



KAMUZU COLLEGE OF NURSING

**ASSESSMENT OF QUALITY OF ANTENATAL CARE THAT PREGNANT
WOMEN RECEIVE DURING THE INITIAL VISIT AT KAWALE HEALTH
CENTRE IN LILONGWE DISTRICT**

BY

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**A thesis submitted in partial fulfilment of the requirements for the award of
Master of Science Degree in Midwifery**

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Declaration

I, Violet Love Bandawe, hereby declare that this thesis is my original work and it has not been presented for any other awards in the University of Malawi or elsewhere.

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Full Name

Signature

Date

Certificate of Approval

The undersigned certify that this thesis represents the student's own work and effort and has been submitted with our approval.

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Dedication

This thesis is dedicated to my late elder sister Maria, my late dad Joseph Bandawe, and my late mum Monica for imparting in me the spirit of working hard in school. I am very sure these people would have been happy and proud to see me succeed in life. To God be the glory and may their lovely souls continue resting in peace.

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Abstract

Antenatal care is one of the strategies for the improvement of maternal health and the reduction of maternal and neonatal morbidity and mortality. The initial antenatal care visit is the entry point for antenatal care and is the most significant visit since this is the visit where women are categorised into standard care or special care in accordance with the World Health Organization (WHO) guidelines. This study aimed at assessing the quality of antenatal care that pregnant women receive during the initial antenatal visit at Kawale Health Centre in Lilongwe District. Specifically, the study assessed the availability of resources necessary for the provision of quality antenatal care, nurse midwives' knowledge and actual practice, and pregnant women's knowledge of antenatal care and their satisfaction with the care that they receive during the initial visit.

The study design was descriptive which used quantitative approach. Systematic random sampling was used to recruit 384 pregnant women who participated in the study. Data was collected using observation checklists and structured questionnaires for both pregnant women and nurse midwives. The study was guided by Donabedian's Quality of Care Framework. Data collection was done in May and June 2015. Data analysis was done using SPSS version 16.0. Results of the study showed that the structure for providing antenatal care scored below the WHO standard at 46% and the process also scored below standard at 65%. Pregnant women lacked knowledge of antenatal care but showed satisfaction with the care received. Uninterrupted supply of material resources necessary for the provision of quality antenatal care, the use of stipulated guidelines, including health education and counselling to pregnant women is recommended for the improvement of quality antenatal care during the initial visit at Kawale Health Centre.

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List of Abbreviations and Acronyms

AIDS:	Acquired Immune Deficiency Syndrome
ANC:	Antenatal Care
AMDD:	Averting Maternal Death and Disability
COMREC	College of Medicine Research and Ethics Committee
DHO:	District Health Office
HIV:	Human Immunodeficiency Virus
MDGs:	Millennium Development Goals
MDHS:	Malawi Demographic and Health Survey
MMR:	Maternal Mortality Ratio
MoH:	Ministry of Health
NSO:	National Statistics Office
STIs:	Sexually Transmitted Infections
UNICEF:	United Nations Children's Fund
UNFPA:	United Nations Population Fund
WHO:	World Health Organization

Operational Definitions

Antenatal Care: The health care that a woman receives throughout her pregnancy.

Maternal death: Death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by pregnancy or its management but not from accidental or incidental causes.

Maternal Mortality Ratio: Number of maternal deaths during a given period of time per 100,000 live births during the same time period.

Neonatal death: Death of a baby within the first twenty-eight days of life.

Neonatal mortality: The number of deaths of children under 28 days of age in a given year, expressed per 1000 live births.

Skilled attendant: Any person with midwifery skills (for example, doctor or midwife) who has been trained to proficiency in the skills necessary to manage normal deliveries and diagnose, manage or refer obstetric complications.

Quality health care: The degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.

CHAPTER ONE

INTRODUCTION AND BACKGROUND

Introduction

Antenatal care (ANC) is the health care that a woman receives throughout her pregnancy in order to ensure that women and newborns survive pregnancy and childbirth (WHO, 2002). Quality ANC during pregnancy provides opportunities to identify pregnancy risks, and helps to monitor and support the general health care of women who may be susceptible to a range of potentially fatal pathologies including Human Immunodeficiency Virus (HIV), anaemia, malnutrition, tuberculosis, and malaria (Finlayson & Downe, 2013). The quality of antenatal care provided during the initial visit is significant in enabling women and health workers identify risks and danger signs during pregnancy which lead to appropriate action leading to better maternal and fetal outcomes (Tetui, Ekirapa, Bua, Mutebi, Tweheyo, & Wiaswa, 2012). The ability of a woman to identify danger signs during pregnancy and act appropriately depend on the quality aspects of antenatal care provided during the initial visit such as the depth of health education and counselling. Quality health care is the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge (Institute of Medicine, 2001). These are services that are safe, effective, patient centred, timely, efficient and equitable (WHO, 2006).

Antenatal care is one of the recommended interventions to reduce maternal and neonatal mortality. Quality antenatal care during the initial visit and subsequent visits

provides pregnant women and their families with the necessary information and advice for a healthy pregnancy, safe childbirth, and postnatal recovery including care of the newborn (Finlayson & Downe, 2013). Based on the results of the WHO antenatal care randomized trial, four antenatal visits are recommended for women without any complications with the first visit occurring in the first three months of pregnancy (WHO, 2002).

Although antenatal care coverage is high in low income countries including Malawi, WHO multi country survey reports indicate that maternal and neonatal mortality also remains high in these countries (WHO, UNICEF, UNFPA, & World Bank, 2010). Furthermore, majority of these women start their antenatal care late and do not meet the four recommended visits. Global estimates show that 289,000 maternal deaths occurred worldwide in 2013 with 99% of all maternal deaths occurring in the developing world (WHO, UNICEF, UNFPA, World Bank, & United Nations Population Division, 2014). In addition, it is also estimated that about 3.3 million neonatal deaths which represent 41% of all under five deaths occur each year (WHO, 2011). Just like maternal deaths, 99% of all new born deaths occur in low-and middle income countries (WHO, 2011). Evidence shows that high maternal and neonatal mortality rates are associated with inadequate and poor quality maternal health care including antenatal care (WHO, 2007).

In Malawi, it is estimated that 96.1% of women who become pregnant receive antenatal care from a skilled attendant yet maternal and neonatal mortality rates remain high at 574/100,000 live births and 29 deaths per 1000 live births respectively (NSO, 2014). Recent estimates however indicate that the maternal mortality rate in Malawi is at 634/100 000 (WHO, 2015). Currently, there is paucity of information regarding the quality of

antenatal care that is provided to pregnant women specifically during the initial visit hence the need to study the quality of antenatal care during this visit.

Background

Antenatal care, which is the care that a woman receives throughout her pregnancy, is one of the key strategies to improve maternal and neonatal health and reduce maternal and neonatal mortality. Provision of antenatal care was identified as one of the four strategies for achieving the goal for reducing maternal mortality by half in developing countries at the 1987 Safe Motherhood Conference in Nairobi Kenya (Zureick-Brown, Newby, Chou, Mozoguchi, Say, Suzuki & Wilmoth, 2013). This was the first of a series of international meetings that highlighted the worldwide problem of maternal mortality. The other three strategies included universal access to family planning, skilled assistance during labour and delivery, and ensuring access to emergency obstetric care. Antenatal care enables early detection of complications and prompt treatment (e.g., detection and treatment of sexually transmitted infections and anaemia), prevention of diseases like tetanus through immunization, micronutrient supplementation, birth preparedness and complication readiness, and health promotion and disease prevention through health messages and counselling of pregnant women (NSO,2011). Finlayson and Downe (2013), indicated that antenatal care provides opportunities to identify the risks of pregnancy and, in a broader sense, to monitor and support the general health care of women who may be at risk of potentially fatal pathologies including HIV, anaemia, malnutrition, tuberculosis, and malaria.

WHO recommends a minimum of four ANC visits known as the Focused Antenatal Care (FANC) approach. This approach emphasizes on the quality of services provided at

each antenatal care visit over the quantity of visits (WHO, 2002). FANC approach is a basic model that is intended for the management of women without any evidence of pregnancy related complications, medical conditions or major health related risk factors. According to WHO, women with complications, special needs, or conditions beyond the scope of basic care require additional visits depending on their individual needs. It is estimated that 75% of women initiating ANC will fall into the basic category while 25% will need special care (WHO, 2002). WHO emphasizes on the interventions that are proven to be effective. Proven effective interventions include serological screening and treatment for syphilis and HIV infection, blood haemoglobin level testing to detect anaemia, iron and folate supplementation for the prevention of anaemia, anti-tetanus immunization, Intermittent Preventive Therapy (IPT) and use of Insecticide Treated Nets (ITNs) for malaria prevention, blood pressure measurements, as well as urine tests for bacteraemia and albumin. In addition, educating women about planning for a safe birth and danger signs of pregnancy and how to deal with them are also included as important components of FANC.

The initial antenatal visit is the most significant visit during antenatal care because this is the visit where women are grouped into two categories based on assessment findings in accordance with the WHO antenatal care guidelines. WHO recommends that the initial visit should occur in the first trimester preferably around 12 weeks' gestation. According to WHO (2002), the emphasis during this visit is on obtaining a comprehensive woman's history, performing a systematic head to toe physical assessment, and carrying out laboratory investigations. The focus is to collect evidence of the woman's eligibility to follow FANC approach or not.

The quality of antenatal care that is delivered to women during the initial visit has a significant impact on the future decisions that women make on health seeking behaviours. For example, a meta-synthesis of qualitative studies on the reasons why pregnant women do not use antenatal care in low and middle-income countries revealed that pregnant women who perceived no benefits after attending the initial antenatal visit made a decision not to return for antenatal care as such women did not receive adequate antenatal care (Finlayson & Downe, 2013). Inadequate antenatal care is however associated with poor pregnancy outcomes like low birth weight and stillbirths since some preventive interventions are missed when women do not attend antenatal care services (Menezes, Yakoob, Soomng, Haws, Darmstadf, & Bhutta, 2009).

Quality antenatal care is generally thought to be an effective strategy for improving the outcomes of pregnant women and their babies (Hollowell, Oakley, Kurinczuk, Brocklehurst, & Gray, 2011). Several neonatal morbidities that also contribute to higher rates of neonatal deaths such as low birth weights and prematurity have been found to be common in women with no antenatal care and those with inadequate antenatal care (Okoro, Coonrod, Chapple, & Drachman, 2012). WHO (2011) highlighted that since more than one third of all child deaths occur within the first month of life (neonatal period), providing skilled care during pregnancy as well as during and after birth greatly contributes to child survival. Quality antenatal care during the initial visit and appropriate follow up in the subsequent visits can therefore help in the reduction of neonatal morbidity and mortality as well as maternal morbidity and mortality in Malawi.

Antenatal care coverage has been reported to be successful in the developing world (Wang, Alva, Wang, & Fort, 2011). According to Wang, Alva, Wang, & Fort, (2011),

majority of the countries in the developing world have over 80% coverage for antenatal care and in some countries the coverage reaches 90%. This data however indicates some gaps in antenatal care coverage. Despite the progress in ANC coverage, many countries in Sub-Saharan Africa are known to have unsatisfactory levels of the WHO recommended number of four antenatal visits. In addition, women from the Sub-Saharan region start antenatal care later in second and third trimester indicating the need for health care providers to ensure good quality care during this visit. The content of antenatal care in Sub-Saharan Africa has been evaluated to be inadequate as most components of the antenatal care package are missed during antenatal care provision (Wang et al., 2011). The content of antenatal care provides an indication of its quality. In most Sub-Saharan Africa, it is estimated that less than half of women who receive antenatal care are informed of the signs of pregnancy complications (Wang et al., 2011). According to Wang et al. (2011), some of the important laboratory tests like urine tests and blood tests are less likely to be taken during antenatal care in most parts of the region. Additionally, most countries in Sub-Saharan Africa do not provide pregnant women with preventive medicines for malaria despite the high prevalence of malaria in this region (Wang et al., 2011). This data therefore indicates the missed opportunities for prevention of maternal and neonatal morbidity and mortality during ANC in the region and this can partly explain the reasons for higher rates of maternal and neonatal mortality rate in the region.

Latest data from WHO, UNICEF, UNFPA, and World Bank (2015), estimates that worldwide, 303,000 maternal deaths occurred in 2015 indicating a 44% decline from the levels of 1990. Despite the decline, developing countries continue to account for 99% of all maternal deaths worldwide. Developed countries account for only 1% of these deaths

making maternal mortality a health indicator with the greatest disparity between developed and developing countries. Sub-Saharan Africa alone accounted for 66% (201 000) of global maternal deaths followed by southern Asia which had 66 000 maternal deaths. Studies indicate that countries with high maternal, perinatal and neonatal mortality have inadequate and poor quality health services including antenatal care which can be associated with reduced utilization of health care services (WHO,2007; WHO,2011). In low and middle income countries, it is estimated that 50% of women of the reproductive age group do not receive adequate antenatal care (Finlayson & Downe, 2013). Other findings indicate that in all developing countries, pregnant women are more likely to get their blood pressure measured but less likely to get their blood samples and urine samples tested (Wang et al., 2011). WHO (2011) indicated that good implementation of evidence-based cost effective packages of interventions can improve the processes and outcomes of maternal health care.

Quality antenatal care during the initial visit provides an opportunity to deliver interventions for improving maternal nutrition, providing health education, and encouraging skilled attendance at birth and use of facilities for emergency obstetric care (Raatikainen, Heiskanen, & Heinonen, 2007). With the spread of HIV, quality ANC during the initial visit also serves as an entry point for HIV counselling and testing hence it has the potential for prevention of Mother-To-Child Transmission of HIV infection (MTCT). MTCT which is also known as vertical transmission is the primary cause of HIV infection in children under ten years of age and HIV and AIDS is one of the leading causes of deaths among women of the reproductive age worldwide (WHO, 2010). Evidence from WHO also suggests that HIV positive women have a greater risk of dying of pregnancy related complications than those who are HIV negative. Without treatment, around 15-30% of babies born to HIV positive

women will become infected during pregnancy and delivery, and a further 5-20% will become infected through breastfeeding. In Malawi, HIV prevalence is higher in women at 12.9% and prevalence among pregnant women is estimated at 8.8% (NSO, 2011). MTCT in Malawi is the second major mode of HIV transmission accounting for 25% of all new infections (MOH, 2012). Maternal ART reduces the viral load and this provides optimal protection during pregnancy, delivery, breastfeeding and for subsequent pregnancies (WHO, 2010). The risk of MTCT is less than 5% if the mother starts ART early in second trimester and is fully adherent to ART throughout pregnancy and breastfeeding (WHO, 2011) . Maternal ART also reduces postpartum mortality rate in HIV infected women. The current management recommends that all pregnant women should be counselled and tested for HIV during the initial antenatal visit and if found positive, they should start Antiretroviral Treatment (ART) immediately at fourteen weeks' gestation and continue ART for life. Quality antenatal care during the initial visit can therefore help in the timely diagnosis of HIV infection and management of HIV positive mothers and this can contribute to the reduction of maternal and neonatal mortality related to HIV infection.

Quality antenatal care during the initial visit can also ensure the timely diagnosis and treatment of maternal syphilis. Syphilis is one of the preventable conditions affecting a large number of pregnant women worldwide which causes serious health problems in pregnant women and even deaths to their infants (Hawkes, Gomez, & Broutet, 2013). Global estimates indicated that in 2008, more than one million pregnant women around the world were infected with syphilis and this caused approximately 520,000 adverse effects including still births, neonatal deaths, preterm and low birth weight babies and congenital infections (Newman, Kamb, Hawkes, Gomez, Say, Seuc & Broutet , 2013). These adverse effects

resulted from un timely diagnosis and treatment in pregnant women indicating poor quality of antenatal care services. Quality antenatal care during the initial visit can therefore ensure timely diagnosis and treatment of maternal syphilis and can result in greater reduction of neonatal morbidity and mortality due to congenital syphilis. Thus antenatal care interventions during the initial visit and subsequent visits could contribute to the reduction of maternal and neonatal mortality in the world.

Increasing antenatal care coverage through the provision of quality care during the initial visit can contribute to the reduction of maternal mortality. WHO (2010) indicated that an increase in antenatal care coverage from 64% in 1990 to 80% in 2008 along with an increase in the proportion of deliveries attended by skilled health personnel from 53% to 63% in the same period contributed to the decline in maternal mortality in the developing regions. Furthermore, an increase in contraceptive use among women of the reproductive age (15-49 years) from 52% to 62% also contributed to the decline. WHO therefore recommended that efforts to improve maternal health and reduce maternal deaths should focus on increasing access to effective interventions and on improving quality of health care including antenatal care. Global implementation of strategies designed to encourage antenatal care attendance are usually based on the assumption that if high-quality services are provided, people will come to them (Finlayson & Downe2013). Thus, if quality care is provided during the initial visit, women will see the benefits of attending antenatal clinics and this will increase the opportunities for the identification of any pregnancy problems and timely management of such problems. It is therefore important that the services that a pregnant woman receives when she goes to the ANC clinic for the first time are fit for

purpose and that the benefits are perceived to outweigh potential harms so that women continue to attend antenatal care services.

