DETERMINANTS OF UTILIZATION OF ANTENATAL CARE SERVICES BY MOTHERS: A CASE OF KITUI DISTRICT HOSPITAL, KITUI COUNTY, KENYA

BY

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DECLARATION

This project report is my original work and has not been presented in any other university.

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DEDICATION

This research project is dedicated to my wife Winfred, my son Richard, my parents and all those whose inspiration has given me courage to complete this work.

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LIST OF ACRONYMS AND ABBREVIATIONS

AIC	African Inland Church
AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
ASEAN	Association of Southeast Asian Nations
CHAK	Christian Health Association of Kenya
DHIS	District Health Information System
FANC	Focused Antenatal Care
HBM	Health Belief Model
HIV	Human Immunodeficiency Virus
HMT	Hospital Management Team
ICPD	International Conference on Population and Development
IPTP	Intermitted Prevention and Treatment of Malaria in Pregnancy
KNBS	Kenya National Bureau of Statistics
MCH	Maternal and Child Health
MDG	Millennium Development Goal
MMR	Maternal Mortality Ratio
STI	Sexually Transmitted Infection(s)
TBA	Traditional Birth Attendant
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
U. S	United States
WHO	World Health Organization

ABSTRACT

Maternal mortality remains a huge public health problem in Africa as a whole and Kenya is not excluded. One of the strategies to improve maternal health is the implementation and appropriate use of antenatal care (ANC) services in which at least four visits are recommended during one pregnancy. Utilization of ANC services is influenced by several factors that vary from one country to another. The aim of this study was to establish the determinants of utilization of antenatal care services among mothers in Kitui district hospital in Kitui County, Kenya. The determinants which were explored include waiting time for services, privacy of antenatal care services and client information, health workers' attitude, services integration and operating hours of the antenatal clinic. The level of utilization of ANC services in the hospital was also established. The study design was a case study which was conducted among postnatal mothers seeking post natal services in Kitui district hospital. The postnatal mothers included were those whose children were below 9 months of age. The target population was 2927 mothers. A sample of 338 postnatal mothers for the study was obtained guided by Krejcie and Morgan table for determining sample size from a defined population. Purposive sampling was used in the study whereby consenting clients who met inclusion criteria were enrolled cumulatively until the required sample size was obtained. One structured questionnaire was used to obtain data from study participants and a structured interview schedule was used for mothers who were unable to fill the questionnaires. After data collection, it was analysed using descriptive statistics which involved frequency distribution tables and percentages. The results of the study showed that utilization of antenatal care services is influenced by waiting time (chi-square value of 30.781), health care workers attitude (chi-square value of 16.621), privacy of services (chi-square value of 86.633) and service integration (chi-square value of 153.379). Most of the respondents (75.4%) indicated that waiting time had influence on utilization of ANC services. Health care workers' attitude was mentioned by 63% of respondents as having an influence on utilization of ANC services. 69.2% of the respondents strongly agreed that privacy of services influences utilization of ANC services. However, 63% of the respondents indicated that clinic operating hours have no influence on utilization of antenatal care services. Majority of the responded (97.6%) also indicated that service integration influenced utilization of ANC services. The study recommended that the hospital should improve on the privacy of the rooms where ANC services are offered and train health workers on effective communication and attitude change. The government should also employ more staff to improve health worker to client ratio with an aim of reducing the waiting time.

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

The United Nation's fifth Millennium Development Goal (MDG5) aims at improving maternal health. Maternal mortality still remains a burden to health care system especially in the developing world. Globally, the Maternal Mortality Ratio (MMR) declined from 400 to 260 deaths per 100,000 live births between 1990 and 2008. During the same period, Maternal Mortality Ratio in sub-Saharan Africa decreased from 870 to 640. The decrease in MMR has been attributed to increase in the proportion of deliveries attended by skilled health personnel (Zere *et al*, 2011). Millions more women however survive but suffer from illness and disability related to pregnancy and childbirth (Safe Motherhood Initiatives, 2003).

Antenatal care is the health care given to pregnant women so that they have safe pregnancy and healthy babies. Recently the WHO Technical Working Group has recommended a minimum level of care to be four antenatal care clinic visits throughout the pregnancy. The first visit which is expected to screen and treat anaemia, syphilis, screen for risk factors and medical conditions that can be best dealt with in early pregnancy and initiate prophylaxis if required (e.g. for anaemia and malaria) is recommended to be held by the end of fourth month. The second, third and fourth visits are scheduled at 24–28, 32 and 36 weeks, respectively (UNFPA, 2004). Antenatal care also includes routine follow up provided to all pregnant women at primary care level from screening to intensive life support during pregnancy and up to delivery.

The Kenya vision 2030 social strategy emphasises the need to improve the overall livelihoods of Kenyans (Government of the Republic of Kenya, 2007). In the area of maternal health, vision 2030 aims at shifting the health bill from curative to preventive care with special attention being paid to lowering infant and maternal mortality ratios. It points out that Kenya is lagging behind in interventions which should lower infant and maternal mortality.

Antenatal care is an important determinant of maternal health outcomes and one of the basic components of maternal care on which the life of mothers and babies depend. It is the entry point to the health care system and determines whether a mother will deliver in a health facility and

whether she will take the baby for preventive services like immunizations and growth monitoring. According to Chuma and Thomas (2013), only a minority of pregnant women (36.1%) make the required minimum of four ANC visits in public health facilities in Kenya. This implies that we are unlikely to achieve millennium development goals number 5 and 6 by the end of this year 2015.

Lack of access to, and low utilization of essential services and high-impact interventions, together with poor quality of health services, may be partially responsible for this lack of progress. In Kitui district hospital, out of the 2927 pregnant mothers who were within the catchment area in 2014, only 747 (25%) of them attended the recommended 4 ANC visits (DHIS, 2015). Assessing the determinants of utilization of antenatal care services in Kitui district hospital is therefore necessary since the findings are likely to help the hospital improve the quality of services and attract more clients.

1.2 Statement of the problem

The United Nations Millennium Development Goal (MDG) number five on maternal health aims to reduce the number of women dying during pregnancy and childbirth by three quarters between 1990 and 2015. To achieve this goal, it is estimated that an annual decline in maternal mortality of 5.5% is needed. However, between 1990 and 2010 the annual decline was only 1.7% in the sub-Saharan region, (WHO 2012). Thus many countries in sub-Saharan Africa will not be able to achieve the goal by the end of this year 2015. In Kenya, the situation is even worse since there has been an increase in Maternal Mortality Ratio from 414 in 2003 to 488 deaths per 100,000 live births in 2008 (KNBS & ICF Macro, 2003, 2010).

Kitui district hospital had a catchment population of 2,927 pregnant women in the year 2014. Despise the availability of antenatal care services in the hospital, only 25% of these women were able to achieve the four recommended antenatal care visits. This is lower than the overall Kenyan situation in which 47.1 percent of pregnant women attended at least four ANC visits in the year 2008 (KNBS & ICF Macro, 2010). In the same year, 5 maternal deaths, 46 neonatal deaths and 93 still births were reported in Kitui district hospital.

The low uptake of antenatal care services means that many mothers who have pregnancy related conditions do not receive preventive and curative services. As a result they come to labour when

they already have untreated medical conditions which lead to poor outcomes like maternal death, disability or long term illnesses. These outcomes negatively affect our public health and the overall socio-economic development.

Despite the low uptake of antenatal care services and the subsequent poor maternal health outcomes, there existed a knowledge gap on the determinants of utilization of these services in Kitui district hospital. This study therefore sought to establish the factors which influence the utilization of antenatal care services by the pregnant mothers in Kitui district hospital in order to improve uptake of these services. This will subsequently improve the health of the mothers, babies and the community at large.

1.3 Purpose of the study

The purpose of this study was to establish the determinants of utilization of antenatal care services by mothers in Kitui district hospital in Kitui County, Kenya.

1.4 Objectives

The study was guided by the following specific objectives:

1. To establish how waiting time for services influences utilization of antenatal care services by mothers in Kitui district hospital.
2. To assess how health workers' attitude influences utilization of antenatal care services by mothers in Kitui district hospital.
3. To examine the extent to which privacy in service delivery influences utilization of antenatal care services by mothers in Kitui district hospital.
4. To ascertain how operating hours influences utilization of antenatal care services by mothers in Kitui district hospital.
5. To establish how service integration influences utilization of antenatal care services by mothers in Kitui district hospital.

1.5 Research questions

The following were the research questions for this study.

1. How does waiting time for services influence utilization of antenatal care services by mothers in Kitui district hospital?

2. How does health workers' attitude influence utilization of antenatal care services by mothers in Kitui district hospital?
3. To what extend does privacy in service delivery influence utilization of antenatal care services by mothers in Kitui district hospital?
4. How does operating hours influence utilization of antenatal care services by mothers in Kitui district hospital?
5. How does service integration influence utilization of antenatal care services by mothers in Kitui district hospital?

1.6 Significance of the study

The establishment of the determinants of utilization of antenatal care services by mothers in Kitui district hospital may assist the hospital and its development partners in planning for improved uptake of these services. The findings of the study can be useful to the hospital management team (HMT) in decision making on the provision of antenatal services in the hospital. The delivery of antenatal care services in an appropriate way may enable the pregnant women utilize these services thereby reducing on the cases of maternal mortality and morbidity, still births and early neonatal deaths within the community served by the hospital.

1.7 Delimitation of the study

This study was carried out in Kitui district hospital in Kitui County. This was because the antenatal care services were highly underutilised at 25% utilization rate. The average ANC service utilization rate in Kenya is at 47.1% meaning that most of the other areas are better off than Kitui district hospital. It involved mothers who were pregnant the previous year and who at the time of the study had children below the age of nine months. The determinants which were investigated include waiting time for services, health care workers attitude, privacy of antenatal care services, operating hours and service integration.

1.8 Limitations of the study

One of the limitations encountered during the study was language barrier for the mothers who were either illiterate or unable to read and write in English. This was mitigated by interviewing the mothers who were not able to fill the questionnaires. The interviews were conducted in Kikamba or Swahili depending on the language the mother understood best. The other challenge that was encountered was fear of victimization especially when the participants reported

weaknesses in the services. This was overcome by assuring the participants that the study was not meant to punish or victimise anyone and that they were not to indicate their particulars on the questionnaire or interview schedule.

1.9 Assumptions of the study

The assumptions in this study included: that all the mothers seeking maternal and/or child health services in Kitui district hospital utilized or perceived the need to utilize antenatal care services, that the selected sample represented the population, that the respondents answered the questions correctly and truthfully and that the data collection instruments had validity and that they were measuring the desired constructs.

1.10 Definitions of significant terms used in the study

Antenatal care services refers to the regular medical and nursing care both for prevention or cure of diseases or pregnancy complications recommended for women during pregnancy.

Health workers' attitude refers to the positive or negative perceptions and treatment of health workers on the antenatal care clients

Mothers refer to both pregnant women and women with children below the age of 9 months.

Operating hours refers to the time during which the antenatal clinic is operational or open.

Privacy of services is the use of screens and other physical barriers to ensure that clients are not seen by other people during service provision. It also refers to the practice of ensuring client information and documents are only accessed by authorized people.

Service integration is the extent to which all ANC services are offered within one department.

Utilization of ANC services is the number of ANC visits that a client makes during one pregnancy.

