FACTORS INFLUENCING COMPLETION OF ANTENATAL CARE AMONG WOMEN IN KIRUHURA DISTRICT, WESTERN UGANDA

COTIOUS TUKASHABA

2015-M282-20047

UGANDA MARTYRS UNIVERSITY

JANUARY, 2018

FACTORS INFLUENCING COMPLETION OF ANTENATAL CARE AMONG WOMEN IN KIRUHURA DISTRICT, WESTERN UGANDA
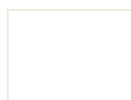
A POSTGRADUATE DISSERTATION

PRESENTED TO

FACULTY OF HEALTH SCIENCES IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF PUBLIC HEALTH-HEALTH PROMOTION OF UGANDA MARTYRS UNIVERSITY

COTIOUS TUKASHABA

2015-M282-20047

JANUARY, 2018

Declaration

I have read the rules of Uganda Martyrs University on plagiarism and hereby state that this work is my own.

It has not been submitted to any other institution for another degree or qualification, either in full or in part.

Throughout the work I have acknowledged all sources used in its compilation.

Name of researcher: …………………………………………………………..………………...

Researcher's Signature: ……………….…………… Date: …………………..……

This work has been produced under my supervision

Name of supervisor: ……………………………………………….……………………

Supervisor's Signature: ……………………………….. Date: …………………..……

Date of submission: ……………………………………………………………………

Submitted to: The Faculty of Health Sciences, Uganda Martyrs University

Dedication

This research is dedicated to my family members, who have been very supportive during this study, especially my husband and two sons (Aldric and Alfric) for their patience and bearing with the absent mother particularly over the weekends, and my newly born daughter (Ariella) who came in just towards the end of this study.

Abstract

Antenatal care (ANC) is one of the global interventions designed to contribute to the reduction of maternal and child mortality playing an important role in ensuring a healthy mother and baby during pregnancy and after delivery. Uganda has recorded inadequate utilization of antenatal care programs with low completion of four recommended ANC visits. However, it is assumed that predisposing, enabling and need factors can improve complete Antenatal care services' utilization.

A cross-sectional descriptive study that employed mixed methods utilized Andersen's behavioural model to establish factors that influenced antenatal care (ANC) completion of four recommended visits. The same model was also used to interpret the relationship between the factors and the level of ANC completion. Data were obtained from 383 women of reproductive age in Kiruhura district using guided questionnaire, one FGD comprising of women of reproductive age selected from the general population and in depth interview with eight women that completed four ANC visits during the most recent pregnancy and had turned up for child immunization at the health facility were conducted.

It was observed that one time ANC visit was at 380 (99%), but with more women inclined to completing all the four ANC visits for their first child 260 (68%), as compared to second child 68 (37%) and third child none (0%) respectively. ANC completion was significantly influenced by level of education (P-Value < 0.002); Occupation (P-Value <0.007); number of pregnancies had (P-Value < 0.003); number of children born (P-Values<0.003); knowledge of the required number of ANC visits (P-Value < 0.000); and distance to the health facility (P-Value < 0.000).

Factors found to enable women complete ANC visits included availability of community initiative and programs (P-Value < 0.024). Women who were aware of their scheduled ANC visits were nearly twice more likely to complete all the four ANC visits as compared to those who were not (Odds Ratio= 1.909). Women's knowledge of the importance of going for ANC during pregnancy, and satisfaction with ANC services had a significant influence on ANC completion (P-Value < 0.010). Regression analysis clearly indicated that the time taken before going for first ANC visit had a strong positive relationship with the number of ANC visits (PPMC R-Value=0.725).

This study therefore recommends that health facilities introduce ANC appointment reminder system prior to the next scheduled ANC using short message (SMS) and or phone call using mothers' or immediate neighbors' contacts. The column of woman's phone contact should be created in ANC register. Community initiatives and programs that promote ANC awareness on the package, timely initiation and completion, such as VHTs, voucher system, health education and health radio talk should be reinforced and scaled up by the district health office. Further studies should be conducted in identifying how the available technology can be used effectively to promote health services' utilization.

Table of Contents

List of Tables

List of Figures

List of Abbreviations

AHSPR   :   Annual Health Sector Performance Report

AIDS   :   Acquire Immune Deficiency Syndrome

ANC   :   Antenatal Care

BDHS   :   Bangladesh Demographic Health Survey

CMR   :   Child Mortality Rate

DHO   :   District Health Office

DLG   :   District Local Government

DV   :   Dependent Variable

FANC   :   Focused Antenatal Care

FGD   :   Focus Group Discussion

HC   :   Health Centre

HDP   :   Health Development Plan

HIV   :   Human Immune Virus

HMIS   :   Health Management Information System

HSSP   :   Health Sector Strategic Plan

IEC   :   Information, Education and Communication

IPTP   :   Intermittent Preventive Treatment of Malaria in Pregnancy

ITN   :   Insecticide Treated Mosquito nets

IV   :   Independent Variable

KDDP   :   Kiruhura 5-Year District Development Plan

MCH   :   Maternal Child Health

MDGs	:	Millennium Development Goals
MMR	:	Maternal Mortality Rate
MOH	:	Ministry of Health
MOUs	:	Midwife Obstetric Units
MTCT	:	Maternal and Child transmission of HIV
NAHSPR	:	National Annual Health Sector Performance Report
NHSPR	:	National Health Sector Performance Report
PMTCT	:	Prevention of Mother to Child transmission of HIV
PNFP	:	Private not for Profit
SDGs	:	Sustainable Development Goals
SMGL	:	Saving Mothers Giving Lives
STI	:	Sexually Transmitted Infections
UBOS	:	Uganda Bureau of Statistics
UDHS	:	Uganda Demographic Health Survey
UMU	:	Uganda Martyrs University
UNAPR	:	Uganda National Annual Performance Report
UNFPA	:	United Nations Population Fund
UNICEF	:	United Nations Children's Fund
USAID	:	United States Agency for International Development
VHTs	:	Village Health Teams. WHO: World Health Organization

Definition of key terms used in the document

Focused Antenatal Care (FANC): Segregates pregnant women into two; women eligible to receive routine ANC (the basic component) and women who need specialized care for specific health conditions or risk factors. FANC emphasizes targeted and individualized care and birth planning.

Antenatal care completion: This research defines completion of ANC visits as when a pregnant woman attends and completes the recommended four ANC visits according to the schedules indicated in the WHO guidelines and as adhered by MOH Uganda.

Women in reproductive age: Refers to all women 15 – 49 years (WHO, 2017).

CHAPTER ONE

GENERAL INTRODUCTION

1.0 Introduction

+

This research established the factors influencing completion of four WHO recommended ANC visits during pregnancy in rural district of Kiruhura, Western Uganda. The underlying assumption was that for pregnant women to complete the four ANC visits there are a number of factors that can influence this process. These factors may include but not limited to: predisposing and enabling factors, need, and health structure and health system. Predisposing factors could be individual traits, demographics such as age, parity, income and level of education, access to information, women's perceptions on ANC importance or a combination of one or more of these categories.

In addition, there are factors that can act as enablers, these may include partner, family and community support, economic activities, geographical location, structural distribution of health services, distance and transport options to the health facility, health systems. Factors strengthening community action such as, male involvement, community health insurance, cultural norms and practices, community health programs by district health leadership, political and religious affiliation may also have an influence on the environment that in turn may influence the way women perceive and utilize health care services.

1.1: Background of the study

Historically, the traditional antenatal care service model was developed in the early 1900s where women were classified into low and high risk by predicting the complications ahead of time. Later in 2000, the thinking shifted to Focused ANC approach (FANC), a goal-oriented approach that was recommended by researchers in 2001 and adopted by (WHO) in

2002. FANC is the accepted guideline in Uganda and has been rolled out in public and private facilities that offer ANC services. The details in the FANCs on four ANC visit breakdown are in the appendix V.

ANC is one of the interventions designed to contribute to the reduction of maternal mortality. Estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division (2015) indicated that there has been a remarkable decline (44%) in maternal mortality ratio (MMR) globally over the past 25 years between 1990 and 2015 as evidenced by an estimated 216 maternal deaths per 100 000 live births in 2015, from an MMR of 385 in 1990. Developing regions accounted for approximately 99% of the global maternal deaths in 2015, with sub-Saharan Africa alone accounting for roughly 66%.

The United Nation Millennium Development Goals (MDGs) on maternal health aimed to reduce the number of women dying during pregnancy and childbirth by three quarters between 1990 and 2015. Annual decline in maternal mortality of 5.5% was needed to achieve this goal; however, between 1990 and 2010, the decline was only 1.7% in the Sub-Saharan region (WHO, 2013). Thus, many countries in Sub-Saharan Africa were not able to achieve the goal by 2015 (Hogan, *et al.,* 2010).

In 2016, at the start of the Sustainable Development Goals (SDGs) era, pregnancy-related preventable morbidity and mortality remains unacceptably high. With an estimated 830 mothers dying due to preventable pregnancy causes and related conditions (WHO, 2015). Within the continuum of reproductive health care, antenatal care (ANC) provides a platform for important health care functions, including health promotion, screening and diagnosis, and disease prevention (Edia, *et al*., 2013). It has been established that by implementing timely and appropriate evidence-based practices, ANC can save lives. Crucially, ANC also provides

the opportunity to communicate with and support women, families and communities at a critical time in the course of a woman's life (WHO, 2016).

Studies have also indicated that antenatal care (ANC) provides regular check-ups that allow skilled personnel (doctors or midwives) to treat and prevent potential health problems throughout the course of the pregnancy while promoting healthy lifestyles that benefit both mother and child (Hallowell, *et al.,* 2012).

The goal of the health systems has been and continues to aim at enabling pregnant women to complete four ANC visits and deliver in health facility by a skilled attendant (WHO, 2015). However, existing studies indicate that this goal is far from being achieved in low and middle income countries. Most developing countries have adopted ANC programmes to improve maternal and neonatal health outcomes (Adam, *et al.,* 2014).

Completion of ANC therefore, means adhering to a simplified and more clearly defined package with four visits throughout the nine months of pregnancy to the health service points. This comprehensive and user friendly ANC package designed by WHO with less visits and each containing a set of interventions for the mother and baby, would make pregnant women more compliant to complete four recommended ANC visits. Therefore, not completing the recommended four ANC visits during pregnancy breaks an important link in the continuum of care, and affects the mother and baby during and after pregnancy period (Linceto, *et al.,* 2015), a case with most pregnant women in Uganda.

Despite the number of pregnant women not completing four ANC visits in middle and low income countries being low, there are situations where the majority of pregnant women have completed the scheduled four ANC visits, a phenomenon that have been interpreted as a contribution to the observed reduction in the maternal mortality for such populations. Such occurrences are an indication of positive deviants.

Understanding the positive deviants and determinants of completing four ANC visits would not only help in redesigning maternal and child health programs that promote ANC service access, utilization and completion of all the four visits, but will also reduce MCH mobidities and mortalities. This is because existing studies in middle and low income countries tend to highlight the negative determinants, barriers and women's perception on ANC utilization (Pell, 2013).

Positive deviance facilitates three important processes: social mobilisation, information gathering to craft interventions, and behaviour change. This concept has been used successfully, mainly to improve child health (Shekar, *et al.,* 1992). It is one of the concepts that was tested in 1970s by policy developers and the findings indicated public health interventions could be designed around uncommon, beneficial health behaviours that some community members already practised (Wray, 1972).

In this concept, the researcher follows up individuals that followed uncommon, beneficial practices and consequently experienced better outcomes than their neighbours who share similar risks (Shekar, 1992). Studies show that identifying such individuals (positive deviants) and enabling communities to adopt the behaviours that explain the improved outcome, are powerful methods of producing change (Mahshid, *et al.,* 2002). This was in line with Klaiman, *et al.,* (2016).

1.1.1: Global Status of Maternal and Child Health in relation to ANC

World over, 830 women still die every day from causes related to pregnancy or childbirth. It is estimated that 289,000 women die worldwide each year as a result of pregnancy and child birth, and 2.7 million infants die during their first 28 days of life. Most of the maternal deaths occur in low to middle income countries across the world and majorly in 24 countries including Uganda (UNFPA, 2014). The lifetime risk of maternal mortality in

women living in Sub-Saharan Africa is 47 times more than those living in United States (WHO, 2014).

It has been estimated that 25% of maternal deaths occur during pregnancy with variance from one country to another. Over half of maternal deaths are due to causes such as hypertension and ante partum haemorrhage, which are directly related to inadequate care during pregnancy. The most significant causes of maternal death include: haemorrhage (27%), hypertensive diseases (14%) and other indirect non obstetric causes (27%). Indirect causes include; Malaria, HIV/AIDS, malnutrition (under nutrition and obesity) and chronic diseases which contribute to a larger proportion of maternal death (Say, *et al.*, 2014).

Over 99% of maternal conditions are entirely preventable if mothers are aware of the importance of accessing, utilizing and completing ANC visits as recommended by WHO and comply. ANC completion would not only improve the mother's health during pregnancy through primary, secondary or tertiary prevention, but also prevent further complications that children might experience during and after delivery (WHO, 2015).

ANC plays a big role in preventing low birth weight, which is a major cause of neonatal death in developing countries. It also impacts on MTCT and it is well documented as evidence that treating pregnant women and HIV positive mothers during pregnancy reduces Mother to Child Transmission of HIV throughout the world (Khanal, Zhao and Sauer, 2014).

Much as research highlights and demonstrates the benefits of ANC including improved health for the mother and the baby, studies conducted in middle and low income countries continue to indicate a low ANC completion rate and the worst performance countries being in Sub-Saharan Africa (Bethan, *et al.,* 2016). In many developing countries, health promotion in antenatal clinics is limited to passive reception of a health talk and more

passive communications through wall posters. The impact of this kind of intervention only benefits a few positive deviant mothers (Oyerinde, 2013).

Among 69 countries tracked by the countdown to 2015 globally, the median coverage rate of at least one ANC visit was 88% and four or more ANC visits was 55% (WHO, 2015), an indicator that women mostly in Sub-Saharan Africa do not complete four ANC visits.

1.1.2: Status of antenatal services in Africa

In Africa, over two thirds of pregnant women (69%) have at least one ANC contact. Much as WHO recommends four antenatal care visits, there is significant low uptake especially in Sub- Saharan Africa and this varies from country to another. Many of these opportunities associated with ANC continue to be missed, even though 69% receive at least one ANC visit (MOH, 2016).

An estimation of 900,000 babies die as stillbirth in Sub-Saharan Africa during the last twelve weeks of pregnancy. Some of the causes of stillbirth are associated to maternal infections notably syphilis and pregnancy complications. Pregnancy problems also affect New-born and these include: preterm birth and restricted foetal growth and brain development. Antenatal care is one of the priority accelerator behaviours with the highest potential to hasten the reduction of maternal and child death hence contributing to ending preventable diseases in Sub-Saharan Africa (USAID, 2016).

1.1.3: Antenatal Care Services in Uganda

Uganda is one of the Sub-Saharan African countries that still experience the highest maternal mortality ratios in the world. Uganda fell short of achieving the desired MDG 4 outcome and scored 5.5% in the maternal mortality rate reduction. Recent findings have revealed that Uganda has a maternal mortality ratio of 336:100,000 live births, with fertility rate of 6.2, and infant mortality rate of 54/1000 live births (UNICEF, 2015; UBOS, 2016).

More than 14,000 mothers die as a result of pregnancy and related causes each year. These scenarios still threaten the achievement of SDGs by 2030 (Gaudenzi, et al., 2015).

In Uganda, ANC services are considered to be the key element in primary health care delivery system aiming at healthy mother, baby and society. Several interventions addressing ANC demand and supply were introduced from January 2010 to September 2011. The interventions included: voucher system that allowed mothers with low income to access ANC and delivery services at the designated health facilities. By delivering from the health facilities, mothers are attended to by skilled medical personnel, hence reducing chances of maternal and child mortality (MOH, 2015).

Other interventions included: distribution of materials like mosquito nets to prevent Malaria during and after pregnancy, free ANC services in public health facilities, supplying Maama kits especially on the fourth visit to encourage mothers complete all ANC visits, HIV counselling and testing that helps in PMTCT, vaccination, IPTp for malaria prophylaxis and community mobilization for ANC attendance through VHTs. Other interventions include health facility capacity strengthening through recruitment and training of health workers to increase skilled personnel and accelerated programs like; safe motherhood and Saving Mothers Giving Lives (SMGL) in Western and Northern regions to create awareness on the benefits of ANC and safe motherhood.

Ministry of Health Uganda in adherence to WHO ANC guidelines recommends a simplified four ANC visits with the first visit taking place in the first trimester between 10-20 weeks of pregnancy, second visit occurring close to week 26 (20 -28 weeks) of pregnancy, third visit occurring close to week 32 (28 -36 weeks) of pregnancy and fourth visit taking place between week $38 - 40, \geq 36$ weeks as documented by MOH, (2010) in the Health Sector Strategic and Investment Plan of 2010-2015 and in Zeine, Mirkuzie, and Shimeles, (2010).

Much as the above strategies and interventions to strengthen completion of goal oriented ANC to reduce MMR related to sexual reproductive health have been put in place, reports from Ministry of Health Uganda as documented in Annual Health Sector Performance reports (AHSPR) for financial year 2013 to 2016 showed that the percentage of pregnant women attending at least four ANC visits in Uganda increased slightly from 32.4% in 2013/14 to 36.6 % in 2014/15 to 38% in 2015/2016. Out of the ANC completion indicator weight of 5 in ANC completion, Uganda scored 1.6 (UBOS, 2015).

This indicated that less than half of women in Uganda attain at least four ANC visits, an indicator that majority of women in Uganda do not complete the four ANC visits as recommended by WHO and national health guidelines. Therefore, Uganda's maternal morbidity, mortality and neonatal mortality remain high largely due to inadequate utilization and completion of ANC (Ediau, *et al.,* 2013).