Context of antenatal care in Malawi

Malawi is one of the countries in Sub-Saharan Africa with the highest MMR of 574 deaths per 100 000 live births (NSO, 2014). Neonatal mortality rate is also high in the country and it is estimated at 29 deaths per 1000 live births (NSO, 2014). In their separate report, WHO, UNICEF, UNFPA, and World Bank (2015) also indicated that Malawi is one of the eighteen countries in Sub-Saharan Africa with the highest MMR of 634 deaths per 100 000 live births. The causes of maternal deaths in Malawi are attributed to the three delays which include: delay in making the decision to seek health care, delay in reaching the health facility, and delay in receiving the appropriate treatment (MoH, 2011).

Postpartum haemorrhage/retained placenta, postpartum sepsis, ruptured uterus and severe preeclampsia/ eclampsia are considered the most common direct causes of maternal deaths in Malawi (MoH, 2011). Malaria, anaemia, and HIV and AIDS are the major indirect causes of maternal deaths in Malawi. Some of these conditions that cause maternal deaths like preeclampsia/eclampsia, malaria, anaemia and HIV and AIDS also contribute to the negative outcomes of the newborn which in turn contributes to high neonatal mortality in the country. These conditions are highly associated with prematurity which is one of the leading causes of neonatal deaths in Malawi. Prompt management of these conditions during antenatal care beginning at the first visit can therefore help in the reduction of maternal and neonatal mortality in the country.

Quality antenatal care during the initial visit in Malawi can help women and their families realize pregnancy complications and prepare for them such that early decisions to seek timely care can be made and this can in one-way help prevent the high burden of maternal mortality in the country. In Malawi, the antenatal care policy also follows the WHO antenatal care (FANC) approach which emphasizes on the quality of care at each antenatal visit over the quantity of visits (NSO,2011). This approach is an essential health care package of maternal and neonatal health guidelines of the Malawi Ministry of Health. FANC hinges on the principle that every pregnant woman is at risk of developing complications.

Antenatal care in Malawi is provided at all levels of health care delivery which are at primary level, secondary level and tertiary level. The services are available at public health facilities, Christian Health Association Hospitals (CHAM), and private clinics. According to Malawi Demographic and Health Survey (2014), in Malawi, 96.1% of women who become pregnant receive antenatal care from a skilled attendant with the majority of them (85%) being attended to by nurses and midwives. Only 12% are attended by doctors or clinical officers while 2% are attended by unskilled personnel and 2% do not receive antenatal care. Despite the high antenatal care coverage in Malawi, only 12% start their antenatal care in the first trimester and 44.7% meet the four WHO recommended number of antenatal care visits. Furthermore, although antenatal care coverage is highly associated with increased skilled assistance during delivery (Pervin et al., 2012), a great disparity is also noted between antenatal care coverage and the number of deliveries attended by skilled personnel in Malawi. Only 87.4% of births are assisted by skilled birth attendant as maternal and neonatal mortality still remains high as indicated above. These disparities in maternal health

indicators in Malawi, specifically the high maternal and neonatal mortality rate despite the high antenatal care coverage, poses a question on the quality of antenatal care that is provided to these women at each antenatal care visit hence the need for this study. The quality of antenatal care in this case involves comprehensive history taking and physical examinations, laboratory investigations detection of complications and prompt management of those complications, prevention of diseases, and health and counselling.

In Lilongwe District where Kawale Health Centre is, maternal deaths, neonatal deaths and fresh stillbirths are also a challenge to the district. District data indicate that in 2012-2013 fiscal year, 49 women of child bearing age died of pregnancy related complications, 437 neonatal deaths occurred, and 449 stillbirths also occurred in the district. Some of the causes of maternal deaths included malaria and pre-eclampsia/eclampsia which could be prevented through quality antenatal care services in the district.

Studies on antenatal care in Malawi have mostly focused on factors associated with the delays in starting antenatal care and factors affecting antenatal care attendance (Pell et al., 2013, Chiwaula, 2011; Banda, 2013). A few Studies have assessed the quality of focused antenatal care in general but have not focused on the initial antenatal visit which is the entry point of antenatal care (Lungu, Malata, Chirwa, & Mbendera, 2011; Mgawadere, 2009). There is limited information on the quality of care that is provided on specific antenatal visits like the first antenatal visit which is the main entry point of antenatal care for a woman during her pregnancy hence this research focused on care provided during this visit.

Antenatal care at Kawale Health Centre

Kawale Health Centre is one of the health centres under Lilongwe District Health Office which serves quite a large population in the district. Antenatal care services at Kawale Health Centre started in the early 1990s. Currently the facility provides antenatal care services to pregnant women in the catchment population for free from Monday to Friday. Midwives are the main providers of antenatal care at this facility. The 2014-2015 health facility profile data indicated that the total catchment population for the facility was 268 827 and the expected number of pregnancies for 2014-2015 fiscal year was 13 441. Facility data for 2014-2015 fiscal year also indicated that 85.3% of all pregnant women in this catchment population received antenatal care at this facility but only 6.2% of these started their antenatal care during their first trimester while only 3.7% met the WHO recommended four targeted visits of focused antenatal care.

Problem statement

Literature indicates that antenatal care is one of the recommended interventions to reduce maternal and neonatal mortality. Quality antenatal care is highly associated with increased skilled attendant at delivery and improves the health of both the pregnant woman and unborn baby (Pervin et al., 2012). Consequently, quality antenatal care influences the outcomes of the pregnancy. Although antenatal care coverage is high in Malawi, maternal and neonatal mortality rates remain high in the country. Maternal and neonatal complications and deaths have also been reported and recorded in Lilongwe District. For 2012-2013 fiscal year, 49 maternal deaths, 437 neonatal deaths, and 449 still births were recorded in the district. Kawale Health Centre is one of the health centres under Lilongwe District Health Office that provides antenatal care to many women since the facility has a

larger catchment population as compared to other health centres in the district. The facility has been recorded to be one of the health centres that refer complicated maternal and neonatal conditions to Bwaila Hospital which is the main referral hospital for all health centres in Lilongwe District. Furthermore, although antenatal care coverage is 85% at Kawale, only 6.5% of these women deliver at this facility. Majority of the women that attend antenatal care at Kawale bypass the facility to deliver at Bwaila. This also raises a question on why these women bypass Kawale for delivery despite attending antenatal care there. One would therefore question the quality of antenatal care that is provided. Literature review indicated scanty information on the quality of antenatal care that is provided to pregnant women during the initial visit. There was no information on how antenatal care is provided at Kawale Health Centre. It was therefore necessary to assess the quality of antenatal care that is provided to pregnant women during the initial visit in order to identify the quality gaps and improve on them.

Significance of the study

Literature review indicates that antenatal care is one of the key strategies for the improvement of maternal health and reduction of maternal and neonatal mortality. The initial antenatal visit is the most significant and influential visit because it provides an opportunity to distinguish women who require special attention from those who require standard care. Assessing the quality of care that pregnant women receive during the initial visit will assist in identifying the quality gaps which will indicate the missed opportunities for delivering effective interventions during antenatal care. This will help in identifying key elements that need to be improved for the delivery of quality antenatal care at health centre level, district level and national level thereby contributing to the reduction of maternal and

neonatal morbidity and mortality in the country. The study findings will help in providing new information regarding antenatal care services at the entry point at health centre level, and this knowledge can be used in the planning of activities by the district with regards to antenatal care provision.

Objectives of the study

Broad objective

To assess the quality of antenatal care that pregnant women receive during the initial visit at Kawale Health Centre

Specific objectives

- 1 To assess the availability of the resources necessary for the provision of quality antenatal care during the initial antenatal visit at Kawale Health Centre.
- 2 To examine midwives' knowledge and practice in the provision of antenatal care services during the initial visit at Kawale Health Centre.
- 3 To explore pregnant women's knowledge of antenatal care at Kawale Health Centre.
- 4 To assess pregnant women's satisfaction with the care rendered to them during the initial antenatal visit at Kawale Health Centre.

Conceptual framework.

In this study, the structure, process, and outcome (SPO) model which was developed by Avedis Donabedian was used to assess the quality of care received by pregnant women during the initial visit at Kawale Health Centre. The structure, process, and outcome model

is a conceptual framework that provides a framework for examining health services and evaluating quality of care. According to this model, information about quality of care can be drawn from three categories; structure, process and outcome (Donabedian, 2003).

Structure

According to Donabedian (2003), structure denotes the conditions under which care is provided. It includes material resources, human resources and organizational characteristics. Material resources include the facilities, equipment and money. Human resources include the number of personnel, the variety, qualification and support staff. Organizational characteristics include organization of medical and support staff, the presence of teaching and research functions, kinds of supervision and performance reviews, and methods of paying for care.

Infrastructure standards for providing antenatal care services include having a conducive waiting area, an adequate counselling and examination room with good ventilation and lighting, functional toilets for clients and health care providers, essential equipment and lab supplies and specific guidelines (MOH, 2007). In this study, the structure quality evaluation of Kawale Health Centre antenatal clinic was done by assessing if the facility has the structural resources necessary for the provision of ANC services. The availability of essential equipment like light source, speculums, gestational age calculators, infection prevention materials, blood pressure machines, stethoscopes, foetal scopes, examination gloves and tape measures was assessed. The availability of laboratory supplies like urine test kits, urine dip sticks, HIV test kits, test kits for syphilis, and reagents for blood haemoglobin level was also assessed. In addition, the availability of essential drugs like

ferrous sulphate, Sulphadoxine Pyrimethamine, Albendazole and Benzathine Penicillin for the management of syphilis was also assessed.

Process

This denotes the activities that constitute health care (Donabedian, 2013). This includes practitioner activities in making diagnosis, recommending or implementing treatment, rehabilitation, prevention, and patient education. It also includes patient activities in seeking care and carrying it out. During the initial antenatal care, it is expected that a comprehensive history of a pregnant woman and a thorough physical examination will be taken including some laboratory investigations. The process quality was therefore assessed by assessing midwives' knowledge on the antenatal care content and their actual practice in the provision of antenatal care during the initial antenatal visit.

Outcome

Donabedian (2003) defines outcome as changes (desirable or undesirable) in individuals and populations that can be attributed to health care. According to Donabedian, outcome includes changes in health status, changes in knowledge acquired by patients and family members that may influence future care, changes in the behaviour of patients or family members that may influence future health and satisfaction of patients and their family members with the care received and its outcome.

In this study, outcome was measured by assessing the knowledge gained by the pregnant women after attending the initial antenatal visit. Focus was put on their knowledge of danger signs of pregnancy, knowledge on where to seek care in case of emergency, knowledge on the signs of true labour, and knowledge on the importance of some of the

interventions that are done during the initial antenatal visit. Furthermore, outcome was measured by assessing whether the pregnant women are satisfied with the care rendered to them during the initial visit or not. The elements of Donabedian's quality assessment are summarised in Figure 1.

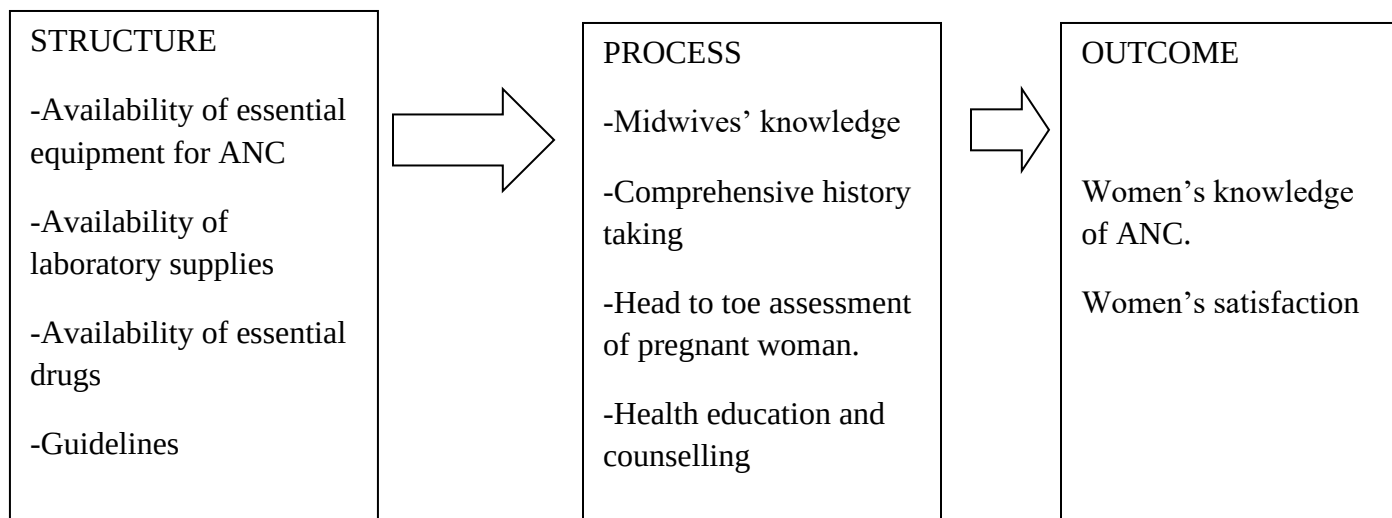


Figure 1: A modified structure, process, and outcome model of quality antenatal care assessment and its elements adapted from Avedis Donabedian (2003)

CHAPTER TWO

LITERATURE REVIEW

Introduction.

This chapter presents a review of literature that was found to be relevant to the study. Literature review comprised of findings from studies conducted by different researchers globally, regionally and within Malawi in relation to quality of antenatal care provided to pregnant women. Different data bases which included Google scholar, HINARI, PubMed and WHO website were used to search literature. Unpublished studies and articles were also reviewed. Literature search was guided by the study objectives. The search terms that were used included: maternal health, quality of antenatal care, nurses' knowledge on antenatal care, maternal and neonatal health in Malawi, pregnant women's knowledge of antenatal care, pregnant women's satisfaction with antenatal care, the practice of antenatal care, and the initial antenatal care visit.

Antenatal care is regarded as a very important component of maternal health services (Majrooh, Hasnain, Akram, Siddiqui, & Memon, 2014). It provides an opportunity for pregnant women and their families to learn about pregnancy risk factors and guides their health seeking behaviour and practices thereby preventing maternal and neonatal morbidity and mortality. The quality of antenatal care services is reflected on the content of antenatal care services provided to the women during each antenatal care visit. As presented above, Malawi is one of the countries in the Sub-Saharan African region with very high maternal mortality rate. WHO (2006) argues that even if health systems are well developed and

resourced, evidence suggests that quality of health services remains a major concern, with expected outcomes not predictably achieved and with wide variations in standards of health care delivery within and between health care systems. WHO therefore emphasizes that every health system should seek to make improvements in six dimensions of quality which require that health care services should be effective, efficient, accessible, acceptable or patient centred, equitable and safe.

The initial antenatal visit is the entry point for the care that a woman receives throughout her pregnancy. The quality of care provided during this visit can assist in early identification and prompt management of underlying conditions in the woman that can put the woman at a greater risk due to her pregnancy state. If much attention is not given to the woman during this visit, some underlying conditions like anaemia and hypertension can be missed and these can progress to pregnancy complications thereby contributing to the burden of maternal morbidity and mortality. Women's impression of the quality of care provided during this visit can have a great impact on their future decisions on whether to seek maternal health care or not.

Availability of resources

The availability of resources in health facilities plays a bigger role in the provision of care. Even if the facility is well staffed, the resources that are available can have an impact on the quality of care provided. Lack of resources compromises the care that women deserve to receive and affects women's satisfaction with the care rendered to them. A global situational analysis on facilitators and barriers to quality of care in maternal, new-born and child health revealed that non availability of essential drugs and necessary equipment compromised the quality of care rendered by health care workers (Nair et al., 2014). In low

and middle income countries, lack of resources was identified as one of the reasons for poor utilization of antenatal care services by pregnant women (Finlayson & Downe, 2013). Shortage of resources was also reported as one of the reasons for failure to carry out some of the recommended laboratory tests during antenatal care like syphilis testing and haemoglobin testing in Ghana, Kenya, and Malawi (Pell et al. 2013). In their study in Eastern Ghana, Tetui et al. (2012) found that the necessary supplies and drugs needed for the provision of antenatal care were inadequate and this affected the quality of care provided. In rural southern Tanzania, shortage of staff, equipment, and supplies were also the main reasons for late initiation of antenatal care among pregnant women (Sarker et al., 2010).

In Malawi, availability of the necessary resources for antenatal care provision is also a major challenge in most facilities providing antenatal care. The Malawi needs assessment on EmONC services revealed that most of the health centres in Malawi did not have the recommended drugs necessary for the provision of emergency obstetric care (MoH, 2011). The assessment further revealed that FANC guidelines were not available in 52% of the studied facilities. The challenge of inadequate resources was also revealed during the Malawi Service Provision Assessment (MSPA) 2013-14. Only about half of the facilities offering ANC had the required resources for infection prevention during antenatal care provision (MoH, & ICF International, 2014). A study on the quality of antenatal care at Lungwena Health Centre in Mangochi Malawi also revealed that resources for the provision of antenatal care were not adequate (Mgawadere, 2009). Inadequate resources have therefore a negative impact on antenatal care provision in different antenatal care settings. It is however not known whether resources are a challenge and affect the quality of care

provided during the initial visit at Kawale Health Centre in Lilongwe hence the need to provide this information.

