor physical access to formal care services, inadequately equipped health facilities, and poor attitude among health personnel (Essendi *et al.*, 2011b).

2.5 Determinants of and Utilization of EmOC services

Poor utilization of quality reproductive health care services continues to contribute to identify policy gaps and develop strategies that will improve utilization of skilled obstetric services and thereby reduce unnecessary loss of lives (Okutu, 2011). Despite more than a decade of the Safe Motherhood Initiative in Ghana, access and utilization levels of modern healthcare services by expectant mothers remain very low, even though considerable progress has been made over time. Analyses of a study done by Appiah-Kubi (2004) revealed that education of mother and spouse, regional location of residence and socioeconomic status exert the strongest impact and are significant in predicting the use of safe motherhood services and thus differentials in health among expectant mothers. The implications of these results for improved maternal healthcare are discussed, (Appiah-Kubi, 2004).

Utilization of EmOC services was affected by the cost of available services, transportation in reaching the facilities, the availability of skilled service providers and lack of communication between the different levels of health facilities for technology transfer and patient management and referral. The burden of cost of availing maternal health services has identified cost and culture as a major barrier to utilization of skilled attendants (Devkota, 2004). Devkota, (2004) said, in coping with the burden of costs of maternal health, the cost for attended delivery at home is double the cost of unattended home delivery. In the normal sense the total cost of a normal delivery at the public health facility is supposed to be cheaper, but extra amount of money paid by the mothers directly to the facility make utilization of service difficult for the mothers (Devkota, 2004). According to Mavalankar *et al.*, (1996) one of the important reasons that government facilities are under used (or people come there as a last resort and hence

many a times come late) in India is the impression that in government facility no one will pay any attention to them or treat them properly. Studies from West Africa have listed a number of health services related factors that act as barriers to treatment of obstetric emergencies, which include shortage of staff, supplies, costs and staff attitudes. According to Mavalankar *et al.*, (1996), The Child Survival and Safe Motherhood (CSSM) programme needs to build in to its training and supervision systems efforts to change the negative staff attitudes towards patients as welcoming and helpful attitudes and behaviour of the staff will go a long way to improve the use of EmOC facilities, (Mavalankar *et al.*, 1996).

In addition, a study conducted by Islam *et al.*, (2005) on improvement of coverage and utilization of EmOC services in southwestern Bangladesh indicated that, there were 1.04 and 0.64 comprehensive and basic EmOC facilities respectively per 500,000 population. When compared with the baseline data, the coverage of comprehensive EmOC services was substantially increased from 0.23 to 1.04 per 500,000 populations, which achieves the minimum UN standards but the coverage of basic EmOC services remained the same. The data also showed that, compared with the baseline survey, the proportion of births at the EmOC facilities increased 119% from 5.3% met need increased 141% from 11.1% to 26.6% and cesarean section as a proportion of all expected births, increased 151% from 0.5% to 1.3% while the overall case fatality rate (CFR) decreased by 51% all due to the implementation of safe motherhood programs throughout the country (Islam *et al.*, 2005). In contrast, assessment of the availability and use of emergency obstetric care services in public hospital in Laos PDR showed that almost all the indicators were below the UN recommendations, (Douangphachanh *et al.*, 2010). Furthermore, on availability and utilization of EmOC services in Bauchi State, Nigeria only 6 of the 59 facilities met the

UN requirements for EmOC centers. None of the three senatorial zones in Bauchi State had the minimum acceptable number of five EmOC facilities per 500 000 population (Douangphachanh *et al.*, 2010).

Focus group studies in the Ashanti Region on Community education to improve utilization of emergency obstetric services in Ghana showed that people avoided utilizing health facilities because of lack of confidence in the services and concern about the availability of drugs and supplies among other reasons (Opoku *et al.*, 1997).

An investigation carried out by Kosum and Yurdakul, (2013) on factors that affect the use of emergency obstetric care services among pregnant women in Turkey with antenatal bleeding reported that advanced age, high level of education, lack of health insurance, receiving antenatal care, nuclear family structure and knowledge of the danger signs during pregnancy were found to affect the use of emergency obstetric care services negatively among pregnant women with antenatal bleeding, (Kosum and Yurdakul, 2013).

Ghana is attracting global attention for efforts to provide health insurance to all citizens through the National Health Insurance Scheme (NHIS). With the program's strong emphasis on maternal and child health, an expectation of the program is that members will have increased use of relevant services. That is access to skilled delivery care helps in the reduction of maternal mortality and morbidity. The NHIS does appear to enable pregnant women to access services and allow caregivers to seek care early for sick children. Interviews uncovered specific challenges women faced regarding registration for the NHIS and other barriers such as lack of understanding of who and what services

were covered for free, (Singh *et al.*, 2015). In line with this notion the Government of Ghana introduced a new policy through the Ministry of Health to exempt expectant mothers from antenatal, delivery and postnatal services. This was done by removing delivery fees in all public, private and Faith-based health facilities. The policy aimed at improving uptake of maternal health through quality care and for women to have free services and improved geographical access to such delivery care services. The exemption policy covers services such as normal delivery, assisted deliveries and caesarean services and the management of medical and surgical complications that may arise out of deliveries (Ofori-Adjei, 2007).

2.6 Determining the Quality of EmOC Services

Patients and clients according to Ofei *et al.*, (2004) often complain about poor quality of services in the health facilities. Poor quality is costly; it leads to loss of lives, loss of time, and loss of public confidence, low staff morale and also results in wastage of limited resources. The Ghana Health Service has as one of its main objectives, the improvement in quality of care at all service delivery points. It is the responsibility of all health workers to help achieve this objective. The centrality of access to professional care during and after labour and delivery in reducing maternal mortality is internationally recognized. Notwithstanding this fact, the universal access to quality services still remains a distant goal for many developing countries. The availability of services alone is not sufficient as underutilization is evident even where adequate services are available. This brings into focus the attitude of service providers. When health providers show good relationship with their clients and communities, show respect to their clients, feel for their patients, not be rude or shout at them, not disclose information they get from patients to other people, these will bring about good relations and trust between the

clients/communities and health providers. Clients consider good interpersonal relationship as an important component of quality of care.(Ofei *et al.*, 2004).

Attitude of service providers in the Gambia according to Cham *et al* (2009) was that women's testimonies depicted mixed reactions. As some expressed satisfaction with the quality of care received others did not. Interpersonal care processes such as being greeted or talked to, bed sheet frequently changed or medications provided free of cost were commonly cited by women who perceived the quality of care received satisfactory. In contrast, poor reception, unpleasant provider attitude, difficulties encountered in acquiring blood and actual transfusion were omnipresent concerns in the accounts of women who perceived the quality of care below expectation. The higher than expected costs of treatment were sources of indignation, shock and disappointment to women and their families. (Cham *et al.*, 2009).

Staff attitude as a barrier to the utilization of health facilities for obstetric care at the teaching hospital (UCTH) in Calabar, Nigeria revealed that lack of incentives and inadequate materials to work with as well as poor remuneration contributed to staff's negative attitudes. Provision of incentives to hospital staff, enhanced regular pay to workers, and regular workshops to train hospital staff were suggested as possible solution to this problem (Asuquo *et al.*, 2000).

In a study conducted by Essendi *et al.*, (2011b) in Nepal, the researchers conceded the difficulty in defining service providers' attitude but broadly refer to the subject as the professional perspective of a service provider about his/her responsibility, linked with personal feelings and approaches, which translate into relationship with clients. The

internationally well respected three delays framework (seeking, reaching and receiving care) demonstrates the complexity of issues associated with delays in women accessing professional care. The attitude of health service providers is a component of the third delay (receiving care). Studies have demonstrated that patient- provider relationships greatly influence service use and programmes that address this interface will be effective in improving both quality and utilization. These studies explained that the reasons behind service provider attitudes are complex and multi-faceted. A health system is influenced by the context of societal culture and values, which in Nepal is structured around strong caste, ethnic and gender hierarchies and dynamics, producing considerable social discrimination as accepted part of normal life. Discriminatory behaviour among health service providers towards lower caste and ethnic minority groups is recognized, and known to influence health-seeking behavior, (Essendi *et al.*, 2011b).

2.7 Conclusion

Findings from the literature review suggest that women in Sub-Saharan Africa continue to face limited access to EmOC services and where available, such services are poorly distributed. Knowledge based review of the EmOC services revealed that, whereas utilization of EmOC services remained much lower among the poorest rural women with no formal education, their richest urban counterpart women with secondary or higher education appear to have knowledge. In addition, utilization of EmOC services by mothers remains very low even though considerable progress has been made over the past decades. Finally quality of EmOC services in the literature was identified to be affected by attitude of health providers and thus remain a distant goal to be achieved in many developing countries.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Introduction

This chapter presents the study design, study area/settings, study population, sample size determination and sampling procedure. It also takes a look at data gathering tool and pre-testing. In addition, it takes a look at the study variables, ethical consideration and study limitations as well as assumptions.

3.2 Study Design

The study was a cross-sectional survey carried out to collect data on emergency delivery provided in the Bosomtwe district from January to December 2013. It focused on nursing mothers from the community who had sought emergency obstetric care services during delivery visited by the research team. This design was used because both the exposure and the outcome could be measured at the same time.