However, over 50% of women in Kiruhura district, in rural Western Uganda complete all the four recommended ANC visits and the trend has been improving for the last four years. According to Ministry of Health Uganda as documented in the Annual Health Sector Performance Reports (Lead Table) for financial year 2010 to 2016 and Kiruhura District Annual Health Reports from 2010 – 2016, ANC completion in Kiruhura has progressively increased from 20% in financial year 2010/2011, 45% in 2012/2013, 52% in 2013/2014 and 55.8% in 2014/2015.

Kiruhura district also registered improvement in health facility deliveries since financial year 2013/2014 from 15%, 38% in 2014/2015 and 42% in 2015/2016. Over the period of three years, the district registered an improvement of 27%. The improvement could have been attributed to completion of four ANC visits (DHIS II, 2017). It's reported that for the last five years (2013 to 2016), Kiruhura district did not register any maternal death in the health facilities. It's only in financial year 2016/2017 when one mother died in a private clinic

due to post parterm haemorrhage and this accounted for the current MMR of 13/100000 live birth (DHIS II, 2017).

Attending and completing four antenatal care (ANC) visits is very crucial. Missing any of the recommended visits puts both the mother and the baby at a very high risk that can turn out to be fatal. A mother completing four ANC visits may be an indicator of an empowered individual and she will more likely be able to take care of her new-born baby hence promoting health (Frumence, *et al*., 2014).

1.1.4: Status of Antenatal services in Kiruhura

a) **Background of Kiruhura District**

Kiruhura is one of the rural districts that lies in the cattle corridor in south western Uganda with a population of 328,544 people and annual growth rate of 3.5% (UBOS, 2014).

Majority of the population in Kiruhura 183,985 (56%) is under 18 years and 163,278 (50%) of the general population are females. It is estimated that 189,241 (57.6%) of its population is engaged in livestock farming, 7,885 (2.4%) is engaged in agricultural production and 32,854 (10%) in trade and other provision of small services. The district has observed wide disparities among men and women, majority (71.9%) of women are unpaid family workers with low literacy level of 69% for ages of 10 and above.

Most of the health services in the Kiruhura district are inadequate, with doctor to patient ratio of approximately 1:65,200 and less than 50% health staffing level according to the national health staffing norms. Health challenges identified in Kiruhura district include; staff inadequacy in numbers and skills, retention and motivation, inadequate supplies, equipment and infrastructure, accessibility and performance (Kiruhura District Health Office, 2016).

b)Status of ANC in Kiruhura District

The goal of the health sector in Kiruhura is the attainment of a good standard of health by all people in the district in order to promote healthy and productive life. Kiruhura has 39 health facilities in the district, 35 are owned by government and four are private not for profit (PNFP). The district has no government district hospital although; it hosts a PNFP hospital (Rushere Hospital). It has two government owned health centre IVs, and 12 health centre IIIs that offer ANC services, 17 health centre IIs, three doctors, 60 Nurses and 18 Midwives, 23.9%,, Doctor to population ratio of 1:86,900 and Nurse to population ratio of 1:4,350 (Kiruhura District Annual Report, 2016., Kiruhura District Local Government Statistical Abstract, 2012).

Since 2010, Kiruhura district has registered increase in the number of women completing four recommended ANC visits from 20% to 56% from FY 2011 to 2016 according to Uganda National Annual Performance Reports (MOH, 2015/2016).

Kiruhura is still among the districts above 50% in four ANC visit coverage compared to its neighbouring districts (MOH, 2016). Kiruhura district is bordered by Isingiro district to the South with 34.8% four ANC visit completion, Kamwengye with 42.6%, Mbarara 49% and Ibanda at 30.2%. Kiruhura has progressively continued to perform well on ANC four accelerator behaviour indicators compared to its neighbouring districts and ranked the best among districts under the Mbarara cluster in Western Uganda. The district was also ranked among the best 10 out of 112 districts country wide in the number of ANC four visits indicator (MOH, 2015/2016).

The study conducted by Kawungezi, *et al.,* (2015), showed that the variations in utilizing ANC services and factors affecting its utilization plus completion vary by geographic area, socioeconomic and cultural settings. For this reason, an area specific study

to determine the factors that influence completion of the four ANC visits in Kiruhura district was crucial.

Despite all the various challenges in the district setting, health sector, health services delivery and literacy levels of women, majority of women (56%) complete the four recommended ANC visits during pregnancy, a percentage higher than the national performance (38%). It is on this basis, that this research was designed to establish the factors that have influenced ANC completion among women in Kiruhura district.

From this study, an in depth analysis of factors influencing women completing their four ANC visits during pregnancy generated great insights that are important in mitigating the general problem of inadequate ANC completion in Uganda. The findings will help as benchmarks in designing health interventions that promote ANC utilization and completion. The findings will further help in aligning ANC care services provided within social and cultural context hence promote ANC completion that will in turn contribute to the reduction in maternal and child morbidity and mortality in Uganda.

1.1.5 Concept of Antenatal Care Services

Antenatal care (ANC) refers to the regular medical and nursing care recommended for women during pregnancy. Antenatal care services is a type of preventative care with the goal of providing regular check-ups that allow doctors or midwives to treat and prevent potential health problems throughout the course of the pregnancy while promoting healthy lifestyles that benefit both mother and child (Ahmed and Mosely, 2002).

The traditional antenatal care service model was developed in the early 1900s where women were classified into low and high risk, later in 2000, it shifted to Focused ANC approach (FANC), and was adopted by (WHO) in 2002. The details in the FANCs on four ANC visit breakdown are in the appendix V. It's advisable for pregnant mothers to book their first visit to the clinic before 20 weeks or as soon as possible thereafter. Ministry of Health

Uganda (2010) adopted WHO recommendations that are simplified in four ANC visits as indicated in the appendix V.

1.1.6 Antenatal Care Indicators

Antenatal care indicators include: Proportion of pregnant women who have at least one antenatal clinic visit an indicator that roughly gives an indication of the knowledge of the services as well as accessibility. Second indicator is proportion of pregnant women who have attended at least four ANC visits during pregnancy. This gives an indication of the utilisation of ANC services as well as completion levels in individual service points. These two indicators are among the five ANC indicators that have been studied in this report.

1.1.7 Theoretical Perspective

The socio-behavioural or Andersen's behavioural model (Andersen and Newman, 1973), groups in logic sequence three categories of factors (predisposing, enabling and need factors), which can influence health behaviour including individual access to and use of healthcare services. Predisposing factors include: age, gender, religion, prior knowledge and experience with illness, formal education and general attitude towards health services. Enabling factors include: availability of services, financial resources, health insurance, and social network support. Need factors include: perception of severity, total number of sick days for a reported illness, total number of days in bed, help from outside for caring among others (Andersen and Newman, 1973).

Andersen's behavioural model has been modified in the International Collaborative Study on Health Care. In addition to the predisposing factors and enabling factors, the modified version include Health Service System factors, referring to the structure of the health care system and its link to a country's social and political macro-system. This is a valuable extension as it puts emphasis on the link of health seeking behaviour with structural levels

within a macro-political and economic context. However, the model omits the need factors, which are central for understanding health seeking behaviour (Weller, Ruebush II, and Klein, 1997). This study was informed by Andersen's behavioural model in data collection, interpretation of results and defining the relationship between various factors.

1.1.8 Conceptual Framework

A conceptual framework is a diagrammatic representation of the relationship between variables (Mugenda and Mugenda, 2003). The conceptual framework was drawn from theoretical perspectives informing this study. Predisposing and enabling factors were the major constructs from the theory that are backing up the conceptual framework to establish as to whether they could be the determinants of ANC completion in Kiruhura district. Predisposing factors were the independent variables, enabling factors were the intervening variables and completion of the four ANC visits was the dependent variable.

Independent Variable   **Dependent Variable**

Predisposing Factors
- Age
- Parity
- Income level
- Marital status
- Religion
- Education- level and type
- Life skills – self-esteem and actualization
- Motivation
- Perceptions
- Decision making – Early initiation of ANC in first trimester.

Completion of recommended four ANC visits

Enabling Factors
- Partner, family and community support
- Economic activities
- Land topography
- Distribution of health services
- Distance and transport options to the health facilities
- Availability, quality and frequency of Health services offered
- Skilled personnel and their attitude
- Waiting time to access ANC services
- Community Health Initiatives

Intervening Variables

Figure 1: **Conceptual Framework for ANC completion**

1.2 Statement of the Problem

Uganda is among the top five maternal and neonatal mortality burden countries in the world (UNICEF, 2014). More than 61% of women in Uganda do not complete four ANC visits (UNAPR, 2016) despite the tremendous efforts with innovations in designing several interventions that aimed at addressing ANC demand, quality of care and skilled attendant, in the last decade. ANC completion with compliance to four recommended visits has stagnated below 39% in Uganda (UNAPR, 2015).

Studies have showed that fewer ANC visits are associated with increased maternal and perinatal mortality (Hofmeyr and Hodnett, 2013). Existing efforts including policies, guidelines, adoption of Focused ANC from WHO, incentives like mosquito nets, Maama kits provided during ANC visits, attending first to women that come with their male partners first, plus innovations like transport and care voucher cards, all seemed not to have succeeded in correcting the situation of ANC completion of the recommended visits in the country.

However, amidst low ANC completion in Uganda, the story is completely different in Kiruhura district in Western Uganda, where there has been notable improvement over time in ANC completion from 20% in 2011 to 56% in 2016 compared with the national ANC completion rate of 38%.

From the ANC completion progress data, there is a possibility that there are predisposing factors as well as an enabling and supportive environment that have made it possible for more than 50% of women to complete ANC in this district. This study therefore, was designed using Andersen's behavioural model to establish factors influencing completion of ANC among women in Kiruhura district.

1.3 Objectives of the Study

1.3.1 Major Objective

To establish the factors that influence completion of four ANC visits as recommended by World Health Organization during pregnancy in rural district of Kiruhura, Western Uganda.

1.3.2 Specific Objectives

a) To determine the current status in utilization of ANC services by the pregnant women in Kiruhura district.

b) To establish predisposing factors that influence women's perceptions on the purpose and value of focused ANC in Kiruhura district.

c) To determine the unique enabling factors that motivate women to complete   four recommended ANC visits during pregnancy in Kiruhura district.

1.4 Significance of the study

The findings of the study will be a major step towards improving maternal health across the rural and marginalized groups in Uganda through the identification of factors that promote ANC completion.

The findings of this study will be useful to maternal health care providers who are key stakeholders in the realization of SDGs three and five in relation to ANC care through provision of accessible, timely, quality and user friendly ANC services.

The Ministry of Health and other health institutions may use the study findings to improve the ANC package and make ANC services attractive to the recipients.

The study highlights areas for further research. Such areas will be studied by other scholars to expand on knowledge base and propose practical solutions to enhance maternal and child health in Uganda.

1.5 Justification of the study

Low rate of ANC completion (38%) of the recommended four visits greatly contributes to a high rate of maternal and infant mortality at 336 death/ 100,000 live birth and 43 death/ 1000 live birth respectively in Uganda (UDHS, 2016).

The health workforce in Kiruhura is still a key bottleneck for the appropriate provision of maternal health services, with less than 50% of health positions filled, compared to other districts MOH 2016 in the Health Development Plan, 2016/ 2020. Besides workforce challenges, the district has its own health service delivery challenges that include: geographical state, socio-economic activities and cultural setting.

However, despite the challenges faced, the district has registered a high ANC completion rate of 56% (positive deviant) compared to the national completion rate (38%). From the national performance reports, Kiruhura is among the 10 districts in Uganda with high four ANC visit completion.

Completion of four ANC visits among pregnant women is an indicator of community empowerment with health literacy that is geared towards health promotion in the community. From the concept of health literacy, a mother who completes four recommended ANC visits is more likely to deliver from the health facility with a skilled attendant. There are also high chances that she will return for postnatal care, hence promoting maternal and child health and reducing maternal and child morbidity and mortality.

Therefore this study was designed to establish factors that have influenced the high ANC completion in Kiruhura district. In addition, the study also established the relationship between the factors and the current status of ANC completion. It was because of this knowledge gap (positive deviant), that the researcher undertook this particular study.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter covers related literature following the theories on which the study was anchored and in line with the key aspects of the study in terms of objectives. Review of literature is an early stride for conducting research. It avoids replication of research work and widens the researcher's understanding of the research problem. Various research studies related to the research topic were studied by the researcher in order to determine what has already been done by other scholars on the same topic and establish the knowledge gaps that this study was designed to address and expound on the knowledge base and enhance learning.

2.1 Theoretical Review

The theoretical framework for this study was benchmarked on Andersen's behavioural model (2005). This model was developed to explain factors that determine the use of health services in United States of America. It examined the influence of individual and health system factors on the pattern of health service use. The framework theorized the following variables that influence the health seeking decision. The constructs from the theory were used to back up the literature arguments.

Predisposing factors: These were the independent variables. They included: age, sex, marital status, family size, social status, education level and type, parity, income level, religion, perceptions and decision making regarding early initiation of ANC in first trimester.

Enabling factors: These were are the intervening variables and they included: household or family income, urban-rural character, health insurance, and health service availability, partner, family and community support, economic activities, land topography, structural distribution of health services, distance and transport options to the health facilities,

availability, quality and frequency of health services offered, skilled personnel and their attitude towards clients, waiting time to access ANC services, and available options in the community e.g. TBAs.

Illness level: This is a perception of the necessity for a health service. This according to Andersen is the most powerful predictor of utilization. Because even though an individual was predisposed and he/she has the means to seek health facility services, if he/she has no need for it, then he/she would not seek health care.

This study adapted its variables from the Andersen's theoretical framework of health service utilization. The study used predisposing and enabling individual determinants of health service utilization. The illness level factor was not considered in this study as perceived norms, threats and benefits.

The health service considered in this study was antenatal care. Thus antenatal care completion of four recommended visits was the dependent variable for this study.

2.2 Current status in utilization of ANC services

A descriptive cross sectional study was conducted in Nepal where only about 50% of pregnant women complete four antenatal care visits. The study was to explore the factors influencing antenatal care visit dropout at government health facilities of Dhanusha district. The study revealed that 49.52% of respondents have completed four ANC visits and 50.47% respondents have not completed four ANC visits. The study confirmed the significant association of antenatal visit dropout was respondents' education, economic status, and dissatisfaction with the health service provided at public health facilities, dissatisfaction with the information provided during ANC visit and unreceptive attitude of health workers major hindering ANC attendance and completion at government/public health facilities. However, the study did not justify how 49.52% overcame those barriers and completed four ANC visits (Singh and Jha, 2016).

A study conducted in Rwanda by Rurangirwa, *et al.,* (2017) on determinants of poor utilization of ANC services among recently delivered women indicated that majority of pregnant women visit health facilities for antenatal care (ANC) services, however not to the extent that is recommended. The findings further revealed that about 54% of pregnant women did not make the recommended four visits to ANC during pregnancy. The risk of poor utilization of ANC services was higher among women aged 31 or older, single women and women with poor social support.

A study conducted in Afghanistan where the country was once again labeled the worst in which to be a Mom revealed that ANC was underused even when the services were available. Several obstacles related to underuse identified included; lack of knowledge regarding the importance of antenatal care among the women and their families, financial difficulties, and transportation problems. The women also reported significant dissatisfaction with the attitudes and behaviour of health personnel, which included instances of verbal and physical abuse. According to the health professionals, poor working conditions, low salaries, and high stress levels contributed to this matter. Personal contacts inside the hospital were considered necessary for receiving high quality care, and bribery was customary (Zuhal, and Mette, 2013).

A study conducted in Zambia (Chitalu and Koch, 2015) which is in line with one conducted in Rwanda revealed that 40% of women in the selected sample didn't attend at least four ANC visits, much as all women (100%) had at least one ANC visit, more than 80% of the initial check-ups did not occur in the first trimester. At the individual level, the woman's employment status, quality of ANC received and the husband's educational attainment are negatively associated, while parity, the household childcare burden and wealth are positively associated with inadequate utilization of ANC. Both individual- and

community-level characteristics influence inadequate use and non-use of ANC in the first trimester; however, community-level factors are relatively stronger in rural areas.

A descriptive observational study conducted in three rural health facilities in Burkina Faso, Tanzania and Uganda about compliance with focused antenatal care services to find out whether health workers perform all ANC procedures, revealed that health workers in all health facilities performed some of the procedures but also omitted certain practices stipulated in the focused ANC guidelines (Conrad, *et al.,* 2011). Reagents for laboratory tests and drugs as outlined in the focus ANC guidelines were often out of stock in most facilities. It was therefore concluded that health workers in all three country sites failed to perform all procedures stipulated in the focused ANC guideline and this could not be always explained by the lack of supplies.

Finlayson and Downe (2013) carried out meta-synthesis qualitative studies in United Kingdom to find out why women do not use ANC services in low and middle income countries (LMICs). The findings revealed that there was a dissonance between ANC program design and cultural contexts which restricted access and discouraged return visits. The misalignment between current antenatal care provision and the social and cultural context of some women in LMICs affected their ANC attendance. This called for a need to find out how ANC program in Uganda is perceived.

A study conducted in Ghana on mobile technology for community health revealed that there is little knowledge and willingness of target users to utilize technologies as intended (behavioural performance) (LeFevre, *et al.,* 2017). The study used client data application (CDA) which allowed providers to digitize and track service delivery information for women and infants and "Mobile Midwife" (MM) which sent automated educational voice messages to the mobile phones of pregnant and postpartum women. Despite the majority

(>77%) owning a private mobile phone and out of those, only 25% of pregnant women received and listened to at least one first trimester message

2.3 Factors influencing   Antenatal care completion

a) Predisposing factors

Gele and Sundby (2013), and Chivonivoni, Ehlers, Roos (2008), described antenatal period as a very crucial moment for the mother and the developing baby, which calls for the best health interventions. It's however not the case in most cases due to a raft of factors that can be categorized as predisposing factors which include: individual traits (attitudes) and perceptions associated with such services, social-cultural factors and demographic aspects such as age, parity, religion, educational status, social values, beliefs and practices of pregnant woman in relation to utilization of ANC services.