Midwives knowledge and practice in antenatal care provision

Lack of knowledge affects the quality of services delivered and it is one of the challenges that have been reported by those involved in the provision of care. In Ethiopia for example, lack of training was identified as one of the challenges faced by services providers in the provision of PMTCT services (Asefa & Mitike, 2014). Lack of training therefore contributed to health personnel's inadequate knowledge in the provision of PMTCT services to pregnant women. In a systematic review in Sub-Saharan Africa, Hill et al. (2013) found that health care providers' knowledge, performance, including confusion over the timing and dosing of Fansidar in relation to gestation of each IPTP dose affected the delivery, access and use of interventions to prevent malaria in pregnancy in Sub-Saharan Africa.

In some cases, even where nurses have adequate knowledge of antenatal care content, their actual practice has been rated poor. In Malaysia, a study on assessing the extent of adherence to the recommended antenatal care content found that nurses did not follow the proper steps when assessing pregnant women, did not perform health education as expected, and documented less than 80% of the recommend ANC content in almost half of the women's health passports (Yeoh, Hornetz, Ahmad Shauki, & Dahlui, 2015). A study on compliance with FANC in rural Burkina Faso, Uganda and Tanzania found that health workers in all the three countries failed to perform all procedures stipulated in the FANC guidelines (Conrad et al., 2012). Similarly, In Rwanda, a cross-sectional study on characteristics associated with performing recommended practice in maternal and newborn

care found that most of the facilities did not perform the recommended practices (Sipsma, Curry, Kakoma, Linnander, & Bradley, 2012). Another study on quality of antenatal care services in Eastern Uganda found that midwives did not counsel women for risk factors and birth preparedness during antenatal care (Tetui et al., 2012). In Malawi, a study on barriers to the utilization of focused antenatal care among pregnant women in Ntchisi found that almost all health workers had knowledge of FANC guidelines but only 72% of them implemented these guidelines when performing individualized care (Banda, 2013).

The attitude of nurses also affects the quality of care as well as the perception of the recipients of care. Several studies have reported of poor attitude of midwives during antenatal care service provision. For example in low and middle-income countries, a metasynthesis of qualitative studies reported that pregnant women do not use antenatal services because of poor attitude of health care providers including nurses (Finlayson & Downe, 2013). In Guinea, a study on factors affecting attendance at the timing of antenatal found that women were discouraged by the poor attitude of nurses during antenatal care as such this affected their ANC attendance (Andrew et al., 2014). In rural Uganda, attitudinal and communication problems were identified as a problem between nurses and pregnant women (Ayiasi et al., 2013). In Malawi, a study on barriers to maternal health services in Chikwawa also found that women were discouraged by the rudeness of health personnel including nurses (Kambala, Morse, Masangwi, & Mitunda, 2011). However, other studies reported about the good attitude of health workers including nurses. In Oman for example, a study on satisfaction among expectant mothers with antenatal care services in the Musandam region revealed that 81% of women were happy and satisfied with the antenatal care services mainly because of the positive attitude of doctors and nurses (Ghobashi &

Khandekar, 2008). Nurses' knowledge, attitude, as well as actual practice in antenatal care provision can therefore have an impact on the quality of care received by pregnant women in different settings.

Pregnant women's knowledge of antenatal care

Pregnant women's knowledge of the antenatal care concept is an important determinant factor for service utilization. Knowledge empowers the pregnant women in making decisions about health seeking. Lack of awareness contributes to low antenatal care utilization (Majrooh et al., 2014). A systematic review and meta synthesis review on factors affecting the delivery, access, and use of interventions to prevent malaria in pregnancy revealed that women who had greater knowledge of malaria and ITNs were more likely to use ITNs than women who had less knowledge during pregnancy (Hill et al., 2013). In Nepal, women with higher levels of education were more likely to meet the WHO recommended number of ANC visits and were more likely to receive good quality antenatal care (Joshi, Torvaldsen, Hodgson, & Hayen, 2014).

Women's knowledge also influences their ability to assess the quality of care that they receive. In South West Ethiopia, pregnant women with low education were more likely to be satisfied with FANC services compared to those with higher education (Chemir, Alemseged, & Workneh, 2014). In Ghana, perceived quality of antenatal care services was higher in women who attained junior education than those with higher education (Atinga, Baku, & Adongo, 2014). In Ghana again, many pregnant women were not able to differentiate between danger signs of pregnancy and pregnancy discomforts (Lori, Dahlem, Ackah, & Adanu, 2014).

Studies assessing knowledge of antenatal care content in women have been carried out and different findings have been reported. In Guinea for example, most respondents had limited understanding of the specific antenatal interventions and this decreased their perceived benefits of antenatal care attendance (Andrew et al., 2014). In Southern Ethiopia a study on knowledge about danger signs among pregnant women found that knowledge level of pregnant women about obstetric danger signs during pregnancy, childbirth and postpartum period was low (Hailu, Gebremariam, & Alemseged, 2010). In Indonesia, lack of community awareness about the importance of antenatal care services was one of the reasons for poor utilization of such services (Titaley, Hunter, Heywood, & Dibley, 2010) . Another study in south west Nigeria on practice, knowledge and perceptions of antenatal care services among pregnant women and nursing care mothers found that knowledge of antenatal care was good in only 15% of the participants (Fagbamigbe, Akambiemu, Adebowale, Olumide, & Korte, 2013). In Tanzania however, a study on factors influencing pregnancy outcomes found that most pregnant women were aware of the risk factors that affect pregnancy outcomes like smoking, alcohol consumption, poor nutrition and unsafe sex (Mosha & Philemon, 2010).

In Lilongwe Malawi, women's timely initiation of antenatal care was associated with knowledge of the services. Women who had knowledge of the right time to start antenatal care were more likely to start antenatal care in the first trimester as compared to those who had no knowledge (Chiwaula, 2011). Another study in Mangochi found that women were not sure of what services they were supposed to receive during antenatal care and this affected their evaluation of whether the care they received was adequate or not (Mgawadere,

2009). Women's knowledge of antenatal care services is therefore important in determining their utilization of the available services and their evaluation of care rendered to them.

Pregnant women's satisfaction with antenatal care

Women's satisfaction with care may influence their future decisions in seeking health care. Satisfied women are more likely to return for health services whenever there is a need to do so in future (Nwaeze, Enabor, Oluwasola, & Aimakhu, 2013). Satisfaction mainly reflects the process of care in some cases. A review of literature on determinants of women's satisfaction with maternal health care in developing countries found that the process of care dominated the determinants of maternal satisfaction (Srivastava, Avan, Rajbangshi, & Bhattacharyya, 2015). Good client- provider communication during care provision significantly influences women's satisfaction (Dahlem, Villarruel, & Ronis, 2015).

Studies on client satisfaction with antenatal care have been done in many parts of the world and different findings have been presented. In Pakistan, a study on coverage and quality of antenatal care provided at primary health care facilities found that more than 50% of the clients were not satisfied with antenatal care services that were rendered to them (Majrooh et al., 2014). In Ethiopia however, more than half of the women were satisfied with focused antenatal care (Chemir, Alemseged, & Workneh, 2014). In other studies, client satisfaction was mainly associated with family centred care while dissatisfaction was associated with uncaring, disrespectful, insensitive, and abusive attitude of care providers (Nair et al., 2014). In New Guinea, pregnant women's previous experience of antenatal care in particular their relationship with health care providers influenced their antenatal care

attendance (Andrew et al., 2014). In Malawi, midwives attitude towards pregnant women was cited as one of the reasons for late antenatal care initiation (Chiwaula, 2011). Similarly, in Mangochi, poor attitude of midwives was also one of the reasons for rating antenatal care services poor at Lungwena Health Centre (Mgawadere, 2009). Women's experience of antenatal care can therefore influence their satisfaction with care and their future health behaviours.

Summary of literature review

The review of literature has shown that quality of antenatal care in many countries is regarded as poor. Pregnant women lack knowledge of some of the components of antenatal care. Availability of resources plays a major role in the provision of quality care during pregnancy. Midwives actual practice and attitude also influences the perception of quality of antenatal care among pregnant women.

Majority of the studies that have been reviewed were conducted in other countries and these studies did not report about the initial antenatal visit but rather antenatal care in general. Very few studies have been conducted in Malawi and have only assessed antenatal care in general but not a specific visit like the initial visit which is the entry point of antenatal care as such; it is difficult to generalise the study findings because of the differences in study settings, focus, and social differences. Furthermore, the studies that were done in Malawi concentrated on factors affecting attendance of antenatal care. Information on quality of antenatal care during the initial visit in Malawi was lacking hence it was necessary to fill the knowledge gap on the quality of antenatal care that is provided to pregnant women during the initial visit at Kawale health centre.

CHAPTER 3

METHODOLOGY

Introduction

This chapter presents the detailed information on study design, setting, population, inclusion and exclusion criteria, sample size and sampling methods, data collection methods, data management and analysis, validity and reliability as well as ethical considerations.

Study Design

A descriptive cross-sectional quantitative study was carried out to assess the quality of antenatal care during the initial antenatal visit at Kawale Health Centre in Lilongwe District. Cross sectional study designs involve collection of data at one point in time and all phenomena under study are captured during one data collection (Polit & Beck, 2010). This design was chosen because it helped to facilitate the collection of data for all variables during one data collection.

Study Setting

The study was conducted at Kawale Health Centre which is under Lilongwe District Health Office in Lilongwe District. Kawale Health Centre is considered one of the health centres which serves quite a larger population as compared to other health centres under Lilongwe DHO. The 2014-2015 fiscal year, health facility profile data indicated that the facility had a population of 268 827 people, the expected number of pregnancies for the same period (2014-2015 fiscal year) was estimated at 13 441. Total antenatal attendees were

11465 and deliveries by skilled attendants were 869 while the total number of deliveries was 923.

The services that are provided at Kawale Health Centre include; Under five, Outpatient, Family planning, Antenatal care, Prevention of mother to mother transmission of HIV, Early infant diagnosis of HIV, Labour and delivery, Postnatal, ART, Cervical cancer screening, sexually transmitted infections syndromic management, dental services and laboratory services. Youth friendly health services, HIV counselling and testing, and TB outpatient follow up services are also provided.

Target population

The study targeted pregnant women who were attending antenatal care at Kawale Health Centre. In addition, the study also targeted the midwives who are involved in the provision of antenatal care at this facility.

Inclusion and exclusion criteria

The study included pregnant women who were attending antenatal care at any visit but it specifically included those who had their initial visit at Kawale Health Centre and those that were willing to participate. All midwives who provide antenatal care at this facility were also included. Non pregnant women and pregnant women that were not willing to participate were excluded in this study.

Sampling and sample size

Probability sampling was used to recruit pregnant women who were the participants of the study. Probability sampling involves random selection of elements in which each

element on the population has an equal, independent chance of being selected. In this study, systematic random sampling method which is one of the forms of probability sampling method was used. Using this method, pregnant women were chosen at regular intervals from the sampling frame. In the first place, a sampling interval (k) was calculated. The researcher then randomly selected a number between 1 and (k) and the number that was picked was the starting point for each day and then every kth number was picked until the desired number was reached. In this study, k was calculated by dividing the total number of antenatal mothers who had been registered from 1st January to 1st May 2015 by the desired sample size (**3193/384 =8**). Number 4 was randomly picked and this was the starting point for each day. Starting with client number 4, every 8th client was then picked until the desired sample size of 384 was reached. Calculation of the sample size for the pregnant women was done by using a formula by [Lemeshow, Hosper, Klar, and Lwanga \(1990\)](#) which is written below, and a confidence interval of 95% was used to calculate the sample size.

$$n = Z^2 P(1 - P)/e^2$$

n is the required sample size.

Z is the value of a normally distributed variable which for a 95% confidence interval is 1.96

P is the proportion of pregnant women who are satisfied with the quality of antenatal care in the catchment area, which was estimated at 50%.

e is an allowable error which in this study was set at 5%.

Therefore, $n=1.96^2 \times 0.5 (1-0.5) \div (0.05)^2$

$$n=3.8416 \times 0.5 \times 0.5 \div 0.0025$$

$$n=384$$

The sample size for pregnant women was therefore 384.

The population of midwives at Kawale Health Centre was small, so all midwives who were available and consented to participate in the study were recruited. A total of eight midwives were available and consented to participate in the study so the study population for the midwives was eight.

Data collection tools.

Different data collection tools were developed and reviewed by other research experts before data collection. The development of these tools was guided by the reproductive health guidelines for antenatal care provision as stipulated by the Malawi Ministry of Health, 2007. The tools included; a checklist for assessing the structure of antenatal care provision (Appendix I, 115), a checklist for assessment of the actual process of antenatal care provision by the midwives (Appendix J, page 118), a questionnaire for assessment of midwives' knowledge on antenatal care (Appendix F, page 97), and a questionnaire for assessment of pregnant women's knowledge of antenatal care and their satisfaction with the care they receive (Appendix G, page 101).

Data collection

A checklist was used to assess the structural quality of the facility for provision of initial antenatal care which was developed with reference to reproductive health standards as stipulated by the Malawi Ministry of Health in 2007. A questionnaire was used to assess the

knowledge of midwives on the provision of the initial antenatal care. Another checklist was used to assess the actual practice of antenatal care provision by the midwives through observation. Since the sample size for midwives was eight, eight observations on the actual process of ANC process were therefore carried out. Each midwife was observed separately during antenatal care provision. The researcher was a non participant observer and assumed the role of complete observer and had no influence on the phenomena under observation. In order to avoid bias, observations on the actual process of ANC provision were done first before interviews with the midwives. In addition, the researcher ensured recording of the actual observed process rather than recording what was expected to be seen or merely thought it was seen. Another questionnaire was administered to pregnant women to assess their knowledge and satisfaction with the antenatal care rendered to them during the initial visit.

Pregnant women attending antenatal care at the study facility were informed about the study at the antenatal care waiting area. Those willing to participate were interviewed after they had received antenatal care following an informed consent. It was explained to them that the interview would last for 30 minutes. A one to one interview was conducted at a private place to promote the comfortability of the subjects and to ensure privacy and confidentiality. The study period was between May and June, 2015.

Validity

Validity is an indication of how sound the research is. It ensures that findings truly represent the phenomenon under study. To ensure validity in this study, the observation checklists were developed in line with the standards for antenatal care. The questionnaire had the items that measured the phenomenon under study in particular knowledge and

satisfaction. These study tools were also reviewed by statistician and other research experts to assess content validity. Thus the instruments were reviewed to establish whether the instruments really measured the concepts under study.

Reliability

To ensure reliability of the study instruments, pretesting was done and any inconsistencies were corrected before the actual study.

Pre- testing

Pretesting of the questionnaires was done at area 25 health centre which is also one of the urban health centres under Lilongwe DHO. Pre-testing was done in order to assess the feasibility of the study and to test the accuracy and reliability of the questionnaires. This helped to assess whether proposed methods or instruments were appropriate and useful in generating the desired information. Pretesting of the instruments assisted the student in rephrasing some of the questions to make them clear before the actual data collection. Pretesting results revealed inadequate resources, poor performance of midwives, and inadequate knowledge of antenatal care concept amongst pregnant women despite high satisfaction levels amongst these pregnant women.

Data management

The checklists and questionnaires were given code numbers for easy identification and sorting. Collected data was reviewed for accuracy and completeness in recording the intended information at the end of each data collection. The completed checklists and questionnaires were kept in envelopes and kept in a lockable drawer to maintain confidentiality and for safety purposes.

Data analysis

Data was analysed using Statistical Package for Social Sciences (SPSS) version 16.0. After data was collected, a codebook was prepared. A codebook is a summary of the instructions that are used to convert the information obtained from each subject into a format that SPSS can easily recognise. In the codebook, each variable was listed and given a unique name that was used in SPSS and each response was coded numerically. After a codebook was prepared, all data prepared in the codebook was then entered directly into SPSS for analysis. Descriptive statistics for the structure and process quality variables were computed and results are presented as frequencies, means and percentages. The means and proportions for structure and process quality components were compared with the WHO standards of 80% and above. The independent and dependent variables were also

Ethical considerations

The study ensured the respect for human rights of all the participants who took part in this study. Their right to self-determination, privacy, confidentiality and protection from any harm was respected throughout the study. Information about the study topic, the main objectives of the study, duration of the interview and the relevance of the study to the health care system was given to the participants in order for them to have a clear understanding of the entire study and make an informed decision on whether to participate or not. Thus an informed consent was signed or thumb printed by the participant before starting the interview.