3.3 Profile of the Study Area

The study was conducted in the households and health facilities offering maternal and child health services in the communities within the district. There are twenty-one (21) health facilities providing health care services. Out of these are two private hospitals, one government hospital, one CHAG hospital, four CHPs compounds, five CHAG health centres, three government health centres, two Maternity homes, and three Reproductive and Child Health Centres. The background of the health staffs consist of Gynecologists, midwives, staff nurses and ward assistants. There are sixty-three (63) Community Based Surveillance Volunteers (CBSVs) who have been trained to support community health activities in the district. They record and report on monthly basis diseases, deliveries and

deaths in their catchments areas. It is interesting to note that all these CBSVs can read and write and they are evenly distributed throughout the district with at least one in a community.

Political background of the study setting: Bosomtwe District is in the Ashanti Region of Ghana and is one of the 30 created districts in the Region. It was formerly part of the Bosomtwe-Atwima-Kwanwoma district, but carved out by Legislative Instrument LI 1853 of 29th February, 2008. Kuntense, the district capital is about 28 kilometers from Kumasi, the capital of the Ashanti Region. It lies within latitudes 6° 43' North and longitudes 1° 46' West and it spreads over a land area of 718sqkm. The district shares common borders with the Ejisu-Juaben district and Kumasi Metropolis on the North; Asante-Akim North district on the East, Atwima Kwanwoma District on the West and Amansie-East district on the South.

The road network from Kumasi, the regional capital, to Kuntense and Abono at the Lake area is second class. Unfortunately, around the Lake and in most parts of the district the roads are not motorable. There are mountainous areas as well which are generally quite difficult to access. The district has the only Crater Lake in Ghana, Lake Bosomtwe which is being developed as a resort to boost tourism in Ghana.

Politically, there are 3 sub-districts, namely, Kuntense, Jachie- Pramso and Amakom, but for public health activities, the Jachie-Pramso sub-district has been divided into; Jachie and Pramso. There are a total of 63 communities with an estimated population for 2014 based on 2010 census, as 104,471. The main occupation of the populace is farming. Plantain, cassava, maize, sugarcane and shallots are the major crops grown. Those who live around the bank of the Bosomtwe Lake are fishermen and fishmongers. The

vegetation or climate is semi-deciduous and temperatures are between twenty-seven degrees and twenty- nine degrees Celsius throughout most of the year during the day. The annual rainfall is approximately 166cm. These support farming activities throughout the year. The climate is also very conducive to the breeding of mosquitoes all year round so malaria is endemic in the district.

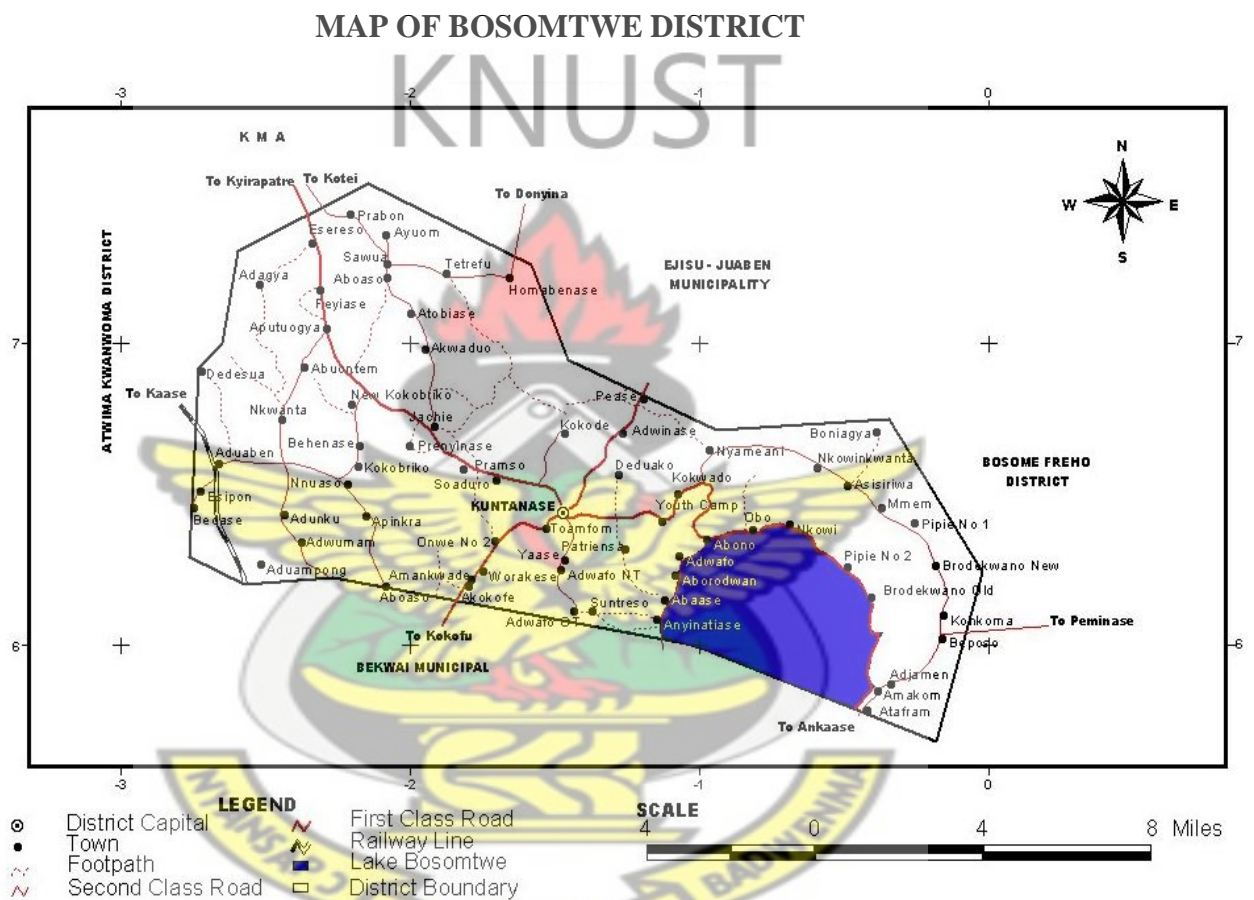


Figure 2: Map of Bosomtwe District

Table3.1 Representing delivery statistics in Bosomtwe district in 2013

Indicators	Kuntanase sub-district	Pramso Sub-district	Jachie Sub-district	Amakon Sub-district
Expected Pregnancy	1061	697	796	499
Number of deliveries by skilled attendants	359 (33.8%)	2984(428.1%)	287(36.1%)	164(32.9%)
Number of deliveries by TBAs	66(6.2%)	0	0	2(0.4%)
Total number of vacuum done	0	24	0	0
Total number of C/S done	34	570	0	0
Number of maternal deaths (institutional)	0	7	0	0



Table 3.2 representing Bosomtwe district population distribution by sub-districts

SUB-DISTRICT	2013	WIFA	EXP PREG	CHN	CHN	CHN	CHN	CHN	CHN	Schoo	CHN	CHN	CHN	CHN	CHN	64+
	GR			0-11 Mths	12-23 Mths	0-23 Mths	24-59 Mths	6-59 Mths	0-59 Mths	l Age 5-9yrs	0-14 yrs	0-14 yrs	15-19 yrs	10-19 yrs	5-19 yrs	
	3.40%			3.00%	3.90%	7.90%	8.60%	14.50%	16.50%	14.60%	12.10%	43.20%	9.70%	22.00%	36.40%	
KUNTANA SE	35,352	8,202	1,061	1,061	1,379	2,793	3,040	5,126	5,833	5,161	4,278	15,272	3,429	7,777	12,868	2,156
JACHIE	26,521	6,153	796	796	1,034	2,095	2,281	3,846	4,376	3,872	3,209	11,457	2,573	5,835	9,654	1,618
PRAMSO	23,231	5,390	697	697	906	1,835	1,998	3,368	3,833	3,392	2,811	10,036	2,253	5,111	8,456	1,417
AMAKOM	16,620	3,856	665	665	648	1,313	1,429	2,410	2,742	2,427	2,011	7,180	1,612	3,656	6,050	1,014
DIST. TOTAL	101,724	23,600	3,218	3,218	3,967	8,036	8,748	14,750	16,784	14,852	12,309	43,945	9,867	22,379	37,028	6,205
3% - For ANC, EPI and SD 14.5% - For VitA supplementation 36.4% - For School Health 23.2% - For WIFA (FP)										43.2% - For AFP target and Measles SIAs 7.9% - For Growth Promotion (CWC) 12.1% and 9.7% - for Adolescent Health						

3.4 Study population

The target population from which sample population was selected was 628 of which included nursing mothers in households who had their delivery through cesarean section, Vacuum, and manual removal of placenta from 1st January to 31st December 2013. In addition, facility heads (policy makers) and one Midwife in-charge each from all the facilities offering maternal and child health services were included in the study.

3.5 Exclusion criteria

Deliveries that did not lead to emergency obstetric deliveries were not considered. Normal deliveries that is, spontaneous vaginal deliveries were not included. Women who went through emergency obstetric delivery but in 2012 were not included.