Waiting time for services refers to the time it takes a client between arrival at the maternal and child health clinic and the time she starts receiving the services.

1.11 Organization of the study

This study is organized in five chapters. Chapter one is the introduction which is further subdivided into: Background to the study, statement of the problem, purpose of the study, objectives, research questions, significance of the study, delimitation of the study, limitations of the study, assumptions of the study, definitions of significant terms and organization of the

study. Chapter two is the literature review which consists of the main literature review and conceptual framework.

Chapter three is the methodology which has been broken down into: introduction, research design, study population, sample size and sampling procedures, research instruments, data collection procedures, data analysis techniques, ethical considerations and operational definition of variables.

Chapter four is data analysis, presentation and interpretation. It is further broken into introduction, questionnaire return rate, study participants' sociodemographic information, utilization of antenatal care services, how waiting time for services influences utilization of antenatal care services, how health workers' attitude influences utilization of antenatal care services, extent to which privacy influences utilization of antenatal care services, extent in which operating hours influences utilization of antenatal care services and how service integration influences utilization of antenatal care services. Chapter five is summary of findings, discussions, conclusions and recommendations. The other components of the study include references and appendices.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature related to the subject matter on the determinants of utilization of antenatal care services in various countries. It describes importance of antenatal care services, utilization of antenatal care services, waiting time for ANC services and utilization of ANC services, health care workers attitude on ANC clients and utilization of ANC services, privacy of antenatal care services and utilization of ANC services, integration of ANC services and utilization of ANC services, clinic operating hours and utilization of ANC services, theoretical framework, conceptual framework and study gaps.

2.2 Importance of antenatal care services

The fifth Millennium Development Goal (MDG5) aims at improving maternal health. One of the strategies to improve maternal health is through utilization of antenatal care services by all pregnant mothers. However, maternal mortality still remains a burden to health care system especially in the developing world. Maternal mortality ratio (MMR) is expressed as number of maternal deaths per 100,000 live births whereas maternal death is defined as the death of a woman while pregnant or within forty-two days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental causes (WHO, 2005).

Globally, the MMR declined from 400 to 260 per 100,000 live births between 1990 and 2008. During the same period, MMR in sub-Saharan Africa decreased from 870 to 640. The decrease in MMR has been attributed to increase in the proportion of mothers attending four antenatal clinic visits and deliveries attended by skilled health personnel (Zere *et al*, 2011).

This United Nation MDG number five on maternal health aims to reduce the number of women dying during pregnancy and childbirth by three quarters between 1990 and 2015. To achieve this goal, it is estimated that an annual decline in maternal mortality of 5.5% is needed. However, between 1990 and 2010 the annual decline was only 1.7% in the sub-Saharan region (WHO, 2012). Thus many countries in sub-Saharan Africa may not be able to achieve the goal by the end of this year 2015.

The Kenya vision 2030 social strategy emphasises the need to improve the overall livelihoods of Kenyans (Government of the Republic of Kenya, 2007). In the area of maternal health, vision 2030 aims at shifting the health bill from curative to preventive care with special attention being paid to lowering infant and maternal mortality ratios. It points out that Kenya is lagging behind in interventions which should lower infant and maternal mortality.

In Kenya, MMR increased from 414 in 2003 to 488 deaths per 100,000 live births in 2008 (KNBS & ICF Macro, 2003, 2010). The 2008-2009 Kenya demographic and health survey results show that maternal mortality remains high in Kenya. County specific MMR in Kenya have not yet been established since the Kenya demographic and health survey 2013-2014 has not been published. However, according to Chuma and Thomas (2013), 16 maternal deaths, 90 neonatal deaths and 395 still births were reported in Kitui County in the year 2012. Kitui district hospital recorded 5 maternal deaths in 2014 (DHIS, 2015).

2.3 Utilization of antenatal care services

Antenatal care (ANC) refers to the regular medical and nursing care recommended for women during pregnancy. Furthermore, it is a type of preventive care with the goal of providing regular checkups that allow doctors or midwives to prevent, detect as well as treat potential health problems that may arise in a pregnant woman (WHO, 2005). ANC service offers a woman advice and information about appropriate place of delivery depending on the woman's condition and status. It also offers opportunity to inform women about the danger signs and symptoms which require prompt attention from a health care provider. Furthermore, ANC may assist in abating the severity of pregnancy related complications through monitoring and prompt treatment of conditions aggravated during pregnancy, such as pregnancy induced hypertension, malaria, and anaemia which put at risk both the life of the mother and unborn baby (Bloom *et al*, 1999); (Bhatia and Cleland, 1995).

ANC among pregnant women is one of the most important factors in reducing maternal morbidity and mortality. Good care during pregnancy is important for the health of the mother and the development of the unborn baby (Lincetto *et al.*, 2006). Pregnancy is a crucial time to promote healthy behaviours and parenting skills. Good ANC links the woman and her family with the formal health system, increases the chance of using a skilled attendant at birth and

contributes to good health through the life cycle. Inadequate care during this time breaks a critical link in the continuum of care, and affects both women and babies (Lincetto *et al*, 2006).

Unfortunately, many women in developing countries do not receive such care. Reports from some countries in Asia show that a high utilization rate of the ANC services results in lowering the risk of maternal mortality (UNICEF, 2008). For example, in South East Asia in 2000–2006, based on the ANC coverage among five ASEAN member countries, Thailand had the highest rate at 98.0%, whereas Laos had the lowest at only 27.0%. The highest rates after Thailand were: Viet Nam (91.0%), Myanmar (76.0%), and Cambodia (69.0%). According to the 2005 statistics of Maternal Mortality in South East Asia, Laos, which had the lowest ANC utilization rate, had the highest maternal mortality rate at 660 per 100,000 live births (WHO, 2007).

According to Lincetto *et al* (2006), ANC coverage is a success story in Africa, since over two-thirds of pregnant women (69 percent) have at least one ANC contact. However, to achieve the full life-saving potential that ANC promises for women and babies, four visits providing essential evidence based interventions – a package often called focused antenatal care (FANC) – are required. Antenatal care is free in South Africa's public health system and nearly all pregnant women and girls attend an antenatal clinic at least once during their pregnancy (Amnesty International, 2014). However, most pregnant women do not access antenatal care until the latter stage of pregnancy. Such delays have been linked to nearly a quarter of avoidable maternal deaths in South Africa.

To promote the health and survival of mothers and babies, Kenya has adapted the WHO focused ANC package that promotes interventions that address the most prevalent health issues that affect mothers and newborns (Villar *et al*, 2001). The major goal of focused ANC according to Harriet and Onyango-Ouma (2006) is to help women maintain normal pregnancies through: Targeted assessment to ensure normal progress of child bearing cycle and newborn period, and to facilitate the early detection of complications, chronic conditions, and other problems or potential problems that will affect the pregnancy and; Individualized care to help maintain normal progress, including preventive measures, supportive care, health messages and

counselling (including empowering women and families for effective self care), and birth preparedness and complication readiness planning.

For women whose pregnancies are progressing normally, WHO recommends a minimum of four ANC visits – ideally, at 8 to18 weeks, 24-26 weeks, 32 weeks and 36-38 weeks. Each visit should include care that is appropriate to the overall condition and stage of pregnancy as described in the Table 2.1.

Table 2.1: The four visit focused ANC model showing the interventions in each visit.

First visit **8-12 weeks**	**Second visit** **24-26 weeks**	**Third visit** **32 weeks**	**Fourth visit** **36-38 weeks**
Confirm pregnancy and Expected Date of Delivery, classify women for basic ANC (four visits) or more specialized care. Screen, treat and give preventive measures. Develop a birth and emergency plan. Advice and counsel.	Assess maternal and foetal well-being. Exclude Pregnancy Induced Hypertension and anaemia. Give preventive measures. Review and modify birth and emergency plan. Advice and counsel	Assess maternal and foetal well-being. Exclude Pregnancy Induced Hypertension, anaemia, multiple pregnancies. Give preventive measures. Review and modify birth and emergency plan. Advice and counsel.	Assess maternal and foetal well-being. Exclude Pregnancy Induced Hypertension, anaemia, multiple pregnancy, malpresentation. Give preventive measures. Review and modify birth and emergency plan. Advice and counsel.

Source: WHO (2006).

According to KNBS and ICF Macro (2010), ANC is more beneficial in preventing advance pregnancy outcomes when it is sought early in the pregnancy and is continued through delivery. According to Chuma and Thomas (2013), only a minority of pregnant women (36.1%) make the required minimum of four ANC visits in public health facilities in Kenya. This is lower than

what was reported in the 2008 Kenya Demographic and Health Survey (KDHS) which estimated that 47.1 percent of pregnant women in Kenya attend at least four ANC visits. The difference is however expected considering that the data presented by Chuma and Thomas only relate to those women seeking ANC in public health facilities. According to the 2008 KDHS, 16.4 percent of pregnant women seek ANC from the private sector (KNBS and ICF Macro, 2010). In kitui district hospital, out of the estimated 2927 pregnant women, only 747 (25%) achieved the minimum 4 antenatal visits. It is therefore important to continually address barriers to ANC services related to affordability, acceptability, and availability.

Globally scientific evidence has shown that low utilisation of FANC services is influenced by some factors such as low maternal education, teenage pregnancies, multiparity, unplanned pregnancies and cultural factors (Simkhada *et al*, 2008). Many women in Africa, Kenya inclusive, under-utilize ANC services. Usually they come late for the services and make fewer than recommended number of focused ANC visits.

In Niger Delta, 77% of the pregnant women start utilising ANC in the second trimester (Ndidi and Oseremen, 2010). In Malawi 48% of the pregnant women start utilising ANC in the second trimester (Malawi Demographic and Health Survey, 2010). In terms of number of visits, in developed countries, 97% of the pregnant women make at least one antenatal visit and 99% of these pregnant women deliver with skilled birth attendants (Mrisho *et al*. 2009). To the contrary, in developing countries, including Kenya, 49% of pregnant women make at least one ANC visit and often times two thirds of these women deliver with unskilled birth attendants (Mrisho *et al*. 2009).

Studies have linked low utilization to poor pregnancy outcomes, which ultimately lead to higher maternal and neonatal morbidity and mortality (Raatikainen *et al*, 2007). High maternal mortality rates in Sub-Saharan Africa remain one of history's puzzling on-going tragedies. Improving maternal health continues to be a major challenge such that a woman living in Sub-Saharan Africa has a 1 in 31 chance of dying during pregnancy or childbirth, as compared to 1 in 4,300 in a high-income country such as Sweden (Zere *et al*, 2011).

2.4 Waiting time for ANC services and utilization of ANC services

Availability of health care services is defined both as a treatment that is delivered at a time convenient for the consumer, and as the availability of professional help in the area and at the time of need (UNICEF, 2011). From this definition, it can be concluded that individuals who experience too long waiting time may fail to access health services. Several studies have shown that long waiting times are a barrier to ANC use (Chowdhury *et al*, 2003; Mathole *et al*, 2004).

Studies show that young people avoid health care services and in effect nullify their preventive care. They can be put off by long waiting times among other factors (UNICEF, 2011). A study conducted in Vietnam among doctors and midwives revealed that long waiting times due to very detailed record taking was a barrier to sexual and reproductive health service delivery. According to Klingberg-Allvin *et al* (2006), this was a general problem but acted as a barrier particularly for adolescent clients as they were concerned about the need to remain anonymous and had a desire for the procedures to be completed as quickly as possible.