To ensure confidentiality, names of participants were not written on the questionnaires and codes were used. Furthermore, data was collected on a one to one basis in the absence of the others. Women were interviewed at a separate and quite place from the

antenatal care waiting area. In order to make them relaxed, they were in the first place welcomed in a friendly manner and proper explanations on the study were made.

Application letter to conduct the research was sent to College of Medicine Research Ethics Committee (COMREC) and data collection was done only after receiving a letter of approval from COMREC. In addition, a letter seeking permission to conduct the research at Kawale health centre was also sent to the District Health Officer of Lilongwe DHO and data collection was conducted after obtaining a letter of permission from the DHO.

CHAPTER 4

RESULTS OF THE STUDY

Introduction

This chapter presents the main results of the study which was conducted to assess the quality of ANC that pregnant women receive during the initial visit at Kawale health centre in Lilongwe district. A total of 384 pregnant women representing 100% response rate were interviewed using a semi structured questionnaire. A total of 8 nurse midwives representing 80% of midwives that provide ANC were also given self-administered questionnaires and all of them were observed providing ANC before being given the questionnaires. Demographic characteristics are presented first followed by quantitative results as per study objectives.

Demographic characteristics of Antenatal mothers

Results showed that 46.1 % (n=177) were in the age range of 20-25 years followed by 24% (n=92) who were in the age range of 26-31 years. The percentage of teenage antenatal mothers was 18 % (n=69). On marital status, results showed that 95.1 % (n=365) were married while only 4.7% (n=18) were single mothers. Fifty three percent (53%) of the participants had formal education up to secondary level (n=207) while 39.8% (n=153) had primary education. Results on women's occupation showed that 70.8% (n=272) were housewives followed by 24% (n=92) who were business women. Results further showed that 38% (n=146) were prim gravidas while 46.6% (n=179) had two to three pregnancies. Only 5.7% (n=22) had five or more pregnancies. The percentage of those who had experienced no delivery was 38.8% (n=149) followed by 26.8% (n=103) who had experienced one delivery.

Only 5.8% (n=22) had four or more deliveries. Refer to table 1 for detailed demographic characteristics of antenatal mothers.

Table 1: Distribution of demographic characteristics of antenatal mothers (n=384)

Characteristic	Frequency (N)	Percentage (%)
Age of participants		
14-19	69	18
20-25	177	46.1
26-31	92	24.0
32-37	41	10.7
>38	5	1.3
Participants' age range	45-14= 31	
Mean age	24.46	
Marital status		
Married	365	95.1
Single	18	4.7
Divorced	1	0.3
Education level		
Primary	153	39.8
Secondary	207	53.9
College	17	4.4
Never attended	7	1.8
Occupation		
House wife	272	70
Business lady	92	24.0
Teacher	6	1.6
Farmer	6	1.6
Other employment	5	1.3
Student	3	0.8
Religion		
Christian	344	89.6
Muslim	40	10.4
Number of pregnancies		
1	146	38
2	103	26.8
3	76	19.8
4	37	9.6
5	15	3.9
6	7	1.8

Parity		
0	149	38.8
1	103	26.8
2	75	19.5
3	35	9.1
4	16	4.2
5	6	1.6

Demographic characteristics of the midwives

Results of the study showed that two out of the eight midwives were within the age group of 25-30 years, another two were in the age group of 36-40 years and another two were above 50years old. Only one midwife was in the age group of 31-35 years while another one was in the age group of 41-45 years. The study further showed that two midwives that participated in the study were Nurse Midwife Technicians (NMTs), two were Community Health Nurse Midwives, one of them was a Registered Nurse Midwife, another one was a Senior Enrolled Midwife (SENM) and the other two were Enrolled Nurse Midwives. Results further showed that three midwives had a work experience of 10-15 years, two of them had worked between 5-10 years, and another two had worked between 2-5 years while one had a work experience between 15-20 years.

Structural attributes of quality antenatal care

This section addresses objective number one which focuses on the availability of resources necessary for the provision of ANC namely infrastructure and material resources. The structural attributes were assessed using a checklist which was developed with reference to the reproductive health standards of Malawi and the results were compared with the WHO standard of quality care. In this study, a total of 39 criteria were assessed under

structure for providing antenatal care and the facility scored 18 out of the total criteria representing 46%. This score was therefore below the WHO standard of 80% and above for the provision of quality antenatal care. The areas that scored below the expected standard are presented under availability of resources in the paragraph below.

Availability of resources

Availability of resources is very crucial in the provision of care. Results revealed that most of the materials necessary for the provision of care were not available during the period of study. The facility had no materials for infection prevention measures like hand soap, plastic bags, containers with 0.5% chlorine for decontamination, and containers with leak proof plastic bags for contaminated and non contaminated wastes. Results further revealed that there were no reagents for the recommended laboratory investigations required during the initial antenatal visit like reagents for syphilis testing and reagents for blood haemoglobin testing. The facility had no reagents for urine protein testing as well as reagents for blood grouping and Rhesus factor. It was further discovered that there were no gloves in the ANC room as well as sterile speculums needed in some case during ANC. Antenatal care guidelines were available but they were inadequate.

Process attributes of quality

Midwives knowledge

Midwives' knowledge on different components of antenatal care was assessed using a self-administered questionnaire. The percentage score for each midwife on every component was calculated and a mean score for each component was also calculated. In general, all midwives showed knowledge on most of the components of antenatal care with highest

scores of above 80% being scored on knowledge of birth preparedness, objective data, labour signs, danger signs and proven intervention during antenatal care. However, there were some scores of less than 80% on other components like the goals of FANC, subjective data, health education and laboratory investigations. Birth preparedness, objectives data, and labour signs had highest scores of 100% while knowledge of laboratory investigations had the lowest score of 54%. On average the mean knowledge score for all the nurses was 83%. Although the mean score for all midwives was high, midwives performed differently on knowledge scores. Some midwives scored higher as compared to others. However, there was no statistical significance between the cadre of the midwives and their performance on knowledge of the components of antenatal care.

Results of the study showed that four midwives had knowledge about all the four goals of FANC, three midwives knew three goals while one midwife knew only one goal. Results also showed that five midwives knew all the ANC interventions proven to be effective in reducing maternal and neonatal morbidity and mortality, two midwives knew about five interventions while one midwife knew only two interventions. Results further showed that only one midwife had knowledge of all the recommended laboratory tests that are done during ANC, three of them knew only two tests, another three knew only 3 tests while only one midwife knew at least five laboratory tests. The study also revealed that seven midwives knew almost all the danger signs during pregnancy while only one midwife knew about four danger signs. All the eight midwives knew the components of birth preparedness and signs of labour.

Midwives' actual practice in ANC provision

Midwives actual practice in the provision of antenatal care was observed using a checklist. A total of 8 midwives were observed providing ANC after the interviews. Each midwife was given a total score out of the total criteria observed and this score was converted into a percentage score at the end. Midwives also performed differently in the provision of antenatal care to the women. The highest midwife scored 79% (calculated to a round figure) while the lowest scored 51%. The mean percentage score for all midwives was then calculated and it was found to be 65% (calculated to a round figure). This score therefore indicated that the process of providing antenatal care at Kawale Health Centre was below WHO standard of 80% and above. The detailed scores for each nurse midwife and the mean percentage score for all the eight midwives are presented in Table 2 below.

Table 2: Individual performance scores for midwives and the mean percentage score. (n=8)

Nurse midwife number	Cadre	Total criteria observed	Total criteria scored	Percentage
1	NMT	47	37	78.7%
2	RNM	47	36	76.6%
3	ENM	47	32	68.1%
4	CHNM	47	30	63.8%
5	CHNM	47	30	63.8%
6	ENM	47	28	59.6%
7	NMT	47	27	57.4%
8	SENM	47	24	51.1%
Totals		376	244	519.1%
Mean % score				64.9%

History taking

Results of the study showed that all the midwives asked the women on whether they had experienced any danger signs, and asked for personal and social information. All the midwives in the study asked the women for history of surgery, major health issues, HIV status, obstetric history, as well as their TTV status. However, the study revealed that only two midwives asked for history of any medication allergies and past history of STIs. Results further showed that even the midwives did not ask the women about substance abuse, ABO and RH factor test results as well as malaria IPT.

Physical examination

Results of the study showed that all the midwives explained in simple ways the stages of examination, observed woman's general appearance, helped the woman up onto and down the examination table/coach, and checked conjunctiva and palms for anaemia. All the midwives checked the woman's neck for enlarged thyroid glands, checked for oedema of the face, ankles and hands, and documented findings in the woman's health passport. Assessment of fundal height, fetal presentation and fetal heart rate in the women was also done by all the midwives. Results further showed that seven midwives ensured visual and audio privacy during physical examination. However, results showed that six midwives did not perform any hand hygiene measures before examining the antenatal woman. Only two midwives performed hand hygiene using hand washing. The results further showed that five midwives did not ask the women to empty their bladder before physical examination and save urine for testing.

Recommendation of laboratory investigations according to FANC guidelines.

The study revealed that only one midwife requested laboratory tests according to national FANC guidelines. FANC guidelines stipulate that every pregnant woman should be tested for syphilis, HIV, Haemoglobin, blood group and Rhesus factor, urine for protein test and malaria test. The study revealed that majority of the midwives (n=7) did not request these laboratory tests. It was observed that midwives only requested HIV test in women. Only two midwives remarked the importance of laboratory tests to the woman while six of them did not.

Provision of ANC recommended drugs

FANC recommends that antenatal women should be given Ferrous Sulphate or Folate, Fansidar and Albendazole after quickening (when the baby starts to kick) and ART and Cotrimoxazole if the woman is HIV positive. The study results showed that all the midwives provided the routine ANC medications to women. It was further revealed that the two nurses that happened to meet HIV positive women during care provision provided cotrimoxazole and ART to the HIV positive women.

Health Education and counseling

Results of the study showed that five midwives did not advise women on the need to use ITN despite its importance on malaria prevention during pregnancy. Only three midwives advised the women on the use of ITN. Although it is of great importance for pregnant women to deliver with the help of Skilled Birth Attendants, results showed that five midwives did not explain to the women on the benefits of giving birth with a skilled birth attendant. Similarly, five of them did not develop a birth plan with the woman. Results

further showed that seven midwives did not counsel women on infant feeding according to HIV status and did not promote exclusive breastfeeding through counseling. Furthermore, although child spacing is important for the health of the mother and child, majority of the midwives did not explain to the woman the benefits of child spacing. None of the midwives informed the women on how to use lactation amenorrhea as a family planning method during the postpartum period. All the midwives did not inform the women about proper use of other family planning methods during postpartum. The study further revealed that all the midwives did not provide advice on harmful habits like alcohol and tobacco use. Half of the midwives provided specific advice and counseling as needed like common discomfort, importance of resting, and safe sex.

All the midwives in the study asked about and responded to any concerns of the woman, gave the woman a date of next appointment, and advised the woman to report back to the facility if any problems arise before the date of next appointment. However, more than half of the midwives did not thank the women for coming to the facility while only a few thanked the women.

Outcome attributes of quality antenatal care

Outcome attributes of quality antenatal care during the initial visit in this study was evaluated by assessing pregnant women's knowledge of antenatal care (objective 3) and their satisfaction with the care that they receive during the initial visit (objective 4).

Pregnant women's knowledge

Knowledge of blood tests

The study revealed that 55.5% (n=213) knew about HIV testing followed by 34.1% (n=131) who knew about HIV and syphilis. A very few percentage of participants 8% (n=3) knew about haemoglobin test as one of the blood tests that are carried out during ANC and only 3.4% (n=13) of the participants mentioned about malaria testing.

Knowledge on urine tests

On urine test, the study revealed that 55.5% (n=213) of the participants did not know any reasons why urine tests are done during antenatal, 30.5%(n=117) mentioned pregnancy confirmation as one of the reasons for urine tests during antenatal, 6.5% (n=25) mentioned albumin test as a reason for urine test and only 4.7% (n=18) mentioned urinary tract infections.

Knowledge on danger signs of pregnancy

Results showed that 23.2% (n=89) had no knowledge of any danger signs of pregnancy, while 22.9% (n=88) knew vaginal bleeding only as a danger sign. A total of 39.3% (n=151) knew at least two danger signs while only 14.6% (n=56) showed knowledge of three danger signs. For all participants who showed knowledge of one or two or three danger signs, vaginal bleeding was mentioned, indicating that vaginal bleeding was found to be the most commonly known danger sign of pregnancy amongst pregnant women.

Knowledge on birth preparedness.

Results showed that 62.5% (n=239) had knowledge of materials for a clean and safe delivery as one of the components of birth preparedness, followed by 26.3% (n=101) who mentioned materials and transport. Only 6.2% (n=24) mentioned of transport, materials and labour companionship (at least 3 components) of birth preparedness.

Knowledge on antenatal care medications

Results showed that 64.1% (n=246) mentioned ferrous sulphate and Fansidar as some of the medications given during antenatal care followed by 13.0% (n=50) who mentioned ferrous sulphate only. A few percentages 11.5% (n=44) mentioned ferrous sulphate, Albendazole and Fansidar. Only 2.8 % (n=11) mentioned ARVs as part of medications given during antenatal care.

Knowledge on signs of true labour

Results showed that 13.5% (n=52) of the participants did not know any signs of true labour, 16.7% (n=64) knew about bloody show only, 43.4 % (n=167) knew about two signs of labour (bloody show and backache) while 26.2 % (n=101) knew at least three signs of true labour (bloody show, lower abdominal pain and backache).

Knowledge on health education

Results showed that 16.9% (n=65) had no knowledge of any health education topics that are given during antenatal, 47.7% (n=183) knew at least one topic, while 28.4% (n=109) knew at least two topics. Only 7.0% (n=27) mentioned at least three topics (family planning, personal hygiene and prevention of STIs and HIV. Prevention of STIs and HIV was the most commonly mentioned topic amongst the women and this was mentioned by

52.4% (n=201), followed by mixed diet which was mentioned by 33.3% (n=128) then family planning which was mentioned by 19.8% (n=76).

Knowledge of the recommended FANC visits

Results showed that only 1% (n=4) knew about the four recommended FANC visits. Forty three percent (43% n=165) mentioned of 1 visit while 28.6% (n=110) mentioned of 3 visits as the recommended FANC visits.

Women's satisfaction with antenatal care

Results showed that 80.7% (n=310) were satisfied with head to toe assessment, 13.3% (n=51) were very satisfied while 3.4% (n=13) and 1.3% (n=5) indicated that they were not satisfied and very unsatisfied respectively. On satisfaction with ANC investigations, 84.1% (n=323) were satisfied while 12.2% (n=47) were very satisfied. Only 2.1% (n=8) were neither satisfied nor dissatisfied while only 1.3% (n=5) said they were very unsatisfied. Results further showed that 84.1% (n=323) were satisfied with the general counseling given by the midwives followed by 11.7% (n=45) who said they were very satisfied.

On satisfaction with the midwives' explanation of findings, 74.5% (n=286) said they were satisfied while 13.8 % (n=53) said they were very satisfied. However, 8.3% (n=32) were not satisfied while 1.3% (n=5) were very unsatisfied. On satisfaction with time given for questions, 67.2% (n=258) responded that they were satisfied while 9.1% (n=35) said they were very satisfied. Results on satisfaction with the time given by the midwives to ask questions showed that 12.2% (n=47) said they were not satisfied with the time given to ask questions while 7% (n=27) were not given a chance to ask questions.

Participants were further asked on whether they were satisfied with general antenatal care or not. Results showed that 76% (n=292) were satisfied with ANC in general while 12.0% (n=46) were very satisfied. About 8.6% (n=33) were neither satisfied nor unsatisfied while 2.6% (n=10) were dissatisfied. Findings also revealed that 97.4% (n=374) of the participants said they would still register for antenatal care at Kawale in the next pregnancy while 2.3% (n=9) said they would not.

Relationship between variables

Statistical analysis was done to establish the relationship between different variables using chi square test at a significance level of 0.05. Demographic information of the pregnant women was related with the knowledge findings and satisfaction with care. This also aimed at ascertaining statistical significance of the findings.

Association between educational level of pregnant women and knowledge of antenatal care

Results showed that there was a significant relationship ($p < 0.05$) between educational level and knowledge of the reasons for urine tests during ANC, and between educational level and knowledge of health education. Women with secondary education and college education had better knowledge of the reasons for urine tests during antenatal care as compared to those with primary education. Similarly, those with higher education had more knowledge of health education topics than those with primary education. However the results showed that there was no significant relationship ($p > 0.05$) between education level and the rest of the variables on knowledge in the study.

Association between education level and satisfaction

Results showed that there was an association between education level and participants satisfaction with antenatal care in general but there was no significant relationship between parity and the individual variables on satisfaction.

Association between parity and knowledge

Results showed that there was a statistical association ($p < 0.05$) between parity and knowledge on urine tests, parity and knowledge on danger signs, and between parity and knowledge of labour signs. Women with one or more parity were more knowledgeable on urine tests, danger signs and signs of true labour as compared to those with no parity. However there was no significance relationship between parity and the rest of the variables on knowledge.

The detailed results of the statistical tests are shown in table 3 below:

Table 3: Results of the statistical test.