3.6 Sample Size Determination

A total of 398 nursing mothers were selected for the study. The sample size for the study was determined using the proportion of women who had emergency obstetric deliveries of 628 through random selection divided by women in reproductive age of 23601 which is 23.2% of the total population of 101724. Using the statistical population method, the proportion of emergency delivery to the WIFA population was $628/23601 = 0.027$.

Thus;

$$p=0.027$$

$$n = \frac{Z^2 pq}{d^2} (z = 1.96 \quad p = 0.0266 \quad q = 1 - 0.0266 = 0.9734)$$

$$n = \frac{(1.96)^2 (0.0266)(0.9734)}{(0.05)^2}$$

$$n = \frac{3.8416 * 0.0266 * 0.9734}{0.0025} = \frac{0.995}{0.0025}$$

$$n = 398$$

Where n = sample size;

p = the proportion of women in the population who got pregnant.

q = proportion of population not getting pregnant where ($q = 1 - p$)

Z = 95% Confidence Interval = 1.96 (for a two-tailed test)

$d = w/2$; where w is the width of the confidence interval

3.7 Sampling Procedure

The names, traceable addresses (residential number) and telephone numbers of the women who gave birth through emergency obstetric care services were taken from the admission and discharged delivery registers and postnatal registers, were used. These were based on the proportion of target population of 628 women who gave birth through emergency care services by the use of simple random sampling of 398 mothers from the books. They were then followed up to their homes for the interview. In addition ten (10) Policy makers and fourteen (14) Midwife in-charges one from each facility were interviewed due to their knowledge and positions at work making total sample of 422 participants. Their selection was based on purposive sampling.

3.8 Data gathering tool

Data collection techniques included administering prepared questionnaires containing open ended and closed ended questions given out to the study participants to respond with the aid of research assistants. The questions were read out and interpreted to the respondents in a local language (Ashanti Twi) (Appendix 1) after which the response from the respondents were recorded accordingly. In addition Policy makers (Appendix 3) to each facility including Midwife in-charges (Appendix 2) were interviewed. Data collected was mainly on type of services provided in the facilities.

3.9 Pre-testing

The questionnaires were pre-tested and the necessary changes made. This was carried out at Fayiasse community which is 19 kilometers from Kuntense community that has similar demographic characteristics. This was to ensure the validity and reliability of the instruments.

3.10 Data analysis

All data needed were collected and written down. The investigator made sure to categorize the data from the questionnaire and checked for completeness and consistency. The data was then coded and entered into a database using EPI-INFO statistical software. Further clearance was made after entering using this software. Descriptive statistics in the form of frequency tables, bar charts and pie charts were used to present results.

3.11 Ethical consideration

The protocol of the study was reviewed and approved by the Ethical Review Committee (CHRPE) KNUST School of Medical Sciences. A letter of introduction from the Community Health Department of KNUST was issued to the Bosomtwe district director of health services of Ashanti Region and the sub-district heads of Bosomtwe to officially inform them of the study and the rationale for doing it. In addition the consent of each respondent was also sought before interviewed. Respondents were assured of confidentiality of information that would be given during the study. Interviewers used language which respondents could understand and speak.

3.12 Limitation

The study population of respondents may not be representative because it was limited to only mothers who went through EmOC care service during delivery in 2013 in the Bosomtwe district. Still the information gathered showed convincing consistency.

3.13 Assumptions

The investigator assumed that the responses and information provided by the respondents are accurate and are a true reflection of their views.



CHAPTER FOUR

4.0 RESULTS

4.1 Introduction

This chapter presents the results of the study which sought to investigate the utilization of essential emergency obstetric care services in the Bosomtwe district of the Ashanti Region. Three hundred and ninety-eight (398) women were recruited to participate in this study. Descriptive statistics involving measures of central tendencies, charts, frequencies and percentages were employed in the presentation of the data.

4.2 Socio-demographic characteristics of respondents

Table 4.1 shows that majority of the respondents (78.9%) were aged between 21-40 years. However, 15% of the sampled mothers were found to be aged “20 years and below”. Small proportion of mothers was between 41-60 years (5.5%) and 61 years and above (0.5%).

In addition, a total of 66% of the respondents were married and 20% were single. Furthermore, a total of 10.0% of the respondents had no formal education. Meanwhile 41% had schooling up to the Junior high school whereas 20% had completed tertiary education. Furthermore, 11% of respondents’ husbands had no education and 32.7% and 33.2% had primary and secondary education respectively, whereas 24% had tertiary education. In addition, a total of 86% of the respondents were Christians whereas 10% were Islam. Again, 20.4% of the respondents were unemployed whilst 32% were traders. However, 48% of the respondents’ husbands were traders while 8% were in other occupation.

Table 4.1 Socio-demographic characteristics of respondents

Variable Name	Category	Frequency(n=398)	Percent (%)
Age	20yrs and below	60	15.1
	21-40 yrs	314	78.9
	41-60 yrs	22	5.5
	61 and above yrs	2	0.5
Marital Status	Single	82	20.6
	Married	264	66.3
	Divorced	6	1.5
	Widowed	6	1.5
Education	No Education	38	9.5
	Primary	164	41.2
	Secondary	118	29.6
	Tertiary	78	19.6
Husband's Edu. Level	No Education	42	10.5
	Primary	130	32.7
	Secondary	132	33.2
	Tertiary	94	23.6
Religion	Christianity	341	85.7
	Islam	41	10.3
	Traditional	8	2.0
	Others	8	2.0
Occupation Level	Unemployed	81	20.4
	Farmer	60	15.1
	Trader	129	32.4
	Civil servant	88	22.1
	Others	40	10.0
Husband's Occupation	Unemployed	2	1.0
	Farmer	99	24.9
	Trader	189	47.5
	Civil servant	77	19.3
	Others	31	7.8

4.3 Availability of EmOC services

Table 4.2 Gynecologist/ Midwives/Anesthetist and Client ratio

These variables are based on the women in reproductive age 23600 in the district and expected pregnancy of 3218 using 2010 census. There were only 4 Anesthetists in the district, two (2) in government hospital and two (2) in CHAG hospitals. The ratio of a Gynecologist to client in public facility was 0:3218 and of expected complication of 5% is 0:161. However, the anesthetists had a ratio of 1:295 in both government facility and in CHAG facility.

Table 4.2 Providers / mothers ratio

Provider/ Patient ratio	Gynaecologist for expected delivery	Gynaecologist for expected complication of 5%	Midwife ratio of expected delivery	Anaesthetist of 5% expected complication
Government hospital	(0:23600)	0(0:1180)	23 (1:1026)	2 [1:590] 5%
Private hospital	(0:23600)	0(0: 1180)	(1:23600)	(0:23600)
CHAG hospital	1 (1:23600)	1(1:1180)	25 (1:944)	2(1:590)
Maternity home	0	0	1 (1:472)	0

4.3.1 Lifesaving Skills

The government facility forming 36% has training for Midwives once in a year only when there is a workshop. However at the maternity homes and private hospital which forms 21%, some in-charges conduct frequent in-service training and supervision and on the job training for their assistants every month whiles the CHAG hospitals have theirs four times in a year or when there is a workshop by GHS.

Table 4.3: Frequency of training for midwives in life saving skills

Midwives Life Saving skills assessment	Frequency
Government facility	Once a year
CHAG hospital	Four times in a year
Private hospital/ Maternity homes	Monthly

4.3.2 Availability of blood banks, blood stock and referral systems

A total of 14% representing two facilities in the district, one at St Michael's hospital and Kuntanase Government hospital had blood banks. However twelve (12) facilities do not have a blood bank. The results showed that out of the two facilities that had blood banks, only one (1) facility St Michael's hospital had stock of blood available at the time of the study. A total of two facilities representing 14% operate Ambulance in the district (St Michael's hospital and Divine Mercy Hospital) while 86% facilities use public transport.

4.3.3 Treatment used in management of Pre-Eclampsia

The results show that 78.6% of the facilities use Magnesium Sulphate in treating Pre-Eclampsia. However, 14.3% give valium before referring while 7.1% refer as soon as possible for further treatment and management.

Table 4.4. Treatment used for Pre-Eclampsia

Variable Name	Frequency	Percentage (%)
Valium	2	14.3
Magnesium Sulfate	11	78.6
Phenobabitone	0	0
I refer immediately	1	7.1
Total	14	100

4.3.4 Type of EmOC service

A total of three facilities representing 21% out of fourteen facilities provide Comprehensive EmOC services and eleven provide Basic EmOC services. However, all the fourteen facilities provide 24 hour services.



Figure 4.1 Type of EmOC services available

4.4 Accessibility of EmOC services

4.4.1 Time spent by mothers on the way and means of transport

Table 4.5 shows that 48.3% of the respondents spent less than 1 hour, 29.1% more than 1 hour and 22.6% within 1 hour on the way before getting to hospital. However, 69.6% being the majority of the respondents got to the facilities by means of motor vehicle.

Table 4.5 Distribution of Respondents by Time spent at home during the emergency and by means of Transport.