Long waiting periods did upset some women in Viet Nam and they felt unable to question this because of their lower status (Nguyen *et al*, 2007). A cross-sectional survey conducted in Laos among female sex workers revealed that one of the main barriers to service use (sexually transmitted infection treatment services) was long waiting time (Ketkesone *et al*, 2012). In a quantitative study in Bogra District in northern Bangladesh investigating client satisfaction with a number of health services, including family planning and maternal services, multivariate analysis revealed that length of waiting time was negatively associated with client satisfaction (Aldana *et al*, 2001). Another study, conducted in Pakistan, found long waiting times, unaffordable costs, and negative attitudes on the part of providers as barriers to youth seeking health care (Ali and de Muynck, 2005).

In South Africa, both health care providers and clients agree that effective provision of comprehensive services is hindered by a host of logistical problems. Common constraints expressed include shortage of human resources and high case loads which lead to longer waiting times and loss of clients (Farzana *et al*, 2012). In Kenya, most of the patients' suggestions

offered on improvement of services are about reduction of waiting time and availability of drugs for treatment (Luoma *et al*, 2010).

2.5 Health care workers attitude on ANC clients and utilization of ANC services

That the attitudes and behaviour of health care workers can affect patient care has long been recognised and there are increasingly calls for more attention to be given to assessing and improving interpersonal skills as part of addressing the quality of care (Wendy and Maya, 2012). Health care workers compliance, perception and attitude play a crucial role as regards to utilization of ANC services. Consideration of the attitudes and behaviour of maternal health care providers is central to a human rights based approach to reproductive health (UNFPA and Harvard School of Public Health, 2010). The significance of respect, privacy, dignity, freedom from discrimination, and confidentiality in health care settings as basic human rights was emphasised at the 1994 International Conference on Population and Development (ICPD, 1995).

Freedman *et al* (2007) and van den Broek and Graham (2009) have called for as much attention to be given to assessing the quality of implementation as to evaluating the efficacy of maternal and newborn health interventions. Van den Broek and Graham point out that two components of care are important: the quality of the provision of care – the service and the system; and quality of care as experienced by users. They note "The use of services and maternal health outcomes are the result not only of the provision of care but also of women's experience of that care. Provision of care may be deemed of high quality against recognised standards of care but unacceptable to the woman, her family and the community."

A good relationship between a patient and health care provider has been described as one in which there is mutual respect, openness and a balance in their respective roles in decision-making (Govender *et al*, 2007). Negative attitudes or fear of negative attitudes from health care workers have the potential to influence the decision to seek family planning, antenatal, delivery and post-natal health care. A poor relationship is also likely to affect process elements of quality of care. History-taking and problem assessment, the appropriateness and effectiveness of management, the patient's compliance with treatment and health promotion advice, the likelihood of appropriate referral, and of return for follow up care will all be influenced by poor communication resulting from a poor inter-personal relationship (Gilson *et al*. 1993).

A wide range of attitudes and behaviours have been documented, including neglect, and verbal, physical and sexual abuse. Doctors, nurses and midwives may find opportunities to demonstrate the power they have in relation to patients. For example, in a study assessing the quality of abortion care in the main maternity ward in Hai Phong, Viet Nam, one doctor frankly admitted: *"I sometimes disappear for a quarter or half an hour. Indeed, I have nothing to do, but that is the way we* (health staff) *let them know who is superior here."* [Doctor, maternity hospital, Hai Phong, Viet Nam] (Nguyen *et al*, 2007).

An important review and advocacy paper in the Lancet by d'Oliveira *et al* (2002) described various forms of violence taking place against women within health care services, ranging from threats, scolding, shouting and neglect, to denial of pain relief, sexual violence and over-medicalisation.

There are similar reports from other regions of the world. Mohammad-Alizadeh *et al* (2009), in their study in Iran, found that the desire to be treated with dignity and respect emerged as the most important theme for women attending family planning services. Similarly, in a quantitative study in Bogra District in northern Bangladesh investigating client satisfaction with a number of health services, including family planning and maternal services, multivariate analysis revealed respect and politeness from the service provider to be the most powerful predictor of satisfaction, above competency (Aldana *et al*, 2001).

A prospective quantitative study to understand the care seeking responses to intra-partum morbidities was conducted in Karnataka, India. Questionnaires were administered to 388 women both during pregnancy and immediately after delivery. The attitudes and behaviours of health care workers were not asked about specifically but the authors did note that the insensitivity with which women are treated makes them averse to institutional or medically attended deliveries (Matthews *et al*, 2005).

Whittaker, in a detailed case study based on ethnographic work in Northern Vietnam illustrating women's perspectives of reproductive human rights also found repeated instances of mocking

and scolding behaviour by health care providers *"They scold us saying 'Why don't you wash – why do you let it (the genital region) become so dirty and very smelly…' The health workers say harsh words which make the women lose their self respect."* [Woman, Viet Nam] (Whittaker, 1997). Whittaker noted that such behaviour feeds women's fear and erodes their dignity, contributing to a 'horrible experience' where 'women feel scared and afraid'.

In 2002, a qualitative study was undertaken to identify perceptions, beliefs, barriers and strengths relevant to the utilization of ANC by women in the urban, peri-urban and rural communities of Goroka, Papua New Guinea (Larsen, 2004). Although there was a high level of satisfaction with services, the attitude of health care workers was one of the most significant concerns raised by the women. Shaming or condescending attitudes of health care workers were described, for example, in relation to the women not having washed before attending for their visit, not wearing convenient clothing, having too many children or missing a visit (Larsen, 2004).

Mathole *et al* (2004) explains that poor attitude of health care providers towards pregnant women contributes to low utilization of ANC services in Zimbabwe. He further contends that many of these mothers prefer to deliver with unskilled birth attendants in the villages. Conrad *et al* (2011) substantiate this finding in a multicentre study conducted in Tanzania, Uganda and Burkina Faso where it was noted that health care workers did not comply with the procedures stipulated in focused ANC guidelines and this had a tremendous effect on the utilization of ANC. Conversely, Yengo (2007) refuted the claim that health workers (nurses) perception affects implementation and utilization of focused ANC in Tanzania. She argued that health care workers perceive ANC as beneficial both to the pregnant mother and the unborn, but rather shortage of human and material resources impede successful implementation of ANC.

In a rare study seeking the views of TBAs in Kenya, Izugbara *et al* (2009) heard in FGDs that the major reason given by TBAs for why women seek their services rather than deliver at a health facility is because of the inconsiderate and sometimes abusive way the women are treated at clinics and hospitals: *''The nurses even tell them [women] that they were not part of making the pregnancy. Statements like 'you are not the only patient here for me to handle', 'push for yourself', 'that's not my problem', are used. They so abuse woman and only listen to the*

heartbeat of the baby and don't care about the mothers. But when they come to us, apart from being patient with them, listening to them, we will also give her a cup of tea after delivery to give her energy . . . I know what happens in the hospital, I used to work there.'' [TBA, poor urban community, Kenya] and *''the doctors and nurses are normally very abusive towards women. When a woman goes through this abuse and maltreatment she gets discouraged to go for the next visit. I myself was told (in the hospital) that I was giving birth to children carelessly without planning so I decided to be having my children at home.''* (Izugbara *et al* 2009).

In an assessment conducted in AIC Mulango Dispensary in Kitui County, it was established that positive staff attitude had built clients' confidence to an extent that clients were reluctant to accept referrals (CHAK, 2011). Spending ample time with clients had also built their confidence and trust in the facility.

2.6 Privacy of ANC services and utilization of ANC services

In health service provision, privacy and confidentiality is of paramount importance to the clients and health workers. Confidentiality is defined as "the privilege and private nature of information provided during the health care transaction" (Elster & Kuznets, 1994). Privacy and confidentiality includes use of screens and ensuring client information and documents are only accessed by authorized people (CHAK, 2011). Health professionals have long realized that confidentiality is crucial for certain sensitive topics like reproductive health and mental health. In situations where services are not discrete or are already stigmatized, clients may find it difficult to seek care (Nare`*et al*, 1997).

The significance of privacy and confidentiality in health care settings as basic human rights was emphasised at the 1994 International Conference on Population and Development (ICPD, 1995). Cohen (2002) underscored the importance of privacy and confidentiality. They noted that most clients are eager to talk about their health concerns with a physician if assured that the information will remain confidential. A study conducted in Vietnam in clinics which provide post abortion care indicated that clients were treated respectfully but there was lack of privacy (Klingberg-Allvin *et al*, 2006). Lack of privacy at public clinics was seen as prohibitive to adolescent clients and was believed to make many of them choose private clinics instead.

In a quantitative study in Bogra District in northern Bangladesh investigating client satisfaction with a number of health services, including family planning and maternal services, multivariate analysis revealed that attention to privacy was a powerful predictor of client satisfaction (Aldana *et al*, 2001). Women visiting the clinic for maternal or reproductive issues were especially likely to report privacy as important. However, privacy was achieved for less than half of these individuals. Another study by Mohammad-Alizadeh *et al* (2009) on Iranian family planning services, there were diverging views about the degree of privacy at different clinics. No clear pattern emerged, but lack of privacy was perceived to exist in clinics in all income areas, whether due to space limitations (where more than one provider had to share the same room) or simply thoughtlessness.

In a study conducted in Kenya by Birungi and Onyango-Ouma (2006) on acceptability and Sustainability of the WHO Focused Antenatal Care package, it was reported that only one-third of the consultations in the clinics ensured privacy and confidentiality. This calls for more investigation and intervention to improve privacy in our health facilities.

2.7 Clinic operating hours and utilization of ANC services

According to Qian *et al* (2007), inconvenient opening hours can be a barrier to contraceptive use among young female workers. In a study conducted in South West Ningeria by Iyaniwura and Yussuf (2009), it was interesting to note that the low-income women were more likely to use private clinics compared to women with higher income. This may be because low cadre workers may have less control over their time at work and therefore have to seek ANC outside the normal clinic hours. In another study conducted in Ethiopia, majority of the interviewed youth (70.1%) preferred special service hours designated for them (Beharne *et al* 2005).

In Kitui District Hospital, the MCH clinic is opened from Monday to Friday between 8.00 am and 5.00 pm. It is closed at night and also during the weekends. This implies that the clients who are employed or in school will have to seek permission from their institutions for them to get ANC services. This may act as barrier to utilization of these services by this class of people.

2.8 Integration of ANC services and utilization of ANC services

To respond to the needs of pregnant women, ANC services must address multiple conditions directly or indirectly related to pregnancy, including malaria, nutrition deficiencies, STIs, HIV, and TB. ANC services should also provide required information and advice on pregnancy, childbirth, and the postnatal period, including newborn care. The most effective way to do this is through integration of programmes and availability of health care providers with a wide range of skills.

Integrated services refer to a package of preventive and curative health interventions for a particular group (WHO, 2008). It can also refer simply to multipurpose service delivery points. International donors including the U.S. President's Emergency Plan for AIDS Relief and the World Health Organization (WHO), emphasize the need to expand the entry points to counselling and testing, which are also offered in ANC clinics, so that more people can know their HIV status (Fischer *et al*, 2007). This approach includes the incorporation of counselling, testing and other relevant information into clinical settings, where the primary reason clients seek services is for other health concerns.