Independent variable	Dependent variable	value	df	Asymp.sig (P value)
Educational level	Knowledge of ANC history	30.44	24	.170
	Knowledge of physical examination	14.335	9	.111
	Knowledge of obstetric examination	27.378	21	.159
	Knowledge of blood tests	11.326	15	.729
	Knowledge of reasons for urine tests	44.315	15	.000***
	Knowledge of danger signs	31.952	21	0.59
	Knowledge of birth preparedness	17.853	18	.465

	Knowledge of ANC medications	22.739	24	.535
	Knowledge of health education	48.787	24	.002***
	Knowledge of recommended FANC visits	42.200	24	.012
	Satisfaction with head to toe assessment	12.665	12	.394
	Satisfaction with ANC investigations	8.490	12	.746
	Satisfaction with education counselling	6.855	12	.867
	Satisfaction with general counselling	7.398	12	.867
	Satisfaction with midwives' explanation	10.437	15	.791
	Satisfaction with time given for questions	12.432	15	.646
	Satisfaction with midwives responses	12.793	15	.618
	Satisfaction with midwives respect	25.855	12	.011
	General satisfaction with ANC	26.194	12	0.010***
Parity	Knowledge of ANC history	100.215	40	.000***
	Knowledge of obstetric examination	39.456	35	.277
	Knowledge of blood tests	33.802	25	.112
	Knowledge of reasons for urine tests	37.842	25	.048
	Knowledge of danger signs	69.232	35	.000***
	Knowledge of birth preparedness	21.440	30	.874

	Knowledge of ANC medications	36.763	40	.617
	Knowledge on signs of true labour	118.511	40	.000 ***
	Knowledge of health education	41.432	40	.408
	Knowledge of recommended FANC visits	36.358	40	.635
	Satisfaction with head to toe assessment	10.565	20	.957
	Satisfaction with ANC investigations	15.143	20	.768
	Satisfaction with education counselling	14.917	20	.781
	Satisfaction with general counselling	12.347	20	.904
	Satisfaction with midwives' explanation	16.804	25	.889
	Satisfaction with time given for questions	19.554	25	.770
	Satisfaction with midwives responses	12.607	25	.981
	Satisfaction with midwives respect	12.176	20	.910
	General satisfaction with ANC	24.232	20	.232

CHAPTER FIVE

DISCUSSION OF THE STUDY RESULTS

Introduction

This chapter presents a discussion of the results of the study on assessment of quality of antenatal care that pregnant women receive during the initial antenatal visit at Kawale Health Centre. The discussion will reflect the study objectives. Demographic characteristics of the study participants will be discussed first followed by structure, process and outcome attributes of quality antenatal care during the initial visit.

Demographic characteristics of antenatal care women

Results of the Study showed that majority of the participants were in the age range of 20-25 years followed by age range 26-31. Thus a greater percentage of women were in the age range of 20-31 years. The percentage of teen age pregnancy was 18% and a small percentage of the women were in the age range of 32-37 years. These results mean that the majority of participants were within the accepted age range of child bearing in Malawi which is associated with less pregnancy complications. However, every pregnant woman is at risk of developing pregnancy complications but the age of the woman also plays a role in pregnancy complications. Young mothers less than 18 years old and old mothers who are more than 35 years are considered to be at greater risk of developing pregnancy

complications and are more likely to die due to pregnancy complications (Bauserman et al., 2015). As presented above, some of the women were teenage mothers. This means that some women are still beginning to bear children at a young age in Malawi. Teen age mothers have immature body which poses a challenge on their adaptation with the physiological changes that occur during pregnancy as well as during delivery. In addition, young maternal age of less than 18 years old is highly associated with adverse outcomes of pregnancy. A study in rural Nepal found that young maternal age of less than 18 years was highly associated with an increased risk of preterm delivery among primigravidas compared with those between 19-25 years (Stewart et al., 2007). Mothers who are above 35 years are more likely to die with pregnancy related complication (Bauserman et al., 2015).

The results of this study showed that majority of the women were married and only a small percentage were single. These results are similar to what was found in a study on factors associated with late initiation of antenatal care among women of Lilongwe where the majority (93%) of the women were also married (Chiwaula, 2011). Similar findings were also found in a WHO secondary analysis of risk factors of pre-eclampsia and its adverse outcomes in Low and Middle income countries (Bilano, Ota, Ganchimeg, Mori, & Souza, 2014). Married women are more likely to have social support during pregnancy from their partners than those who are single. Lack of support has been reported as one of the major challenges in antenatal care utilization among pregnant women (Heaman et al., 2015). In Tanzania, a study on factors associated with four or more antenatal care visits and its decline among pregnant women found that unmarried women were less likely to make four recommended number of ANC visits as compared to those who were married (Gupta et al., 2014).

Results showed that more than half of the participants had formal education up to secondary level while less than half had low education (standard one to eight). These results are different from what was found in a study on assessing the quality of antenatal care in Mangochi by Mgawadere in 2009 where only 3.8% of the study participants had reached secondary school while the majority (96.2%) had only attended school up to primary level. The differences are likely due to the study setting whereby this study was carried out in the urban area while the other one was carried out in the rural area. As presented above, more than half of the participants in this study had formal education up to secondary level. This was good because women who are educated are more likely to understand the concepts related to health than those who are not educated. Education influences health seeking behaviours in pregnant women in particular utilization of obstetric services. Highly educated women have a positive view about quality of ANC since they are likely to understand the dynamics of health care delivery that enables them to cope with service providers when they are faced with problems (Atinga et al., 2014). Other studies revealed that higher education amongst pregnant women increases the probability of giving birth in the health facility (Melaku et al., 2014). Delivering in a health facility helps in timely recognition and management of major complications that may occur during labour and delivery thereby reducing the incidences of maternal deaths. In this study, there was a statistical significance between high education level and knowledge of the reasons for urine tests during antenatal care and knowledge of health education topics that are given during antenatal care. Women with higher education in this study had more knowledge as compared to those with primary education. The results of this study support earlier findings of a study in Western Kenya

where higher maternal education level was also found to be positively associated with maternal health knowledge (Perumal et al., 2013).

Results further showed that some of the participants were primigravidas, others had 2-3 pregnancies, and others had four pregnancies, while others had five or more pregnancies. These results mean that the majority of the participants had an experience of the process of pregnancy and these were expected to have some knowledge about antenatal care. Being pregnant for the second time or more, could mean being exposed to some information regarding antenatal care considering that antenatal care coverage is high in Malawi. Women, who are pregnant for the second time or more, are more likely to have some knowledge in relation to antenatal care as compared to those who are pregnant for the first time.

In this study, there was a statistical significance between parity and knowledge of urine tests, knowledge of danger signs, and knowledge of signs of true labour. Women with one or more parity showed knowledge on these variables as compared to those with no parity. These results could therefore mean that these women have ever been exposed to issues related to pregnancy hence the knowledge. The results of this study support earlier findings in Tanzania where the likelihood of the women having more awareness of the danger signs increased with increased number of deliveries (Pembe et al., 2009). Other studies indicated that women with more than one pregnancy and parity were more likely to attend ANC four times or more (Joshi et al., 2014). Results however showed that some of the participants were primigravidas indicating that this was their first experience to be pregnant. This is a group of pregnant women that need to be given the rightful information during pregnancy in order to clear them off some pregnancy misconceptions. Primigravidas need

correct information for them to understand the physiological changes that occur during pregnancy so that they can differentiate between minor disorders of pregnancy and danger signs of pregnancy so that they can seek health care as soon as they notice any danger signs.

Demographic characteristics of nurses

Results showed that two of the midwives were within the age group of 25-30, another two in the age group of 36-40, and another two were above 50 years old. One midwife was in the age group of 31-35 and another one was in the age group of 41-45 years. This shows that there was a mixture of ages which is helpful in sharing ideas among one another. Results further showed some of the midwives were NMTs, others SENM, others CHNMs and one was a registered nurse midwife. A combination of different cadres at the facility presents an opportunity for the delivery of services with shared ideas. If one midwife is not sure of what to do with a certain case, she or he is more likely to get assistance from the other nurses. Registered nurses are expected to perform some skills that NMTs cannot perform. The presence of a registered nurse at the facility was therefore of great significance because this is the cadre that the other cadres can seek guidance from. Results further showed that midwives had different work experiences ranging from two years to twenty years. The difference in work experience was good as it gives room to learn from other peoples' experiences.

Structural attributes of quality antenatal care

Availability of resources.

The study results showed that Kawale Health Centre did not have most of the resources necessary for the provision of care and this made it to score below the WHO standard on structure. These results are similar to what was found by MoH and ICF (2014) during the Malawi Service Provision Assessment (MSPA), Mgawadere (2009) in Mangochi Malawi, Nair et al. (2014) in a global situational analysis, and Tetui et al. (2012) in eastern Uganda. Inadequate or lack of resources necessary for the provision of care affects the quality of care that is provided. In this study it was noted that most nurses did not request the recommended laboratory tests during care provision. This could be attributed to the unavailability of the reagents for these tests. Unavailability of these laboratory reagents affected timely diagnosis of some conditions that can affect the outcome of pregnancy like maternal syphilis. Women in this facility were not been tested for syphilis. This implies that unavailability of the recommended resources made nurses to miss the opportunity to diagnose syphilis during the initial visit. Furthermore, lack of resources at the facility deprived pregnant women of their basic right of access to quality health care. Lack of resources therefore affected the process of care in this study hence the need to focus on strategies that can ensure that the needed resources are always available for antenatal care provision.

Process attributes of quality antenatal care.**Midwives knowledge**

Results showed that nurses at Kawale had knowledge of most of the components of antenatal care with a mean score for all nurses of 83%. However, there were some low scores in other components of antenatal care like knowledge of laboratory investigations and

goals of FANC. These results are in support of what was found by Mgawadere (2009) in Mangochi where all the providers had basic knowledge of antenatal care. However, these results are different from what was found in other studies on health care workers knowledge of antenatal care. In Bangladesh for example, a study on assessment of nurse-midwives' knowledge in saving lives of mothers and babies found that the majority of nurses had significantly low scores of antenatal care knowledge (Bogre, 2010). Another study in Nigeria revealed that 80% of the health care providers had no knowledge of FANC (Amosu et al., 2011). The results of this study mean that there was a good indicator for FANC practice at Kawale since these midwives who showed knowledge can put their knowledge into practice as they provide care to pregnant women and this can therefore produce good outcomes. However, the knowledge gaps in some components like the recommended laboratory investigations in this study implies that nurses can easily miss these tests in pregnant women as such some conditions that need to be detected and treated early in pregnancy like syphilis and anaemia, can therefore be missed and this can have a negative impact on the outcomes of pregnancy. This, therefore, calls for the need for refresher courses for nurse midwives on FANC so that these providers remain knowledgeable on all the concepts.

Nurse midwives 'actual practice on antenatal care provision

Results showed that midwives actual practice at Kawale Health Centre scored below WHO standard of antenatal care provision at 65%. These findings are similar to what was found in a study on quality assessment of focused antenatal care services in Malawi where the process of ANC provision also scored below WHO standard at 60% (Lungu et al., 2011). Similar findings were also found in Pakistan where the quality of services regarding

assessment, treatment and counseling during antenatal care was poor (Majrooh et al., 2014). These results indicate some quality gaps in antenatal care provision despite nurses showing knowledge of the FANC concept. This shows that despite the high levels of knowledge of antenatal care concept, nurses at Kawale Health Centre are not applying this knowledge into their actual practice as such there is a need to reinforce the use of stipulated guidelines in antenatal care provision at the facility.

History taking

Results showed that all the midwives asked about history of any danger signs, personal and social history, major health issues, surgery, HIV status, obstetric history as well as TTV status. However, results showed that majority of the midwives did not ask the women about medication allergies, history of STIs, substance abuse, ABO and RH test results as well as malaria IPT. These results are different from what was found in Mangochi where it was found that all the necessary history was collected from all women during antenatal care (Mgawadere, 2009). The findings of this study showed that not all the important history is taken during antenatal care. These results indicate the missed opportunities for gathering the necessary information from the women during antenatal care because history taking is the foundation for a comprehensive physical examination. The history that is presented by a woman helps to guide the provider on areas of focus during physical examination, laboratory investigations, as well as counseling. In addition, history taking helps to identify whether the woman has any risk factors that could lead to complications during pregnancy. With the FANC approach, proper history taking during the initial visit helps in putting the woman in the right category according to WHO guidelines. Midwives in this study missed some of the important history that is supposed to be collected

from every pregnant woman like history of STIs, medication allergies as well as substance abuse. History of STIs for example can help to remind the midwife on the need to encourage the woman to have a syphilis test as well as counseling on the need for safe sex. Obtaining history on medication allergies could help in guiding the midwives on what drugs to give or not to the woman. For example, if the woman is allergic to Sulphur, taking such a history could guide the midwife to avoid prescribing Fansidar which is one of the recommended medications given during antenatal care. This study revealed that guidelines were available but they were not enough. During observations, no guidelines on history taking were seen in the antenatal care room. This could have contributed to midwives missing of some of the important history. Pasting these guidelines in the antenatal care room could help to remind midwives on all the necessary history that is supposed to be collected during antenatal care.

Physical examination

Results showed that all the midwives in the study explained in simple ways the steps of physical examination, observed woman's general appearance, checked for blood pressure and weight of the woman, and checked the conjunctiva and palms for signs of anaemia. All the midwives checked for signs of oedema, Fundal height, fetal presentation and fetal heart rate. This study also revealed that all the midwives documented the assessment findings in the health passport book of the woman. Majority of the midwives in the study also ensured visual and audio privacy during physical examination. In general midwives performed well on physical examination in the study. These results support earlier results of quality antenatal care in the Eastern Uganda where client examination during antenatal care was generally well done in the majority (80%) of the clients (Tetui et al., 2012). Similar results were also revealed in Mangochi, Malawi where all health workers performed most of the

necessary examinations during antenatal care (Mgawadere, 2009). The performance of the midwives in the study was encouraging and recommendable because physical examination helps in the identification of some problems that might not be presented by the pregnant women during history taking. Checking for blood pressure for example could help in the detection of preeclampsia which is one of the direct causes of maternal deaths. Midwives in the study assessed for signs of anaemia in the women during observations. Anaemia is one of the indirect causes of maternal morbidity and mortality in Malawi (UNICEF, UNFPA, WHO& AMDD, 2010). Assessing for signs of malaria in pregnant women could therefore help in early diagnosis and treatment of anaemia thereby reducing the incidences of maternal morbidity and mortality due to anaemia. Midwives in the study showed knowledge of the antenatal care component especially on physical examination. This could have contributed to their recommendable performance of the physical examination aspect.

The results of this study were however not in support of what was found in Pakistan, Burkina Faso, Ghana, and Tanzania (Majrooh et al., 2014; Duysburgh et al., 2013). In Pakistan the overall quality of clinical assessment was poor in 72%, average in 23% and good in 5% while in Burkina Faso, Ghana, and Tanzania the physical examination were found to be inadequate. The disparity in the findings between this study and the other studies could be due to the differences in the study settings. This study took place at one facility while the other studies took place in different settings.

Majority of the midwives in this study did not perform hand hygiene measures before examining the women and did not advise the women to empty their bladder before physical examination. It is recommended that before touching any client, the health provider should first perform hand hygiene as an infection prevention measure. However, this was

not done by most of the midwives before examination of the women even though running water was available during the period of study. This was not recommendable because this could facilitate the spread of infections between the provider and the client and even from one client to another. This compromised the safety of the care that was rendered to the women. There is therefore a need for midwives to follow infection prevention measures whenever they are performing their duties to prevent the spread of infections.

Recommendation of laboratory tests

Study results revealed that majority of the midwives did not request the recommended laboratory investigations in pregnant women during antenatal care. HIV test was found to be the only laboratory test that was ordered by the midwives and this was indeed done. The study further revealed that majority of the midwives did not remark the importance of laboratory tests. These results support what was found in a study on compliance with FANC in Burkina Faso, Uganda, and Tanzania where most of the laboratory tests were not done in pregnant women (Conrad et al., 2012). Similar results were found during a study on quality of antenatal care services at public health facilities in Ethiopia where urine tests, haemoglobin tests, syphilis tests were available in only 25% of all the facilities (Ejigu, Woldie, & Kifle, 2013). In Zambia, a national assessment on quality of antenatal care also revealed that most screening tests were not available during antenatal care provision in most of the facilities (Kyei, Chansa, & Gabrysch, 2012). Similarly, in China a small proportion of pregnant women had their blood tested for haemoglobin and their urine tested for proteins during antenatal care in three countries under study (Long & Zhang, 2010). Poor recommendation of these laboratory tests by the midwives at Kawale Health Centre could be attributed to the unavailability of the reagents for the recommended

tests at the facility. However, despite the unavailability of these reagents for the recommended laboratory tests, midwives could have recommended these tests and advise the women to have the tests in other facilities and bring the results to them but this was not the case.