Globally, scientific evidence has indicated that low utilisation of ANC services is influenced by some factors such as low maternal education, teenage pregnancies, multi-parity, unplanned pregnancies and cultural factors (WHO, 2014). A study conducted in Malawi by Chiwaula, (2011) indicated that less than 12% of the pregnant women came for antenatal care in the first trimester. The study further revealed that oftentimes women only made an average of two visits per pregnancy and that despite availability of the reproductive health policy and initiatives promoting adequate utilization of ANC services, very few pregnant women utilized them.

In a Demographic and Health Survey aimed to identify factors associated with attendance of four or more ANC visits and receipt of good quality ANC in Bangladesh by Joshi, *et al*., (2014) established that half the women had four or more ANC visits and 85% had at least one visit. Older age, higher parity, and higher levels of education and household economic status of the women were predictors of both attendance of four or more visits and receipt of good quality ANC.

Gharoro and Igbafe (2000), conducted an analytical study to establish the socio-demographic characteristics of the patients booking at the University of Benin Teaching Hospital, to determine areas where changes could be made to improve service uptake. It was found out that majority (52.1%) of the patients were belonging to the middle class, while 87.5% had secondary or tertiary education. The mean age of the mothers was 29.7 years, and a mean parity of 1.3 and primi-gravidae constituted 32% of the patients. The mean gestational age of booking was 23.7 weeks. The sixth month was the peak period for the initiation of antenatal care.

This study is in line with another study conducted in Uganda by Turyasiima, *et al.,* (2014) which revealed that the gestational average ANC booking was 5.7 months. The decision to attend antenatal care was taken by the husband alone in 52% of the cases. Late booking was due to ignorance and financial constraints, which was observed in 41.5% and 25% of the patients respectively. The researchers concluded that the delay in initiating antenatal care was due to ignorance and financial constraints. Male dominance was pointed out as one the factors that influenced women's adequate utilization of antenatal services.

A study conducted in Saudi Arabia in Madina, revealed that women's education level plays a great role in antenatal care (Alhazmi, *et al.,* 2017). Out of 1,617 women who were randomly selected for the study, 40% had a university degree. 80.9% started following up at first or second trimester and 80.1% were following up their pregnancies consistently and regularly. 89.7% believed in the importance of antenatal care visits.

The study in Saudi Arabia is in line with another study that was conducted in Malawi, Uganda and Ghana by Pathak (2010), indicated that the level of education influenced maternal health seeking behaviour. Women living in urban areas, educated and economically empowered, increased the probability of attending ANC visits and having their most recent birth in a health facility. In addition, a study conducted in Tanzania on ANC and postnatal

care use at the health facility indicated that Individual-level attributes positively associated with ANC utilisation were women's education of primary level or higher (Mohan, *et al.,* 2015). This was in agreement with a study conducted in Uganda by Bbaale (2011), where 16% of women used full content of ANC and the utilization of ANC content was significantly associated with the level of education of a mother and her partner. It was later concluded that there was extra need to educate a girl child in Uganda beyond secondary level.

Gitonga (2017), in his study on determinants of focused antenatal care uptake among women in Tharaka Nithi County, Kenya indicated that focused antenatal care is one of the interventions to reduce maternal morbidity and mortality. Kenya health guidelines recommend four ANC targeted visits, however, the level of uptake of FANC was slightly more than half (52%). The determinants of uptake included: level of education, type of employment, household income, parity, and marital status of the pregnant women. This called for a need to conduct such a similar study in Uganda to find out whether the determinants of ANC uptake and completion vary across different countries.

A study conducted in Ethiopia on timing and adequate attendance of antenatal care visits among women in Ethiopia indicated that 66.3% of women did not use ANC at first trimester and 22.3% had ANC less than four visits (Yaya, *et al.,* 2017). The study findings revealed that the type of place of residence was associated with delayed initiation of ANC visits, with rural women having the higher odds of delayed initiation of ANC visits. In addition, multi-parity showed higher odds of delayed initiation of ANC visit when compared to the primi-gravida. If the distribution of age was as observed and other covariates remained the same among respondents and everyone lived in the rural setting, 71.6% delayed initiation in ANC visit would be expected.

Place of residence was one of the factors that influences ANC utilization. From the studies conducted, women in urban areas were more likely to use ANC than rural women in

Ecuador (Paredes, *et al.,* 2015) and in India (Ghosh, and Sharma, 2010). On the other hand, a study by Navaneetham, and Dharmalingam (2012), in India found that women in urban areas of Karnataka were less likely to receive ANC than those living in rural areas. Distance to the health facility was inversely associated with ANC utilization (Glei, Goldman, Rodriguez, 2003).

Another study conducted on rural-urban differentials of utilization of antenatal health care services in Bangladesh (Rahman, *et al*., 2011), revealed that urban women received antenatal care and had antenatal visits more than rural women. It was also identified in the study that many of the urban women relative to few rural women who received antenatal care had their blood pressure and weight checked. Mother's education level, children ever born, wealth index, permission from husband to go to hospitals or health centres, source of drinking water, region and partner's education level were significant determinants of receiving antenatal care.

Regassa (2011), investigated on the utilization of antenatal and postnatal care service using the southern Ethiopian population for the study. The study revealed that women with high level of education and exposure to mass media as well as low parity have higher usage of antenatal and postnatal care. This reflected women of high socio-economic status in the rural community i.e. the rural rich. However, unlike previous findings that revealed low utilization of antenatal care in the rural area, this study showed high antenatal care use in the rural population of Ethiopia.

In Hadiya; Ethiopia, family size was a strong determinant of ANC service utilization with greater household size limiting the access to and use of ANC services (Zeine, Mirkuzie, Shimeles, 2010). This study further revealed that availability of women's time was important as women spent more time on their multiple responsibilities for care of children, collecting water or fuel wood, cooking, cleaning, and trade than on their own health.

Khan, *et al.,* (2015), conducted a study to assess the knowledge, beliefs and barriers to timely antenatal care to antenatal clinics in the Democratic Republic of Congo. Although 75% of women believed antenatal care should start before the end of the fourth month, as recommended by World Health Organization, only 22% were present by this time. Important barriers were financial (37%) and lack of knowledge about appropriate timing (35%). Gravidity was associated with gestational age at first visit (p< 0.001). Average gestational age of first was 4.7 months in primi-gravidae and 5.9 months in women with > or = 2 previous pregnancies. Hence, there was a need to find out the perceptions on importance and status of timely antenatal care in the neighboring country Uganda.

Babalola, (2009) examined determinants of maternal service utilization in Nigeria. A multi-level analysis was done and the findings showed that education, socio-economic level, urban residence and community media saturation were significant predictors of maternal health service utilization at all the levels of analysis respectively except the state. However, woman's age at birth of last child, ethnicity, notion of ideal family size, approval of family planning, prevalence of the small family norm in the community and ratio of primary health care to the population indicated variation in predicting maternal healthcare utilization at individual, household, community and state-level respectively.

Hasan and Nisar (2012), conducted a study to assess the knowledge of women about obstetric complications and care in Karachi. The findings showed that half (50%) of the women did not attend antenatal care in their last pregnancy and 75% of them delivered at home. There was need to create awareness regarding obstetrical complications for mothers to attend, complete ANC and deliver from the health facility. This could be achieved through health promotion and education interventions.

Chiang (2013), established that parity significantly influenced antenatal care attendance in Bangladesh, but level of education, religion and marital status did not.

Approximately 55% of the women stated that they had delivered outside the formal health delivery system despite antenatal care attendance. All women in their second pregnancy had delivered their first child in the village, despite Traditional Birth Attendant (TBA) training to the contrary. Most of the women delivering away from health care centres said that they were more comfortable delivering under a TBA than in the health centre (Campbell-Grossman, Hudson, Keating-Lefler, Yank, (2009).

A study carried out among expectant mothers in Ghana by Song (2013), established that women from households in the highest income quartile were more likely to demand institutional maternal services by 18% points, compared to women in the lowest wealth quartile whose attendance to these maternal services was not a priority. Inter Press Service, (2011) showed exposure to modern care givers as another important factor associated with attending to antenatal care centres and choice of place of delivery. The same study in Ghana found out that women who had an income or hailed from working families were more likely to have antenatal care services.

Ramazani, *et al.,* (2014) explained that the determinants of low utilization of antenatal care services in Ethiopia included: maternal age, birth order of the child, low educational level, low income, and rural-urban life. According to the UDHS, (2005), births by younger working mothers (under age 35), first births, and births to women with jobs are more likely to seek for antenatal care and subsequently be assisted by a trained health professional. Countries with good indicators in maternal and infant mortality have pregnancy related complications identified and managed early, however according to UBOS (2016), the overall one time antenatal attendance in Uganda was found at 94% with women in rural areas being twice less likely to attend ANC than the urban women.

A cross-sectional analytical study conducted by Turyasiima, *et al.,* (2014) in Northern Uganda on determinants of first ANC and the trimester at what pregnant women attend ANC

revealed that, only 11.5% of women attended their first ANC (0- 16 weeks) during pregnancy and prevalence of late initiation of ANC during pregnancy by women was 88.5%. The mean gestational age at booking for the first ANC was at 5.7 months of pregnancy. Late booking for the first ANC is one of the major factors that affect ANC attendance. Paternal level of education, outcome of previous pregnancy, previous ANC attendance, weeks of amenorrhea, convenience of opening hours at ANC facility, knowing the right time for ANC enrolment, and pregnancy planning were found to be significant predictors governing early booking, hence affecting ANC completion.

Gross, *et al.,* (2013) in the qualitative exploratory study conducted in Tanzania on timing of antenatal care for adolescent and adult pregnant women revealed that majority of pregnant women initiated antenatal care attendance with an average of 5 gestational months. Perceived poor quality of care, late recognition of pregnancy and not being supported by the husband or partner were identified as factors associated with a later antenatal care enrolment ($p < 0.05$). Prime-parity and previous experience of a miscarriage or stillbirth were associated with an earlier antenatal care attendance ($p < 0.05$). Adolescent pregnant women started antenatal care no later than adult pregnant women despite being more likely to be single. Community-based that involved men interventions were needed, content and outreach of antenatal care services to enhance early antenatal care enrolment among pregnant women.

According to the UBOS (2016), only 8% of rural women in Uganda received ANC from a doctor. Regionally, Southwestern women were more likely to receive skilled care (20%), than Eastern women (3%), while only 2% of the women in Karamoja were reported to seek the same. It was reported that women in Uganda tend to seek antenatal care very late with 37% attending the first ANC visit at 6 months or more. Therefore, there was need to find out why completion of ANC service by women in rural areas in Kiruhura Uganda is high.

Globally, developing countries still face a challenge of poorly implemented ANC programs with irregular clinical visits and long waiting times plus poor feedback to the women (Villar*, et al.,* 2002). A study in Hadiya zone, Ethiopia found that majority of the mothers who attended ANC did not receive adequate number of visits and initiated the visits later than recommended by the World Health Organization (Zeine, Mirkuzie, Shimeles, (2010). A similar study done in Nigerian teaching hospital found that Nigerian women tended to obtain antenatal care late in pregnancy, and for about one third, the care was inadequate with almost half (47%) of women attending the ANC clinic in the third trimester (Karl, and Ajegbomogun, 2005).

A systematic review conducted by Simkhada, Teijlingen, Porter, and Simkhada, (2008) also included maternal education, husband's education, marital status, availability, cost, household income, women's employment, media exposure and having a history of obstetric complications, but not leaving out cultural beliefs, parity and ideas about pregnancy as factors that significantly influenced utilization of ANC among women. The study further revealed that women of higher parity tend to use antenatal care less.

Another study done in Ibadan, Nigeria revealed that women who were Muslims or other religions were more than two times likely to attend ANC clinic than women who were Christians. The same study showed that women who were 25 years and older utilized ANC more than women who were below 25 years, which agrees with the study that was conducted in Bangladesh (Dairo, and Owoyokun, 2010; Nguyen, *et al.,* 2012).

A study done in rural Local Government Area in Ogun State, Nigeria, identified that women preferred TBAs for various reasons which included: cheap, easily accessible, culturally acceptable services and more compassionate care than orthodox health workers, and for some it was the only maternity they knew. However, some respondents acknowledged that complications could arise from TBA care (Ebuehi, and Akintujoye, 2012).

A study conducted by Ssengooba, (2010) in rural parts of Uganda revealed that ANC attendance was irregular with few women appreciating the fact that ANC attendance aimed at monitoring both the growth of the baby and the health status of the woman. This study also identified parity as one of the factors that significantly influenced ANC attendance, but level of education, religion and marital status did not. Ssengooba, (2010) asserts that there are several factors that influenced Ugandan women ANC seeking behaviour, which included: perceived high cost of ANC services, conducting a delivery and treatment, and perceived inadequacy of services provided by the formal health system. The 2015 Uganda Maternal Health review revealed that access to the basic antenatal care services has significantly registered very slight improvement with decline and stagnation in utilization and completion in some districts for the last five years. Therefore, there is need to find out why there is decline in access, utilization as well as completion of ANC services.

Another study that was carried out in India, revealed that economic disparity along with cultural beliefs and restrictions determined care seeking behaviour and utilization of health care services, resulting in slow decline of child mortality rate (Ghosh, 2012).

Gazali and Gana, (2012) explained that the demand for and utilization of maternal health services depends on numerous factors, many beyond a woman's direct control, including the physical accessibility of facilities to her home; direct and indirect costs of obtaining services including not only fees for medication, transportation, feeding and accommodation charges but also the convenience of opening hours and average waiting times, the extent to which staff are competent, providing quality care and demonstrating cultural sensitivity to her needs, and the availability of other needed key healthcare inputs such as essential drugs and food supplements.

A study conducted by Atekyereza. *et al*., (2014) in Masaka, Uganda on influence of pregnancy definition and perception on patterns of seeking regular and timely antenatal care

among women in the reproductive age group (15-49 years) revealed that, woman's socio-definitions and perceptions of pregnancy influence their seeking behaviour on antenatal health care. To the women with a positive orientation towards antenatal care, pregnancy provides joy, happiness, pride, promotes their social status and safe-guards their marriage. It also indicated that women who shun antenatal care perceive pregnancy to be a source of misery, sadness, pain and suffering, uncomfortable and regrettable experience. Women also hold socio-cultural beliefs on pregnancy, which are culturally constructed and rooted in taboos, rituals and practices of their communities. Therefore, there was a need to understand whether these perceptions and definitions that motivate mothers to seek antenatal and postnatal care for better maternal and child health also were applicable in completion of four ANC visits.

b) Enabling factors

Heaman, *et al.,* (2014) conducted a study in Canada to determine barriers, motivators and facilitators to prenatal care despite Canada's universally funded health care system. It was revealed that use of prenatal care varies widely across neighborhoods in Winnipeg, Manitoba, with the highest rates of inadequate prenatal care found in eight inner-city neighborhoods. Using case control study, 35 barriers out of 39 significantly increased the odds of inadequate prenatal care for inner-city women. Some of these included: psychosocial issues like stress, having family problems and feeling depressed. Structural barriers included not knowing where to get prenatal care, having a long wait to get an appointment, and transportation. Attitudinal barriers included not planning or knowing about the pregnancy, thinking of having an abortion, and believing they did not need prenatal care. Of the 10 motivators assessed, four had a protective effect, such as the desire to learn how to protect one's health. Receiving incentives and getting help with transportation and child care facilitated women's attendance at prenatal care visits. Several psychosocial, attitudinal,

economic and structural barriers increased the likelihood of inadequate prenatal care for women living in socioeconomically disadvantaged neighborhoods. Capitalizing on factors that motivate and facilitate women to seek prenatal care, despite the challenges of their personal circumstances may help improve use of prenatal care by inner city women.

Egbewale, and Bamidele, (2009) carried out a study that determined the barriers to attendance to maternal health services in north-western Nigeria using a cross-sectional study of 150 mothers. The findings from the study discovered that despite living near a health facility, most of the mothers did not utilize maternal health services. Reluctance to utilize maternal health services was as a result of many expectant mothers lacked information on the essence of visiting clinics with "after all am not sick" attitude. From this study, it's clear that there was dire need to raise awareness on the utilization of maternal health services and make the services more affordable.

A study conducted in Turkey demonstrated that teenage mothers were statistically less likely to use ANC services. However, in other studies, teenage mothers were more likely to start utilizing ANC services earlier than their older counter parts (Bhatia, and Cleland, (1995). Other than age, maternal education has also been found to influence utilization of ANC services. Matsumura, and Gubhaju (2001), in study conducted in Nepal, demonstrated that women with higher education were more likely to utilize ANC services than those with lower education. Pallikadavath, Foss, and Stones, (2004) found similar results in their study which demonstrated that both maternal and paternal education positively influenced utilization of ANC services.

Some cultural beliefs have also been found to influence utilization of ANC services. The study conducted by Simkhada, *et al.,* (2010) in Nepal found that mother in laws negatively influenced utilization of FANC by their daughter in-laws. In this study Simkhada,

et al., (2008) also found out that mother in-laws tend to persuade their daughter in laws to fulfil household duties instead of visiting health facilities for ANC services.

Lee, Yin, and Yu (2009), in a study conducted in Taiwan also found that mother in-laws and spouses, heavily influenced decisions about where and whether to go for antenatal care. Engaging men as partners has been found to be a critical component of ANC, but their involvement has been low (Byamugisha, *et al.,* 2011). For this reason, there's critical need to devise strategies that encourage male participation to promote the uptake of ANC services by pregnant women.