Variable Name	Category	Frequency	Percentage (%)
Time spent at home during the emergency before reaching the hospital	less than 1 hour	192	48.3
	1 hour	90	22.6
	More than 1 hour	116	29.1
Total		398	100
Means by which respondent got to the health facility	By foot	97	24.4
	Motor bicycle	10	2.5
	Motor vehicle	77	19.3
	Others	14	3.5
Total		398	100

4.5 The level of knowledge of mothers on EmOC services

4.5.1 Mothers' knowledge on danger signs in pregnancy

A total of 124(19.1%), followed by 114(17.6%) of the patients knew about severe vomiting and headache as danger signs in pregnancy. Majority of the respondents reported (229/35.3%) vaginal bleeding to be the most common danger signs.

Table 4.6: Mothers knowledge on danger signs in pregnancy

Danger signs in Pregnancy	Responses	
	N	Percent
Vaginal Bleeding	229	35.3%
Severe vomiting	124	19.1%
Severe headache	114	17.6%
Swelling of feet	120	18.5%
Others	61	9.4%

4.5.2 Sources of Knowledge on Danger Signs in Pregnancy and Action taken

A total of 84.4% respondents under multiple responses reported that they obtained information from the health facilities whilst 4% had obtained information from media sources and 9.0% indicated that it was through their own initiatives. Majority of respondents 393 (98.7%) said they would seek professional care from a hospital or a maternity home whereas 5(1.3%) would rather see an herbalist for treatment.

Table 4.7 Sources of knowledge on danger signs in pregnancy and action taken

Sources of knowledge	Frequency	Percent (%)
Health facility	336	84.4
Media	16	4.0
Self-initiative	36	9.0
Others	6	1.5
No response	4	1.0
Total	398	100
Action taken by clients on danger signs		
Action taken by clients on danger signs	Frequency	Percentage (%)
Visit hospital	295	74.1
Visit the maternity home	98	24.6
Visit the herbalist	5	1.3
Visit the Fetish Priest	0	0
Total	398	100

4.6 Utilization of EmOC services in the Bosomtwe district

4.6.1 Antenatal clinic attendance

A total of 388 (97.5%) representing mothers who attended ANC Clinic during Pregnancy whereas 10 (2.5%) resorted to native medicines.

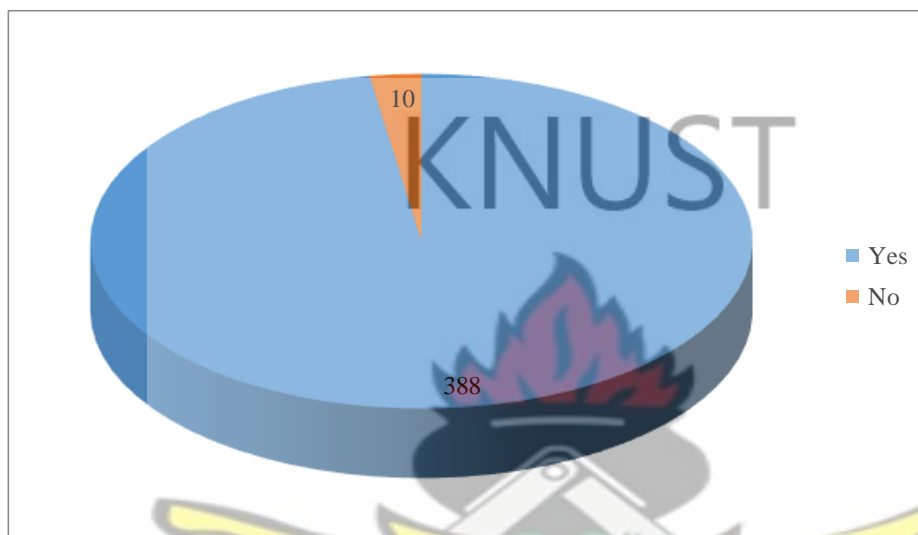


Figure 4.2: Whether mothers attended Antenatal clinic

4.6.2 Frequency of ANC attendance during the last pregnancy

A total of 256 (64.3%) of the respondents reported accessing ANC more than four times during their last pregnancy while 60 (15.1%) reported accessing ANC four times during their last pregnancy.

Table 4.8: Frequency of ANC attendance during last pregnancy

Variable Name	Category	Frequency	Percent (%)
No. of times respondents accessed the services	4 times	60	15.1
	less than 4 times	82	20.6
	more than 4 times	256	64.3
Total		398	100

4.6.3 NHIS assessment

A majority of the mothers representing 94.5% were insured with the NHIS. However, 47.5% of mothers also reported that though they were insured, they were made to pay for some health services rendered to them.

Table 4.9: NHIS registrants and extra payment for certain health services

Variables Name	Category	Frequency	Percentage (%)
NHIS registration	Yes	376	94.5
	No	22	5.5
Whether respondents paid extra money	Yes	189	47.5
	No	209	52.5

4.6.4 Respondents' choice of delivery site

A total of 239(60.1%) mothers delivered in CHAG hospitals, 23.1% in private facilities and 16.8% in Government facility. In relation to next pregnancy, majority (53.5%) of the mothers reported of their intention to deliver at private facilities whereas 25.6% indicated they will deliver at government facilities. In addition, 12.3% said they will deliver at maternity homes for their next pregnancies.

Table 4.10: Facilities where mothers delivered

Type of facility	No (%)	Percent
Government hospital	67	16.8
Private hospital/Maternity	64	16.1
CHAG	239	60.1
No response	28	7.0
Total	398	100

Table 4.11: Facilities respondents intend to deliver in the future

Type of facility	No (%)	Percent
Government hospital	49	12.3
Private hospital/Maternity	213	53.5
CHAG	102	25.6
No response	34	8.5
Total	398	100

4.6.5 Indications of EmOC and whether respondents were operated upon

The results presented in table 4.12 and 4.13 show a total of 30.9% of mothers accessing EmOC as due to fetal condition and 69.1% were due to maternal conditions and a total number of respondents that were operated on during delivery gave 48.5% and 51.5% representing those who had other emergency services like vacuum extraction and manual removal of placenta.

Table 4.12 Respondents indication of EmOC

Variable Name	Category	Frequency	Percentage (%)
Indication of EmOC	Maternal condition	275	69.1
	Fetal condition	123	30.1
Total		398	100

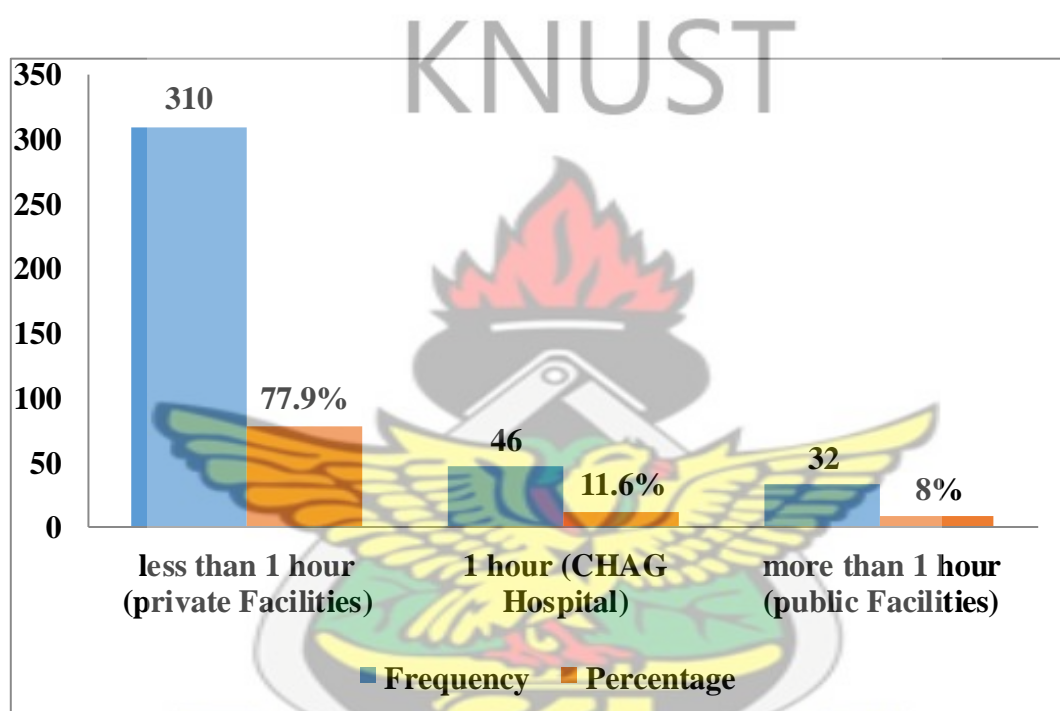
Table 4.13 Type of service received by respondents

Variable Name	Category	Frequency	Percentage (%)
Whether respondents were operated upon	Yes	193	48.5
	No	205	51.5
Total		398	100

4.7 Perception about quality of care

Time spent at Facility

A 64 (16.1%) sampled women were of the view that they were normally attended to within less than an hour in private facilities, followed by 239(60.1%) in the CHAG facilities, and 67(16.8%) of public facilities stating that they spent exactly an hour before they were attended to.