These results indicated the missed opportunities for delivering proven effective interventions for antenatal care provision as recommended by WHO. For example in the case of maternal syphilis, studies have revealed that timely diagnosis and treatment during pregnancy makes a significant difference in the risk of having an adverse outcome due to syphilis (Hawkes et al., 2013) yet women were not been tested for syphilis during the study period. This therefore defeats one of the goals of FANC which aims at early detection and treatment of complications during pregnancy. Midwives need to follow guidelines and advise women accordingly. The availability of HIV testing during pregnancy was however, recommendable as this provided for the opportunity of the prevention of mother to child transmission of HIV infection.

Provision of ANC recommended drugs

Results of the study revealed that all nurse midwives provided the recommended routine antenatal medications which included ferrous sulphate for anaemia prevention, Fansidar for malaria prevention, and Albendazole for hook worm prevention. Furthermore, ARVs were provided to women who were found to be HIV positive. The results are in support of other study results that also revealed the provision of recommended medications during antenatal care. In Ethiopia for example, a study on availability and components of maternity services found that all essential drugs were available and were given to pregnant women during antenatal care in all the 15 study facilities (Worku, Yalew, & Afework,

2013). A national assessment on quality of antenatal care services in Zambia also revealed that IPT for malaria prevention was provided in the vast majority of the facilities (Kyei et al., 2012). In Nepal 91% of women received iron tablets.

The provision of the recommended medications to pregnant women in this study was commendable as some of the problems could be prevented in pregnancy. Malaria infection is one of the indirect causes of maternal mortality in Malawi and it is highly associated with adverse effects like maternal anaemia, intrauterine death, preterm births and low birth weight babies. Provision of Fansidar to pregnant women therefore increased the opportunity for malaria prevention during pregnancy which could also increase the chances for prevention of maternal anaemia due to malaria. These findings however are different from what was found in Ethiopia where ferrous sulphate was found to be available and being provided to pregnant women in only one facility out all the public facilities (Ejigu et al., 2013). The provision of these recommended medications by the midwives in the study could be attributed to the availability of these essential drugs at the facility. Furthermore, it could be attributed to their knowledge of the recommended medications during antenatal care.

Health education and counseling

Results showed that majority of the midwives did not counsel the pregnant women on the need to use ITNs, the benefits of giving birth with a skilled birth attendant, and did not develop a birth plan with the woman. Results further revealed that majority of the midwives did not counsel the women on infant feeding and did not promote exclusive breastfeeding. Midwives in the study did not explain to the women on the benefits of child spacing, did not inform women about proper use of family planning methods during

postpartum and did not advice the women on harmful habits like alcohol abuse and tobacco use during pregnancy. Midwives performance in health education and counseling was generally poor at Kawale.

These results are in support of what was found in a study on perceptions of patient – provider interaction in African American women during the initial visit where the standard protocol steps for counseling were found to be at lower level and extremely compromised the quality of the ANC services since the overall ranking of quality of counseling was poor in 92%, average in 6%, and good in 2% of the services provided (Dahlem et al., 2015). Similarly in Eastern Uganda, counseling for pregnancy risk factors and birth preparedness was poorly done during antenatal care (Tetui et al., 2012). Similar findings were also reported in Tanzania (Sarker et al., 2010). Inadequate education and poor counseling which was revealed in this study could affect the knowledge of the pregnant women on antenatal care. Women in this study had inadequate knowledge on most components of antenatal care reflecting that they do not receive adequate information from the midwives. There is therefore a need for midwives to spend their time in providing the appropriate information to pregnant women during antenatal care provision so that women are well prepared for child birth.

Outcome attributes of quality antenatal care

Outcome of quality antenatal care in this study were measured by assessing pregnant women's knowledge and satisfaction with care.

Pregnant women's knowledge

Pregnant women's knowledge on blood tests and urine tests

Results showed that just more than half of participants knew about HIV testing only while less than half knew about HIV and syphilis testing. A very few percentages knew about haemoglobin and malaria test. These results imply that women were mainly conversant with what is commonly done to them during antenatal. As discussed above, HIV testing was the only laboratory test that was been done during antenatal care during the study period and this can be the possible reason why most women were able to mention HIV test as compared to other tests that are during antenatal care.

More than half of the women in the study did not know any reason why urine tests are done during antenatal. Less than half mentioned of pregnancy confirmation while a very few percentages knew that urine tests are done for albumin test and urinary tract infections. Lack of knowledge in these women indicates that women are not well informed of what is supposed to be done to them during antenatal. Women in this study lacked information of the recommended laboratory tests that are done during antenatal care. As discussed above, most of the reagents for different laboratory tests were not available at the facility during the study period except for HIV test only and midwives did not recommend these tests for women during antenatal. The lack of knowledge in these women which is the outcome measure in this study therefore is in agreement with Donabedian's theory which explains that the structure affects the process and the process affects the outcome. The availability of these laboratory tests at the facility and proper recommendation as well as explanations on the need for these during antenatal care is therefore needed and this can help to improve women's knowledge of the recommended investigations. There is a need for management to ensure availability of the recommended laboratory reagents for antenatal care provision at the facility.

Women's Knowledge on danger signs of pregnancy

Results showed that some women had no knowledge of any danger sign of pregnancy while others knew only vaginal bleeding as a danger sign. Less than half knew about two danger signs while a very few percentages knew at least three danger signs of pregnancy. In general, knowledge of danger signs of pregnancy was poor amongst pregnant women in the study. Vaginal bleeding was the most commonly known danger sign of pregnancy amongst those who showed knowledge of any danger sign of pregnancy. These results are consistent with what was found in Tanzania where only 26% of women knew at least one danger sign during pregnancy while a few women knew three or more danger signs (Pembe et al., 2009). Vaginal bleeding was also found to be the most commonly mentioned danger sign of pregnancy among mothers in Ethiopia (Hailu & Berhe, 2014). Hailu and Berhe (2014) found that in their study, 35.1% of women in Ethiopia didn't know any danger sign of pregnancy, but at least more than half (58.8%) knew at least two danger signs. Poor knowledge of pregnancy danger signs was also found in Ghana where many women were not able to differentiate between pregnancy discomforts and danger signs. Earlier studies also found that women had problems in recognizing true danger signs versus the normal discomforts associated with pregnancy (Lori et al., 2014).

The results of this study reflect the counseling and education given to women during antenatal. Women are mostly aware of vaginal bleeding as a danger sign of pregnancy than the other danger signs. Lack of knowledge in this study could mean that pregnant women are not informed of the main danger signs of pregnancy during antenatal care. Delay in deciding to seek medical care is one of the factors contributing to maternal mortality in Malawi. It is only when pregnant women and their families recognize complications early

that they can seek health care immediately. Lack of knowledge of danger signs can affect women's preparedness for complications and timely seeking of health care services if complications occur. It is believed that if pregnant women and their families recognize danger signs of pregnancy they may seek care in time and this can reduce their delay in deciding to seek health care (Bogale & Markos, 2015). The results of this study therefore indicate the need for nurse midwives to take health education and counseling seriously during antenatal care provision so that pregnant women are well prepared for any pregnancy complications in order to avoid the first delay.

Women's knowledge on birth preparedness

In this study, more than half of the participants knew materials for a clean and safe delivery as one of the components of birth preparedness, followed by those who mentioned materials and transport. A very few percentage mentioned transport, materials and labour companionship (at least 3 components) of birth preparedness. Majority of the women only know about having materials for a clean and safe delivery. This could mean that the information given on birth preparedness is mostly emphasized on having materials only. The results of this study clearly show that women are not well equipped with the necessary information despite their efforts to attend antenatal care. Midwives need to educate women on all aspects including place of delivery and identification of a blood donor in case of emergency. Results could also mean that women's preparedness mainly focuses on having the necessary materials needed during child birth yet it is necessary to be prepared in all aspects.

Knowledge of birth preparedness can help women to effectively plan for their birth and deal with pregnancy emergencies when they occur. Studies on birth preparedness have

reported that pregnant women are not well prepared during pregnancy. In southwest Ethiopia for example, a study on factors affecting birth preparedness and complication readiness in Jimma zone found that the status of birth preparedness and complication readiness was low in the study area (Debelew, Afework, & Yalew, 2014). Birth preparedness among women was also found to be low in the rural Uganda where the overall preparedness level was 35% (Kabakyenga, Östergren, Turyakira, & Pettersson, 2011). Lack of enough knowledge on birth preparedness in women who participated in this study could also mean that pregnant women are not well prepared for child birth despite their attendance of antenatal care. This means opportunities for delivering the necessary information to women are being missed during antenatal care. It is therefore necessary to use every opportunity that arises in meeting a pregnant woman to deliver information on birth preparedness.

Knowledge on signs of true labour, health education, and recommended FANC visits.

WHO emphasizes that every health provider who come into contact with pregnant women must provide information on the signs of labour and when to seek care if danger signs appear during pregnancy (WHO, 2006). Study results showed that some of the participants did not know any of the signs of true labour, others knew about bloody show only, others knew about two signs of labour (bloody show and backache) while others knew at least three signs of true labour (bloody show, lower abdominal pain and backache). These results suggest that knowledge gap on signs of labour still exists in pregnant women despite their efforts to attend antenatal care. The knowledge gap could imply that these women are not getting the necessary information during antenatal care despite their efforts

to attend antenatal care. Pregnant women need to be well prepared before the onset of labour. It is only when they know the signs of labour that they can timely seek care when they experience any of the signs. It is necessary that midwives should teach women about the signs of labour so that women are well prepared incase labour starts any time. Knowledge of the signs of labour could help women and their families in preventing the delays in seeking care when labour starts.

In this study, some women did not know any health education topics that are given during antenatal care, close to half of the women knew at least one topic, others knew at least two topics while a very few percentages mentioned about three topics. Prevention of STIs and HIV was the most commonly mentioned topic followed by mixed diet then family planning. Women in this study lacked adequate knowledge on different health topics that are supposed to be given during antenatal care. Lack of adequate knowledge in this study could mean that midwives do not educate women on different topics during antenatal care. During the study period, it was observed that the routine antenatal care starts with a group health education every day but there were no scheduled topics for health education which showed that midwives could just decide on what topics were convenient to them for a particular day. The mentioning of prevention of STIs and HIV by almost half of the participants could mean that this is the most commonly presented topic at the facility. Since every pregnant woman is supposed to be counseled and tested for HIV, this could be the other reason why most women mentioned this topic because they do receive HIV and AIDS education as part of the counseling process. Study findings on the focus of information during antenatal care in the rural Uganda revealed that information giving focused on HIV and AIDS, malaria and children immunization (Ayiasi et al., 2013). Almost all the women

in this study had no knowledge on the recommended number of FANC visits. This could also mean that women are not given the appropriate information during antenatal care.

Women's lack of knowledge on health education topics in this study could also mean that they miss the health education when nurses are giving before the beginning of antenatal care. The group health education is given at any time from 7:30 am so those who come late for antenatal care are more likely to miss the health education. However, this could also reflect that individual health education and counseling is not being done. Nurse midwives in this study did not perform well on health education and counseling. This is therefore reflected on pregnant women's knowledge of different health topics in this study. There is therefore a need for nurse midwives to have a schedule on health education topics so that all the necessary education topics that are supposed to be given during antenatal care are given to the women.

Pregnant women's satisfaction with antenatal care

Client satisfaction is an important test that helps health care programs to assess the impact of their services and it is an integral part of the quality assurance process of health care delivery (Ghobashi & Khandekar, 2008). This study found that women were generally satisfied with antenatal care services at Kawale Health Centre and majority responded that they would still seek antenatal care services at Kawale in future pregnancy. There were greater satisfaction levels on specific components like head to toe assessment, investigations, and general counseling. These results are similar to what was found in Nigeria where 81.1% of the participants were satisfied with the services rendered to them and 83.3% revealed that they would register in the same facility in subsequent pregnancy (Nwaeze et al., 2013). Higher satisfaction levels with antenatal care services were also found

in 88% of clients in a study that was done in Lagos (Sholeye, Abosede, & Jeminusi, 2013). Another study in Ethiopia also found that more than half of the respondents (60.4%) were satisfied with services that they received (Chemir et al., 2014). However, dissatisfaction levels on specific components were quite higher in Ethiopia than what was found in this study.

Though minimal, there were some dissatisfaction levels in women at Kawale Health Centre on midwives' explanation and time given for women to ask questions. The results of this study could mean that women accepted the care that they received at the facility. However, this could also reflect the knowledge gap on what is expected of antenatal care. High satisfaction levels have been associated with low expectations amongst women attending antenatal care in some studies (Chemir et al., 2014). Women in this study showed that they lacked knowledge on most components of antenatal care and this means that they do not know exactly what they are supposed to get when they attend antenatal care. This lack of knowledge therefore could contribute to low expectations during antenatal care attendance hence the high satisfaction levels. Dissatisfaction levels with midwives' explanation and time given for asking questions in this study could mean that midwives do not give women enough time to express their issues during antenatal care. Women may have some questions or misconceptions that need to be cleared off during antenatal. Some misconceptions during pregnancy can have a negative impact on the health of the mother and the unborn child. Giving women enough time to ask questions and responding to them accordingly can therefore help to reduce the misconceptions of pregnancy. There is therefore a need for nurse midwives to consider giving women time to express their

questions and help them understand some of the issues concerning their own health and the health of their unborn children.

Limitations of the study

The study was conducted at one health facility hence the results cannot be generalized. Findings could have been enriched if the study was also conducted in other health centre settings. Limited time was another limitation because the researcher had to work in line with the academic calendar. Collection of data using one method (quantitative) was also a limitation in gathering more information from the women.

Recommendations

Basing on the study results, the following recommendations are made for the improvement of the quality of antenatal care that pregnant women receive during the initial visit at Kawale Health Centre:

- The District health management team should ensure proper allocation of funds in order to minimize the interrupted supply of infection prevention materials and laboratory reagents required to carry out the recommended investigations during the initial antenatal care.
- The nurse midwife in charge of Kawale Health Centre should ensure that all the antenatal care guidelines are available at the facility and should be pasted on the walls of the antenatal care room so that midwives can easily make references during care provision.

- The nurse in charge and all midwives at Kawale should ensure that the antenatal care room is well organized by making sure that all the materials that can be used during antenatal care provision are within reach in the room.
- The use of stipulated guidelines during antenatal care provision should be encouraged, promoted and supported by the responsible supervisors like the District Nursing Officer, safe motherhood coordinator and the nurse in charge of the facility.
- There should be scheduled health education topics during group antenatal care that covers all the necessary topics that are supposed to be given to pregnant women during antenatal care. The health education schedule should be attached with a staff rota to clearly indicate the person responsible for giving health education each day.
- Midwives should ensure that individual health education and counseling on all the important topics is given to every pregnant woman during antenatal care provision.

Conclusion

This study focused on the quality of antenatal care that pregnant women receive during the initial visit at Kawale Health Centre in Lilongwe District. Specifically, the study assessed the availability of resources necessary for the provision of care, midwives' knowledge of antenatal care concept and their actual practice, pregnant women's knowledge of the antenatal care concept and their satisfaction with the care that they receive during the initial visit. The results of the study revealed that the structure and the process for the provision of antenatal care at Kawale were below WHO standard. Midwives showed knowledge of the antenatal care concept but failed to apply this knowledge into practice during observations. Pregnant women lacked knowledge of the antenatal care content but showed greater satisfaction with the care that they received during the initial visit. The

results of this study therefore concludes that the quality of antenatal care that is provided to women during the initial visit at Kawale Health Centre was poor.

Results of this study have shown that the structure for providing antenatal care affected the process of care provision and that the process also affected the outcome. There is need to ensure the uninterrupted supply of material resources that are necessary for the provision of quality antenatal care during the initial visit. There is need to reinforce the use of stipulated guidelines during antenatal care provision and there is also need to educate pregnant women on most of the components of antenatal care in order to improve their knowledge.

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LIST OF APPENDICES

APPENDIX A: Permission Letter to Lilongwe DHO

Kamuzu College of Nursing,
P.O Box 415,
Blantyre.

Email: viobandawe@yahoo.co.uk
or viobandawe@gmail.com

Cell: 0888783618 or 0995421577

The District Health Officer,
Lilongwe District Health Office,
P. O Box 1274,
Lilongwe

Dear Sir,

REQUEST FOR PERMISSION TO CONDUCT A PILOT STUDY AT AREA 25
HEALTH CENTRE.

I am a postgraduate student pursuing a Master of Science Degree in Midwifery at Kamuzu College of Nursing a constituent college of the University of Malawi. In partial fulfilment of

the Master of Science Degree programme, I am required to carry out a research study. The topic of my study is *Assessment of quality of antenatal care that pregnant women receive during the initial visit at Kawale health centre in Lilongwe District.*

The study will explore the availability of the resources necessary for the provision of antenatal care as recommended by the reproductive health guidelines, midwives knowledge and actual practice in the provision of antenatal care, and pregnant women's knowledge and satisfaction with the care rendered to them by the midwives during the initial antenatal visit. The participants will be pregnant women attending antenatal care at the facility and midwives that are involved in the provision of antenatal care at the study site. The study findings are believed to assist in the identification of quality gaps and help in the improvement of quality of antenatal care rendered to pregnant women thereby improving the health of the mothers and their unborn child and improving on the outcomes of pregnancies.