The influence of male involvement in utilization of ANC services was established from qualitative studies, designed to investigate the direction of the influence (Mullick, Kunene, Wanjiru, 2005). Furthermore, in Zimbabwe Mathole, Lindmark, Majoko, and Ahlberg, (2004) found that the early period of pregnancy was the most vulnerable to witchcraft associated fears, which was the reason for pregnant women not attending ANC services in first trimester. A study conducted in Malawi by Chiwaula, (2011) also demonstrated that cultural beliefs negatively influenced access to and utilization of ANC services. From these findings, it's critical to seek out practical ways on how some cultural beliefs and practices promote completion of ANC services by pregnant women.

In a qualitative study, using focus groups to examine beliefs, knowledge and perceptions about pregnancy and delivery and care seeking behaviour among pregnant women in urban Accra, Ghana, Dako-Gyeke, *et al.,* (2013) found out that perceived threats, which are often given socio- cultural interpretations, increased women's anxieties and this drove them away from seeking maternal health care.

Colomar*, et al.,* (2017) conducted a mixed-methods systematic review on the use of supply kits for antenatal and childbirth care during antenatal and delivery as a means to cope up with barriers related to access. The review included eight studies, and seven were

implemented in developing countries. It was revealed that once mothers received kits that were hygienic, affordable, and convenient, there was avoidance of delays in receiving care especially in rural and resource constrained health facilities. Use of kits as an accepted alternative to increase the use of evidence-based interventions improved quality of care during pregnancy, childbirth and neonatal period, at the community level, in low-income countries and remote areas with low access.

In Uganda, despite good government policies and concerted efforts to increase the utilization of ANC services by women to reduce the high ratio of maternal deaths (336 death/100,000 live births), the lack of resources and skilled staff to improve quality and delivery of maternity services has greatly affected the positive outcome (UDHS, 2016).

In many developing countries, high out-of-pocket spending on healthcare services prevents some people from seeking care and can result in financial catastrophe and impoverishment for others. A study conducted in Uganda on community effect of maternal voucher program indicated that there was an upward trend in out-of-pocket expenditure on healthcare services in Uganda even after the abolition of user fees in public health centres and hospitals (Obale and Bellows, 2015; Orem, *et al.*, 2011; WHO, 2013). Available evidence suggested that although removal of user fees increases service uptake, it had a negative impact on the quality of care (Lagarde and Palmer, 2008). Since the policy abolishing user fees allowed hospitals to operate a dual system for paying and non-paying clients, hence most households that had some financial stand opted to pay while others without especially in rural areas experience the effects of compromised quality services.

In a study conducted by Kyomuhendo, (2003) in Hoima, a rural district in Western Uganda to enhance understanding of why, when faced with complications of pregnancy or delivery, it was found that women continue to choose high risk options leading to severe morbidity and even their own deaths. The findings demonstrated that adherence to traditional

birth practices and beliefs that pregnancy was a test of endurance and maternal death a sad but a normal event. The use of primary health units and the referral hospital, including when complications occur, was considered only as a last resort especially by majority of women who never sought antenatal services during their pregnancy.

According to Kyomuhendo, (2003), other reasons that affect ANC utilization included: lack of skilled staff at primary health care level, complaints of abuse, neglect and poor treatment in hospital and poorly understood reasons for procedures, plus health workers' views that women were ignorant, also explained the unwillingness and reluctance of women not only to seek antenatal services but also to deliver in health facilities and seek care for complications.

2.4 Completion of four ANC visits

A study conducted in Brazil, where prenatal care is supplied for the entire population at the community level as part of the Family Health Strategy (FHS), which is the main source of primary care provided by the public health system, revealed that women who had prenatal care through FHS were 40% less likely to have a child with low birth weight (Andrade, *et al.,* 2017).

In a study conducted in Ghana on boosting antenatal care attendance and number of hospital deliveries among pregnant women in rural communities using a community initiative based on mobile phones applications and portable ultrasound scans that were used by trained community health workers, revealed that women who attained at least four ANC visits were less likely to practice self-medication. The study findings showed that prenatal care approach can make quality ANC accessible in rural communities where pregnant women have not been able to access proper ANC (Amoah, *et al.,* 2016).

A study conducted in Ethiopia (Muchie, *et al.,* 2017) revealed that completion of four ANC or more visits was at 32%. According to the findings by MoH Ethiopia (2014), 33.0%

34

of women completed the recommended four ANC visits although 56.5% had at least one ANC visit. Out of those who had at least one ANC visit, 37.4% visited in their first trimester. Completing the recommended ANC visits was negatively associated with women in the lower educational level, lower economic conditions, higher birth order, and rural residence. But, positively associated with the quality ANC services received, early arrival in the first trimester for services, and motivating mothers that begin ANC to confirm continuity.

A study conducted in Kenya (Wangalwa, *et al*., 2012) between 2008 to 2010 where a community-based maternal and newborn care intervention package was implemented in Busia County using the community health strategy approach revealed that there was a statistically significant ($p<0.05$) increase in attendance of at least four antenatal care visits (39% to 62%). This demonstrated that, community health strategy is an appropriate platform to deliver community based interventions. The researcher therefore wanted to find out whether these could also be community based initiatives in the area of study that could be influencing four ANC completion.

2.5 Gap identified

From the literature and studies reviewed, it's evident that completion of four ANC visits especially in Sub-Saharan Africa is still very low , though some countries like Rwanda are performing well in that ANC indicator . However, most studies focused on access and utilization of services, looking at why mothers do not access and utilise ANC services as recommended. Most of the studies aimed at finding out factors affecting ANC services utilization either from demand or supply or both aspects, barriers to ANC utilization, level of awareness on importance of ANC utilisation, initiation and benefits of ANC services. However, findings based on positive deviants who are mothers that completed the four recommended ANC visits especially in rural communities and what facilitated their completion were so scanty. This study therefore was designed to address this particular gap

by focusing on ANC completion among women in Kiruhura district because of its progress and good performance in four ANC visits completion.

CHAPTER THREE

RESEARCH METHOLOGY

3.0 Introduction

This chapter describes the research design, area of study, study population, sampling procedure, size and techniques, as well as data collection methods and tools. It also highlights the data quality control methods, management, processing and analysis. The chapter also includes: ethical considerations and limitations of the study. Through this methodology, the study established factors that influence completion of four WHO recommended ANC visits during pregnancy, among women in reproductive age in Kiruhura district, Western Uganda. According to WHO definition, reproductive age ranges from 15 to 49 (WHO, 2004).

3.1 Research Design

This study employed cross-sectional descriptive approach that used both quantitative and qualitative methods of data collection and analysis. The study described the level of completion, predisposing and enabling factors and their relationship with completion of four ANC visits. A description was made up of characteristics of women in reproductive age that had brought their babies from 0-9 months for child immunization at the health facility, Frequencies or proportions or percentage were used to describe the relationship between variables and specific predictions analysed and stated (Zikmund, 2003). Positive deviants were used to understand the predisposing and enabling factors to completion of ANC.

The use of a mixed method approach has been of great advantage since both quantitative and qualitative techniques of data collection and analysis complimented each other and ensured validity and reliability of data as well giving meaning explanation to the observed frequencies and proportions (Creswell, 2014).

.

3.2 Area of Study

The study was conducted in Kiruhura district, located in Western Uganda. The district has a population of 328,544 people (UBOS, 2016) with a growth rate of 3.4%. The prevalence of ANC attendance in Kiruhura district in 2015/2016 was 21,968, out of these, 56% mothers completed the four recommended ANC visits.

Kiruhura has 39 health facilities in the district, 35 are owned by government and four are private not for profit (PNFPs). The district has no government hospital although; it hosts a PNFP hospital (Rushere Hospital) within the district owned by Church of Uganda. The district has two government owned health centre IVs: Kazo and Kiruhura. Kiruhura district has eleven (11) health centre IIIs and 21 health centre IIs. The district has catchment area comprised of two counties namely: Nyabushozi and Kazo. There are 15 sub-counties and three town councils. All health facilities at level IV and III plus very few health centre IIs provide routine ANC services.

3.3 Study Population

The study primarily focused on women in reproductive age that had successful pregnancies and had returned for child immunization at the heath facility with babies 0-9 months. The study population included women that attended ANC during pregnancy irrespective of their completion status (those who completed and those who did not complete four ANC visits) to meet the study objectives.

An in depth interview was also conducted with women (Eight) selected from the group who completed the four recommended ANC visits for their most recent pregnancy with documentation and had turned up with their children at immunization clinic at one of the health facilities. Also, a Focus Group Discussion was done in one of the communities with 13 women in the general population that were purposively selected to share their individual

perspectives regarding factors influencing ANC completion in their community. A list of different categories of women in the community was generated by the researcher and each category had a representative that was identified and purposively selected to join the FGD. This was done in order to triangulate data to enhance its validity, reliability and accuracy.

3.4 Sampling Techniques

Multiple sampling techniques were applied during the study. This was because the study adopted a mixed methods approach (applied both qualitative and quantitative methods). Kiruhura district was purposively selected based on its progressive improvement in ANC completion rates on the national league table from 2011 to 2016. The health facilities in Kiruhura district were stratified into health centre IVs and IIIs. Simple random sampling was used to select at least 60% sample of health facilities from each health facility strata to ensure that the sample was representative. Two health centre IVs and seven HC IIIs were selected for the study.

The distribution proportionate to sample approach was used in the study to determine the number of respondents (mothers) at each of the randomly selected health facility. After identifying the proportion of respondents to be interviewed at the health facility, respondents were also identified using simple random sampling where the researcher with the help of research assistants used folded papers that they gave to all mothers that had brought their children (0-9 months) for immunization at the health facility. The papers had odd and even numbers. Only mothers that picked even numbers were considered for the interview (2, 4 and 6), while mothers who picked odd numbers were thanked and let to go.

The mothers who completed four ANC visits were identified during individual interviews for an in-depth group interview. Additional information gaps that were identified during individual and in-depth group interviews were addressed during Focus Group

Discussion conducted using a FGD guide and attended by 13 women from the general population that were purposively selected.

Through this procedure, the aim was to establish factors that influenced the completion of the four recommended ANC visits. This is in line with Creswell, (1998) who stated that studies attempt to establish people's perceptions, perspectives and understandings of a particular situation and reasons why it happens.

3.4.1 Health Facility and Respondents

A random representative sample of at least 60% of public health facilities offering ANC services both health centre IVs and IIIs were considered. Two health centre IVs and seven health centre IIIs were randomly selected for the study using simple random sampling. The table below shows the health facilities that were selected and the distribution proportionate sample of respondents for each facility:

Table 1: Selected respondents in each of the health facilities

No.	Health facility label	Level	ANC attendance (First visit)	Number of Respondents selected
1.	A	IV	1,396	77
2.	B	IV	1,297	72
3.	C	III	563	31
4.	D	III	715	39
5.	E	III	588	32
6.	F	III	745	41
7.	G	III	642	36
8.	H	III	508	28
9.	I	III	496	27
Total			**6,950**	**383**

3.4.2 Sample Size

3.4.2.1 General population

Cochran's (1963) sample size determination method was used to yield the representative sample size using the equation below using Kiruhura general population of 328,554 people:

Equation:

$$n_o = \frac{Z^2 pq}{e^2}$$

Where n_0 was the sample size using the general population, Z^2 was the abscissa of the normal curve that cuts off an area α at the tails (1 - α equals the desired confidence level, e.g., 95%), **e** was the desired level of precision, **p** was the estimated proportion of an attribute that is present in the population, and **q** was 1-p. The value for **Z** was calculated from statistical tables, which contain the area under the normal curve.

At a confidence level of 95%, the **Z** value was 1.96, **e** was 0.05 and precision level was + or − 5%.

The $n_o = \frac{(1.96)^2 x 0.5 x 0.5}{(0.05)^2} = \mathbf{385}$

The total number of women in reproductive age in Kiruhura district was calculated from the general population using the formula below:

Formula: Number of women in reproductive age (w) = Total population x 0.202

w= 328,554 x 0.202 = 66,377

Where 0.202 was the estimation of the number of women in reproductive age in the general population

The formula below was used to determine the actual sample size (**n**) using estimated number of women in reproductive age.

$$n = \frac{n_o}{1 + \frac{(n_o-1)}{w}}$$

$$n = \frac{385}{1 + \frac{(385-1)}{66,377}} = 383$$

Where **n** is actual sample size and **w** is women on reproductive age**.**

3.5 Data Collection Methods and Instruments

3.5.1 Data Collection Methods

The study was conducted majorly using individual interviews. Individual interviews using guided questionnaires were conducted with simple randomly 383 selected mothers who had turned up for immunization with children between 0-9 months irrespective of their ANC. The interview guide was administered by the researcher and four trained research assistants. The interview guide was administered in Runyankole/Rukiga, the most understood language by the target group. This was to ensure that the respondents understand the questions and provide accurate answers for valid data collection. For this reason, the English version of the interview guide was translated into the local language by a certified and experienced Runyankole/Rukiga language translator.

History and review of secondary records such ANC attendance books "mother's passport" to ascertain their ANC attendance and completion history was conducted. Based on the records, mothers who completed the four recommended ANC visits were selected for in-depth group interviews. An in-depth interview was conducted with mothers that had turned up for immunization with children between 0-9 months but completed four or more ANC visits and FGD was done with purposively selected mothers in the general population from the community. Mothers from the general population included: young married women,

mother in-laws, VHTs, church leader mothers, women in support groups, peer educators and women champions among others.

3.5.2 Data Collection Instruments

The study applied a number of data collection tools. This aimed at triangulation of tools to ensure validity, reliability and accuracy of data. Three data collection tools designed for the study included: Individual interview guide (Questionnaire) used to collect data from selected women in reproductive age, in-depth interview guide for women who had completed four ANC visits, and FGD guide for the focus group discussion that targeted general women in the population. These captured both qualitative and quantitative data related to ANC attendance and completion in Kiruhura district.

The data collection tools were pretested in a rural setting with women in similar target groups in Bushenyi district during Round Table Assessment. The purpose of pretesting was to find out whether the tools elicited the required information, the duration it took to administer each of the tools and whether there were any necessary changes required. Following the findings from pretesting, some of the questions were adjusted and the tools reformatted. It was also established that the individual interview took at least 25 minutes to administer. The findings from the pre-testing exercise helped to plan for the time and other resources for the actual field data collection exercise.

3.6 Quality Control Methods

3.6.1 Validity

Validity was measured, and then assessed using the Content Validity Index (CVI). Research instruments were validated through consultation with experts who assessed the items in the questionnaire to verify and establish their relevance in collecting data for the study. After the expert validation, the CVI was computed, to establish the validity of research

instruments. A CVI of 0.9 was derived at, following the expert rankings, and since this was more than 0.7, it implied that the instruments used for this study were valid.

$$CVI = \frac{\text{Items rated relevant}}{\text{Total number of items}} \qquad = 54/60 = 0.90$$

3.6.2 Reliability

It is the ability of the instrument to measure what it should measure i.e. the same results should be obtained in repeated measurements. It is used to assess the consistence of the tool.

Reliability of the tool was measured using the Cranach's Alpha, which was got by running a pilot study for the tool. Data gathered was then captured in SPSS to obtain the reliability of the tool.

Furthermore, during the design stage, in an effort to ensure reliability of the research tools, the researcher used carefully developed and pretested tools. The three tools were, peer reviewed, pre-tested by giving some persons who would not participate in the actual interview to respond to the questions on the instruments and finding out whether there are no ambiguous questions.

Four research assistants were also identified following the recommendation of the Bio- Statistician of Kiruhura district, and were given one day orientation training by the researcher. The emphasis for the training included: interview skills and getting acquainted with the individual respondent interview guide by going through it. This helped improve the understanding of questionnaire and interview skills on the part of the research assistants a head of the actual data collection for the study.

3.6.3 Quality Control Measures during Data Collection

A series of trainings were held for the data collection teams ahead of their field activities of collecting data. These trainings emphasized the need to collect accurate and

complete data, how to identify the correct respondents for interview, how to deal with unresponsive / uncooperative respondents, ethics of data collection among others.

At the end of each day, each questionnaire was examined by Kiruhura district Bio-statistician (data coordinator) and later by the researcher for completeness, as well as the logical flow of answers, and where problems were identified the responsible persons who collected the data were contacted to clarify on the data collected.

3.6.4 Data Entry Process

A carefully developed and pretested data entry screen was developed using statistical data entry software called Epidata. Epidata was chosen due to its ability to handle very large amounts of data and minimize errors which usually arise during the data entry process. Also, unlike other software, Epidata allowed for development of customized user-friendly data entry screens which decreased on time spent for data entry. In addition to supporting double entry verification, Epidata enabled various checks (range and jumps*)* and validation for each variable entered. These provided quality control checks during data entry.

3.7 Data Management and Processing

The completed 384 individual interview questionnaires (including one extra) were received by the researcher from the field in four batches. On receiving the first and subsequent butches, the researcher read through the completed individual questionnaires and established that research assistants had done the job as per the expectations. The researcher was able to identify information gaps as well as key stakeholders. As a result, the researcher improved on the Focus Group Discussion and in-depth interview guides, scheduled and conducted the interviews with the selected mothers.

After verifying all the questionnaires for correctness and completeness, the researcher then captured them in a computer using a data entry screen designed in Epidata format. After

data entry process, data was then exported to SPSS (Version 16) for further data cleaning and analysis.

3.8 Data Analysis and Presentation Methods

Data analysis was performed using SPSS software Version 16 and Nvivo 10 (specifically for qualitative data analysis). Descriptive statistics for central tendency were generated for all continuous variables (such as number of ANC visits) and, for categorical variables, frequencies, valid and cumulative percentages were also generated. Multiple response analysis was performed for variables where participants were required to give one or more responses to a question. Quantitative data was presented in tabular, graphical and text formats.