❖ Missing values 10

Figure 4.3 Length of Time Spent before Respondents were attended to at facility

4.8 Attitude of health care providers

More than a third of the respondents (47%) described the attitude of the service providers as friendly while 10.3% of the respondents reported that the attitude portrayed by the service providers was hostile.

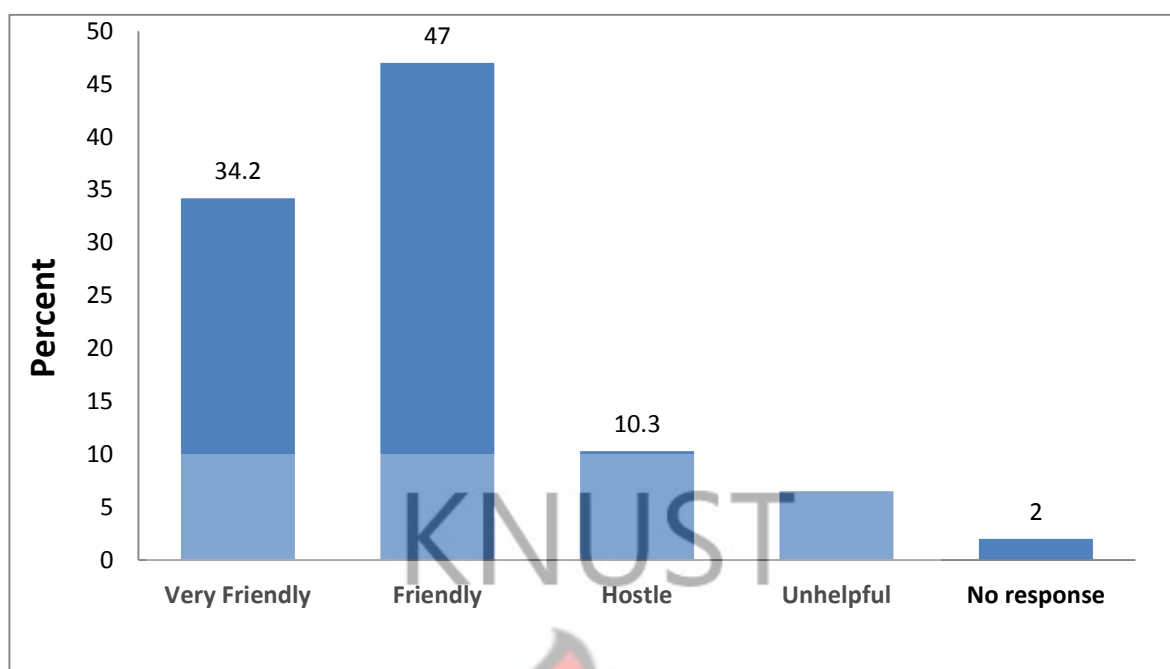


Figure 4.4 Attitude of health care provider

4.8.1 Description of the overall quality of care and services received

The results showed that almost a third of the respondents (31.4 %) rated the quality of services rendered by the health facilities as very good with a small proportion of them (6.0%) describing the overall quality as poor.

Table 4.14: Rating of the overall quality of service received by respondents

Categories	Frequency (n)	Percentage (%)
Excellent	60	15.1
Very good	125	31.4
Good	118	29.6
Average	63	15.8
Poor	24	6.0
No response	8	2.0
Total	398	100

CHAPTER FIVE

5.0 DISCUSSION

5.1 Introduction

This part of the study discusses the results gathered from the respondents on the availability and utilization of EmOC services in the Bosomtwe district.

5.2 Availability of EmOC services in the Bosomtwe district

There were three comprehensive EmOC facilities and eleven basic facilities available in the district to meet the population size of 101724. This result compares to the Guidelines jointly issued in 1997 revised in 2009 by the World Health Organization, the UN Children's Fund and UNFPA that recommended that for every 500,000 people there should be four facilities offering basic care and one facility offering comprehensive essential obstetric care. This figure of three comprehensive and eleven basic EmOC facilities to that of its population is above the global target.

All facilities (100%) had emergency medications easily accessible. However 11 facilities used the recommended drug in the treatment of Eclampsia (Magnesium Sulphate) while 2 facilities give Valium before referring. The remaining 1 facility refers as early as possible to the higher level for management. There were two blood banks in two facilities which were St Michael's hospital and Kuntanase Government which served as the district hospital. All other facilities depend on blood from these two facilities. This gives the notion that life of a woman during emergency may be compromised. There is no Ambulance service in the district hospital. A midwife or a doctor, after completion of safe motherhood initiative training course is expected to perform the life-saving procedures such as manual removal of placenta. During this time it is expected that they

get frequent refresher training to equip their skills and knowledge. However during the study, it was found that only government hospital and the other government facilities in the district had in-service training on Life Saving Skills once in a year. The private hospital and maternity homes do weekly teaching, daily supervision and on the job monthly training, while the CHAG hospitals had Life Saving Skills training four times in a year or during workshops by GHS. It is therefore interesting to find out why training in these skills is not popular with midwives.

The district also had two blood banks serving during emergencies. However only one had blood in stock (St Michael's Hospital) during the study and the result can be obvious at the other facility without the blood stock. There were four Anesthetists in the district, two at St Michael's hospital, and the other two at Kuntanase hospital. Again the ratio of Gynaecologist to client in the district of expected delivery was 1:23600 and in emergency obstetric care complication of 5% is 1:1180. Meanwhile in public facility it is 0:23600 of expected delivery and 0:1180 of 5% expected complication. This result compares to that of a study conducted by Fournier and Dogba, (2009) on human resources in developing countries and the quality of EmOC where staff shortages were found to be a major obstacle to providing good quality of EmOC services. This can be a factor of delay in a government facility during care assessment than in the private facilities.

5.3 Accessibility of EmOC service provided

This study of time spent at home and means by which respondents got to the facility shows that majority 48.3% spent less than one hour before getting to the facility and 69.6% got to the facility by vehicles which gave hope to the mothers in receiving care before due time. Delay in accessing the health facility for care of the mother can affect

her health status and also cause death. This is because, timing is critical in preventing maternal death and disability; although post-partum haemorrhage can kill a woman in less than two hours, for most other complications, a woman has between six and 12 hours or more to get life-saving emergency care. The Bosomtwe district has 14 health facilities scattered all over to ensure accessibility to Reproductive and Child Health (RCH) Services.

5.4 The level of knowledge of mothers on EmOC services

Having adequate knowledge in pregnancy by mothers, husbands and relatives is one of the objectives of the national health policy. As such has been published at the back of every ante- natal card for mothers and their partners to know. This study has revealed that majority of the women were able to give some danger signs in pregnancy. A total of 84% of the respondents obtained this information from health facilities. This outcome may be the result of health staff capacity to adequately educate women on danger signs in pregnancy. In addition, a 4% of them obtained their knowledge on danger signs from the media. The media has been a powerful tool that health care providers can use to educate the public on pertinent issues. On seeing danger signs, five of the respondents reported that they would rather seek treatment from herbalists. This should be a cause for concern for the healthcare providers because the herbalist is not skilled and this may be due to inadequate health education in some facilities. Health education which plays a vital role in improving health-related knowledge and encouraging the development of positive health practices should be intensified to help correct this situation.

5.5 Utilization of EmOC services in the Bosomtwe district

The health policy of Ghana indicates that pregnant women should be seen and examined at antenatal clinics at least four times during pregnancy. The results of this study show that majority of pregnant women in the Bosomtwe District in the Ashanti Region of Ghana normally attend ANC clinic and mostly access the facility more than four times. This ensures that the women receive better health services for themselves and their unborn babies in the district. However, it is difficult to suggest that all services rendered under NHIS are absolutely free in the district since 48% of insured clients are made to pay extra charges in the facilities during pregnancy. This result shows some consistency with the study conducted by Devkota (2004), on utilization of EmOC services which reported that the amount of money paid by the mothers directly to the facility was very high.

5.6 Perception about quality of care

Quality according to Crosby, (1979) means doing things right the first time. Time spent at the facility before client was attended to could affect quality of service perceived by clients. The study revealed that mothers spent fewer hours at both private and Christian health association of Ghana (CHAG) facilities, than at the public facilities. The recommended approach by WHO to measuring time spent by clients at the hospital is thirty minutes. Mothers (77.9%) from private facilities spent less than an hour whereas 8% from the public facilities spent more than an hour before attended to. This is in line with a study done by Mavalankar *et al.*, (1996) which reported that one of the important reasons that government facilities are under used (or People come there as a last resort and hence many at times come late) in India is the impression that in government facility no one will pay any attention to them or treat them properly. On the other hand this could

also be a result of lack of incentives and inadequate materials to work with in the government facilities confirming a study conducted by Asuquo *et al.*, (2000) which states that these negative attitudes form barrier to the utilization of health facilities.

At CHAG institutions, mothers spent half of the time they spent at government facilities. This could be explained by that the facility attends to more clients in the district than other facilities causing delay in provision of service to mothers. Again the CHAG institution is the only facility that has a Gynaecologist therefore more clients are referred there during critical situations. In addition CHAG institutions have strong policies such that supervision of nurses at work is done frequently and one can be penalized when work is not done as expected. People spent less time in the private facilities, perhaps because one can be sanctioned at any time the person performs poorly.