I therefore seek your permission to conduct a pilot study at Area 25 Health Centre which is under your office in order to test the validity and reliability of the research methods.

Should you require further information please contact the undersigned on 0888783618 or 0995421577.

Looking forward to your approval.

Yours faithfully,

Violet Bandawe Liphava (Mrs)

APPENDIX B: Permission letter to Lilongwe DHO

Kamuzu College of Nursing,

P.O Box 415,

Blantyre.

Email: viobandawe@yahoo.co.uk

or viobandawe@gmail.com

Cell: 0888783618 or 0995421577

The District Health Officer,

Lilongwe District Health Office,

P. O Box 1274,

Lilongwe

Dear Sir,

REQUEST FOR PERMISSION TO CONDUCT A RESEARH STUDY AT KAWALE
HEALTH CENTRE.

I am a postgraduate student pursuing a Master of Science Degree in Midwifery at Kamuzu College of Nursing a constituent college of the University of Malawi. In partial fulfilment of the Master of Science Degree programme, I am required to carry out a research study. The topic of my study is *Assessment of quality of antenatal care that pregnant women receive during the initial visit at Kawale Health Centre*

The study will explore the availability of the resources necessary for the provision of antenatal care as recommended by the reproductive health guidelines, the actual care that is provided during the initial antenatal care and will also assess nurse midwives' knowledge and actual practice in the provision of the initial antenatal care. The participants will be pregnant women attending antenatal care at the facility and the midwives that are involved in the provision of antenatal care at Kawale Health centre. The study findings are believed to assist in the identification of quality gaps and help in the improvement of quality of antenatal care rendered to pregnant women thereby improving the health of the mothers and their unborn children.

I therefore seek your permission to conduct this study at Kawale Health Centre which is under your office. Should you require further information please contact the undersigned on 0888783618 or 0995421577.

Looking forward to your approval.

Yours faithfully,

Violet Bandawe Liphava (Mrs)

APPENDIX C: Permission Letter from Lilongwe DHO

Ref. No.:
Telephone No.: 265 726 466/464
Telefax No.: 265 727817
Telex No.:
E-Mail: lilongwedho@malawi.



In reply please quote NO DZH/MALAWI,
Lilongwe District Health Office
P.O. Box 1274
Lilongwe
Malawi

COMMUNICATIONS TO BE ADDRESSED TO:

4th May, 2015

TO : The In-charge, Kawale Health Centre
: The In-charge, Kawale Health Centre

Dear Sir/Madam

**PERMISSION TO CARRY OUT A PILOT STUDY AT AREA 25 HEALTH CENTRE
AND RESEARCH AT KAWALE HEALTH CENTRE**

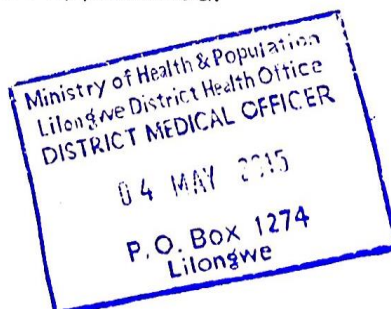
Permission has been granted to the bearer of this letter

Violet Bandawe Liphava

To conduct a research at the above mentioned hospital "Assessment of quality of antenatal care that pregnant women receive during the initial visit at Area 25 Health Centre and Kawale Health Centre in Lilongwe District"

Any assistance rendered would be appreciated.

Dr. E. Rambiki
For: DISTRICT HEALTH OFFICER



APPENDIX D: Consent form for participants

Kamuzu College of Nursing,
P.O Box 415,
Blantyre.

Dear Participant,

CONSENT TO PARTICIPATE IN A STUDY ON ASSESSMENT OF QUALITY OF ANTENATAL CARE THAT PREGNANT WOMEN RECEIVE DURING THE INITIAL VISIT AT KAWALE HEALTH CENTRE

My name is Violet Bandawe Liphava, a Master of Science in Midwifery student at Kamuzu College of Nursing a constituent college of the University of Malawi. In partial fulfilment of my Master of Science Degree programme, I am required to conduct a research study. The topic of my study is assessment of quality of antenatal care that pregnant women receive during the initial visit at Kawale health centre. The aim of the study is to assess the quality of care that pregnant women receive during the initial antenatal visit at this facility. The study findings are believed to assist in identifying the quality gaps in antenatal care provision and this will help in the improvement of the care rendered to pregnant women during the initial antenatal visit. I am therefore requesting for your consent to participate in this study in order for me to gather some important information regarding the antenatal care that pregnant women like you receive during the initial visit at this facility.

During your participation you will be required to answer some questions in relation to the topic. You will be expected to give answers that you think are correct for each question. It is anticipated that the interview will take a period of 30 minutes. Please take note that

participation in this study is voluntary and no penalties will be given if you chose not to participate. You may also wish to know that you are free to withdraw from the study at any point without being penalized.

The study will not involve any body experiments that may harm you and the answers that will be given will be kept in confidence. To maintain confidentiality, you will not be required to mention or write your name on the questionnaires. You also need to take note that there are no direct benefits to you for participating in the study but rather the study findings may contribute to the wellness of pregnant women and their unborn children in Malawi. If you agree to participate in this study, please sign or thumb print in the space provided below. Should you have any inquiries or concerns you can contact Violet Bandawe Liphava on 0888783618 or 0995421577. You can also raise your concerns by writing to: COMREC Secretariat, P/Bag 360, Chichiri, Blantyre 3. or by calling COMREC Secretariat on 01877245 or 01877291.

Your participation will be greatly appreciated.

Researcher's name: Violet Bandawe Liphava

Signature: Date :

Consent

I have read or have had another person read to me the information given by the researcher above and have understood the purpose of the study. I understand that I will not suffer any injury or harm during the study. I am aware that participation is voluntary, and that I am free to withdraw from the study at any time without being penalised. I understand that the

information that I will share with the researcher will be kept in confidence and will not be used against me in future. I know where to complain if my rights are violated during the study. I therefore give consent to voluntarily participate in the study.

Participant's signature / thumb print..... Date.....

Researcher's name: Violet Bandawe Liphava Date.....

Witness: Date:

APPENDIX E: Translated Chichewa consent form

KALATA YOVOMELEZA KUCHITA NAWO KAFUKUFUKU WOKHUZA SIKELO
YA AMAYI APAKATI PA CHIPATALA CHACHING'ONO CHA PA KAWALE.

Dzina langa ndine Violet Bandawe Liphava wophunzila wa pa sukulu ya za ukachenjede ya anamwino ya Kamuzu koleji ndipo ndikupanga kafukufuku wa za chithandizo chomwe amayi oyembekezela amalandila pa nthawi yomwe akuzayamba sikelo pa chipatala pano. Kafukufuku ameneyu ndikupanga ngati mbali imodzi ya maphunziro anga. Tsono ine ndikufuna kupempha chilolezo chanu kuti mutengapo mbali pa kafukufuku ameneyu ngati muli omasuka kutelo. Kafukufukuyu akuyembekezeka kutenga mphindi zokwanila makumi atatu.

Chonde dziwani kuti simukukakamizidwa kutengapo mbali komanso ngati mutatengapo mbali ndinu omasuka kusiya nthawi ina iliyonse mungafune opanda kulandila chilango china chilli chonse. Kafukufukuyu alibe chiopsezo china chilichonse pathupi lanu.

Dziwaninso kuti palibe cholowa chilichonse kwa inu potsatila kutengapo mbali kwanu komabe mudziwe kuti zotsatila za kafukufuku ameneyu zingathe kuthandiza kupititsa patsogolo chithandizo chakuchipatala chomwe amayi apakati amalandila zomwe zingapangitse kuti umoyo wa amayi apati ndi makanda ukhale wabwino mdziko lathu lino la Malawi.

Ngati mungavomeleze kutengapo mbali pa kafukufukuyi ndizakufunsani mafunso okhuzana ndi chithandizo chomwe munalandila kapena mwalandila pa nthawi yoyamba sikelo ya amayi apakati. Mafunsowa akuyembekezeka kutenga mphindi zokwanila makumi atatu.

Zonse zomwe tikambilane pa nthawiye zizasungidwa bwino mwa chinsinsi ndipo dzina lanu silizalembedwa pa pepala ya mafunso ndi mayankho.

Ngati mwavomeleza kutengapo mbali muzapemphedwa kusaina kapena kutsindikiza chala chanu pa pepala la mafunso ndi mayankho ngati umboni wakuti mwavomeleza nokha opanda kukakamizidwa. Ngati mungakhale ndi mafunso kapena chidandaulo china chilichonse chokhuzana ndi kafukufuka ameneyu mukhoza kupeleka madandaulo anuwo kwa Violet Bandawe Liphava pa 0888783618 kapena 0995421577. Mukhonzanso kupeleka madandaulo anu polembela kalata ku COMREC Secretariat, P/Bag 360, Chichiri Blanyre 3 kapena kuimba lanya pa 01877 245 kapenanso pa 01877 291 .

Chivomelezo

Ndawelenga kapena wina wandiwelengela ndondomeko za kafukufuku zomwe zalembedwa pamwambapa ndipo ndamvetsetsa cholinga cha kafukufukuyu. Ndamvetsa kuti palibe chiopsezo china chilichonse pamoyo wanga pa kafukufuku ameneyu. Ndamvetsanso kuti palibepo phindu la ndalama kapena cholowa chili chonse potenga nawo mbali pa kafukufukuyu. Ndikudziwa kuti zonse zomwe tikambilane zizasungidwa bwino mwachinsinsi ndipo sizidzagwilitsidwa ntchito musutsana ndi ufulu wanga mtsogolo. Ndine omasuka podziwa kuti kulipo komwe ndingakapeleke madandaulo anga ngati patapezeka vuto lilonse lokhudzana ndi kafukufuku ameneyu. Ndikuvomeleza kutengapo mbali mwaufulu ndiponso mosakakamizidwa.

Wotenga mbali: Tsiku..... Saina/ chidindo cha
chala.....

Wofunsa mafunso:..... Violet Bandawe Liphava.....

Tsiku.....Saini.....

Mboni: Tsiku.....

APPENDIX F: Questionnaire for Midwives

Date of interview.....

Time interview started.....Time interview ended

Interview code number:

NO	ITEM	RESPONSE& CODE	COMMENT
1	What is your age?	(years)	
2	What is your cadre	Registered nurse midwife.....1 Enrolled nurse midwife.....2 Nurse midwife technician.....3 Others specify.....	
3	When did you qualify as a midwife	2-5 years ago 1 5-10 years ago.....2 10-15 years ago.....3 15-20 years ago.....4 Others specify.....	
4	What are the goals of focused antenatal care that you know?	Early detection and treatment of problems and complications.....1 Prevention of complications and diseases.....2 Birth preparedness and complication readiness.....3 Health promotion.....4 Others specify.....	

5	What are some of the problems and complications that can be detected early during pregnancy through antenatal care?	Chorioamnionitis 1 Malaria.....2 Severe anaemia.....3 Pre-eclampsia / eclampsia.....4 HIV and AIDS.....5 Sexually Transmitted Infections.....6 Others specify.....	
6	What are some of the interventions proven to be effective in reducing maternal and neonatal morbidity and mortality that you carry out during antenatal care?	Tetanus toxoid immunization to prevent tetanus.....1 Iron/Folate supplementation to prevent iron deficiency anaemia.....2 Intermittent presumptive treatment (IPT) for malaria prevention 3 Use of insecticide-treated nets (ITNs).4 Presumptive treatment for hookworm infection.....5 HIV Testing and Counselling (HTC)...6 Syphilis testing.....7 Others specify.....	
7	What subjective data do you collect from antenatal mothers during their initial visit?	Last normal menstrual period 1 Number of previous pregnancies and their outcomes.....2 Medical history.....3 Family history 4 Others specify.....	
8	What objective data do you collect from pregnant women during	Gestation age.....1 Presentation 2 Fetal heart rate.....3 Others specify.....	

	their initial antenatal visit? Blood pressure		
9	What laboratory investigations do you carry out in a pregnant woman during the initial antenatal visit?	Pregnancy test.....1 HIV test.....2 Syphilis test 3 Blood for haemoglobin.....4 Blood for rhesus factor and blood group 5 Malaria test 6 Others specify.....	
10	Which danger signs do you make women aware of during the initial visit?	Vaginal bleeding.....1 Draining of liquor.....2 Oedema of both extremities 3 Dizziness, severe headache and blurred vision 4 Ceasation of foetal movements.....5 Convulsions 6 Others specify.....	
11	What are some of the components of a birth preparedness plan that you teach pregnant women?	Skilled provider and place of birth.....1 Signs and symptoms of labour.....2 Labour companion.....3 Materials for a clean and safe delivery.....4 Transport 5 Others specify.....	
12	What are the signs of true labour that you	Regular progressive painful contractions.....1	

	teach pregnant women during ANC?	Lower back pain radiating from the back.....2 Bloody show.....3 Rupturing of membranes.....4 Others specify.....	
13	What other information do you give to pregnant women during health education and counselling?	The physiology of pregnancy and its complications 1 Family planning.....2 Food and nutrition 3 Birth preparedness 4 Signs of true labour.....5 Use of drugs during pregnancy	

End of questions. Thank you for your participation.

APPENDIX G: Questionnaire for pregnant women

Date of interview:

Time interview started: Time interview ended:

Interview code number:.....

Name of interviewer

Instructions: please give the appropriate answer (s) for the questions below.

Section A: Demographic characteristics of pregnant women (please give the appropriate answers for the questions below)			
QN NO	QUESTION	ANSWER & CODE	COMMENTS
1	What is your Age?	years	
2	What is your marital status?	Married 1 Single.....2. Divorced.....3 Widowed.....4 Others specify.....	
3	What is your education level?	Primary.....1 Secondary.....2 College 3 Others specify.....	

4	What is your religion?	Christian 1 Islam 2 Others specify.....	
5	What is your occupation?	House wife 1 Business lady 2 Teacher 3 Others specify.....	
Part B: Questions on Knowledge of antenatal care			
6	What type of history is a pregnant woman supposed to provide during the initial antenatal care?	I don't know 1 Past medical history.....2 Family history.....3 Surgical history.....4 Past obstetrics history.....5 Present obstetrics history 6 Others specify.....	
7	What are some of the physical examinations that are carried out on a pregnant woman during the initial antenatal visit?	I don't know.....1 Blood pressure check 2 Body weight.....3 Height 4 Others specify.....	
8	What obstetric examinations are carried out on a pregnant woman during the initial antenatal visit?	I don't know.....1 Fetal lie and presentation.....2 Fundal height (gestational age of the baby). 3 Fetal heart sounds.....4.	

		Others specify	
9	What are some of the blood tests that are done to a pregnant woman during the initial antenatal visit?	I don't know.....1 HIV test.....2 Syphilis test.....3 Blood haemoglobin level 4 Malaria test 5 Blood group and Rhesus factor..6 Others specify.....	
10	What urine tests are carried out on a pregnant woman during the initial antenatal visit?	I don't know.....1 Urine for pregnancy test.....2 Urine for albumin.....3 None.....4 Others specify.	
11	What are some of the danger signs of a woman during pregnancy that you know?	I don't know.....1 Vaginal bleeding during pregnancy.....2 Draining of liquor or rupturing of membranes before labour 3 Severe headache, blurred vision, heart palpitations and dizziness.....4 Decreased or ceasation of fetal movements 5 Oedema of both extremities.....6 Others specify.....	

12	What should a pregnant woman do when she notices the danger signs in her?	I don't know.....1 Stay home and rest.....2 Report to the hospital immediately.....3 Others specify	
13	What are some of the things that are included in a birth plan?	I don't know.....1 Transportation.....2 Place of delivery 3 Materials for a clean and safe delivery 4 Labour companionship.....5 Others specify	
14	What are some of the medications that a pregnant woman receives during the initial antenatal care visit?	I don't know.....1 Ferrous sulphate 2 Albendazole.....3 Fansidar 4 Others specify	
15	What is the importance of taking the different medications mentioned in 9 above. (Skip if you don't know the medications)	I don't know 1 F/Sulphate for anaemia prevention.....2 Albendazole for hook worm prevention.....3 Fansidar for prevention of malaria.....4 Others specify	

16	What is the importance of using the Insecticide Treated Nets (ITNs) during pregnancy?	I don't know.....1 Helps in the prevention of malaria.....2 Others specify.....	
17	What are the signs of true labour in a pregnant woman?	I don't know.....1 Bloody show.....2 Regular and frequent uterine contractions that become more intense with time 3 Lower abdominal pains 4 Backache.....5 Others specify.....	
18	What are some of the important health topics that a pregnant woman can learn at the antenatal care clinic during the initial visit?	I don't know.....1 Food and nutrition.....2 Family planning methods 3 Exclusive breast feeding 4 Rest and sleep during pregnancy.....5 Personal hygiene.....6 Prevention of Sexually Transmitted.....7 Infections (STIs) including HIV.....8 Others specify.....	