In order to test for whether the independent variables had an influence on the dependent variable, this study used Pearson's chi-square to test for independence (associations). An additional regression analysis was also done to determine the nature of the relationship, and effect i.e. how much of the dependent variable could be explained by the independent variables.

Answering objective two:

H_0: The Predisposing factors have no influence on the level of ANC completion among women in Kiruhura district

H_1: The Predisposing factors have influence on the level of ANC completion among women in Kiruhura district

Where, H_0 was the null hypothesis, and **H_1** was the alternative hypothesis

The Chi square (X^2) test statistic was computed using the formulae below

The Chi square (X^2) statistic was used as follows:

$$\mathbf{X}^2 = \sum \frac{(O_{ij} - e_{ij})^2}{e_{ij}}$$ where O_{ij} was the observed frequency in the ith row and jth Column

e_{ij} was the expected frequency in the ith row and jth Column

$$e_{ij} = \frac{(Rowtotal * Coulmtotal)}{Grandtotal}.$$

$\mathbf{X}^2_{0.05,d.f}$ was tabulated chi-square value ((read from the statistical chi-square table). Where d.f. was the degree of freedom

Rejection Criteria:

Reject $\mathbf{H}_0$ if **computed** $\mathbf{X}^2$ > $\mathbf{X}^2_{0.05,d.f}$ the tabulated chi-square value (read from the statistical chi-square table). Or if P-Values < 0.05

Strength test for the Chi-square

In order to measure the strength of Chi-square test, this study used the Cramer's V test. Cramér's V (sometimes referred to as Cramér's phi and denoted as φ_c) is a measure of strength of association between two nominal variables, giving a value between 0 and +1 (inclusive). It was based on Pearson's chi-squared statistic and was published by Harald Cramér in 1946. Calculated with the following formula:

$$\mathbf{\Phi}_c = \sqrt{\frac{\chi^2}{n(K-1)}}$$

Where; χ^2 is the chi-square test statistic value, *n was the grand total, K* was the number of rows or number of columns, whichever was less.

Interpretation of Cramer's V: If the P-Values of $\mathbf{\Phi}_c$ was less than 0.05 it implies that there was a significant relationship between the two variables, and where the P-Values of $\mathbf{\Phi}_c$ was greater than 0.05, it implied that there was no significant relationship between the two variables.

3.9 Ethical Considerations

The researcher obtained a letter of introduction from UMU (as in appendix ii). The researcher used the letter to introduce herself and the purpose of the study to the District Health Officer - Kiruhura. While in Kiruhura district, the researcher requested for and was provided with an introductory letter from the District Health Officer (as in appendix ii). The letter from the district (DHO) was used to introduce the researcher to the In-charges of the randomly selected health centres about the purpose of the study as well as introducing the Research Assistants to the health centre In-charges. The Research Assistants were remunerated in accordance with terms and conditions that were agreed upon prior to the data collection exercise and commensurate to their input and the tasks that were accomplished.

The research explained to the randomly selected respondents about the study being anonymous and assured them of the confidentiality of the information they provided during the study. The researcher and the assistants then obtained verbal informed consent from each of the selected respondents before participating in the study. The researcher and assistants also explained to the selected respondents that they were free not to respond to some of the questions they were not comfortable with or opt out of the study at any time if they wished.

The researcher incorporated the findings of the study in a report without any alteration that could affect the reflection of the true picture on the ground from the study findings. This report from the study was submitted to Uganda Martyrs University for award of Masters in Public Health-Health Promotion. This was the main purpose the study was conducted. In addition, the researcher will share the findings from the study with Kiruhura district, the area that was studied.

3.10 Limitations of the Study

The study had the following limitations:

- Targeting mothers attending immunization clinic limited the scope indicating that women with poor health seeking behaviours that don't access health services at the facility were left out.

- Recall bias among some women especially if the ANC visit was not on record and some information being left out

3.11 Provision for Briefing, Counselling and Additional Information

The researcher incorporated feedback that was received from her supervisor from time to time and external examiners into the final study report. Upon approval from the supervisor, the final study report was availed to UMU Faculty of Health Sciences for marking. The researcher was given an opportunity to defend her work during VIVA and submit a final hard and soft copy to the University.

3.12 Plan for Dissemination of Results

The researcher made three hard copies of the final study report that were marked by external examiners. Dissemination of approved report to stakeholders will be done after graduation.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

4.0 Introduction

This chapter provides a presentation, analysis and discussion of findings. The presentation of findings was in line with the major objective, specific objectives and research questions. The findings in response to the objectives were as indicated in the subsequent sections below:

4.1 Status in Level of Antenatal Care Completion

4.1.1 Response rate

A total of 383 women in reproductive age were interviewed. The respondents interviewed in a health facility are presented in the table 2 below:

Table 2: Response rate verses number of respondents

NO.	Health Facility Label	Level	Respondents selected	Respondents interviewed	
				Count	%
1.	A	IV	77	77	100
2.	B	IV	72	72	100
3.	C	III	31	31	100
4.	D	III	39	39	100
5.	E	III	32	32	100
6.	F	III	41	41	100
7.	G	III	36	36	100
8.	H	III	28	28	100
9.	I	III	27	27	100
Total			**383**	**383**	**100**

4.1.2 Level of ANC visits

This study revealed that 380 (99%) of all the respondents had attended at least one ANC visit for the child they were immunizing at the time of the interview. Out of the 380 respondents, the majority 259 (68%) had attended four or more ANC visits, with only 121 (32%) who had attended less than four ANC visits. From the study findings, 33(9%) and 81(21%) respondents had attended two and three ANC visits respectively.

Table 3: **Number of ANC visits**

Number of ANC Visits	Frequency	Percent
1st visit	7	1.8
2nd visit	33	8.5
3rd visit	81	21.0
4th visit	160	41.5
More than four visits	99	25.9
Total	**380**	**98.7**
Missing System	3	1.3
Total	**383**	**100.0**

4.1.3 Level of ANC completion on schedule

It was clearly noted that for the first child, the majority of respondents: 261 (68%) attended four or more ANC visits, however, women that had more than one child, for their second child, this percentage significantly decreased, with only 68 (37%) completing four or more ANC visits, women with more than two, by the third child none of the respondents had attended the required four ANC visits as indicated in Figure 2 below:
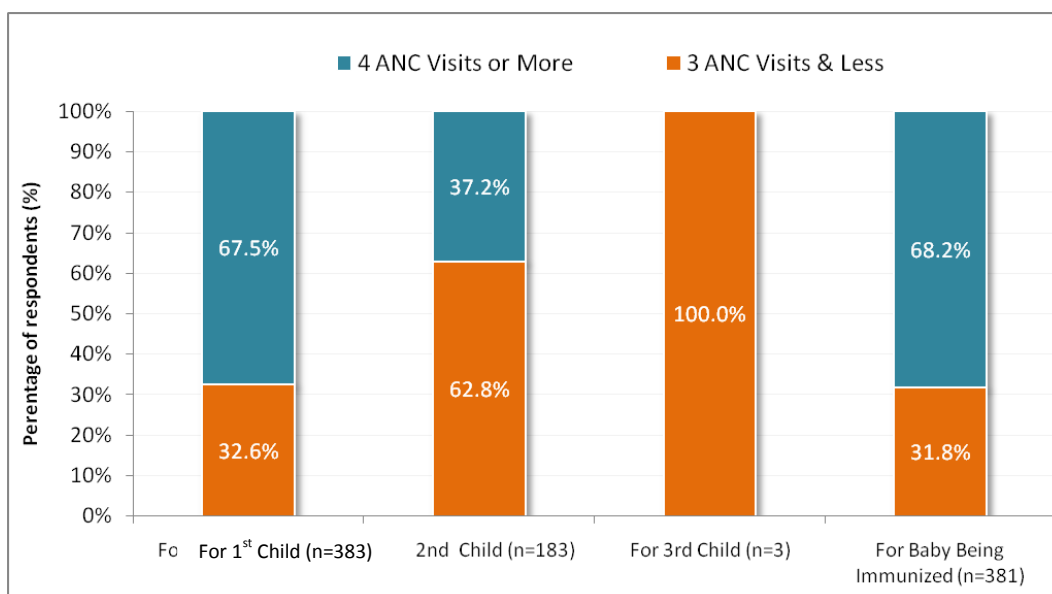
Figure 2: Level of completion of ANC visits

Table 4: Status of ANC utilization

Health Facility Label	Didn't attend ANC	Attended ANC one visit	Attended two ANC visits	Attended three ANC visits	Attended four or More ANC visits	(%)	Total
A		1	5	13	58	75	77
B		1	6	15	49	68	72
C			4	8	19	61	31
D			3	7	29	74	39
E			4	6	22	69	32
F		1	3	9	28	68	41
G	3	1	3	6	15	54	28
H		1	2	9	24	67	36
I		1	3	8	15	56	27
Total	**3**	**7**	**33**	**81**	**259**	**68**	**383**

4.1.4 Reasons for attending all four (4) ANC visits

The majority of women, 199 (70%), who completed all the four ANC visits attributed it to mainly the fact that they wanted to ensure and monitor the health status of their unborn

baby, followed by more than a half 146 (51%) whose main reason was following appointment dates and health workers' advice. A total of 51 (18%) reported that prior history of sickness related to danger signs in their previous pregnancies made them attend four or more ANC visits. In addition, 18% cited prior knowledge on the required number of ANC visits during pregnancy and 47 (17%) wanted to seek for routine ANC checkup.

During FGD, respondents had same reasons and added the following: fear to be chased away by health workers once they return for delivery and they did not complete the visits and establishing friendship with health workers that will extend even after delivery.

Table 5: Reasons for attending all the four (4) ANC visits

Reasons	Count	Percentage
Ensuring and monitoring the wellbeing of the unborn baby	199	69.8
Sickness with danger signs	51	18.0
Followed ANC appointment dates	146	51.2
General consultation from health workers	47	16.5
Had prior knowledge regarding ANC completion	50	17.5
Others reasons	51	17.9

4.2 Predisposing factors that influenced ANC completion on schedule

4.2.1 Age distribution and occupation

Table 6: Age distribution and Occupation

Variable	Frequency	Valid %	P-Values
Age range			
15-19	37	9.66	
20-24	114	29.77	
25-29	122	31.85	0.123
30-34	73	19.06	
35-39	26	6.79	
40-44	11	2.87	
Total	**383**	**100.00**	

Occupation			
Housewife	157	40.99	
Business Woman	73	19.06	P-Value <0.007
Civil Servant	13	3.39	
Farmer	136	35.51	
Others	4	1.04	
Total	**383**	**100.00**	

The majority 273 (71%) of the respondents were aged less than 30, 73 (19%) were aged 30 to 34, with only 11 (3%) aged 40-44. This clearly indicated that most of the respondents to this study were of young reproductive age. This study further revealed that age had no significant influence on ANC completion (Crammers' V P-Values > 0.123). Over 157 (41%) of all the respondents were fulltime housewives, with 136 (36%) being occupied by farming, followed by 73 (19%) who reported to be business women, only 13 (3%) were civil servants (refer to Table 7). This study established with 95% confidence level that the different occupations had a significant influence on ANC completion (P-Value <0.007) (refer to table 6 above).

4.2.2 Marital Status

The highest proportion 345 (90%) of the respondents were married, followed by 26 (7%) who were single, 10 (3%) had divorced, and only 2 (1%) were widowed. This study found that marital status had no significant influence on the ANC completion (P-Value > 0.541) (refer to Table 9).

Table 7: Marital Status

Marital status	Frequency	Valid %	P-Values
Married	345	90.08	
Single	26	6.79	0.541
Divorced	10	2.61	
Widowed	2	0.52	
Total	**383**	**100.00**	

4.2.3: Religion:

The majority 366 (96%) of the respondents were Christian, with only 14 (3.7%) being Muslim, and 2 (1%) were traditionalists. This study found that religious status of respondents had no significant influence on the completion of ANC visits (P-Value > 0.597) (refer to Table8).

Table 8: Religion

Religion	Frequency	Valid %	P-Values
Christian	366	95.56	
Muslim	14	3.66	0.597
Traditionalist	2	0.52	
Others	1	0.26	
Total	**383**	**100.00**	

4.2.4 Highest level of education

Nearly a half 186 (49%) of the respondents had attained primary education, followed by 125 (33%) who reached secondary, with only 51 (13%) who reported to have attained a tertiary institution level of education. Only 20 (5%) had never gone to school. This study established with 95% confidence level that education level of respondents had a significant influence on the completion of ANC visits (P-Value < 0.002) (refer to Table 9).

Table 9: Highest level of education

Highest level of education	Frequency	Valid %	P-Values
Primary Level	186	48.56	
Secondary	125	32.64	0.002
Tertiary Institution	51	13.32	
None	20	5.22	
Others	1	0.26	
Total	**383**	**100.00**	

4.2.5 Income Levels

The highest percentage 238 (62%) of the respondents were earning between 10,000 and 100,000 Uganda shillings every three months, this was followed by 58 (15%) who earned between 110,000 -200,000 Uganda shillings every three months, only 4 (1%) were earning

above 500,000 Uganda shillings every three months. This study however, established that income levels of respondents did not influence their ANC completion (P-Value > 0.092) (refer to Table 10).

Table 10: Level of income every three months

Level of income every three months	Frequency	Valid %	P-Values
10,000-100,000	238	62.14	
110,000-200,000	58	15.14	0.092
210,000-300,000	42	10.97	
310,000-400,000	25	6.53	
410,000-500,000	11	2.87	
Above 500,000	4	1.04	
Other	5	1.31	
Total	**383**	**100**	

4.2.6 Number of pregnancies

This study established that more than a half 204 (53%) of the respondents had 1-2 pregnancies, with more than a quarter 102 (27%) having up to between 3-4 pregnancies, only 77 (20%) had experienced more than four (4) pregnancies. It was further revealed with 95% confidence level that the number of pregnancies had a significant influence on the completion of ANC visits (P-Value < 0.003) (refer to Table 11).

Table 11: Number of pregnancies

Number of pregnancies	Frequency	Valid %	P-Values
1-2	204	53.26	
3-4	102	26.63	0.003
More than 4	77	20.10	
Total	**383**	**100.00**	

4.2.7 Number of children born

Likewise, 204 (53%) of the respondents had bared 1-2 children, 106(28%) had bared 3-4 children with only 73 (19%) reporting to have given birth to more than four (4) children. This study equally found that the number of children ever born by the respondents

significantly affected the completion of their ANC visits (P-Values<0.003) (refer to Table 12).

Table 12: Number of children ever born by respondents

Number of children born	Frequency	Valid %	P-Values
1-2	204	53.26	
3-4	106	27.68	0.003
Above 4	73	19.06	
Total	**383**	**100.00**	

4.2.8 Knowledge about ANC

a) Importance of ANC visits

This study revealed that 319 (85%) respondents knew why a woman should go for antenatal care during pregnancy, and 64 (15%) did not know. It was established that knowledge about the importance of ANC visits significantly influenced ANC completion for the respondents (P-Value < 0.010).

b) Required ANC Visit

From the study, majority 224 (59%) correctly mentioned that ANC visits should happen four (4) times, whereas, 45 (12%) suggested three (3) or less ANC visits, and 109 (29%) cited more than four (4) ANC visits. This study established with a 95% confidence level that knowledge (as a result of awareness) pertaining the required ANC visits for pregnant women, had a significant influence on the completion of ANC visits (P-Value < 0.000) (refer to Table 13).

Table 13: ANC knowledge level

Times a pregnant mother should attend ANC visits	Frequency	Valid %	P-Values
3 and below	45	11.91	
4 visits	224	59.26	0.000
More than 4 visits	109	28.84	
Total	**378**	**100**	

4.2.9 Distance from health facility

It was revealed that the majority of the respondents 233 (61%) had to travel over long distances (6-10 kilometers) to the health facility, 86 (22%) reported that the health facility was five kilometers or less away from their homes, with about 17% citing that the health facility was more than ten kilometers away from their homes. This study therefore concluded with 95% confidence level that distance of the health facility from respondents' homes significantly influenced the completion of ANC visits (P-Value < 0.000) (refer to Table 14).

Table 14: Distance to the health facility

Distance to health facility	Frequency	Valid %	P-Values
0-5 kilometers	86	22.45	
6-10 kilometers	233	60.84	0.000
More than 10 kilometers	64	16.71	
Total	**383**	**100.00**	

***Statistically significant at P-Value < 0.05

4.2.10 Number of people in household

The study findings revealed that the majority of respondents; 203 (53%) lived with 4 to 6 people in their household. This was followed by 95 (25%) and 85 (22%) who lived with at most 3 people and at least 6 people respectively.

Table 15: Number of people in household

Number of people in household	Frequency	Valid %	P-Values
3 people and below	95	24.80	
4 to 6 people	203	53.00	0.076
Above 6 people	85	22.19	
Total	**383**	**100.00**	

***Statistically significant at P-Value < 0.05

4.3 Enabling factors for ANC completion on schedule

This study established that the main enabling factors for completion of four ANC visits were: honoring ANC appointment dates as reported by 225 (87%) of the respondents. This was followed by availability of transport to the health facility 89 (34%), and 68 (26%)

followed VHTs' advice on ANC completion. Over 55 (21%) of the respondents revealed sickness associated with pregnancy lead to seek for medical care and eventually resulted in ANC completion.

Table 16: Enabling factors for four ANC completion

Enabling factors	Yes	
	Count	Percentage (%)
Availability of transport	89	34.2
Accessibility to health facility	25	9.6
VHTs' advice to complete recommended ANC visits	68	26.2
Honoring ANC return dates	225	86.5
Support from health program	34	13.1
Desire to know the health status of the unborn	44	16.9
Support from husband	32	12.3
Sickness associated with pregnancy	55	21.2
Others	56	21.5

Note: *There were 260 respondents who reported to have attended four or More ANC visits, these were the ones considered.*

4.3.1 Awareness of scheduled ANC visits

This study revealed that 147 (57%) of the respondents were aware of the scheduled ANC visits, while 113 (43%) were not aware. It was established that awareness of the scheduled ANC visit significantly influenced ANC completion (P-Value <0.000).