In Zambia, researchers conducted a stepped wedge evaluation and found that integration of ANC and HIV services doubled the proportion of treatment-eligible women enrolling in HIV care, as well as doubling the proportion of treatment-eligible women initiating HAART while pregnant (Killam et al, 2010). In a study conducted in Kenya by Baotran *et al* (2011), it was established that integration of HIV/AIDS care into ANC clinic increased client satisfaction with the services.

In Kitui district hospital, antenatal care services are both partially integrated and also provided in a standalone maternal and child health (MCH) clinic. The MCH clinic provides partially integrated services and mothers who are attending the first visit are normally sent to the laboratory for baseline laboratory tests. The youthful pregnant women who require youth friendly services are also referred to youth friendly clinic. An interview with the nursing officer in charge of MCH clinic indicated that due to shortage of clinicians, sometimes the doctor is not there and the pregnant women who are unwell are referred to the general outpatient department.

2.9 Theoretical frame work

This study was based on the Becker's Health Belief Model (HBM) as the theoretical framework (Becker, 1978). The model postulates that health seeking behaviour is influenced by a person's perception of the threat posed by a health problem and the value associated with the action aimed at reducing the threat. The main components of this model include perceived susceptibility, perceived severity and cost, motivation and enabling or modifying factors (Polit and Beck, 2003).

The health seeking behaviours of pregnant mothers are based on perceived benefits and costs, enabling and modifying factors that affect access to and utilization of antenatal care services. These factors influence their decision to seek these services. According to the medical dictionary, health behaviour is defined as an action taken by a person to maintain, attain or regain good health and to prevent illness. In the context of this study, health behaviour is the activity undertaken by the pregnant mothers to seek antenatal care services which include identification and management of obstetric complications, tetanus toxoid immunization, intermittent preventive treatment for malaria during pregnancy (IPTp), and identification and management of infections including HIV, syphilis and other sexually transmitted infections (STIs).

The HBM consists of three distinct phases that lead up to an action related to health. The first phase is individual perception which is described in three basic types: perceived susceptibility, perceived severity, perceived benefits and costs. In this study, individual perceptions concern the pregnant women's beliefs during the pregnancy period, the risks during this period and the opportunities for safe motherhood that ANC services present.

The other phase is termed as modifying factors. According to Polit and Beck (2003), modifying factors such as personality variables, client satisfaction and socio-demographic factors influence health behaviour. In the context of this study, the modifying factors will include age, level of education, level of satisfaction with waiting time, provider interactions, service integration, provider attitude, privacy and confidentiality and operating hours.

The third phase is the likelihood of an action. Butler (1994) describes the likelihood of action as follows; "An individual's action is determined by the balance or imbalance between the individual's perceived positive and negative forces affecting his or her health behaviour". In this study, the likelihood of utilization of ANC services would be influenced by factors that promote or discourage utilization by the pregnant mothers.

2.10 Meta-theoretical assumptions

Assumptions are basic principles that are believed to be true without proof or verification (Polit and Beck, 2003). Burns and Grove (2005) defined assumptions as statements that are taken for granted or considered to be true even though they have not been scientifically tested. This study is based on the following assumptions: That the way the health facility is organized or structured influence utilization of ANC services by pregnant mothers in Kitui district hospital; that service related deterrents such as attitude of service providers, long period of waiting, limited operating hours and inadequate privacy prevent mothers from utilizing ANC services in Kitui district hospital and that the main phases of HBM would be used to contextualize the results of the study.

2.11 Conceptual framework

A conceptual framework is a graphical or diagrammatic representation of the relationship between variables in a study (Mugenda and Mugenda, 2003). It helps to see the proposed relationship between the variables easily and quickly. In this study, the conceptual framework is based on the determinants of utilization of antenatal care service in Kitui District Hospital. Every determinant will either lead to enhancing or deterring utilization in this study.

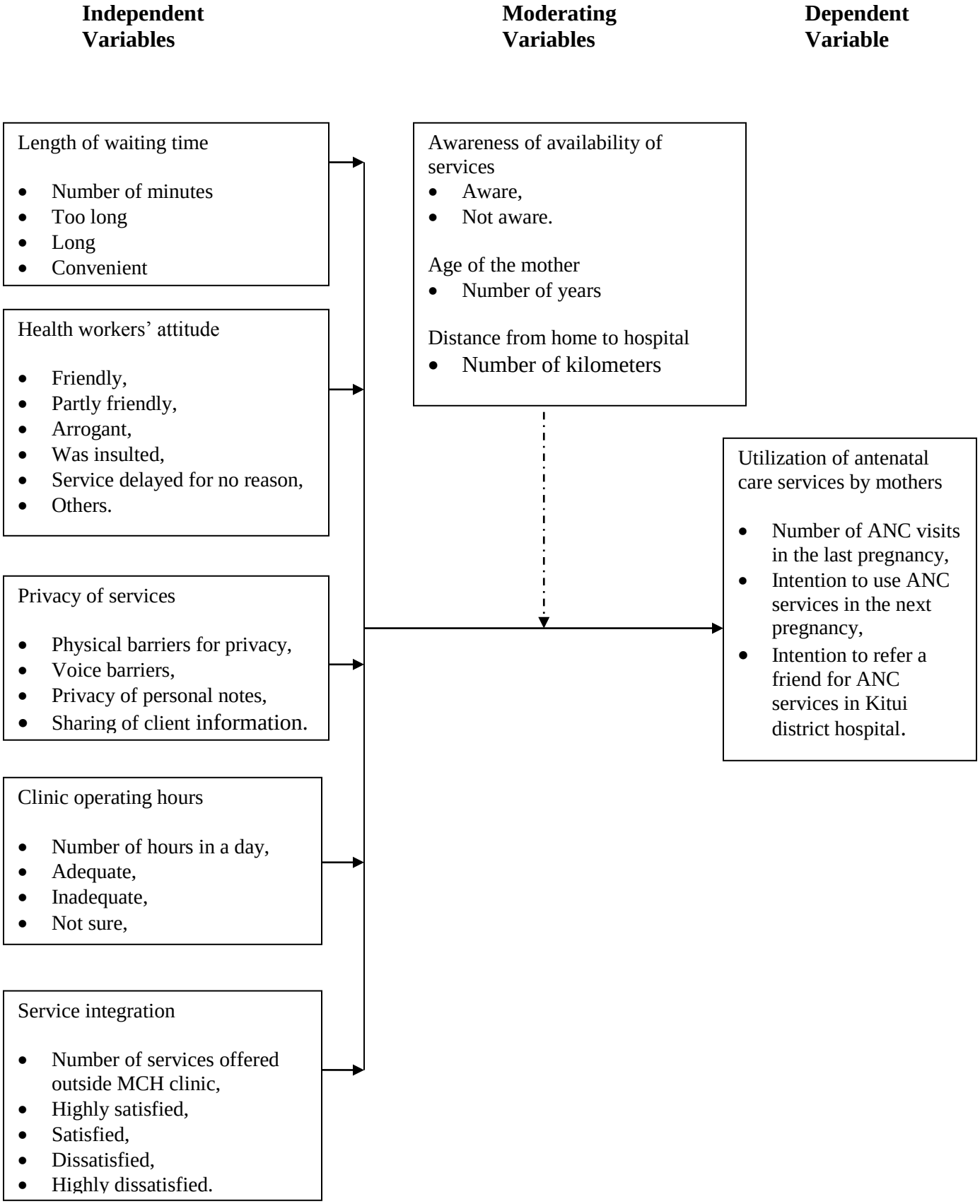

Figure 1: Conceptual framework

2.12 Study gaps

Table 2.2 is a summary of gaps indentified in literature review.

Table 2.2: Gaps in literature review.

Author/Year	Country	Study design	Sample size	Results	Comments
Utilization of antenatal care services					
Lincetto *et al* (2006).	Africa	Survey design	Six African countries	Over two-thirds of pregnant women (69 percent) have at least one ANC contact.	There is low utilization of ANC services in Kenya. It doesn't however indicate the percentages per number of visits.
KNBS and ICF Macro (2010).	Kenya	Kenya Demographic and Health Survey	Countrywide Survey	47.1 percent of pregnant women in Kenya attend at least four ANC visits	
Waiting time for ANC services and utilization of ANC services					
Chowdhury *et al*, (2003).	Bangladesh	Ethnographic study		Long waiting time discouraged women from utilizing ANC services in government clinics.	The study in Zimbabwe by Methole *et al* (2004) conflicted with the findings in other countries. There is also no information on relationship between Waiting time for ANC services and utilization of ANC services in Kitui district hospital.
Mathole et al, (2004).	Zimbabwe	Qualitative study	44 women and 24 men	Although pregnant women had some concern on waiting time, they were more concerned about the details on the wellbeing of the fetus.	
Ketkesone *et al*, (2012).	Laos	Cross sectional survey	407 female sex workers	Long waiting time was a main barrier to service use	
Aldana et al, (2001).	Bangladesh	Quantitative study	1913 persons	Length of waiting time was negatively associated with satisfaction of users of maternal services.	
Farzana *et al*, (2012)	South Africa	Cross sectional survey	200 clients	Long waiting times served as a deterrent to young people utilizing ANC services.	

Luoma *et al*, (2010).	Kenya	Cross sectional survey		Most of the suggestions offered on improving services are about reduction of congestion at the facility, reduction of waiting time, and availability of drugs for treatment	
Health care workers attitude on ANC clients and utilization of ANC services					
Mohammad-Alizadeh *et al* (2009).	Iran	A qualitative study	53 married women of reproductive age	The desire to be treated with dignity emerged as the most important predictor of satisfaction among mothers.	The findings by Yengo (2007) were conflicting finding with other studies.
Matthews *et al*, (2005).	India	Quantitative study	388 women	The authors noted that the insensitivity with which women are treated makes them averse to institutional or medically attended deliveries	
Mathole *et al* (2004).	Zimbabwe	Qualitative study	44 women and 24 men	Poor attitude of health care providers towards pregnant women contributes to low utilization of ANC services in Zimbabwe.	
Conrad *et al* (2011).	Tanzania, Uganda and Burkina Faso	Cross-sectional survey	788 ANC clients and health workers	Health care workers did not comply with the procedures stipulated in focused ANC guidelines and this had a tremendous effect on the utilization of ANC services	
Yengo (2007).	Tanzania	Cross-sectional survey	50 nursing officers, 53 nurse midwives and 40 public health nurses.	She refuted the claim that health workers (nurses) attitude affects implementation and utilization of focused ANC in Tanzania.	
Izugbara *et al* (2009).	Kenya	Cross-sectional survey	74 women	The major reason given by TBAs for why women seek their services rather than deliver at a health	

				facility is because of the inconsiderate and sometimes abusive way the women are treated at clinics and hospitals.	
Privacy of ANC services and utilization of ANC services					
Klingberg-Allvin *et al*, (2006).	Vietnam	Cross-sectional survey	40 midwives and 28 doctors	Lack of privacy at public clinics was seen as prohibitive to adolescent clients and was believed to make many of them choose private clinics instead.	The study by Klingberg-Allvin et al (2006) was on adolescent clients only. The other studies did not look at associations between privacy and utilization of services.
Aldana et al, (2001).	Bangladesh	Quantitative study	1913 persons	Privacy was positively associated with satisfaction of users of maternal services.	
Mohammad-Alizadeh *et al* (2009).	Iran	A qualitative study	53 married women of reproductive age	There were diverging views about the degree of privacy at different clinics. No clear pattern emerged, but lack of privacy was perceived to exist in clinics in all income areas, whether due to space limitations (where more than one provider had to share the same room) or simply thoughtlessness.	
Birungi and Onyango-Ouma (2006).	Kenya	Case control survey	The study compared clinics in two intervention Districts with clinics in a control district.	Client privacy was sometimes Compromised.	
Clinic operating hours and utilization of ANC services					
Qian *et al* (2007).	China	Quasi experimental design	598 women	Inconvenient opening hours can be a barrier to contraceptive use among young female workers.	No study in Kenya and specifically in Kitui county on relationship