19	How many antenatal visits is a pregnant woman supposed to make during pregnancy?	I don't know.....1 Two or three visits.....2 Four visits.....3 Others specify	

Part c: Questions about women's satisfaction with antenatal care during the initial visit. How satisfied were you with the following services during the initial antenatal visit?						
NO.	ANC Service	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied
20	The physical assessment that was done on you by the midwife					
21	The medical investigations that were carried out on you					
22	The health education that was provided to you by the midwife					
23	The type of counselling that you received					

24	The explanation of the assessment findings that the midwife gave you					
25	The amount of time that was given to you to ask questions					
26	The responses that were given based on the questions you had					
27	The respect that was shown to you by the midwife					
28	In general how satisfied were you with the care that you received during the initial antenatal care?					

29. Given a chance to make a choice on where to seek antenatal care, would you love to come back to Kawale health centre?

[Yes] or [no]

End of questions.

Thank you very much for accepting and participating in the study.

APPENDIX H: Chichewa version of a questionnaire for women

Tsiku la mafunso:

Nthawi yoyambila mafunso:

Nthawi yomalizila mafunso:

Nambala ya ofunsidwa mafunso.....

Ofunsa mafunso.....

Gawo loyamba: mbiri ya oyankha mafunso			
Tsopano ndikufunsani mafunso okhudzana ndi mbiri yanu. Langizo: Pelekani mayankho anu pa funso lililonse lomwe mufunsidwe mmusimu (			
	FUNSO	YANKHO	
1	. Kodi muli ndi zaka zingati?	14-19.....1 20-25.....2 26-31.....3 32-37.....4 >38.....5	
2	Kodi muli pabanja?	Eya.....1 Ayi sindili pa banja.....2 Ayi banja linatha.....3 Ayi ndine mkazi wa.Masiye.....4 Zina tchulani.....	
3	Kodi sukulu munafika nayo pati?	Pulaimale 1 Sekondale 2 Koleji 3	

		Zina tchulani.....	
4	Kodi ndinu a chipembezo chanji?	Chikhirisitu.....1 Chisilamu 2 Zina tchulani.....	
5	Mumagwila ntchito yanji?	Ndine mayi wapakhomo..1 Ndimapanga bizinezi.....2 Yauphunzitsi 3 Zina tchulani.....	
Gawo lachiwiri: Zomwe mukudziwa zokhudzana ndi sikelo ya amayi apakati			
6	Kodi ndi mbiri ziti zaumoyo zomwe mzimayi woyembekezela amayenela kuwafotokozela azamba akuchipatala panthawi yodzayamba sikelo?	Sindidziwa.....1 Mbiri ya umoyo wake wambuyomu.....2 Mbiri ya umoyo wa achibale ake.....3 Mbiri ya opaleshoni uliwonse pathupi lake.....4 Mbiri ya uchembele wa mbuyomu.....5 Mbili ya uchembele wa pakati pomwe ali napo.....6 Zina zitchuleni.....	
7	Kodi ndizinthu monga ziti zomwe mzimayi woyembekezela amayesedwa panthawi yomwe akuzayamba sikelo.	Sindidziwa.....1 Kuthamanga kwa magari.....2 Kulemela kwa thupi 3 Utali wake.....4 Zina zoonjezela zitchuleni.....	
8	Ndiziti zokhuzana ndi uchembele zomwe	Sindidziwa.....1 Momwe mwana wagonela mchibelekelo.....2 Kukula kwa mimba molingana ndi miyezi.....3	

	mzimayi amayesedwa panthawi yodzayamba sikelo yapakati?	Kugunda kwa mwana.....4 Zina tchulani.....	
9	Kodi mzimayi woyembekezela amatengedwa magari pofuna kuyesa zinthu monga ziti mnthupi mwake pamene akuzayamba sikelo?	Sindidziwa 1 Za kachilombo ka HIV.....2 Za chindoko cha magari.....3 Za kuchuluka kwa magari mnthupi.....4 Za malungo.....5 Za gulu lamagazi 6 Zina zoonjezela tchulani.....	
10	Nanga mzimayi woyembekezela amamuyesa mikozi pofuna kufufuza chiyani mnthupi mwake?	Sindiziwa.....1 Kutsimikiza kuti ndi oyembekezela.....2 Kuyeza Michele yamnthupi 3 Zina tchulani.....	
11	Kodi ndi zizindikilo ziti zoopsa zomwe mzimayi woyembekezela amayenela kukhala nazo tcheru nthawi zonse?	Sindidziwa.....1 Kutaya magari munthu ali woyembekezela...2 Kutaya madzi kumusiku kapena kusweka.....3 msupa matenda asanayambe Mutu wa ching'alang'ala, kuona mdima mmasos, ndinso chizungulile.....4 Kufooka kugunda kwa mwana kapena kusiya kuunda kumene.....5	

		Kutupa kwa mikono, manja, miyendo, ndinso mapazi.....6 Zina zoonjezela., tchulani.....	
12	Nanga mzimayi akaona zizindikilo zoopsazo amayenela kuchita chani?	Sindidziwa.....1 Kupumula kunyumba.....2 Kupita msanga kuchipatala.....3 Zina zoonjezela tchulani.....	
13	Ndizinthu ziti zomwe mzimayi amayenela kuziika pa ndondomeko ngati mbali yokonzekela ubeleki wabwino panthawi yomwe ali woyembekezela?	Sindidziwa.....1 Za mayendedwe pa nthawi yokableleka.....2 Za malo okablekela.....3 Zipangizo zoyenela kukhala nazo panthawi yobeleka.....4 Chithandizo cha wachibale nthawi ya matenda ndinso yobeleka 5 Zina tchulani.....	
14	Ndimankhwala monga ati omwe amapelekedwa kwa mzimayi woyembekezela panthawi yomwe wapiti ku sikelo?	Sindidziwa.....1 Amagazi 2 A njoka za mmimba.....3 Fansida woteteza malungo 4 Ena tchulani	
15	Pali ubwino wanji mzimayi akamwa mankhwala mwatchula kalewa?	Sindidziwa 1 Fansida amateteza ku malungo.....2 Enawo amateteza kumatenda okutha magazi mnthupi 3 Ena amateteza ku njoka za m'mimba.....4 Zina tchulani.....	

16	Kodi ukonde wa udzudzu omwe mzimayi woyembekezela amalandila ku sikelo ndiofuna bwanji?	Sindidziwa 1 Umateteza kuti mzimayi asadwale malungu chifukwa salumidwa ndi udzudzu.....2 Zina tchulani.....	
17	Kodi mayi woyembekezela amayenela kupita ku sikelo kangati?	Sindiziwa 1 Kawiri kapena katatu 2 Kanayi 3 Zina tchulani.....	
18	Ndi maphunziro anji okhudzana ndi umoyo omwe mzimayi woyembekezela amaphunzila panthawi yodzayamba sikelo ya pakati?	Sindidziwa 1 Kadyedwe kabwino.....2 Ubwino ndi njira za Kulela.....3 Kuyamwitsa mwakathithi 4 Kupumula koyenela pamene mayi ali oyembekezela 5 Ukhondo wapathupi.....6 Kapewedwe ka matenda opasilana pogonana kuphatikizapo za kachirombo ka HIV 7 Zina tchulani.....	
19	Kodi mayi woyembekezela amayenela kupita ku sikelo kangati?	Sindiziwa 1 Kawiri kapena katatu.....2 Kanayi 3 Zina tchulani.....	

Gawo lachitatu: Mafunso okhuzana ndi kukhutila ndi chithandizo chomwe munalandila panthawi yozayamba sikelo yapakati

Kodi munali okhutila bwanji ndi chithandizo chomwe munalandila pa zinthu izi?

	Okhutila kwambiri	Okhutila	Pakatikati	Osakhutila	Osakhutila kwambiri
Kukuyesani thupi lonse kuchokela kumutu mpaka kumiyendo.					
Zofufuzafufuza za mthupi mwanu.					
Maphunziro a zaumoyo amene azamba anakupatsani					
Uphungu wa zaumoyo umene azamba anakupatsani.					
Momwe azamba anafotokozela za zomwe anapeza atatha kukuyezani..					
Nthawi imene azamba anakupatsani yoti mufunsile mafunso.					
Mayankho amene munapatsidwa mutafunsa mafunso.					
Ulemu umene azamba anakupatsani panthawi yonse yomwe mumalandila chithandizo.					
Pomaliza , kodi munali okhutila bwanji pa chithandizo chonse chimene munalandila pa nthawi imene					

mumazayamba sikelo ya amayi apakati?					
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Kodi mutapatsidwa mwayi osankha malo ochitilako sikelo yapakati kodi mungakondwe mutamabwelabe pano pa kawale ?

Eya.....1

Ayi.....2

Mafunso athela pamenepa.

Zikomo kwambili chifukwa chovomeleza kutengapo mbali pa kafukufuku ameneyu.

APPENDIX I: Checklist on structural assessment of quality of Antenatal care provision

Performance standard	Criteria	Yes	No	Comments
The examination room has adequate furniture needed for ANC care provision	There is a desk There are chairs for the provider, client, and companion. Examination table.			
The facility has equipment, supplies and materials necessary for the provision of ANC	Light source Container with leak proof plastic bag for contaminated wastes. Container with 0.5% chlorine solution for decontamination. Container with leak proof plastic bag for contaminated waste. Gestational age calculator or calendar -Speculum Sphygmomanometer Adult stethoscope Fetal scope Thermometers Weighing scale			

	Tape measure Cotton/gauze swabs Examination gloves Wooden spatula Soap Antiseptic solution Antenatal register Health passports			
The facility has essential drugs needed for the provision of care	Ferrous sulphate tablets Sulphadoxine Pyrimethamine tablets Benzathine Penicilline Albendazole tablets Erythromycin tablets Cotrimoxazole tablets.			
The facility has essential laboratory supplies needed for antenatal care provision.	Reagents for haemoglobin Reagents for syphilis screening. Reagents for HIV testing Reagents for pregnancy testing Reagents for blood grouping and Rhesus factor.			

	Reagents for urinalysis for protein testing Reagents for malaria testing Reagents for urinalysis for sugar. Urine specimen bottles Blood specimen bottles. Needles and Syringes			
The facility has ANC guidelines	There are reproductive health guidelines.			

APPENDIX J: Checklist on actual process of quality antenatal care provision

Performance standard	Verification Criteria	Yes/No N/A	comments
The provider conducts a rapid initial evaluation at the first contact	Asks the pregnant woman upon her arrival in the hospital whether she has had any danger sign and symptoms. Assures immediate attention in the event of any of the danger signs and symptoms.		
The provider receives and treats the pregnant woman and her husband or companion cordially and respectfully.	Prepares before starting the daily attention the ANC consultancy rooms/examination areas ensuring that the minimum required furniture, equipment, supplies and stationary are available.		
	-Asks for personal and social information. -Asks /reviews obstetrical history.		

The provider obtains/reviews client's information	-Determines the expected date of delivery and gestational age.		
The provider takes / reviews the medical history of a pregnant woman	Reviews client's health passport. Asks about any recent health problems (headache, fever, joint pain, chronic diarrhoea, weight loss, vaginal discharge, genital ulcers). Asks for any major health issues (diabetes, Tuberculosis, hypertension, heart disease, urinary tract infections, anaemia, malaria). Asks for HIV status. Asks for any history of surgery to the pelvic region or blood transfusion Asks about the past history or current symptoms of STIs in woman or her partner (vaginal discharge, genital ulcers). Asks whether the woman is taking any medications or has any allergies. Asks about Tetanus toxoid immunization Asks about tobacco or alcohol use or any harmful substances.		

	Asks about ABO and RH factor test results Asks about Malaria IPT (when, how many doses) and use of insecticide-treated net.		
The provider thoroughly conducts a physical examination of a client	Explains in a simple way each stage of the examination. Asks the woman to empty her bladder, saving urine for testing. Helps a woman up onto and down from examination table. Ensures privacy during examination (visual and audio) Performs hand hygiene before examination Observes woman's general appearance, measures height, weight, and vital signs. Checks conjunctiva and palms for anaemia Checks the neck for enlarged thyroid glands and distended jugular veins. Checks for oedema of the face, ankles and hands.		

	Records all relevant findings in the woman's health passport and antenatal care register. Informs woman of key findings.		
The provider properly conducts individualized care based on findings and protocols.	-Explains findings from the clinical history, physical exam and available lab tests in simple language. -Requests laboratory tests according to the national focused ANC package. (haemoglobin, urinalysis for sugar, protein and acetone tests, syphilis, blood group and RH factor, HIV after counselling and consent.) -Provides routine medications, including malaria intermittent preventive treatment. • Provides specific treatment /counselling for women living with HIV. • Advises client for using insecticide treated nets.		

	• Provides advice on harmful habits such as smoking, drug abuse and alcohol consumption. • Provides counselling on infant feeding according to HIV status • Provides specific advice and counselling to the woman and her husband or companion as needed (i.e. common discomfort, rest, safe sex, nutrition, hygiene and breast feeding). • Explains the benefits of giving birth with a skilled provider who knows how to treat complications. • Develops a birth plan with the woman, including preparations for normal birth and eventual emergencies (skilled provider and place of delivery, signs and symptoms of labour and danger signs, emergency transportation and funds, family member as a blood donor, items for clean and safe delivery and decision – making person in case of complications at home.		
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The provider counsels client regarding postpartum contraception and lactational amenorrhea.	• Promotes exclusive breastfeeding and Informs that many contraceptive methods are compatible with breastfeeding. • Explains to the client the benefits of healthy timing and spacing of pregnancy. • Explains to the client how to use LAM as their method of family planning. • Informs the client about the proper use of other family planning methods during postpartum, including IUDs.		
The provider conducts an evaluation of the care provided and subsequent follow-up	• Asks the woman to repeat back the most important points of the counselling provided, especially recognition and action in case of danger signs. • Remarks the importance of the laboratory tests. • Asks about and responds to any concerns that the woman might have • Sets a date for the next consultation according to current standards.		

	• Tells the woman that they can come anytime if needed. • Records all information in the antenatal register and client's health passport • Thanks the woman for coming.		
The provider provides appropriate treatment and counselling to women reactive to syphilis test or conducts guided interview with provider.	• Gives single dose of Benzathine Penicillin 2.4 IM (1.2 MU in each buttock) once for three weeks. If the woman is allergic to Penicillin, gives Erythromycin tablets 500mg every 6 hours for 15 days. • Explains to woman that partner(s) must receive the same treatment. • Gives the woman a follow up schedule: two appointments seven days apart. • Encourages testing for HIV • Encourages the couple to abstain or use condoms during treatment.		
The provider manages correctly uncomplicated	• Gives quinine 10mg/kg body weight every 8 hours for 7days.		

malaria during the first trimester of pregnancy	• Prescribes Paracetamol 500mg every 8 hours for three days. • Asks the woman to return if there is no improvement after completing the treatment		
The provider manages correctly uncomplicated malaria during the 2nd and 3rd trimester of pregnancy.	• Prescribes Artemether Lumefantrine correctly. • Prescribes Paracetamol 500mg every 8 hours for three days.		
The provider manages moderate anaemia (Hb 7-11 according to guidelines)	• Identifies and treats causes of anaemia • Gives Fefo 200mg OD by mouth until delivery. • If woman is in the 2nd or 3rd trimester, gives anthelmintics: Albendazole 400mg or Mebendazole 500 mg stat orally. • Advises about nutrition: animal proteins, legumes, dark green vegetables, and sources of vitamin C. • Makes a follow up appointment to reassess.		

The provider manages severe anemia (<7g/dl) according to the national guidelines	• Admits the woman • Identifies and treats the causes of anemia • Indicates blood transfusion • Gives Fefo 200mg orally until delivery • Advises to continue taking Fefo for three months after delivery.		
The provider manages preeclampsia according to protocol	• Diagnoses preeclampsia correctly • After 20th week of pregnancy. • Systolic pressure of >140mmHg and diastolic of >90mmHg in two successive assessment 4-6 hours apart. • Woman with pre-existing essential hypertension: increase of systolic >30mmHg and increase of diastolic >15mmHG. • Proteinuria. • Properly classifies the severity of preeclampsia. • Manages preeclampsia correctly according to severity.		

Appendix K: COMREC approval certificate



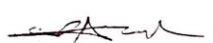
**CERTIFICATE OF ETHICS
APPROVAL**

This is to certify that the College of Medicine Research and Ethics
Committee (COMREC) has reviewed and approved a study entitled:

P.11/14/1649 – Assessment of quality of antenatal care that pregnant women receive during
the initial visit at Kawale Health Centre in Lilongwe District version 4 dated April 2015 by Violet
Bandawe Liphava

On 16th April 2015

*As you proceed with the implementation of your study, we would like you to adhere to international ethical
guidelines, national guidelines and all requirements by COMREC as indicated on the next page*


Dr. C. Dzamalala– VICE Chairperson (COMREC)

Approved by College of Medicine	16/04/2015
16 APR 2015	Date
(COMREC) Research and Ethics Committee	