4.3.2 Accessibility to the health facility

The majority 166 (64%) of respondents, who had completed four ANC visits, cited that it was easy to reach the health centre during their recent pregnancy. Respondents attributed this to availability of transport 129 (50%), and accessibility 68 (26%). 94 (36%) reported having had difficulty to reach the health centres for their four ANC visits. This was attributed to distance 91 (35%), and availability of money for transport 32 (12%).

This study further confirmed that difficulty in getting to the health centre had a significant influence on completion of four ANC visits (P-Values < 0.000).

Table 17: Accessibility to health facility

Explanations	Yes		No		Total	
	Count	%	Count	%	Count	%
Health center was very nearby	68	26.2	192	73.8	260	100.0
Transport to the health center was available	129	49.6	131	50.4	260	100.0
Distant health centers	91	35.0	169	65.0	260	100.0
No money for transport	32	12.4	227	87.6	259	100.0
Others	19	7.3	240	92.7	259	100.0

4.3.3 Mode of transport to the health facility

The majority 174 (46%) of the respondents used motorcycle, whereas 164 (43%) walked, 8% used a bicycle, and 14 (4%) used a vehicle to get to the health facility. Likewise, this study further confirmed with 95% confidence level that the different modes of transport used by the respondents had a significant influence on their completion of ANC visits (P-Value < 0.007).
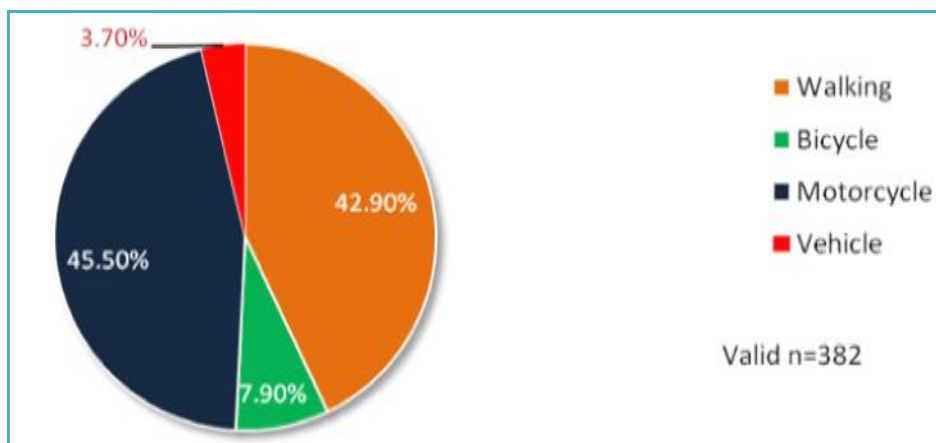
Figure 3: Mode of transport to the health facility

4.3.4 Opening days for ANC clinic

Over 265 (69%) of the respondents revealed that the facility they had visited during their last pregnancy opened daily, with 35 (9%) citing weekly, 28 (7%) monthly, and 31 (8%)

did not know about the opening days for ANC at the facility they had visited during their last pregnancy (see figure 4)
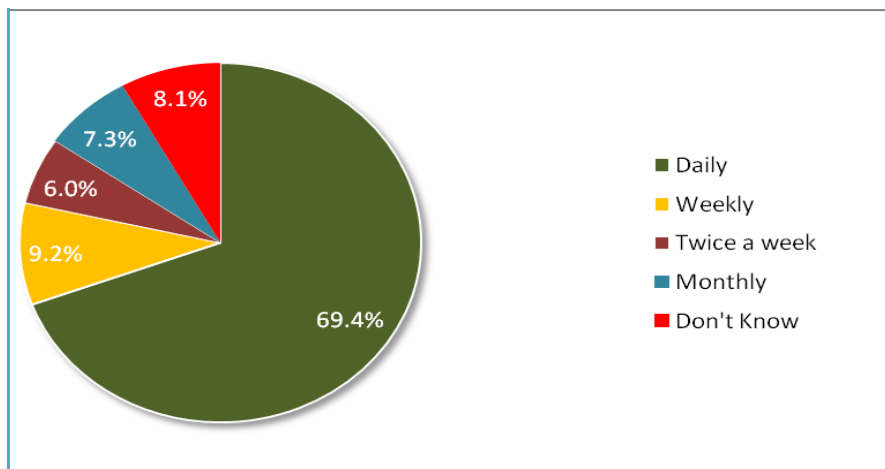
Figure 4: Opening days for ANC clinic

The majority of respondents 312 (83%) considered the opening days to be convenient to them. This was attributed to availability of health workers, less queues, well-spaced ANC schedule that allowed time for them to secure money for the next visit, easy to remember appointment days e.g. "every first Wednesday of the month", as well as the possibility to access ANC services even on other days. Of the respondents, 64 (17%) reported opening days were not convenient. This was mainly attributed to absence of health workers, long queues, and few opening days in a month and delay in service delivery.

4.3.5 Health seeking behaviour during pregnancy

The study revealed that 215 (56%) of respondents attended ANC at the health centre after realising they were pregnant, 136 (35%) decided to do nothing, whereas 35 (9%) used other alternatives that included taking herbal medicine, hiding from school (for students), did HCG to confirm pregnancy, informed their husbands, and others were scared to talk about it.

4.3.6 Period taken to initiate ANC

The study revealed that majority of respondents 213 (55.5%) started attending ANC within the first three months of their pregnancy, followed by four months at 76 (19.6%), and

five months at 60 (15.7%). The minimum was at 0 and maximum at 8 months of waiting (see Table 17). The findings from the FGD showed that most women go for their first ANC visit at three, four and five months with very few at two and seven months.

Furthermore, regression analysis clearly indicated that the time taken before going for the first ANC visit had a strong positive relationship with the number of ANC visits (PPMC R-Value=0.725) (see Table 18).

Table 18: Duration for ANC initiation

Months	Frequency	Valid Percent	Cumulative Percent
0	3	0.78	0.78
1	13	3.36	4.14
2	75	19.59	23.73
3	125	32.64	56.37
4	76	19.84	76.21
5	60	15.66	91.87
6	23	6.01	97.88
7	7	1.83	99.71
8	1	0.26	99.97
Total	383	100	

4.3.7 Reasons for ANC initiation

The study findings revealed that awareness by pregnant women on the government ANC utilization guidelines within their first trimester 189 (50%) enabled them to attend. This was followed by 179 (47%) who went for ANC to get ANC or voucher cards to avoid being reprimanded by health workers when they turn for delivery and to access ANC and delivery services respectively. Other reasons included: desire to know the health status of their unborn baby 132 (35%), confirm pregnancy 101 (26%), 50 (13%) wanted to know their HIV status, and 30 (8%) wanted to benefit from PMTCT services. In addition, 67 (17.6%) of respondents cited having attended their first ANC due to other reasons.

4.3.8 Information received during ANC visits

The main kind of information reported to have been received by the respondents from the health workers included: nutritional education 162 (42%); HIV testing and counselling services and results 151 (40%); health education on malaria prevention 136 (36%); importance of ANC attendance and completion 128 (34%) and birth preparedness 76 (20%). However, 82 (22%) revealed that they did not receive any information from health workers during ANC visits (see Table 21).

Table 19: Information received during ANC visits

Information received Workers during ANC	Yes		No		Total
	Count	%	Count	%	Count
Malaria prevention	136	35.6	246	64.4	382
Nutritional education	162	42.4	220	57.6	382
HIV testing and counseling services	151	39.5	231	60.5	382
Birth preparedness	76	19.9	306	80.1	382
Health status of the unborn baby	35	9.2	347	90.8	382
Expected date of delivery-EDD	47	12.3	335	87.7	382
Drug adherence (ARVs)	31	8.1	351	91.9	382
Importance of ANC visits	128	33.5	254	66.5	382
Opening days for ANC	10	2.6	372	97.4	382
No information received during ANC	82	21.6	297	78.4	379
Additional information received	59	15.5	321	84.5	380

Notably, 135 (36%) of the respondents expected to receive other information from the health workers but was not provided during ANC visits and this included: family planning, nutrition and safe motherhood, dangers of using herbs, blood group, importance of attending ANC with husband, and how to live with HIV discordant partner.

4.3.9 Community Initiatives and Programs that promote ANC completion

A total of 129 (34%) of the respondents revealed that there existed community initiatives and programs that promoted ANC completion. These included: VHT, radio program, voucher system, community awareness van, and family support and famer groups.

However, the majority of respondents 254 (66%) were not aware of any of such community initiatives and programs that promoted ANC completion.

From the study, it was further confirmed with 95% confidence level that community initiatives and programs that promoted ANC completion had a significant influence on ANC completion (P-Value < 0.024).

Role of community initiatives and programs

VHTs: Out of the 129 respondents who were aware of community initiatives and programs, 30 (23%) of them reported existence of VHTs. The roles of VHTs that were highlighted included: community sensitization, referrals, home visits and constant reminders for ANC completion.

Radio Program: 11 (8.5%) of the respondents reported the existence of radio program that promote ANC completion. The main role was for district health team and political leaders create awareness and sensitization on ANC completion through radio talk shows and short adverts.

Other community initiatives: 14 (11%) of the respondents mentioned other community initiatives that included: Marie Stopes whose major role was to provide maternity voucher cards to subsidize on transport, ANC and delivery costs. Marie Stopes also provides community awareness van. Other initiatives included: family support groups for people living with HIV, and farmer groups which provide money for women in case of emergency.

The findings from FDG concurred with the individual interview results regarding community initiatives and programs. In addition, Findings from FDG highlighted free ANC services at public health facilities as one of the programs that promoted ANC completion.

4.3.10 Government ANC Support

Out of 210of the respondents that had completed the four ANC visits, 116 (55%) of reported that government support through Kiruhura district influenced their completion of

ANC visits, 88 (23%) did not know, whereas 84 (22%) stated that their completion of ANC was influenced by government support. The study findings revealed that government through Kiruhura district significantly influenced ANC completion (P-Value <0.000).
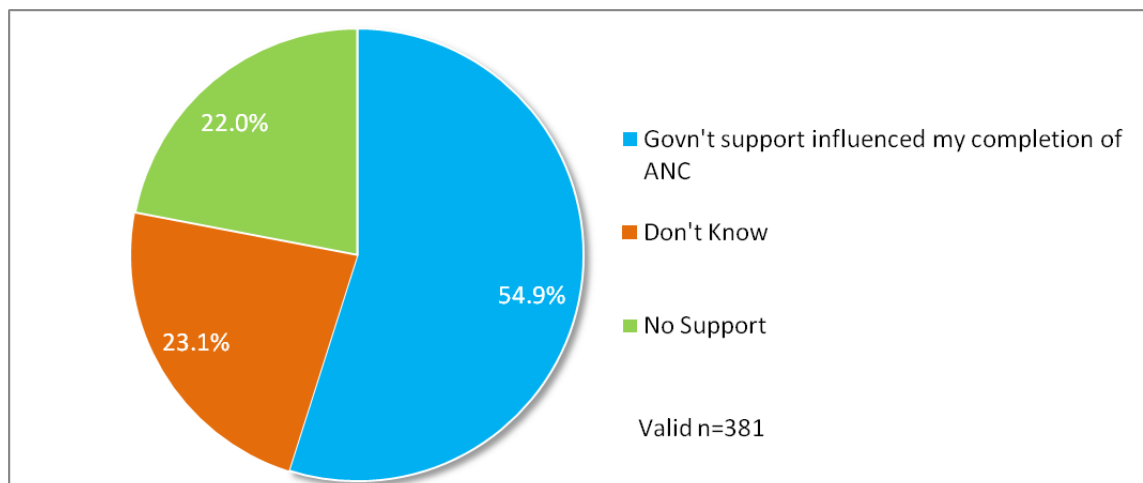
Figure 5: Showing government ANC support

According to the respondents, the major government support provided about completion of ANC visits was radio talk shows 158 (75%), followed by provision of free mosquito nets at especially during the first ANC visit 116 (55%), VHT integration into maternal child health program 91 (44%), provision of Maama kits during the fourth ANC visit 34 (16%), provision of free ARVs 20 (10%) and others (See Table 20).

Table 20: Government support for ANC completion

Government support for ANC completion	Yes		No		Total
	Count	%	Count	%	Count
VHT integration into MCH program	91	43.8	117	56.3	208
Provision of Maama kits	34	16.2	176	83.8%	210
Provision of free Mosquito nets	116	55.2	94	44.8	210
Radio talk shows	158	75.2	52	24.8	210
Provision of free ARVs	20	9.6	189	90.4	209
Ambulance for emergency	3	1.4	206	98.6	209
Others support	74	35.2	136	64.8	210

4.3.11 Cultural beliefs

From the FDG findings, there were both positive and negative cultural beliefs that

affected completion of ANC visits in Kiruhura district. The positive cultural beliefs and practices included: father in-laws slaughter goats for their daughter in-laws once they produced live babies, and mother in-law takes very good care of the daughter once she produces alive baby including making traditional delicious meals. The negative cultural beliefs and practices included: delivering at mother's place, not attending ANC at the nearby places due to fear of lack of confidentiality, going to traditional healers and / or TBAs for ANC, following traditional healer's rituals, use of local herbs to clean up the pregnancy and induce labour, and fear to go to the health facility due to mother in-laws forcing themselves to escort their daughters' in-law for ANC.

4.3.12 Improvement of ANC services over the past years

The study revealed that health ANC services have improved ovet the pat years 137 (47%) in comparison with the prviuos preganicies. This was attributed to: recrutment of more health workers, equitping health centre IVs with operational theater, free ANC servces, provison of Maama kits, mosquito nets, and free drugs.

134 (46%) of the respodents reported not to have recognised any improvement. 23 (8%) reported that things have worsened. For both of these categories of respodents, the reasons advanced included the following: drug stock outs, long waiting time at the health facility due to increased number of mothers but with few health workers, poor clientele and time management and no extra services provided such as ultra-scans. This study further established at 95% confidence level that improvement in the services at the health facility had a significant influence on completion of ANC (P-Value<0.002).
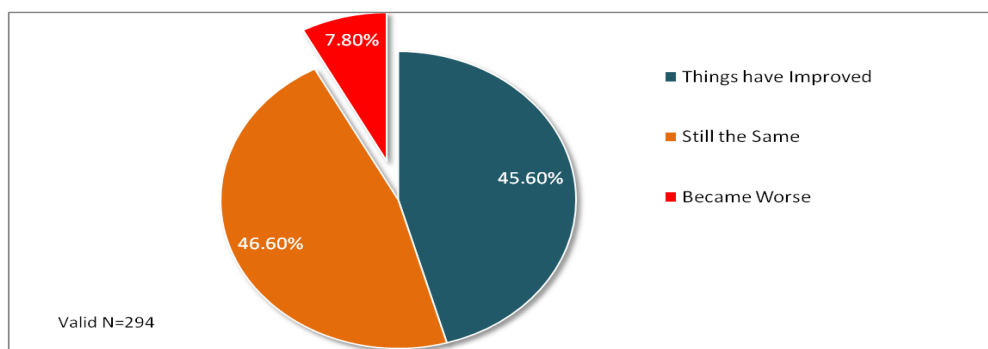
Figure 6: Showing improvement in ANC services

4.3.13 Services received during pregnancy

The greatest proportion of respondents 338 (88%) reported that during their ANC visits, they received abdominal examination service; closely followed by 320 (84%) who were counseled and tested for HIV, 246 (64%) were given drugs during pregnancy. Of the responded who received medication, 116 (67%) received iron tablets (67%), 119 (48%) received Fansidar, and 9 (2%) received ARVs. 186 (49%) of the respondents were given mosquito nets during their ANC visits as seen in Table 21 below.

Table 21: Services received during ANC visits

Services received during ANC	Yes		No		Total
	Count	%	Count	%	Count
HIV testing and counseling services	320	83.6	63	16.4	383
Laboratory services	65	17.0	318	83.0	383
Abdominal examination	338	88.3	45	11.7	383
Immunization	137	35.8	246	64.2	383
Drugs	246	64.4	136	35.6	382
• Iron tablets	166	67.48	80	32.52	246
• Fansidar	119	48.37	127	51.63	246
• De-worming tablets	6	2.44	240	97.56	246
• ARVs	5	2.03	241	97.97	246
• Other medicines	2	8.7	21	91.3	23
Mosquito nets	186	48.8	195	51.2	381
Health and nutrition education	54	14.1	328	85.9	382
Routine HCT on drug adherence	13	3.4	369	96.6	382
Received voucher card	25	6.5	357	93.5	382
Others	44	11.7	333	88.3	377

4.3.14 Satisfaction with ANC services

The majority of the respondents 245 (64%) revealed that ANC services offered at the health facility they visited during their pregnancy met their individual needs. This was attributed to: necessary advice received from mid-wives 153 (62%), safe delivery of healthy baby 152 (61%) and free medications and supplies 107 (44%). This study further revealed that respondents' satisfaction with ANC services offered to them at the health facility had a significant influence on the completion of ANC visits (P-Value<0.002).

4.3.15 Ways of improving ANC services

The respondents recommended the following ways in Table 22 below to improve ANC services.