Iyaniwura and Yussuf (2009).	Nigeria	Survey design	392 women	It was interesting to note that the low-income women were more likely to use private clinics compared to women with higher income. This may be because low cadre workers may have less control over their time at work and therefore have to seek ANC outside the normal clinic hours.	between clinic operating hours and utilization of ANC services.
Beharne *et al* (2005).	Ethiopia	Cross-sectional survey		Majority of the interviewed youth (70.1%) preferred special service hours designated for them.	
Integration of ANC services and utilization of ANC services					
Killam *et al* (2010).	Zambia	Evaluation survey design	Countrywide survey	Integration of ANC and HIV services doubled the proportion of treatment-eligible women enrolling in HIV care, as well as doubling the proportion of treatment-eligible women initiating HAART while pregnant	The studies were specifically on integration of HIV/AIDS services on ANC services. They did not consider other services like laboratory and youth friendly services.
Baotran *et al* (2011).	Kenya	Case control study	326 women	Integration of HIV/AIDS care into ANC clinic increased client satisfaction with the services	

2.13 Summary

In Kenya maternal mortality remains high with a maternal mortality ratio of 488 deaths per 100,000 live births. The situation is not better in Kitui County where 16 maternal deaths, 90 neonatal deaths and 395 still births were recorded in the year 2012. Kitui district hospital recorded 5 maternal deaths in 2014 which is still a high number. Focused antenatal care has been recommended as a strategy for improving maternal and neonatal health and acts as an entry point to save motherhood.

Studies have been conducted on the determinants and barriers to utilization of ANC services and the common barriers include: distance between homesteads and health facilities, cost of services, availability of services, knowledge on the availability of services, husband's approval and negative staff attitude. Health facility factors influencing utilization of antenatal care services have not been well investigated especially here in Kenya. A theoretical framework on which the study can be based has been identified as health believe model. No similar study has been established to have been conducted in Kitui district hospital.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter deals with research design, study population, sample size and sampling procedures, research instruments, data collection procedures, data analysis techniques, ethical considerations and operational definition of variables.

3.2 Research design

The main purpose of this study was to investigate the determinants of utilization of antenatal care services among the pregnant mothers in Kitui district hospital. We used a case study design which revealed the exact situation as it was within the hospital during the time of the study. According to Kothari (2004), a case study method is a very popular form of qualitative analysis and involves a careful and complete observation of a social unit, be that unit a person, a family, an institution, a cultural group or even the entire community. The case study places more emphasis on the full analysis of a limited number of events or conditions and their interrelations. It deals with the processes that take place and their interrelationship. The design was identified as the most convenient and it ensured that the data obtained gave answers to the research questions.

3.3 Target Population.

Population is the aggregate of all objects or individuals that conform to a given specification (Mugenda and Mugenda, 2003). This study targeted 2,927 antenatal clients who were within the catchment area of Kitui district hospital. The catchment area of Kitui district hospital with total catchment population and population of pregnant women is as illustrated in Table 3.1.

Table 3.1: Catchment area of Kitui district hospital showing catchment population and number of pregnant women

Ward	Village	Total Population	Target population (No. of pregnant women = 4% of total population)
Township Ward	Township A	6,635	266
	Township B	6,630	265
	Manjengo	3,987	160
	Kaveta	4,584	184
	Kalundu	4,180	167
Kyangwithya West Ward	Itoleka	5,626	225
	Mulutu	3,848	154
	Tungutu	6,778	272
	Nduumoni	2,245	90
Mulango Ward	Wikililye/Wii	9, 605	384
Kyangwithya East Ward	Mulundi	6,899	276
	Misewani	5,719	229
	Museve	6,374	255
Total ANC Clients		**63,505**	**2,927**

Source: The County Government of Kitui (2014) & DHIS (2015).

3.4 Sample size and Sampling procedure

This section involves the sample size and sampling procedure.

3.4.1 Sample size

The sample size included 338 mothers visiting the maternal and child health clinic in Kitui district hospital. The number of mothers was derived from the Krejcie and Morgan table for determining sample size from a given population as shown in appendix five. Data from the hospital indicated that a minimum of 25 clients are seen per day. We therefore required a minimum of 3 weeks achieve this sample size.

3.4.2 Sampling Procedure

Purposive sampling was used in this study. Consenting clients who met inclusion criteria were enrolled cumulatively until the required sample size was obtained.

3.5 Research instruments

Questionnaires and structured interview schedules were used as tools for data collection. There was a structured questionnaire for women and those who were unable to fill the questionnaires were interviewed. According to Orodho (2009), questionnaires are instruments used to gather data which allows the measurements for or against a given view point. The advantage of questionnaires is that they can be administered to a large number of people at the same time (Fraenkel and Wallen, 2003).

3.5.1 Pilot testing of the instrument

A pilot study was carried out in ANC clinic at Kauwi Sub-District hospital in Kitui County between 27th and 29th April 2015. A total of 34 participants were sampled for the pre-test whom according to Mugenda and Mugenda (2003) make up 10% of the sample size for the actual study. During the pilot testing of the instrument, we assessed the clarity of the instruments and their ease of use. Information obtained during the pilot testing was used to revise the study instruments.

3.5.2 Validity of the instrument

Validity refers to the appropriateness, correctness, meaningfulness and usefulness of the specific inferences researchers make based on the data they collect (Fraenkel and Wallen, 2003). According to Polit and Beck (2003), validity is the question of whether there is evidence to support the assertion that the instruments are really measuring the concepts they purport to measure. After consultation with the supervisors from the University of Nairobi who are experts in research, they assisted in polishing the data collection instrument until they were assured of its validity. They ensured that data collected with the instruments was relevant to the study.

3.5.3 Reliability of the instrument

Reliability refers to the degree to which scores obtained with an instrument are consistent measures of whatever the instrument measures **(**Fraenkel and Wallen, 2003). A measuring instrument is reliable if it provides consisted results (Kothari, 2004). Reliability of the instruments was established using a split half method. In this approach, the instruments were randomly divided into two groups in that the questionnaires with odd numbers were grouped together and those with even numbers together. The questionnaires were administered to 34 women in a pre-test. The two sets were scored and then correlated using Pearson's correlation

coefficient and a reliability coefficient was established at 0.8. This is an indicator of a strong positive correlation.

3.6 Data collection procedures

A research authorization permit was obtained from the medical superintendent of Kitui district hospital in order to be allowed to collect data from the hospital for the study. Two research assistants were identified and trained for two hours by the researcher. The researcher pre-visited the MCH department to inform the staff of the upcoming data collection and create rapport with them before the actual data collection date. The questionnaires were personally administered by the researcher and research assistants after getting consent from participants. The participants who were unable to fill the questionnaires were interviewed. Each questionnaire was filled in and collected before leaving to the next selected study participant.

3.7 Data analysis techniques

After data collection, the raw data collected was systematically organised to facilitate analysis. Completed questionnaires were cross examined for completeness and consistency. Descriptive statistics was used in data analysis. This entails the use of frequency distribution tables and percentages to summarise data on the closed ended items in the questionnaire. Data obtained from open-ended items in the questionnaires was categorised according to themes relevant to the study and was presented in narrative form using descriptions. Analysis of data employed Statistical Package for Social Scientists (SPSS) software where descriptive statistics was generated.

3.8 Ethical considerations

A research authorization permit was obtained from the medical superintendent of Kitui district hospital in order to be allowed to collect data from the hospital for the study. Informed consent was fulfilled by seeking participant's permission before administering the questionnaire to the sampled participants. Participation of the respondents was voluntary. The participants were treated with respect and courtesy. The study ensured protection of respondents from harm by minimising the amount of psychological stress by applying the principle of anonymity.

3.8 Operational definition of variables

The following is a table for operationalization of variables:

Table 3.2: Operationalization of variables

Objective	Variable	Indicators	Measurement	Scale
To establish whether waiting time for services influences utilization of antenatal care services by mothers in Kitui district hospital.	Utilization of antenatal care services	ANC visits in last pregnancy; intention to use ANC services in future pregnancy, intention to refer a friend for ANC services.	Number of ANC visits in last pregnancy, Number of those intending to use ANC services in future pregnancy and those with intention to refer a friend for ANC services.	Ratio scale
	Waiting time	Minutes of waiting. Too long, long, convenient	Number of minutes of waiting scored as Too long, long, convenient	Ratio scale
To establish the influence of health workers' attitude on utilization of antenatal care services by mothers in Kitui district hospital.	Health worker's attitude	Positive or negative handling or perception of antenatal mothers. Reception by health workers which is friendly, partly friendly, arrogant, was insulted, service delayed for no reason, others	Having treated or perceived antenatal mothers either positively or negatively, having been handled in a friendly, partly friendly, arrogant way, was insulted, service delayed for no reason, others	Nominal scale
To examine the extent to which privacy in service	Privacy in service delivery	Having experienced some physical barriers, voice	Number of mothers who experienced physical barriers, voice barriers,	Nominal scale

delivery influences utilization of antenatal care services by mothers in Kitui district hospital.		barriers, privacy of personal notes, sharing of client information during service utilization. Having kept client information confidential.	privacy of personal notes, sharing of client information during ANC service use. Number of health workers who observe confidentiality of client information.	Nominal scale
To ascertain whether operating hours influences utilization of antenatal care services by mothers in Kitui district hospital.	Operating hours	Hours per day indicating the specific time of the day rated as adequate, inadequate, not sure.	Number of hours in a day rated as adequate, inadequate, not sure.	Interval scale
To establish whether service integration influences utilization of antenatal care services by mothers in Kitui district hospital.	Service integration.	Services not offered within the antenatal clinic, rated as highly satisfied, satisfied, dissatisfied, highly dissatisfied.	Number of services not offered within the antenatal clinic number of services offered outside MCH clinic, rated as highly satisfied, satisfied, dissatisfied, highly dissatisfied.	Ratio scale

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter consists of data analysis, presentation and interpretation. Data was analysed according to research questions of the study. The subheadings of the chapter are: introduction, questionnaire return rate, study participants' sociodemographic information, utilization of antenatal care services, how waiting time for services influences utilization of antenatal care services, how health workers' attitude influences utilization of antenatal care services, extent to which privacy influences utilization of antenatal care services, extent in which operating hours influences utilization of antenatal care services and how service integration influences utilization of antenatal care services.

4.2 Questionnaire response rate

Responses were received from 338 study participants. This was mainly because the researcher and research assistants administered the tools to each participant at a time and collected them immediately they were filled. The questionnaire response rate was therefore 100 per cent. This was an excellent response rate since according to Mugenda and Mugenda (2003), a response rate of 70% and above is very good.