The result showed a higher proportion of mothers giving birth at the CHAG facilities than the Public and the Private facilities, one important aspect of the Midwives -patient relationship in public facility is the midwives' attitude towards the patients that may affect the utilization of EmOC services. This is because the result of the study indicated that, on the positive to negative attitude continuum; the midwives' attitude fell at the positive (friendly) in the private facilities but poor in the public facilities. This may have accounted for 59% of the women's choice for future delivery at private facilities. These results show some partial conformity to the study of Cham *et al.*, (2009) on attitude of service providers in the Gambia which reported that women's testimonies depicted mixed reactions. As some expressed satisfaction with the quality of care received others did not.

CHAPTER SIX

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusion

The study sought to determine the availability and use of essential emergency obstetric care services at Bosomtwe District in Ashanti Region.

6.1.1 Availability of EmOC services in the Bosomtwe district

The study shows that EmOC services in the Bosomtwe district were found to be high. There were 3 Comprehensive and 11 Basic facilities per 101724 populations.

6.1.2 Accessibility

Facilities are properly allocated at vantage points making it easy for people to access services except those living in the hard to reach areas that had to walk for seven kilometers before getting means of transport to the health facilities.

6.1.3 The level of knowledge of mothers on EmOC services

This study indicated that the knowledge level of pregnant women about obstetric danger signs (during pregnancy, childbirth and postpartum period) was very high

6.1.4 Utilization of EmOC services in the Bosomtwe district

There was high utilization of EmOC services in the Bosomtwe district. The findings of the study show that majority of pregnant women in the district normally attend ANC clinic and mostly often accesses the facility more than the four times.

6.1.5 Quality of EmOC services

Quality of EmOC services perceived by respondents indicated that midwives attitude fell at the positive (friendly) in the private facilities but negative (poor) in the public facility. This is influencing mothers' choice for future delivery at private facilities. However the overall assessment of services in the district was rated as good.

6.2 Recommendation

The following recommendations are being made for consideration by the major stakeholders.

6.2.1 Ghana Health Service

As a policy of Ghana Health Service making women's health as their concern so it is being recommended that Regional supply officers and Regional Pharmacists ensure all facilities are equipped with the needed equipment and emergency medicines for managing pregnant mothers at the facilities.

6.2.2 Bosomtwe District Health Directorate

It is recommended that a blood bank store with blood should be ensured in all the Comprehensive EmOC facilities. The directorate should ensure an ambulance is purchased for the district hospital to provide transport for EmOC referral cases. The district health directorate in collaboration with the district health management team should have a frequent customer care training for all midwives more especially at the public facilities to complement the Nurses pledge that states that "I promise to respect the dignity of the patients in my charge" There should also be at least two Life Saving Skill Training and counseling for all Midwives in the district in a year. The DHD should

organize education through churches and local information centres as a means of educating the public on action to be taken during emergencies. Education through churches will serve as a recipe for sharing information, with the co-operation of the religious leaders.

The DHMT should collaborate with health workers in the ANCs and labour wards to have well-planned health education schedules for the year and this should include danger signs in pregnancy and action to be taken when a danger sign occurs. The district health directorate in collaboration with the regional health directorate should post a gynaecologist to help relieve overload on the only one available thereby reducing waiting time for mothers transferred to him.

Health worker training and retraining on customer care should be ensured. Training programs should be organized by the DHMT on a regular basis so that all the health workers in the maternal and child health units are trained.

6.2.3 Bosomtwe district assembly

Mothers and children form 70% of the population. As such they are the biggest single target group for the government. Poor roads have increased the time needed to travel to health facilities. In this regard, for the Assembly to have good health for its citizens, it is recommended that they construct good roads for people living by the Lake side to have easy movement to health facility in times of emergencies. Furthermore the Assembly should build more CHPs compounds around the lake to serve as a first point of contact in times of emergencies

REFERENCES

- Andrew Schroeder, D., Hannah Rael, C. & Susan Fowler, P. (2015). Emergency Obstetric Care. *Direct Relief - Emergency Obstetric Care* [Online]. Available: <https://www.directrelief.org/focus/maternal-and-child-health/emergency-obstetric-care/> [Accessed 18 Jan. 2015].
- Appiah-Kubi, K. (2004). Access and utilisation of safe motherhood services of expecting mothers in Ghana. *Policy & Politics*, 32, 387-407.
- Ashford, L. (2002). *Hidden Suffering: Disabilities From Pregnancy And Childbirth In Less Developed Countries*, Population Reference Bureau, Measure Communication.
- Atogembero, A. S. (2005). Improving access and utilization of emergency obstetric care in Tano District, Ghana. [Online]. Available: <http://hdl.handle.net/123456789/1671> [Accessed 18 Jan. 2015].
- Asuquo, E., Etuk, S. & Duke, F. (2000). Staff attitude as a barrier to the utilisation of University of Calabar Teaching Hospital for Obstetric Care. *African Journal of Reproductive Health*, 4, 69-73.
- Bailey, P., Lobis, S., Maine, D. & Fortney, J. (2009). *Monitoring emergency obstetric care: a handbook*, Geneva, World Health Organization.
- Biswas, A. B., Das, D. K., Misra, R., Roy, R. N., Ghosh, D. & Mitra, K. (2005). Availability and use of emergency obstetric care services in four districts of West Bengal, India. *J Health Popul Nutr*, 23, 266-74.
- Bogale, D. & Markos, D. (2015). Knowledge of obstetric danger signs among child bearing age women in Goba district, Ethiopia: a cross-sectional study. *BMC Pregnancy and Childbirth*, 15, 77.

- Bowelo, M., Marribr, L. S., Rabantheng, G. & Thihe, B. (2008). *Emergency Obstetric care assessment in selected Health facilities in Botswana*. 1st ed. [ebook] Botswana: UNFPA. Available at: http://www.gov.bw/Global/MOH/PC_MOH_18.pdf [Accessed 28 Jan. 2015].
- Cham, M., Sundby, J. & Vangen, S. (2009). Availability and quality of emergency obstetric care in Gambia's main referral hospital: women-users' testimonies. *Reprod Health*, 6, 5.
- Collin, S. M., Anwar, I. & Ronsmans, C. (2007). A decade of inequality in maternity care: antenatal care, professional attendance at delivery, and caesarean section in Bangladesh (1991-2004). *Int J Equity Health*, 6, 9.
- Devkota, M. D. (2004). Utilization of Emergency Obstetric Care (EmOC) In Selected Districts of Nepal. Available: http://www.nsmg.org/publications_reports/documents/utilisationEvaluationRpt.pdf [Accessed 26 Dec. 2014].
- Douangphachanh, X., Ali, M., Outavong, P., Alongkon, P., Sing, M. & Chushi, K. (2010). Availability and use of emergency obstetric care services in public hospitals in Laos PDR: a systems analysis. *Bioscience trends*, 4, 318-324.
- Esen, R. K. & Sappor, M.-M. (2013). Factors Associated with the utilization of skilled delivery services in the Ga East Municipality of Ghana Part 2: barriers to skilled delivery. *Int J Sci Tech Res*, 2, 195-207.
- Essendi, H., Mills, S. & Fotso, J.-C. (2010). Barriers to Formal Emergency Obstetric Care Services' Utilization. *Journal of Urban Health: Bulletin of the New York Academy of Medicine*, 88, 2.
- Essendi, H., Mills, S. & Fotso, J.-C. (2011a). Barriers to formal emergency obstetric care services' utilization. *Journal of Urban Health*, 88, 356-369.
- Essendi, H., Mills, S. & Fotso, J. C. (2011b). Barriers to Formal Emergency Obstetric Care Services' Utilization. *J Urban Health*, 88, 356-69.

- Fournier, P. & Dogba, M. (2009). Human resources and the quality of emergency obstetric care in developing countries: a systematic review of the literature. *Hum Resour Health*, 7, 7.
- Gabrysch, S., Campbell, O. M. & Lohela, T. J. (2012). Distance to care, facility delivery and early neonatal mortality in Malawi and Zambia. *PloS one*, 7, e52110.
- Gabrysch, S., Simushi, V. & Campbell, O. M. (2011). Availability and distribution of, and geographic access to emergency obstetric care in Zambia. *International Journal of Gynecology & Obstetrics*, 114, 174-179.
- Ghana Health Service (2010). *Annual Report* [online] Available at: http://www.ghanahealthservice.org/includes/upload/publications/GHS_2010_Annual%20Report_Final.pdf. [Accessed: 14 Jan. 2015]
- GHS. (2014). *Maternal Health / Ghana Health Service* [Online]. Ghana Health Service. Available: <http://ghanahealthservice.org/maternal-health.php> [Accessed 3 Dec. 2014 2014].
- Hailu, M., Gebremariam, A. & Alemseged, F. (2010). Knowledge about Obstetric Danger Signs among Pregnant Women in Aleta Wondo District, Sidama Zone, Southern Ethiopia. *Ethiop J Health Sci*, 20, 25-32.
- Hu, D., Bertozzi, S. M., Gakidou, E., Sweet, S. & Goldie, S. J. (2007). The Costs, Benefits, And Cost-Effectiveness Of Interventions To Reduce Maternal Morbidity And Mortality In Mexico. *Plos One*, 2, E750.
- Islam, M. T., Hossain, M. M., Islam, M. A. & Haque, Y. A. (2005). Improvement of coverage and utilization of EmOC services in southwestern Bangladesh. *Int J Gynaecol Obstet*, 91, 298-305; discussion 283-4.
- Kosum, Z. & Yurdakul, M. (2013). Factors affecting the use of emergency obstetric care among pregnant women with antenatal bleeding. *Midwifery*, 29, 440-6.
- Kusi, F. (2006). *Maternal mortality in Bantama Sub-Metropolitan area, Kumasi, Ghana: a study on access to emergency obstetric care*. MSc.Thesis, Kwame Nkrumah University of Science and Technology.