Table 22: Ways of improving ANC services

Strategy	Yes		No		Total
	Count	%	Count	%	Count
Government recruit more health workers at the health facilities	261	68.5	120	31.5	381
Health workers encourage mothers to complete four ANC visits	63	16.6	317	83.4	380
Equip health centers with more facilities (Ultra sound scan, theatre equipment, Ambulances)	231	60.8	149	39.2	380
Construct equipped health centers in the district	13	3.4	367	96.6	380
Timeliness in service delivery	127	33.4	253	66.6	380
Conduct ANC outreaches and community sensitization	152	40.0	228	60.0	380
Provide Maama kits to all pregnant mothers	98	25.7	283	74.3	381
Ensure regular drug supply to reduce stock outs	99	26.1	281	73.9	380
Others e.g. Youth friendly services, more sitting space, short ANC educative video	123	32.4	257	67.6	380

4.3.16Attitude of health care service providers

The study established with 95% confidence that perspective of respondents on attitude of health care services providers towards mothers did not significantly influence the completion of ANC (P-Value > 0.080) See Figure 6 below.
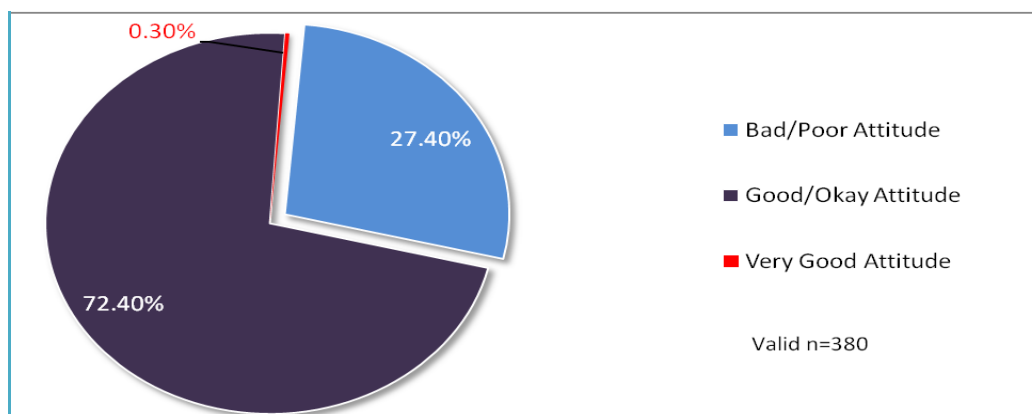
Figure 7: Attitude of ANC service providers

4.3.17: Qualitative Findings from FGD and In Depth Interview

Table 23: Qualitative findings (FGD and in-depth interview)

Major Themes	Major categories	Minor categories /Explanations
Reasons for pregnant women to start ANC visits.	**Medical checkup**	• To do blood tests • To check for blood pressure • Test for HIV • Detect diseases associated with pregnancy • To prevent abortion • To check whether the baby is safe
	Receive Treatment	• To get treatment • To get malaria prophylaxis
Observations about the ANC practices in this community	**Attendance**	• Not all attend, and those who attend not all finish the required visits.
Reasons why other pregnant women don't attend ANC	**Health centre factors**	• Fear of long lines during ANC
	Inaccessibility	• The health facility is far • Lack of transport means to the heath centre • Not aware of the available services offered at the health facility • Lack of finance to buy necessities for personal hygiene
	Poor attitudes of HW	• Fear to be abused by health worker • Good history of previous pregnancies

	Poor health seeking behaviours	• Bad experience with previous pregnancies • Laziness • Loss of ANC attendance record books • Lack of proper clothing
	Cultural/tradit ional practices:	• Use of herbs • Cultural practices (presence of TBAs) • Cultural beliefs like post-datism (okuhanika enda)
Reasons why other pregnant women attend ANC	**Support from VHTs:**	• Home visited by VHTs and are sensitized about ANC • Referred by VHTs to attend ANC
	Proper health seeking behaviours	• Previous bad or good experience • Personal willingness / zeal • Self motivation • Caring about individual health • Love for a healthy baby • Feeling pain or sick
	Accessibility of services	• Availability of ANC services in the area • Availability of private clinics that offer ANC services • Awareness about services offered at the health facility Personal savings to facilitate ANC attendance
	Family support	• Encouraged by the husband or peers or relative
	Voucher cards	• Voucher cards where mothers buy them cheaply that cater for many ANC visits
Information given during ANC visits by health workers	**Personal Hygiene**	• Women who are dirty are given feedback and at times it's never to come back. • Emphasis on personal hygiene
	Nutritional Information	• Nutrition
	Antenatal care	• Adherence to prescribed drugs and use of mosquito nets • Edd and where to deliver from • The status of the pregnancy
	Support from husband	• To come back with the spouse for the next visits. In case the husband refuses they fear to come back to the health facility to complete ANC visits,(most husbands are not willing to escort their wives because of mandatory HIV tests.

When is a pregnant mother supposed to go for ANC services?	At least four or more times	• Majority said at least four and above, however they do not know which services one should get at each visit. Health workers do not explain the components of each AMC visit. Some mothers come late and miss the information. • 3/9 women know services offered at each recommended visit • Majority of the health workers conduct medical checkup and give a return date without any further information
How women got information about ANC attendance	Word of Mouth	• Through village health teams • Through neighbors and relatives • Health workers • Church announcements • Home visits by VHTs
	Media	• Majorly on radio • Posters at health facility
	Meetings	• During community dialogue meetings • Women groups(mothers union, village savings groups, UWESO, "Bakyara Kweterana, Nigiina and Mwezikye"
Category of women that mostly attend and complete ANC	Educated/Aware	• Women who are aware of ANC services, • Women who attend community dialog meetings with VHTs, • Women with more formal education,
	Diseased/Sickly	• HIV positive, • History of complicated pregnancy,
	Good health seeking behaviours	• Newly married first pregnancy. • Personal willingness, • Past family experience
	Easily Access services	• Women with personal income • Women who are near the health facility,
	Religious	• Religious families,
Are women aware of dangers associated with not completing ANC in pregnancy? What are these dangers?	Chronic diseases	• 5/11 did not know the dangers. Even those who know fear to be operated for the next pregnancy/medical procedures Danger signs: • Oedema, high blood pressure, bleeding, anemia, malaria, vomiting, dehydration, twins, distended abdomen and previous scar. TB, dizziness, virginal discharge, backache, convulsions, HIV, alcohol/drug abuse, domestic/ sexual violence.

What reminds women to go for subsequent ANC visits during pregnancy?	**Return date reminders**	- The health worker writes in the ANC attendance book the return date - Sharing the return date with husband - Sharing the return date with close friends - Sharing with in-laws and VHTs - Radio adverts
Why do mothers not use their mobile phones as a reminder tool to ANC attendance?	**Lack of follow up**	- Health workers do not ask for phone numbers during the visits. - If they don't return there is no follow-up using a phone - There is no column for phone contact in the ANC register - Do not know how to use the reminder system in their phones. (d) Out of 10 families how many families posses a phone? - At least 7/10 posses a phone in the house
What are the traditional practices done by pregnant women in your area and why do they do them?	**TBAs and Herbs**	- Women like using herbs and TBAs, majority of the women believe in them, the herbs include: the ones that help the baby to grow, softening pelvic bones, cleaning the baby's skin during pregnancy, increasing blood, those that reduce labor pains, and those that induce labor especially in mothers with postdatism conditions. - The herbs are always accessible and readily available.
Why do pregnant women consult TBAs in your area?	**Immediate best option**	They are friendly available in the community, some were trained by the government and majority have wide experience overtime dealing with pregnant women. They are cheap and they know a variety of herbs for various pregnancy related conditions.
How does the health facility conduct ANC services and their convenience?	**Opening hours and information received**	- The heath facility opens every day ANC services are provided on a daily basis at the health facility - Health workers are available but very few. - There are long lines more often that increase waiting time. - There is mixed information provided, that some time affects the next ANC appointments. - Health workers multitask (moving from ANC to maternity wards) due to fewer numbers and work overload. This affects their attitude towards mothers and their job. - Some women are also rude to health workers especially during the multitasking time,

What is the attitude of men towards their wives who seek ANC?	**Low level of male involvement low**	- Most men in the rural communities are not supportive, because they are not feeling pain. - They fear to escort their wives to the health facility because of mandatory HIV testing during pregnancy. - They fear to disclose their HIV status especially when they have ever tested. - Men who have concubines fear to escort them to health facilities. - Some men have not time and they find ANC not a big deal - Domestic violence, alcohol, and poverty - Hard for men who work outside their home area to escort their wives.
What are strategies for male involvement in ANC services?	**Create awareness**	- Women making men their close friends. - Use mother in laws to encourage their sons to be involved - Organise men seminars and retreats. - Community sensitization and dialogue meetings - Home visits to individuals and family by community leaders or VHTs - Use of male champions, peers, CDOs, church leaders and prayer groups to encourage men to get involved. - Formation of community initiatives that target men and Men's corner at the facilities
What measures if any are in place to improve women's completion of ANC services?	**Balance demand and supply sides**	- Availability of health facilities - Presence of health workers - Support from nongovernmental organization - Presence of VHTs - Voucher system - Radio talk shows - Supplies like mosquito nets and mamakits - Programs like community dialogues to encourage mothers to complete.
What in your opinion should be improved?	**Mixed approach**	- Incentivizing VHTs - Promoting ANC community outreaches - Increasing number of health workers and motivate them to be friendly to pregnant women/ create more time for mothers. - Incorporate psycho social services for couples during ANC - Involvement of stake holders - The government to create more incentives to model

		mothers especially those who complete ANC visits according to the schedule. Eg. Bar of soap, certificate among others. • Use model mothers to teach their peers on the importance of completing ANC at different platforms.
Please explain, if there is any kind of support from government through Kiruhura as a district that you think influence completion of ANC visits?	**Supplies, personnel and infrastructure**	• Provision of mama kits and mosquito nets to pregnant mothers • Availability of ANC drugs at health facility • Couples given first priority at ANC • Provision of ANC and delivery beds, curtains at the health facility • Operational theatre and availability of Doctors at the health centre IV. • NGO like Marie Stopes providing health baby voucher cards to poor mothers for two years to access MCH services • HIV pregnant mothers being given jerry cans for save drinking water. Water treatment products • Availability of PMTC drugs (ARVS) and success rate of negative babies. • Re-assurance of mothers from government to promoting an HIV free generation.
What are supportive structures that influence completion of ANC visits?	**Leadership, programs and infrastructure**	• Engagement of local leaders especially C.M LC IV and the Mayor about MCH on all forums and VHTs in the community • Frequent Radio programs by DHT/DHO on Radio five every Sunday • Good roads and transport means to facilities • Presence of programs like: Obulamu, NACOLA, RIGHTS, Maristops, SEARCH, ICOBI, EGPAF and Mayanja Foundation

4.4: Discussion of Findings

4.4.1 Current status of ANC utilization

From this study, 379 (99%) of the respondents had attended at least one ANC visit for the child they were immunizing at the time of the interview. This is in agreement with findings of UBOS, (2016) report which established 94% overall one time antenatal attendance in Uganda with women in rural areas being twice less likely to attend ANC than the urban women. This study further found out that only 160 (68%) had completed four (4) or more ANC visits, a clear indication of improvement completion. This is contrary to MOH,

(2016) which noted that more than 61% of women in Uganda do not complete ANC visits. The best practices in Kiruhura can be benchmarked to improve ANC in Uganda.

From the study findings, 380 (99%) of the mothers that had brought the children for immunization between 0-9 months had attended ANC during pregnancy for the child they were immunizing. Majority of respondents 160 (68%) had attended four or more ANC visits, with only 121 (32%) who had attended less than four ANC visits. This indicated that mothers who attend ANC services during pregnancy are more likely to come back to the health facility for delivery, postnatal and child immunization for the good of their health and the health of their babies. However, the findings are contrary to the study conducted in Tanzania by Mohan, *et al.,* (2015) which revealed that women who attended four or more ANC visits were less likely to utilize postnatal care services.

From this study, it was revealed that mothers who attended less than four ANC visits mainly attributed it to the fact that they started attending late 80 (66%), followed by the fact that they had missed appointments 60 (50%) as they could not remember the dates, and up to 28 (23%) lacked transport to the health centre. By initiating ANC late with already designed ANC package, mothers were unable to complete the recommended ANC visits and missed some of the ANC services, hence missing some of the ANC benefits that are intended for the mother and the baby during pregnancy. This is in agreement with a study that was conducted in Ethiopia on timing and frequency of ANC visits by Yaya, *et al.,* (2017), which revealed that delayed ANC initiation and frequency of ANC visits have an impact on completion of ANC visits. Another study by Muchie, (2017) indicated that to improve the uptake of ANC services, early ANC initiation in the first trimester and motivating mothers to begin ANC and complete are vital.

From the FGD, it was noted that some of reasons for mothers not completing ANC visits included: fear for abuses from nurses, absence health workers, lack of safe examination

and delivery spaces, previous bad experience at the health facility, a lot of home chores with no one to leave the older children with, lack of proper clothing for putting on to go to the facility, laziness to attend ANC even when everything is okay, poor health seeking behaviours, religion, multiple pregnancies in a short period of time, school girls fearing to be identified pregnant. This shows that failure to complete ANC visits is as a result of multiple factors from both demand and supply sides. This is in line with studies conducted by Mohan, *et al.,* 2015; Pell, *et al.,* 2013 and Yaya, *et al.,* 2017.

4.4.2 Predisposing factors that influence ANC completion

From the study findings, the following factors significantly influenced ANC completion: occupation (P-Value <0.007), mode of transport (P-Value < 0.007), highest level of education (-Value <0.002), number of pregnancies (P-Value <0.003), number of children born (P-Value <0.003), knowledge of the required ANC visits (P-Value <0.000), and distance from health centres (P-Value <0.000). From the study, the most significant predisposing factors included: knowledge of ANC visits, distance from health centres, mode of transport, high level of education, number of pregnancies, number of children born and different occupation.

Although, the majority of respondents 234 (61%) had to travel long distances (6 – 10 kilometers) to the health facility, having money for transport (majority provided for by husbands) and transport means especially using commercial and private motorcycles (boda-bodas) made it easy for respondents to access health facilities and complete the four ANC visits. Other modes of transport included walking and bicycles. A study conducted by Mohan*, et al.,* (2015) indicated that geographical location of women had a significant role in not only ANC services' utilization, but also on other maternal child health services including delivery, perinatal and child immunization.

The study findings regarding education levels are in line with the study that was

conducted in Saudi Arabia, Madina by Alhazmi, *et al.,* (2017) which revealed that education has a great role in the interest of women attending and completing ANC visits. Furthermore, the findings on education level concurred with Pathak, (2010) who indicated that the level of education influences maternal health seeking behaviour.

The study findings on distance to health facility concur with and Glei, Goldman, Rodriguez, (2003) who noted that distance to the health facility is inversely associated with ANC utilization.

A study by Zeine, Mirkuzie, Shimeles, (2010) established that family size was a strong determinant of ANC service utilization with greater household size limiting the use of ANC services. None of authors above looked at how the predisposal factors influenced completion of four ANC visits, a gap that this study had addressed.

From this study, the findings revealed that the ANC completion declined significantly with the number of subsequent pregnancies. More women 261 (68%) tended to complete all the four ANC visits for their first child, 68 (37%) for their second child, none completed the required four ANC visits by third child. The decline is attributed to: negative attitude of health workers towards mothers, long waiting hours, drug stock outs, unfriendly services and unfavorable ANC clinic days. The findings are in line with the study by Pell, *et al.,* (2013) which indicated that, the supply side factor has an important influence on ANC attendance and completion. Therefore, the design of ANC and how the health system deals with concerns of women during their first visit in the first trimester has implications in timing and completion of ANC, including the subsequent pregnancies.

The number of pregnancies and number of children born by a woman were revealed to be significant predisposing factors to complete the four recommended ANC visits. This was further confirmed by the findings from the FGD revealed that women with good history of previous pregnancies rarely complete all the four ANC visits. This in line with a study

conducted by Colomar, *et al., (*2017) which indicated that parity had a statistically significant negative effect on adequate ANC attendance. Whilst women of higher parity tend to use antenatal care less, there is interaction with women's age and religion.

The study revealed that the following demographic factors below did not have a significant influence on completion of ANC: age (P-Values > 0.123), marital status (P-Value > 0.541), religion (P-Value > 0.597), and income levels (P-Value > 0.092) all had no significant influence on ANC completion. This was in line with the study conducted by Chiang, (2013), which revealed that religion and marital status do not significantly influence antenatal care attendance. Contrary, a study conducted by Joshi, Torvaldsen, Hodgson, and Hayen, (2014) revealed that older age, was one of the predictors of both attendance of four or more visits and receipt of good quality ANC services.

The systematic review report by Colomar, *et al.,* (2017) also indicated that most commonly identified factors affecting antenatal care uptake included: maternal education, husband's education, marital status, availability, cost, household income, women's employment, media exposure and having a history of obstetric complications. Cultural beliefs and ideas about pregnancy also had both negative and positive influence on antenatal care use.

This study revealed that over 319 (85%) respondents knew why a woman should go for antenatal care during pregnancy, only 15% reported not to know, therefore, knowledge about the importance of ANC visits significantly influenced ANC completion for the respondents (P-Value < 0.010). Specifically women who knew the importance of ANC visits were more likely to complete all the four ANC visits (Odds Ratio = 1.421).

4.3.3 Enabling factors for ANC completion on schedule

One of the outstanding enabling factors for completion of four ANC visits according to this study was honoring the return dates and following medical appointments as reported

by 225 (87%). It was established that awareness of the scheduled ANC visits had a significant influence on the ANC completion on schedule (P-Value < 0.000), women who were aware of their scheduled ANC visits were nearly twice more likely to complete all the four ANCs as compared to those who were not (Odds Ratio= 1.909). This is in line with a study conducted by Bbaale, (2011), which revealed that only 16% of women who attend ANC visits are aware of ANC package and utilize it fully. This indicated that most women do not receive the full package of what ANC is intended to provide.