4.3 Study respondents' sociodemographic information

In question one, the participants were asked to indicate their age in form of cohorts of five years from 11 to 45 years as indicated in the preset choices in the questionnaire. The results are presented in Table 4.1.

Table 4.1: Distribution of respondents by age

Age (years)	Frequency	Percentage (%)
11-15	2	0.6
16-20	52	15.4
21-25	123	36.4
26-30	102	30.2
31-35	40	11.8
36-40	17	5.0
41-45	2	0.6
Total	**338**	**100**

From Table 4.1, most of the mothers who visit the maternal and child health clinic in Kitui district hospital are between 21-25 years at 36.4% followed by those between 26-30 years at 302%. It also shows that the teenagers of between 11-15 years (0.6%) and those between 16-20 years (15.4%) are also attending the MCH clinic. The other proportion of the clients is composed of those between 31-35 years at 11.8%, 36-40 years at 5.0% and 41-45 years at 0.6%. This implies that the services should be structured in such a way that they respond to the needs of both the youth and the adult population.

The respondents were also required to indicate their marital status. The results are presented in Table 4.2.

Table 4.2: Distribution of the respondents by marital status

Marital status	Frequency	Percentage (%)
Married	256	75.7
Single	66	19.5
Divorced	10	3.0
Widowed	6	1.8
Separated	0	0.0
Total	**338**	**100**

The study results from the data analysis shows that mothers who were married accounted for 75.7% of the respondents, single were 19.5%, those divorced were 3.0%, widowed were 1.8% and there were no separated mothers. This indicates most of the mothers who utilise antenatal and postnatal services in Kitui district hospital are married.

In question three, the study participants were asked to indicate their religion in terms of whether they were Christian, Muslim, no religion or to specify if they were of any other religion. Their responses are as shown in Table 4.3.

Table 4.3: Distribution of respondents by religion

Religion	Frequency	Percentage (%)
Christian	302	89.0
Muslim	35	10.4
None	0	0.0
Others	0	0.0
No response	2	0.6
Total	**338**	**100**

Table 4.3 clearly shows that most of the respondents were Christians as they accounted for 89.0%. The other proportion is Muslim who accounted for 10.4%. Since in general population Christians account for 80% of the population while Muslims account for 20%, Christianity could be having some influence on utilization of ANC services in Kitui district hospital.

The respondents were required to indicate whether they have ever attended school or not. This was to determine whether they were either literate or illiterate and their responses are summarised in the Table 4.4.

Table 4.4: Distribution of the respondents by literacy

Have you ever attended school?	Frequency	Percentage (%)
Yes	332	98.2
No	4	1.2
No response	2	0.6
Total	**338**	**100**

Table 4.4 shows that almost all the mothers who were took part in the study had attended some level of school. This indicates that literacy has a part to play in determining whether a mother will utilise maternal and child health services or not. This is because they can read the information, education and communication (IEC) materials displayed in public places encouraging mothers to seek ANC care.

In question 5, the respondents who had indicated that they had attended school were asked to indicate their highest level of education. They were to tick whether it was primary, secondary or tertiary education and the findings are tabulated in Table 4.5.

Table 4.5: Distribution of the respondents by level of education

What is your highest level of education?	Frequency	Percentage (%)
Primary education	134	40.4
Secondary education	130	39.2
Tertiary education	68	20.4
Total	**332**	**100**

Out of the 332 mothers who had some form of literacy, 40.4% of them had primary education, 39.2% had secondary education while 20.4% had tertiary education. This indicates that most of the clients who seek maternal and child health services have either primary or secondary level literacy.

To establish the economic engagements of the respondents, they were asked to indicate what they do for a living. The responses are summarised in Table 4.6.

Table 4.6: Distribution of the respondents by economic activities

What do you do for a living?	Frequency	Percentage (%)
Business	109	32.2
Casual work	33	9.8
Employed	72	21.3
Farming	64	18.9
Other	60	17.8
Total	**338**	**100**

From Table 4.6, the highest proportion of the mothers who participated in the study (32.2%) were in business. 21.3% were employed, 18.9% were in farming, 9.8% were casual workers while 17.8% were in other activities. The economic activity has an influence on utilization of ANC services. This is because the economic activity may determine whether a mother will get time during the clinic working hours to seek the services.

In question 7, the respondents were asked to indicate the number of deliveries they have had in the past and the responses are summarised in Table 4.7.

Table 4.7: Distribution of the respondents by parity

How many deliveries have you ever had?	Frequency	Percentage (%)
None	0	0.0
One	153	54.8
Two	113	33.4
Three	38	11.2
Four	19	5.6
More than four	14	4.1
No response	1	0.3
Total	**338**	**100**

From Table 4.7, it is evident that most of the mothers had only one delivery. Those who had more than 4 deliveries accounted for 4.1%, those with 4 deliveries were 5.6%, those with 3 deliveries accounted for 11.2% while those with two deliveries accounted for 33.4%. From these findings, we can conclude that mothers with one child are the most consumers of ANC services in Kitui district hospital followed by those with two children. As the number of children increases, the clients reduce.

4.4 Utilization of antenatal care services

We sought to find out the level of utilization of antenatal care services by the mothers in Kitui district hospital. The findings are summarised in the Table 4.8.

Table 4.8: Antenatal care clinic attendance

In regard to your previous pregnancy, Did you attend antenatal care clinic?	Frequency	Percentage (%)
Yes	327	96.7
No	8	2.4
No response	3	0.9
Total	**338**	**100**

Table 4.8 clearly shows that most of the mothers (96.7%) had attended the antenatal care clinic in their previous pregnancy. This is a strength in that the mothers who are attending ANC clinic can be encouraged to embrace the 4 visit model of ANC services.

The study went further to establish the number of antenatal care visits that the mothers had made in their previous pregnancy. They indicated the number of visits and the results are as shown in Table 4.9.

Table 4.9: Number of ANC visits by mothers in the previous pregnancy

How many ANC visits did you make in Your previous pregnancy?	Frequency	Percentage (%)
One	73	22.3
Two	75	22.9
Three	80	24.5
Four	96	29.4
More than four	3	0.9
Total	**327**	**100**

From Table 4.9, it is clear that 30.3% of the mothers achieved the four recommended ANC visits. Those who visited only once were 22.3%, those who made two visits accounted for 22.9% and those who made three visits accounted for 24.5%. This means that the ANC services are still underutilised since the focus of the health ministry in Kenya is to have every pregnant mother visit the ANC clinic at least four times in one pregnancy.

The study wanted also to find out the period during pregnancy in which the mothers started their antenatal clinic and the feedback is provided in the Table 4.10.

Table 4.10: Gestation period in which ANC clinic was started

At which month of pregnancy did you Start attending ANC clinic?	Frequency	Percentage (%)
0-3 months (0-12 weeks)	57	16.9
4-6 months (13-24 weeks)	230	68
7-9 months (25-36 weeks)	46	13.6
Don't know	5	1.5
Total	**338**	**100**

Table 4.10 shows that only 16.9% of the mothers started attending the ANC clinic within the recommended first 12 weeks of pregnancy. Majority of the mothers (68%) started attending the ANC clinic at 13-24 weeks gestation which is a bit late while 13.6% of the mothers started attending the clinic towards pregnancy term.

The question on whether the mothers were satisfied with the focused antenatal care services offered in the hospital was answered and the feedback is provided in Table 4.11.

Table 4.11: Level of satisfaction with focused antenatal care services

Were you satisfied with ANC services In this hospital?	Frequency	Percentage (%)
Fully satisfied	277	82.0
Somehow satisfied	46	13.6
Neither satisfied nor dissatisfied	4	1.2
Somehow dissatisfied	3	0.9
Dissatisfied	5	1.5
No information given	3	0.9
Total	**338**	**100**

Table 4.11 clearly shows that 82% of the respondents indicated that they were fully satisfied with the services while 13.6% of them were somehow satisfied. 1.2% of the respondents were in between satisfaction and dissatisfaction. However, 2.4% of the respondents were dissatisfied with the ANC services in the hospital. The researcher also asked the respondents whether they can come for ANC services in the same hospital in case they become pregnant again. The responses are summarised in the Table 4.12.

Table 4.12: Utilization of ANC services in future pregnancy

In case you become pregnant again, would You prefer to come for ANC services in this hospital?	Frequency	Percentage (%)
Yes	325	96.2
No	9	2.7
Don't know	4	1.1
Total	**338**	**100**

From Table 4.12, 96.2% of the respondents indicated that they will come for ANC services in Kitui district hospital in case they become pregnant again. Only 2.7% of the respondents indicated that they would not prefer to come for these services in the same hospital in future pregnancies.

The study sought to find out whether the respondents would refer their friends for ANC services in Kitui district hospital and the responses are provided in Table 4.13.

Table 4.13: Probability of refering friends to Kitui district hospital for ANC services

Would you refer a friend to come for ANC services in this hospital?	Frequency	Percentage (%)
Yes	317	93.8
No	9	2.7
Don't know	12	3.6
Total	**338**	**100**

From Table 4.13, it is clear that 93.8% of the respondents indicated that they would refer their friends to Kitui district hospital for ANC services. Only 2.7% reported that they would not refer their friends to this hospital for ANC services.

4.5 How waiting time for services influences utilization of antenatal care services

The question on whether waiting time for ANC services had influence on utilization of antenatal care services was answered and the feedback is presented in Table 4.14.

Table 4.14: Influence of waiting time for services on utilization of ANC services

Do you think waiting time for services has Influence on utilization of ANC services?	Frequency	Percentage (%)
Yes	255	75.4
No	67	19.8
Don't know	16	4.8
Total	**338**	**100**

From Table 4.14, 75.4% of respondents indicated that waiting time had influence on utilization of ANC services while 19.8% held a contrary view. This means that waiting time for services is crucial in the uptake of ANC services. Those who answered yes were asked to explain how waiting time influences utilization of ANC services. The explanations given by respondents were that long waiting time discourages clients from coming for the services since it wastes their valuable time. This means that if the waiting time for services is usually long in the hospital, uptake of ANC services will be low.

The study also wanted to establish the opinion of the respondents on the length of waiting time in Kitui district hospital. The results are summarised in Table 4.15.

Table 4.15: Length of waiting time in Kitui district hospital

In your opinion, how can you rate waiting Time in this hospital	Frequency	Percentage (%)
Enough/convenient	167	49.4
Long	136	40.2
Too long	35	10.4
Total	**338**	**100**

From Table 4.15, 49.4% of the respondents reported that the waiting time was convenient for them. However, 40.2% of them indicated that the waiting time was long while 10.2% reported that it was too long. This means that waiting time could be one of the deterrents to ANC service utilization.

4.6 How health workers' attitude influence utilization of antenatal care services

The question as to whether health care workers' attitude influences utilization of antenatal services was asked and the respondents responded to it. The summary of the responses is presented in Table 4.16.

Table 4.16: Influence of health workers' attitude on utilization of ANC services

Do you think health workers' attitude has Influence on utilization of ANC services?	Frequency	Percentage (%)
Yes	213	63
No	116	34.3
Don't know	9	2.7
Total	**338**	**100**

Table 4.16 shows that 63% of respondents indicated that health workers' attitude has influence on utilization of ANC services while 34.3% reported that it didn't have. This means that health care workers' attitude is an important consideration if we want to improve the uptake of ANC services. Those who answered yes were asked to explain how health care workers' attitude influences utilization of ANC services. The explanations given by respondents were that bad attitude by health care workers towards clients will discourage them from coming for the services.