- Leigh, B., Mwale, T. G., Lazaro, D. & Lunguzi, J. (2008). Emergency obstetric care: how do we stand in Malawi? *Int J Gynaecol Obstet*, 101, 107-11.
- Maine, D., Bailey, P., Lobis, S. & Fortney, J. (2009). *Monitoring emergency obstetric care: a handbook*, World Health Organization.
- Mavalankar, V. D. & Reddy, P. (1996). Can PHC system in India deliver emergency obstetric care?: a management perspective on child survival and safe-motherhood programme. *Social Change*, 26, 14-29.
- Mbonye, A. K., Asimwe, J., Kabarangira, J., Nanda, G. & Orinda, V. (2007). Emergency obstetric care as the priority intervention to reduce maternal mortality in Uganda. *International Journal of Gynecology & Obstetrics*, 96, 220-225.
- MEDINDIA, 2015. *Pregnancy and Antenatal Care* [Online]. Available: <http://www.medindia.net/patients/patientinfo/antenatal-care.htm> [Accessed 23 January 2015].
- Meyers, J., Lobis, S. & Dakkak, H. (2004). UN process indicators: key to measuring maternal mortality reduction. *Forced Migration Review*, 16-18.
- Ministry of Health, G. (2008). National consultative meeting on the reduction of maternal mortality in Ghana: Partnership for Action. Ministry of Health.
- Ministry Of Health (2008). A Synthesis Report, National Consultative meeting on the reduction of maternal mortality in Ghana. [online] Available at: <http://www.moh-ghana.org/UploadFiles/Publications/Synthesis%20Report%20-%20MDG5120427093223.pdf> [Accessed: 24 Jan. 2015]
- Mkoka, D. A., Goicolea, I., Kiwara, A., Mwangi, M. & Hurtig, A.-K. (2014). Availability of drugs and medical supplies for emergency obstetric care: experience of health facility managers in a rural District of Tanzania. *BMC pregnancy and childbirth*, 14, 108.
- Munjanja, S. P., Magure, T. & Kandawasvika, G. (2012). 11 Geographical Access, Transport and Referral Systems. *Maternal and Perinatal Health in Developing Countries*, 139.

- Mwangome, F., Holding, P., Songola, K. & Bomu, G. (2012a). Barriers to hospital delivery in a rural setting in Coast Province, Kenya: community attitude and behaviours. *Rural Remote Health*, 12, 1852.
- Mwangome, F. K., Holding, P. A., Songola, K. M. & Bomu, G. K. (2012b). Barriers to hospital delivery in a rural setting in Coast Province, Kenya: community attitude and behaviours. *Rural Remote Health*, 12, 1852.
- NMHI.com, 2015. *Antenatal care and pregnancy, antenatal tests for pregnant women..* [Online]. Available: <http://www.nmhi.com/a/antenatal-care-and-pregnancy.htm> [Accessed 11 January 2015].
- Ofei, A. K., Bannerman, C. & Kyeremeh, K. (2004). Health Care Quality Assurance. *Accra, Ghana Health Service.*
- Ofori-Adjei, D. (2007). Ghana's Free Delivery Care Policy. *Ghana Med J*, 41, 94-5.
- Oiyenmhonlan, B., Udofia, E. & Punguyire, D. (2013). Identifying obstetrical emergencies at Kintampo Municipal Hospital: a perspective from pregnant women and nursing midwives: original research article. *African journal of reproductive health*, 17, 129-140.
- Okereke, E., Aradeon, S., Akerele, A., Tanko, M., Yisa, I. & Obony, B. (2013). Knowledge of safe motherhood among women in rural communities in northern Nigeria: implications for maternal mortality reduction. *Reproductive health*, 10, 57.
- Okutu, D. (2011). Access to and utilization of antenatal care services in Uganda. Available: <http://uaps2011.princeton.edu/papers/110707> [Accessed 20 Dec. 2014].
- Opoku, S. A., Kyei-Faried, S., Twum, S., Djan, J. O., Browne, E. N. & Bonney, J. (1997). Community education to improve utilization of emergency obstetric services in Ghana. The Kumasi PMM Team. *Int J Gynaecol Obstet*, 59 Suppl 2, S201-7.

- Overbosh, G. B., Nsowah-Nuamah, N. N. N., Van Der Boom, G. J. M. & Damnyag, L. (2003). Determinants of Antenatal Care Use in Ghana. A Report Prepared for Human Resource Development for Poverty Reduction and Household Food Security. Ouagadougou, Burkina Faso: Sécurité Alimentaire Durable en Afrique de l'Ouest Centrale.
- Paxton, A., Bailey, P., Lobis, S. & Fry, D. (2006). Global patterns in availability of emergency obstetric care. *International Journal of Gynecology & Obstetrics*, 93, 300-307.
- Pearson, L. & Shoo, R. (2005a). Availability and use of emergency obstetric services: Kenya, Rwanda, Southern Sudan, and Uganda. *Int J Gynaecol Obstet*, 88, 208-15.
- Pearson, L. & Shoo, R. (2005b). Availability and use of emergency obstetric services: Kenya, Rwanda, Southern Sudan, and Uganda. *International Journal of Gynecology & Obstetrics*, 88, 208-215.
- Raise. (2007). Emergency Obstetric Care. *Raise Fact Sheet: Emergency Obstetric Care* [Online]. Available: http://www.raiseinitiative.org/library/pdf/fs_emoc.pdf [Accessed 13 Nov. 2014].
- Sappor, M. & Esena, R. K. (2013). Utilization Of Skilled Delivery Services In Ghana: Quality Improvement Issues of Maternal Health. 2, 345-367, May 2013 ed.: *International Journal of Innovative Research and Studies*.
- Sharan, M., Ahmed, S., Naimoli, J. F., Ghebrehiwet, M. & Rogo, K. (2010). Health system readiness to meet demand for obstetric care in Eritrea: Implications for results-based financing (RBF). *World Bank Technical Working Paper*.
- Singh, K., Osei-Akoto, I., Otchere, F., Sodzi-Tettey, S., Barrington, C., Huang, C., Fordham, C. & Speizer, I. (2015). Ghana's National Health insurance scheme and maternal and child health: a mixed methods study. *BMC Health Services Research*, 15, 108.
- Ten Hoope-Bender, P., Tinker, A., Azfar, S., Bustreo, F. & Bell, R. (2005). A continuum of care to save newborn lives. *Lancet*, 365, 822-5.

Unfpa/Nicaragua & Impact (2008). Emergency Obstetric Care in Nicaragua: A 2005/6 National Level Assessment and Assessment of a MOH/UNFPA/AMDD Project in three SILAIS (2002-2005).

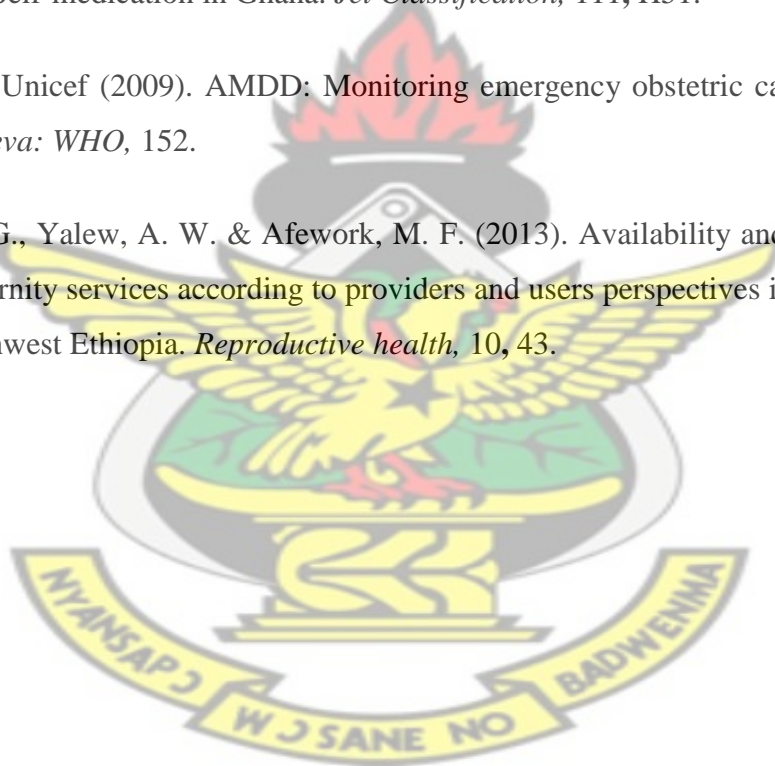
Unicef. (2015). UNICEF - Goal: Improve maternal health. *Millenium Development Goals* [Online]. Available: <http://www.unicef.org/mdg/maternal.html> [Accessed 20 Jan. 2015].

Unicef.org, (2015). *UNICEF - Goal: Improve maternal health*. [online] Available at: <http://www.unicef.org/mdg/maternal.html> [Accessed 12 Jan. 2015]

Van Den Boom, G., Nsowah-Nuamah, N. & Overbosch, G. (2004). Healthcare Provision and Self-medication in Ghana. *Jel Classification*, 111, H51.

Who, U. & Unicef (2009). AMDD: Monitoring emergency obstetric care: a handbook. *Geneva: WHO*, 152.

Worku, A. G., Yalew, A. W. & Afework, M. F. (2013). Availability and components of maternity services according to providers and users perspectives in North Gondar, northwest Ethiopia. *Reproductive health*, 10, 43.



DATA COLLECTION TOOLS

APPENDICES

APPENDIX – I

FORM 1: DATA COLLECTION FORM FOR HOUSEHOLD SURVEY.

INTRODUCTION

My name is Christiana Kontoh. I am MPH student from the Community Health Department, K.N.U.S.T. I am here to carry out a study on the factors that affect the availability and use of Essential Emergency Obstetric Care Services in the Bosomtwe district of the Ashanti region.

The project is designed by Lecturers from the Community health department of KNUST and the Bosomtwe District Health Directorate. The information will be used to address the factors that affect EMOc services in the district. I assure you that everything you say in the interview will be confidential. I would therefore appreciate if you could grant me five (5) minutes of your time to ask a few questions. Thank you.

APPENDIX 1: QUESTIONNAIRES FOR (MOTHERS)

SOCIO-DEMOGRAPHIC CHARACTERISTICS

1. Age []
2. Marital status ()
 1. Single 2. Married 3.Divorced, 4.Widowed 5.Co-habiting
3. Educational background:
 1. No education 2. Primary 3. Secondary 4. Tertiary ,
4. Husband's educational level:
 1. No education 2. Primary 3. Secondary 5. Tertiary
5. To which religion do you belong? 1. Christianity 2. Islam 3. Traditional 4. Other

6. Occupational level of respondents.

1. Unemployed 2. Farmer 3. Trader 4. Civil Servant 5. others

7. Husband's Occupation: 1. Unemployed 2. Civil Servant 3. Tradesman

4. Self-employed 5. Other

8. Who provided money during the emergency?

1. Self. 2. Husband 3. Parents 4. Others

MOTHERS KNOWLEDGE ON EMERGENCY OBSTETRIC CARE

9. What are some of the danger signs in pregnancy that you know? Ans.:__

1. Bleeding[] 2. Severe vomiting[] 3. Severe headache[]
4. Swelling feet[] 5. Others.

10. What do you do when you see any of these danger signs?

1. Visit Hospital /clinic 2. Maternity 3. Herbalist 4. Fetish Priest

11. What are your sources of knowledge?

1. Health facility 2. Media 3. Self-initiative 4. others

HEALTH SEEKING BEHAVIOUR

12. Did you ever attend ANC clinic? 1. YES 2. NO.

13. If yes how many times did you access the services?

1. 4 Times 2. Less than 4 times 3. More than 4 times

14. Did you register with the NHIS? 1. YES 2. NO If yes, did you still pay for extra money? 1. YES 2. NO.

15. Which type of facility did you have your delivery?

1. Government Hospital 2. Private hospital, 3. Private clinic
4. Private Maternity home

17. Were you operated upon during delivery? 1. YES 2. NO
- If yes why? 1. Fetal condition 2. Maternal condition 3. others
18. What was the time spent at home before you got to the health facility?
1. Less than 1 hour 2. 1 hour 3. More than 1 hour
19. By what means did you get to the health facility?
1. by foot 2. Motor bicycle 3. Car 4. Other
21. How long did it take to go to the health facility you attended?
1. Less than 1 hour, 2. 1 hour 3. More than 1 hour.
22. How long did you spend before you were attended to by a health provider?
1. Less than 1 hour 2. 1 hour 3. More than 1 hour
23. What was the attitude of the health provider at the facility you visited?
1. Very friendly 2. Friendly 3. Hostile 4. Unhelpful (Denigrating)
24. Where do you intend delivering the next time you are pregnant?
1. Government hospital 2. Private hospital/clinic 3. Maternity
4. CHAG Hospital 5. TBA
25. Would you say that you received adequate information about the progress of birth?
1. YES 2. NO
26. Would you say that you were involved in every decision making regarding birth and delivery? 1. YES 2. NO
27. Overall, how would you describe the quality of care and services received?
1. Excellent 2. Very good 3. Good 4. Average 5. Poor

APPENDIX – II

APPENDIX 2: QUESTIONNAIRES FOR MIDWIFE IN-CHARGE

INTRODUCTION

My name is Christiana Kontoh. I am MPH student from the Community Health Department, K.N.U.S.T. I am here to carry out a study on the factors that affect the availability and use of Essential Emergency Obstetric Care Services in the Bosomtwe district of the Ashanti region.

The project is designed by Lecturers from the Community health department of KNUST and the Bosomtwe District Health Directorate. The result of the study would help frame better policies and interventions for pregnant mothers. I assure you that everything you say in the interview will be confidential. I would therefore appreciate if you could grant me five (5) minutes of your time to ask a few questions. Thank you.

RESPONDENT II (MIDWIVES)

1. Date of interview-----
2. Name of facility-----
3. Type of facility-----
4. Does your facility provide emergency obstetric care services? 1.YES 2.NO
5. What type of emergency obstetric care does your facility provide? 1, Basic 2, Comprehensive 3. Non-basic
6. Does your facility provide parenteral Antibiotics? 1, YES 2, NO
7. Does your facility provide parenteral Oxytocin? 1.YES 2.NO
8. Do you manage pre-eclampsia in your facility? 1.YES 2.NO
9. If yes, which of the following medicine do you use in managing Pre-Eclampsia?

1. Valium 2. Magnesium Sulphate 3. Phenobarbitone

4. I refer immediately

10. Is the stock of emergency medication easily available? 1 Yes 2 No

11 If no what do you do when there is none? 1. We refer 2. The clients buy and bring

12. What do you do when you get PIH? 1. We treat 2. We refer

13. Do you perform manual removal of placenta in your facility? 1. YES 2. NO

14. How many deliveries did you get in the year 2013? ()

15. How many of the deliveries occurred in 2013 through the following means

caesarean sections [], vacuum [], and forceps []

16. Are there equipment's for EmOC services such as Vacuum aspirator? -----

17. How many Vacuum aspirations did the facility performed in the past one year? ()

18. Have you been trained on management of third stage of labour within the period of six months? 1. YES 2. NO

19. Do you have partograph Sheets in the facility? 1. YES 2.NO

20. Are you able to use it in conducting delivery? 1. YES 2.NO

21. Are there Forceps for extraction? 1. YES 2.NO

22. How many forceps delivery has been conducted for the past one year? -----

APPENDIX – III

APPENDIX 3: QUESTIONNAIRES FOR POLICY MAKERS

INTRODUCTION

My name is Christiana Kontoh. I am MPH student from the Community Health Department, K.N.U.S.T. I am here to carry out a study on the factors that affect the availability and use of Essential Emergency Obstetric Care Services in the Bosomtwe district of the Ashanti region.

The project is designed by Lecturers from the Community health department of KNUST and the Bosomtwe District Health Directorate. The result of the study would help frame better policies and interventions for pregnant mothers. I assure you that everything you say in the interview will be confidential. I would therefore appreciate if you could grant me five (5) minutes of your time to ask a few questions. Thank you.

RESPONDENTS III (POLICY MAKERS)

1. Date of interview-----
2. Name of facility-----
3. Type of facility-----

ASSESSING HEALTH SYSTEM STRUCTURE

4. Do you have a Gynaecologist? 1. YES 2. NO
5. If yes what is the ratio of Gynecologist to clients in your facility? -----
6. Do you have a Midwife? 1. YES 2. NO
7. If yes what is the ratio of a Midwife to client in your facility? -----
8. How many Anesthetists do you have in your facility? -----
9. How often do you train your midwives in life savings skills? -----
10. Do you have blood bank in your facility? 1. YES 2. NO
11. Is there some blood available at the moment? 1. YES 2. NO
12. What is your means of referral system in emergencies?
 1. Ambulance
 2. Passenger vehicle
 3. Bicycle/ motorbike
13. Does your facility provide emergency obstetric care services? 1. YES 2. NO
14. Which type of emergency obstetric care do you provide in your facility?
 1. Basic
 2. Comprehensive
 3. Non-basic
15. Do all the Emergency obstetric care facilities run 24hours? YES () NO ()