The study went ahead to find out the nature of attitude of health care workers in Kitui district hospital towards ANC clients and the feedback is provided in Table 4.17.

Table 4.17: Attitude of health care workers towards ANC clients

How can you describe the attitude of health Care workers in this hospital	Frequency	Percentage (%)
Friendly	286	84.6
Somehow friendly	42	12.4
Arrogant	2	0.6
They insult clients	8	2.4
They delay services for no reason	0	0.0
Total	**338**	**100**

From Table 4.17, it is clear that 84.6% of the respondents described the health care workers as friendly while 12.4% of described them as somehow friendly. However, 0.6% of the respondents indicated that the health care workers are arrogant while 2.4% reported that they insult clients.

4.7 Extent in which privacy in service delivery influence utilization of antenatal care services

The study wanted to establish the extent in which privacy of services influences utilization of ANC services. The question was answered by the respondents and the results are presented in Table 4.18.

Table 4.18: Influence of privacy of services on utilization of ANC services

Privacy of services influences utilization Of ANC services	Frequency	Percentage (%)
Strongly agree	234	69.2
Agree	56	16.6
Disagree	28	8.3
Strongly disagree	20	5.9
Total	**338**	**100**

Table 4.18 clearly shows that 69.2% of the respondents strongly agreed that privacy of services influences utilization of ANC services while 16.6% agreed with this statement. However, 8.3% of them disagreed while 5.9% of the strongly disagreed with the statement. This means that privacy should be highly considered during service provision in order to improve uptake of

services. The researcher also went ahead to ask the respondents whether they were satisfied with privacy ANC services in Kitui district hospital. The feedback is summarised in Table 4.19.

Table 4.19: Level of satisfaction with privacy of ANC services in Kitui district hospital

Were you satisfied with the privacy of ANC services in Kitui district hospital?	Frequency	Percentage (%)
Yes	299	88.5
No	21	6.2
Don't know	18	5.3
Total	**338**	**100**

Table 4.19 shows that 88.5% of the respondents were satisfied with the privacy of services while 6.2% were not. This implies that there is need to improve the conditions in the MCH clinic so that all clients can be satisfied with the services.

4.8 Extent in which operating hours influence utilization of antenatal care services

The question as to whether clinic operating hours influence utilization of antenatal services was asked and the respondents responded to it. The summary of the responses is presented in Table 4.20.

Table 4.20: Influence of clinic operating hours on utilization of ANC services

Do you think the hours of the day that the MCH Clinic is open has influence on utilization of ANC services?	Frequency	Percentage (%)
Yes	116	34.3
No	213	63
Don't know	9	2.7
Total	**338**	**100**

From Table 4.20, we find that 63% of the respondents indicated that clinic operating hours have no influence on utilization of antenatal care services. 34.3% of the respondents however indicated that clinic operating hours have an influence on utilization of ANC services. The study also wanted to establish whether the current operating hours in the MCH clinic were adequate for the consumption of the ANC services. The feedback is summarised in Table 4.21.

Table 4.21: Whether clinic operating hours were adequate for the clients to consume ANC services

Do you think the hours of the day that the MCH Clinic is open are adequate for you?	Frequency	Percentage (%)
They are adequate	233	68.9
They are not adequate	88	26.0
I am not sure	17	5.1
Total	**338**	**100**

From Table 4.21, 68.9% of the respondents indicated that the clinic operating hours were adequate for them while 26.0% of them indicated that they were not adequate. These findings implies that although most of the respondents indicated that operating hours have no influence on utilization of ANC services, some clients were being affected by negatively by the hours.

4.9 How service integration influence utilization of antenatal care services

The study wanted to establish the extent to which service integration influences utilization of ANC services. The question was answered by the respondents and the results are presented in Table 4.22.

Table 4.22: Influence of service integration on utilization of ANC services

Do you think that having all the ANC services Under one roof has influence on utilization of ANC services?	Frequency	Percentage (%)
Yes	330	97.6
No	8	2.4
Don't know	0	0.0
Total	**338**	**100**

Table 4.22 clearly shows that 97.6% of the respondents indicated that service integration influenced utilization of ANC services while 2.4% were of contrary opinion. This means that service integration highly influences utilization of ANC services since the client obtains all the services in one department. The researcher also asked the respondents to rate their satisfaction with the status of service integration in Kitui district hospital and the feedback is presented in Table 4.23.

Table 4.23: Level of satisfaction with integration of services

How can you rate your satisfaction with the Integration of services in MCH clinic?	Frequency	Percentage (%)
Highly satisfied	130	38.5
Satisfied	200	59.2
Dissatisfied	8	2.4
Highly dissatisfied	0	0.0
Total	**338**	**100**

From Table 4.23, it is clear that most of the respondents were satisfied with the status of service integration since 38.5% were highly satisfied while 59.2% were satisfied. However, the 2.4% who were dissatisfied are still significant and call for more improvement in service integration.

4.10 Relationship between variables

The study sought to establish whether there are significant relationships between the independent variables and the dependent variable. Chi-square values for the results in each objective were calculated and the values are presented in Table 4.24.

Table 4.24: Chi-square values for association between independent and dependent variables

Variables	Chi-square values	Degree of freedom	Critical value
Waiting time and utilization of ANC services	30.781	2	5.991
Health workers attitude and utilization of ANC services	16.621	2	5.991
Privacy and utilization of ANC services	86.633	2	5.991
Operating hours and utilization of ANC services	5.728	2	5.991
Service integration and utilization of ANC services	153.379	2	5.991

Based on Table 4.24, we established that waiting time influences utilization of ANC services in Kitui district hospital at a chi-square value of 30.781. Health workers attitude also influences utilization of ANC services at a chi-square value of 16.621. Privacy of services highly influences utilization of ANC services since the chi-square value was high at 86.633. However it was established that operating hours have no influence on utilization of ANC services since the chi square value was 5.728 which is less than the critical value. Service integration highly influences utilization of ANC services at a chi square value of 153.379.

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The study set out to establish determinants of utilization of antenatal care services in Kitui district hospital. This chapter provides the summary of findings from the research, discussions on the findings, conclusions and recommendations, both for improving utilization of these services and for further research.

5.2 Summary of findings

The study findings indicated that waiting time influences utilization of antenatal care services in Kitui district hospital. The analysis of data established that long waiting time discourages clients from coming for the services since it wastes their time. It was found that the length of waiting time in Kitui district hospital was perceived to be long by some respondents and this could deter them from coming for the ANC services.

The research assessed the extent in which health workers attitude influences utilization of antenatal care services in Kitui district hospital. It was found out that health workers' attitude had an influence on utilization of ANC services. The respondents indicated that bad attitude by health care workers towards clients discourages them from coming back for the services while a friendly attitude encourages them to come back. It was also established that health workers in Kitui district hospital were friendly to the ANC clients.

It was established that privacy of services influences utilization of antenatal care services in Kitui district hospital. Most of the respondents strongly agreed that privacy influence utilization of ANC services. However, the respondents indicated that they were satisfied with the privacy situation in Kitui district hospital.

The research also assessed the extent in which clinic operating hours influence utilization of antenatal care services in Kitui district hospital. It was established that clinic operating hours

have no influence on utilization of ANC services. The respondents also indicated that the clinic operating hours in Kitui district hospital were adequate for them.

The fifth objective was to establish how service integration influences utilization of antenatal care services by mothers in Kitui district hospital. It was found out that service integration influences utilization of antenatal care services. The respondents also indicated that they were satisfied with the level of service integration in Kitui district hospital.

5.3 Discussions of findings

On the first objective, waiting time was seen as key in understanding why there is underutilization of antenatal care services in Kitui district hospital. The antenatal mothers perceived waiting time as long and this discouraged them from coming back for subsequent visits. Long waiting time was therefore established as a barrier to utilization of antenatal care services. The study was in agreement with Chowdhury *et al*, (2003), Mathole *et al*, (2004), Nguyen *et al*, (2007), Aldana *et al*, (2001) and Farzana *et al*, (2012) who found out that long waiting time was a barrier to women seeking antenatal care services. The study findings were also in agreement with those of Luoma *et al*, (2010) in Kenya where suggestions given by most of the patients seeking all manner of services on improvement of services were about reduction of waiting time and availability of drugs for treatment.

The second objective was to assess how health workers' attitude influences utilization of antenatal care services by mothers in Kitui district hospital. It was established that the attitude of health care workers towards antenatal care mothers was key in determining whether they would continue utilizing the ANC services. This was so because bad attitude by health care workers towards clients discouraged them from coming back for the services while a friendly attitude encouraged them to come back. These findings were in agreement with Gilson *et al*, (1993) who concluded that negative attitudes or fear of negative attitudes from health care workers have the potential to influence the decision to seek family planning, antenatal, delivery and post-natal health care. They also established that follow up care will be influenced by poor communication resulting from a poor inter-personal relationship between the health worker and the client.

The findings were also in agreement with Mohammad-Alizadeh *et al* (2009), Aldana *et al*, (2001) and Matthews *et al*, (2005) who concluded in their studies that the level of client satisfaction and the likelihood of an antenatal care client coming back to a health facility for subsequent care were highly depended on attitudes of health care workers. This was also in line with Larsen, (2004) conclusion that shaming or condescending attitudes of health care workers were discouraged clients from utilizing antenatal care services. They were also supported by Mathole *et al* (2004), Izugbara *et al* (2009) and CHAK, (2011) who established that poor attitude of health care providers towards pregnant women contributes to low utilization of ANC services.

The third objective was to examine the extent to which privacy in service delivery influences utilization of antenatal care services by mothers in Kitui district hospital. The study wanted to establish whether privacy has a role in determining whether clients will continue consuming ANC services. The findings indicated that privacy was important in determining whether the mothers would come for subsequent visits in the hospital. Most of the mothers however reported that they were satisfied with the status of privacy in our hospital. The findings were in agreement with Cohen (2002) who underscored the importance of privacy and confidentiality and noted that most clients are eager to talk about their health concerns with a physician if assured that the information will remain private and confidential. It is also supported by Klingberg-Allvin *et al*, (2006), Birungi and Onyango-Ouma (2006) and Aldana *et al*, (2001) who in their studies concluded that privacy was a powerful predictor of client satisfaction and continued use of reproductive health services in public health facilities.

The fourth objective was to ascertain how operating hours influences utilization of antenatal care services by mothers in Kitui district hospital. The operating hours of antenatal care clinic have no influence on utilization of antenatal care services. The consumers of these services felt that the current operating hours for antenatal care clinic are actually adequate for their utilization of the services. This was in contrast to the findings by Qian *et al* (2007), Iyaniwura and Yussuf (2009) and (Beharne *et al* 2005 who concluded that inconvenient opening hours can be a barrier to contraceptive and ANC service use among young female workers and low income women. The fact that the operating hours were convenient for antenatal mothers in Kitui means that they could get time during the working hours to come for these services.

The fifth objective was to establish how service integration influences utilization of antenatal care services by mothers in Kitui district hospital. The research findings revealed that service integration was important in influencing the utilization of antenatal care services. When all services are available in one department, mothers find it easier to use these services since they don't have to move from one department to another. They also reported that they were satisfied with the level of service integration in the hospital. The findings were in agreement with Killam *et al*, (2010) and Baotran *et al* (2011) who found out that integration of services resulted in increased satisfaction and subsequent service use. The supermarket approach in antenatal care service provision is therefore important and need to be wholly implemented so as to achieve maximum service uptake.

5.4 Conclusion

The purpose of this study was to assess the determinants of utilization of antenatal care services in Kitui district hospital in Kitui County, Kenya. The study was guided by five objectives along which respondents were asked questions, respondent to the questions and responses analysed. The results of the study showed that there was underutilization of antenatal care services in Kitui district hospital. The study findings also showed that waiting time has an influence on utilization of antenatal care services in Kitui district hospital and this can be generalised to the other hospitals.

Health care workers attitude influences utilization of antenatal care services by mothers in Kitui district hospital. When health workers are friendly to the ANC clients, the clients tend to come back for future appointments. When clients are mistreated, they tend not to come back for future appointments. The study findings also established that like in other areas in the world, privacy of services influences utilization of ANC services in Kitui district hospital. Lack of privacy or inadequate privacy can make an antenatal client not come back for subsequent appointments.

Antenatal clinic operating hours have no influence on utilization of antenatal care services by mothers in Kitui district hospital. This means that the mothers are in control of their time and they don't need the services outside the clinic hours. This was however contrary to the literature review which indicated that clinic operating hours influenced utilization of antenatal care services in other countries.

The study findings also showed that service integration has influence on utilization of antenatal care services by mothers in Kitui district hospital. The clients were satisfied with the level of service integration in the hospital because most of the services are available under one roof.

5.5 Recommendations

Based on the findings of this study, the researcher made the following recommendations:

1. It is important to address the issue of waiting time for antenatal care services to improve their utilization. There is need to increase the number of nurses and midwives and equip dispensaries so that the high workload being experienced in the hospitals can be distributed to the nearby dispensaries.
2. There is need to train health workers on interpersonal relations to improve their health worker to client relationships and attitudes. This should be done during the basic professional training and also during inductions after employment.
3. Antenatal care infrastructure should be designed in such a way that they maintain client privacy in all forms. Both visual and auditory privacy should always be considered as lack of it could make clients shy away from the services.
4. Antenatal care services should be integrated as much as possible. Although in most settings it is not easy to integrate laboratory services, health care leadership should consider establishing laboratory services in all ANC settings.

5.6 Suggestions for further research

The researcher suggested further studies on socioeconomic determinants of utilization of antenatal care services in Kitui county and other areas in the country which have low uptake of antenatal care services. The relationship between spouse involvement in antenatal care services and utilization of these services also needs to be investigated. Since utilization of antenatal care services remains a challenge in Kenya, the knowledge and practice of antenatal care guidelines and policy among health care workers also need to be investigated.

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APPENDICES

Appendix I: Letter of Transmittal

Athanas Mwangangi Kithua
University of Nairobi,
School of Continuing and Distance Education,
Embu Extra-Mural Centre,
Email: athanaskithua@yahoo.com
13th February 2015

The Medical Superintendent
Kitui District Hospital,
P.O. Box 22-90200,
Kitui.

Dear Sir,

RE: APPLICATION FOR PERMISSION TO CARRY OUT RESEARCH IN KITUI DISTRICT HOSPITAL

My name is Athanas Mwangangi Kithua. I am a student at the University of Nairobi's school of continuing and distance education, Embu extra-mural centre undertaking a master's degree in project planning and management. I intent to carry out a study in your institution on determinants of utilization of antenatal care services among mothers in Kitui district hospital in Kitui County, Kenya. The research is purely for academic purpose. I therefore kindly seek permission from your office to undertake the study.

Yours sincerely

ATHANAS M. KITHUA

Appendix 2: Informed Consent

Dear Respondent,

I am Athanas Mwangangi Kithua, a post graduate student pursuing Master of Arts in Project Planning and Management at The University of Nairobi. I am undertaking a research on **'Determinants of utilization of antenatal care services among mothers in Kitui District Hospital in Kitui County, Kenya,** and request you kindly to participate in this survey which is voluntary and involves no risk to you. The information given is confidential and will be useful in improving antenatal care services here in Kitui district hospital. The questionnaire/interview will take about 20-30 minutes to fill. Do you agree to participate?

☐ YES

☐ No

Date……/……/2015 Signature……..

Appendix 3: Questionnaire for the mothers

Date……

Code……

INSTRUCTIONS TO MOTHERS

Do not write your name; tick only the correct response or multiple responses and where you are asked to describe, use the space provided to do so.

Part A: Respondents Personal Characteristics

1. How old are you?

a. 11-15

b. 16-20

c. 21-25

d. 26-30

e. 31-35

f. 36-40

g. 41-45

2. What is your marital status?

a. Married

b. Single

c. Divorced

d. Widowed

e. Separated

3. What is your religion or denomination?

a. Christian

b. Muslim

c. No religion

d. Others (Specify).....

4. Have you ever attended school?

a. Yes

b. No

5. If yes in 4 above, what is your highest level of education?

a. Primary education

b. Secondary education

c. Tertiary education

6. What do you do for a living?

a. Business

b. Casual work

c. Employed

d. Farming

e. Others (Specify)……

7. How many deliveries have you ever had?

a. None

b. One

c. Two

d. Three

e. Four

f. More than four

Part B: Questions about antenatal care (ANC) services

8. With regard to your previous pregnancy, did you attend Antenatal care clinics?

a. Yes

b. No

9. If yes in number 8 above, how many antenatal clinic visits did you make?

……..

10. At which month of the pregnancy did you start antenatal care?

a. 0 – 3 months (0-12 Weeks)

b. 4 – 6 months (13-24 Weeks)

c. 7 – 9 months (25-36weeks)

d. Don't Know

11. Were you satisfied with the services offered at this facility regarding focused antenatal care?

a. Fully satisfied
b. Somewhat satisfied
c. Neither satisfied nor dissatisfied
d. Somewhat dissatisfied
e. Dissatisfied
f. No information given

12. In case you become expectant again, would you prefer to come for ANC services in this hospital?

a. Yes
b. No

13. Would you refer a friend to come for ANC services in this hospital?

a. Yes
b. No

Part C: Questions about waiting time.

14. In your opinion, do you think that the waiting time has influence on utilization of ANC service?

a. Yes
b. No
c. I don't know

15. If yes in 14 above, please explain the reason.....
.....

16. In your opinion, how can you rate waiting time in MCH clinic in this hospital?

a. Enough / Convenient
b. Long
c. Too long

Part D: Questions about Health workers' attitude

17. In your opinion, do you think health care workers attitude has influence on utilization of ANC services?

a. Yes
b. No

c. Don’t know

18. If yes in 17 above, Please explain how.....
.....

19. How would you describe how you were handled by health service provider (s)?

a. They were friendly
b. They were somehow/ partly friendly
c. They were arrogant
d. I was insulted
e. The service was delayed for no reason

Part E: Questions about Privacy

20. Privacy of health services influences utilization of ANC services

a. Strongly agree
b. Agree
c. Disagree
d. Strongly disagree

21. Were you satisfied with the privacy of the services that you received?

a. Yes
b. No

Part F: Questions on Integration of services

22. D0 you think that having all the ANC services under one roof influences utilization of ANC services?

a. Yes
b. No
c. Don’t know

23. How can you rate your level of satisfaction with the integration of services in the MCH clinic?

a. Highly satisfied
b. Satisfied
c. Dissatisfied

d. Highly dissatisfied

Part G: Questions about operating hours

24. Do you think the hours of the day that the MCH clinic is operational influences utilization of ANC services?
    a. Yes
    b. No
    c. Don’t know
    25. What are your views on these hours?
    a. They are adequate
    b. They are inadequate
    c. Am not sure

THANK YOU

Appendix 4: Interview Schedule for mothers

Date……

Code……

INSTRUCTIONS TO MOTHERS

Do not write your name; tick only the correct response or multiple responses and where you are asked to describe, use the space provided to do so.

Part A: Respondents Personal Characteristics

1. How old are you?

h. 11-15

i. 16-20

j. 21-25

k. 26-30

l. 31-35

m. 36-40

n. 41-45

2. What is your marital status?

f. Married

g. Single

h. Divorced

i. Widowed

j. Separated

3. What is your religion or denomination?

e. Christian

f. Muslim

g. No religion

h. Others (Specify).....

4. Have you ever attended school?

c. Yes

d. No

5. If yes in 4 above, what is your highest level of education?

d. Primary education

e. Secondary education

f. Tertiary education

6. What do you do for a living?

f. Business

g. Casual work

h. Employed

i. Farming

j. Others (Specify)……

7. How many deliveries have you ever had?

g. None

h. One

i. Two

j. Three

k. Four

l. More than four

Part B: Questions about antenatal care (ANC) services

8. With regard to your previous pregnancy, did you attend Antenatal care clinics?

c. Yes

d. No

9. If yes in number 8 above, how many antenatal clinic visits did you make?

……..

10. At which month of the pregnancy did you start antenatal care?

e. 0 – 3 months (0-12 Weeks)

f. 4 – 6 months (13-24 Weeks)

g. 7 – 9 months (25-36weeks)

h. Don't Know

11. Were you satisfied with the services offered at this facility regarding focused antenatal care?

g. Fully satisfied
h. Somewhat satisfied
i. Neither satisfied nor dissatisfied
j. Somewhat dissatisfied
k. Dissatisfied
l. No information given

12. In case you become expectant again, would you prefer to come for ANC services in this hospital?

c. Yes
d. No

13. Would you refer a friend to come for ANC services in this hospital?

c. Yes
d. No

Part C: Questions about waiting time.

14. In your opinion, do you think that the waiting time has influence on utilization of ANC service?

d. Yes
e. No
f. I don't know

15. If yes in 14 above, please explain the reason.....
.....

16. In your opinion, how can you rate waiting time in MCH clinic in this hospital?

d. Enough / Convenient
e. Long
f. Too long

Part D: Questions about Health workers' attitude

17. In your opinion, do you think health care workers attitude has influence on utilization of ANC services?

d. Yes

e. No

f. Don't know

18. If yes in 17 above, Please explain how.....
.....

19. How would you describe how you were handled by health service provider (s)?

f. They were friendly

g. They were somehow/ partly friendly

h. They were arrogant

i. I was insulted

j. The service was delayed for no reason

Part E: Questions about Privacy

20. Privacy of health services influences utilization of ANC services

e. Strongly agree

f. Agree

g. Disagree

h. Strongly disagree

21. Were you satisfied with the privacy of the services that you received?

c. Yes

d. No

Part F: Questions on Integration of services

22. D0 you think that having all the ANC services under one roof influences utilization of ANC services?

d. Yes

e. No

f. Don't know

23. How can you rate your level of satisfaction with the integration of services in the MCH clinic?

e. Highly satisfied

f. Satisfied

g. Dissatisfied

h. Highly dissatisfied

Part G: Questions about operating hours

24. Do you think the hours of the day that the MCH clinic is operational influences utilization of ANC services?

d. Yes

e. No

f. Don’t know

25. What are your views on these hours?

d. They are adequate

e. They are inadequate

f. Am not sure

THANK YOU

Appendix 5: Krejcie and Morgan Table for Determining Sample Size from a Given Population

N	***S***	***N***	***S***	***N***	***S***
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—***N*** is population size. ***S*** is sample size.