From the focus group discussion, it was found out that at least seven out of 10 mothers have access to mobile phones with in the family. However, two out of seven use mobile phone technology in form of reminders for ANC appointments during pregnancy. This concurs with the study that was conducted in Pennsylvania in United States where it was found out that little is known about how pregnant women engage with technologies and the interface between these tools and medical care, especially for women of lower socio-economic status. Despite rapid evolution of technology including internet and mobile phones, women are still not consuming the technology services that would help them to attend and complete four ANC visits (Kraschnewski, *et al.,* 2014). This is also in line with LeFevre, *et al.,* (2017) who in their study conducted in Ghana, revealed that despite the majority (>77%) owning a private mobile phone, only 25% of expected messages were received by pregnant women and listened to at least in their first trimester.

One of the major motivating factors for mothers to complete the four ANC visits was to ensure and monitor their wellbeing and health status of their unborn baby 199 (70%), which was a perceived benefit for both the mother and the baby. Other factors included: sickness and prior knowledge on the required number of ANC visits by a pregnant mother, seeking for consultation from health workers and general medical checkup. Individual perceptions, health seeking behaviours and health beliefs played a key role in enabling

mothers complete four ANC visits. To some extent, the supply side which is the health structures and health system also played a key role. The study conducted by Sumankuuro, *et al.,* (2017) in Ghana, revealed that overall use of ANC during pregnancy was shaped by social cultural factors related to perceptions of pregnancy, gender-based roles and responsibilities.

Another critical enabling factor was the availability and mode of transport, which was closely linked to the difficulty in getting to the health facility and all these two were found to significantly influence completion of the four ANC visits on schedule. This is in agreement with earlier studies conducted in Zimbabwe by Mathole, Lindmark, Majoko, and Ahlberg, (2004) and in Pakistan by Mumtaz, and Salway, (2005) which established that uncomfortable transport, poor road conditions and difficulties in crossing big rivers were barriers to access and utilize ANC services.

The study revealed that for the last pregnancy, respondents that attended ANC at the health facilities that open daily were the highest, followed by those that opened weekly, then twice a month and monthly were the least. Health facilities that opened daily and weekly provided mothers with missed ANC appointment opportunities to complete their ANC visits. Opening health facilities daily or weekly for ANC service utilization, with availability of health service providers, helped ensure timely provision of ANC services and reduced on waiting hours and hence enabled mothers complete the four ANC visits.

The study findings indicated that majority of respondents 293 (78%) received health education on various topics including: nutrition, HIV counselling and testing, sleeping under mosquito net, drug adherence, importance of completing ANC visits, voucher cards and birth preparations. Much as the majority of the respondents received health education, 135 (36%) of them expected to receive additional information from the health workers which was never provided. The missing information included: family planning, nutrition and safe motherhood,

dangers of using herbs, blood group, importance of attending ANC with husband, how to live with HIV discordant partner, supply of Maama kits and sex education during pregnancy. From these findings, there is information gap in ANC awareness sessions that needs to be filled during ANC visits.

From the study, 82 (22%) of respondents did not receive any information from health workers during ANC visits. This could have been as a result of pregnant women turning up late and missing health education sessions that are always conducted in the morning by health workers before they begin the other routine ANC services. This resulted in pregnant women not being aware of the comprehensive ANC package and its benefits which affected their learning and understanding about and completion of ANC visits. This indicates a knowledge gap on ANC utilization and completion benefits.

This study further revealed that community initiatives and programs that promoted ANC completion had a significant influence on ANC completion (P-Value < 0.024). The community initiatives included: VHTs, radio programs, voucher card system, family support groups, mothers union and farmer groups. Of all the initiatives, VHTs were the most influential, followed by radio programs and voucher system. This is in agreement with a study that was conducted in Tanzania by Mohan, *et al.,* (2015) which indicated that women counseled by Community Health Workers (CHW) (equivalent to VHTs in Uganda) were two to three times more likely to use health facility services for ANC and postnatal care. All these community initiatives contributed to the completion of all the four ANC visits by the 260 (68%) of women in Kiruhura district who were part of the study.

The study also revealed that government support through Kiruhura district significantly influenced completion of ANC visits (P-Value <0.000).The support from government included: Radio talk shows, provision of free mosquito nets, VHTs, provision of Maama kits, provision of free drugs including ARVS. Radio talk shows facilitated 158 (75%) respondents

to complete ANC, followed by provision of free mosquito nets 116 (55%), then VHT integration into maternal child health program 91 (44%), provision of Maama kits during at the fourth ANC visit 34 (16%) and provision of free ARVs 20 (10%). The integrated approach of initiatives and programs was found to be significant in enabling respondents complete the four recommended ANC visits.

The above findings are in line with a study that was conducted in Ghana where programs like health insurance and vouchers determine the utilization of ANC, delivery and postnatal care services. Evidence from Ghana demographic Health Survey indicated that among insured women, the likelihood of completing ANC increased by 96%, delivery by 129% and postnatal by 61% (Browne, *et al,.* 2016). Another study conducted in Mexico also revealed an increase of 72% in ANC utilization with five ANC visits with mothers who received financial benefits during pregnancy. They received 12.2% more ANC services than the non beneficiaries (Hurst*, et al.,* 2015). This shows that, once there are other different integrated initiatives, ANC utilization and completion rate is increased.

The study findings revealed that there are traditional and cultural beliefs that influence ANC completion both positively and negatively. The traditional and cultural beliefs that were cited to enhance ANC completion during the study included: father in-laws slaughter goats for their daughter in-laws once they deliver a live baby, and mother in-law takes very good care of the daughter once she delivers a live healthy baby including making traditional delicious meals (called eshabwe in Runyankole Language). Cultural beliefs that were cited to prevent ANC completion and safe motherhood included: delivering at mother's place, belief that attending ANC at the nearby places may not be confidential, going to TBAs for ANC and delivery, following traditional healers' rituals, use of local herbs to clean up the pregnancy and induce labour and fear to go to the health facility for ANC because of their mother in laws' initiative to escort them to the health facility.

The above findings are in line with the study that was conducted in Ghana by Sumankuuro, *et al.,* (2017) which revealed that the average number of ANC visits was 3.34±1.292, and the majority of expectant mothers (71.3%) enrolled for ANC at the eighth week or later, with the longest delay recorded at the sixth month of gestation. Traditional norms significantly influenced this delay. Likewise, overall use of ANC during pregnancy was shaped by cultural factors related to perceptions of pregnancy, gender-based roles and responsibilities and concerns that ANC would result in an overweight baby and culturally inappropriate delivery at a health care facility.

The respondents faced a number of challenges while accessing ANC during their last pregnancy. The challenges included: poor time management at the health centre that led to delay in service delivery 135 (35%), transport challenges 125 (33%), sicknesses such as persistent Malaria and cough 58 (15%), long distance to health facility 26 (7%), long queues of women as a result of few health workers 24 (6%), harsh health workers who abuse or are unfriendly to the mothers 15 (4%). The key challenges were: delay at the health facility due to fewer staff, high workload and poor time management. The other key challenge was transport due to distant health facility and lack of money for transport. Rude and unfriendly health workers were also cited as challenges. This poor character of health staff could be attributed to work overload, lack of equipment and supplies, low motivation as a result of untimely and low salaries.

Given the above findings, it is critical that the government recruits more health staff as per the health staffing norms to reduce on workload and provide relevant equipment and supplies to all health facilities to ensure timely and quality ANC services. Health facility staff should be given continuous orientation in customer care by government and introduce ANC mother to health worker feedback mechanism to improve on ANC service delivery. ANC should be extended to hard to reach mothers through community outreaches. This is in line

with a study conducted by Bbaale, (2015) which emphasized professional care during ANC that called for the need of qualified and enthusiastic health workers to educate women on the content of ANC care package and also conduct community out reaches in hard to reach areas to reach out to women who cannot easily access health facilities for ANC services.

From the study, the majority of respondents 137 (47%) reported improvement in services at health facilities in compariosn with previous preganicaies. Some of the improvements that were cited included: more health facilities equipped with operating theatres and more health workers recruited, good governance, free ANC services and supplies.

This study further established that improvement in the services at the health facility had a significant influence on completion of ANC (P-Value<0.002). This study revealed that respondents' satisfaction with ANC services offered to them at the health facility had a significant influence on the completion of ANC visits (P-Value<0.002). Women who reported to be satisfied with ANC services were more likely to complete all their four ANC visits as compared to those who were dissatisfied (Odds Ratio = 1.286). The majority of respondents 245 (64%) felt that ANC services offered to them at the health facility met their individual needs as mothers during pregnancy; only 138 (36%) were not satisfied with the services. Respondents' satisfaction with the services was attributed to the necessary advice/ guidance by the midwives/health workers, timely services, and safe delivery of healthy babies, free pregnancy drugs and supplies. This is in line with Colomar, *et al.,* (2017) in the systematic review, where use of supplied maternity kits for antenatal and childbirth care during antenatal and delivery increase MCH utilization. It's also in agreement with UDHS (2016), where lack of resources and skilled staff to improve quality and delivery of maternity services has greatly affected the positive outcome. Therefore, having an integrated ANC

package with different services during different ANC visits is important in enabling mothers complete ANC as required.

It was also established from the study that women who considered ANC services at the health facility to be mother friendly, were more likely to complete all the four ANC visits as compared to those who felt that the ANC services were unfriendly (Odds Ratio= 1.296).

These findings were in agreement with several authors such as: Gele and Sundby (2013); Chivonivoni, Ehlers, Roos (2008), both noted that antenatal period is a very crucial moment for the mother and the developing baby, which calls for the best health interventions. However, predisposal factors which may include attitudes and perceptions are usually associated with such services. Likewise Ssengooba, (2010) asserted that perceived inadequacy of services provided by the formal health system was among one of the several factors which influenced Ugandan women ANC seeking behaviour. However, the above three authors specifically looked at factors influencing ANC seeking behaviour but did not relate the several factors with the completion of the four recommended ANC visits on schedule, which this study successfully accomplished.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter presented the conclusive summary of the research findings, recommendations, which were all done in line with the research objectives. Suggested areas that needed further study have also been covered herein.

5.1 Summary of Findings

In summary, this study set out to specifically establish the factors that influence completion of four ANC visits as recommended by WHO during pregnancy in rural district of Kiruhura, Western Uganda.

Findings showed that whereas almost all 380 (99%) of the women who responded had attended ANC visits for the child they were immunizing at the time of the interview, most women 261 (68%) completed all the four ANC visits for their first child, for the second child, 68 (37%) completed all four ANC visits, and by the third child none of the respondents had actually completed the required four ANC visits. Therefore, a number of factors that influence ANC completion were identified by this study.

The following predisposing factors had a statistically significant influence on ANC completion: The highest level of education (P-Value < 0.002); Occupation (P-Value <0.007); Number of pregnancies had (P-Value < 0.003); Number of children born (P-Values<0.003); Knowledge of the required number of ANC visits (P-Value < 0.000); and distance to the health facility (P-Value < 0.000). These findings concurred with several authors such as Pathak, (2010), Glei, Goldman, Rodriguez, (2003) and Zeine, Mirkuzie, Shimeles, (2010). On the contrary, this study established that: Age (P-Values > 0.123); Marital status (P-Value > 0.541); Religion (P-Value > 0.597); and Income levels (P-Value > 0.092) all had no

significant influence on ANC completion on schedule; this was in line with Chiang (2013), but contrary to Joshi, Torvaldsen, Hodgson, and Hayen (2014).

One of the outstanding enabling factors for completion of four ANC visits was honoring return dates/appointments, as reported by 225 (87%) and women who were aware of their scheduled ANC visits were nearly twice more likely to complete all the four ANC visits compared to those who were not (Odds Ratio= 1.909). Availability and mode of transport was closely linked to completion of four ANC visits. This was in agreement with earlier studies conducted in Zimbabwe by Mathole, Lindmark, Majoko, and Ahlberg (2004) and in Pakistan by Mumtaz, and Salway (2005).

An additional critical enabling factor was the community initiative/programs that promoted ANC completion. This was indeed found to have a significant influence on ANC completion (P-Value < 0.024), specifically in Kiruhura, the community initiatives/ programs that promoted ANC completion included mainly VHTs, whose major roles were to sensitize community and encourage mothers to attend and complete all the four ANC visits by referring them and Marie Stopes whose major role was to provide maternity voucher cards (to reduce on transport, ANC and delivery costs) and community awareness.

A number of women's perceptions were equally found to influence their completion of four ANC visits on schedule, such as: knowledge on the importance of going for antenatal care during pregnancy, specifically, women who knew the importance of ANC visits during pregnancy were found to be more likely to complete all the four ANC visits (Odds Ratio = 1.421). Women who reported to be satisfied with ANC services were more likely to complete all their four ANC visits as compared to those who were dissatisfied (Odds Ratio = 1.286) and women who perceived ANC services at the health facility to be mother friendly, were more likely to complete all the four ANC visits as compared to those who felt otherwise (Odds Ratio= 1.296).

5.2 Conclusion

Conclusively, the study findings indicated that the trend in ANC completion among women in Kiruhura that brought their children for immunization was slightly higher that the ANC completion status identified at the beginning of this study. So many factors that influence the completion of the four required ANC visits on schedule in Kiruhura district were identified during the study.

Predisposing factors included: level of education, occupation where most women were farmers and this facilitated transport plus other needs during ANC visits. Number of pregnancies and number of children born significantly contributed to ANC completion. Knowledge on the required number of ANC visits was a very big contributor, this was attributed to: routine health education sessions at the health facility, one on one advice from health workers, a number of awareness programs in the district carried out by different leaders both technical and political using local Radios and other communication channels and opportunities.

Motorcycles "Boda bodas" as quick means of transport increased the level of accessibility of ANC services especially with women that could afford and this contributed significantly to ANC completion of the four recommended visits.

Kiruhura district scaled up ANC services in all health facilities from level III and above. They went ahead to equip them with personnel, supplies and infrastructure with regular opening days. This helped in reducing distance for some women while visiting the health facility, hence contributed to ANC completion.

Women's perceptions on ANC services utilization were equally found to influence their completion of four ANC visits on schedule, such as: knowledge on the importance of going for antenatal care during pregnancy and women's satisfaction with ANC friendly services. Health workers had a big input in educating and providing ANC services. However,

women who fear to be chased by nurses when they come to deliver without completing ANC visits greatly contributed to ANC completion.

One of the major enabling factors was women honoring their return dates and being aware of the scheduled ANC visits. This was attributed to a number of factors that included: follow ups from VHTs during their routine community activities, reminders from husbands, radio sports reminders, return dates written in their ANC attendance book and family support. All these strategies hugely contributed to ANC completion.

Voucher system from Marie Stops that targeted poor women and availed them an opportunity to utilize services at affordable cost played a big role in motivating women for ANC completion, although the vouchers were availed at HC IVs and private clinics.

Supplies like mosquito nets that were given on the first visit, Mama Kits given on fourth visit, free ARVs, iron supplements and other free medications especially at the health facility motivated women to complete four ANC visits.

Cultural beliefs, where ANC attendance during pregnancy was not seen as a woman's role but for the whole family had a significance role in ANC completion. That's why mother-in-laws would be willing to escort their daughter in laws to make sure they have attended and completed ANC.

Therefore, all the study findings clearly indicated that addressing the issue of completion of four ANC visits on schedule needs to adopt a holistic approach taking into account different factors which contribute to completion of ANC visits. The integrated approaches should focus on timely initiation of ANC, knowledge gap on ANC package and its benefits, demand generation and supply factors that influence completion of four ANC visits.

5.3 Recommendations

Therefore, from the research findings, below are the key recommendations to enhance four ANC visits' completion:

5.3.1 Predisposing factors and ANC completion:

1. More awareness creation and community sensitization on the required number of ANC visits by a pregnant mother, as well as its benefits, especially by the CBOs, and already ongoing community programs in the districts like integrating VHTS in MCH programs and district health teams' radio talk shows targeting all pregnant women irrespective of their parity.

2. All stakeholders should aim at promoting girl child education in the communities, this will have a great positive impact not only during pregnancy but also on their future health.

5.3.1.2 Improvement of Women's Perception and ANC Services:

1. The health radio talk show conducted once a month for one hour on Radio five by District Health team members and district local leaders, sponsored by RHITES should be scaled up to other local radio stations that are outside coverage of the current radio, and the district should incorporated this activity in its budget for sustainability purpose.

2. Health workers should unpack and explain to mothers the different services offered during each of the four ANC visits for mothers to appreciate the importance and benefits of attending each of the ANC visits.

3. The government and development partners should devote more resources to MCH programs to avoid stock out of ANC supplies such as mosquito nets, Maama kits, gloves, polythene sheets, medications and also procure ultra sound scan at HC IVs.

4. The district should re-orient health workers in providing customer friendly service especially during heavy clinic days while using limited resources.

5. District Health Educators should introduce short videos in the local language showing important ANC messages and play such videos to the women during ANC visits in order for health workers to start ANC early, optimally utilize few health workers to reduce on mothers' waiting time, ensure mothers who come late for ANC do not miss out on such key ANC messages and also ensure mothers are meaningfully engaged in learning during waiting time.

6. Health centre IIIs that are currently conducting ANC services either once or twice a month should increase on their ANC service provision frequency to at least once a week to provide more opportunities for mothers who start late or miss appointments catch up.

7. The Ministry of Health should recruit more health workers especially midwives according to minimum staffing levels to fill the existing staffing gaps at ANC service points to reduce on waiting time of mothers at the health facilities and create opportunities for community ANC outreaches.

8. Districts should introduce the concept of mother champions who complete the four ANC visits and assign those responsibilities to mobilize and encourage others (Care group). This could be at the facility or within their respective communities.

9. Districts should implement youth friendly services at the health facilities to reduce on teenage pregnancies and offer friendly services to young mothers that will encourage them to complete ANC during pregnancy.

5.3.2 Enabling factors for women to complete recommended ANC visits:

1. In order to encourage honoring of return dates by the mothers, Ministry of Health or districts should put a mechanism of tracking mothers or immediate neighbors phone contact in ANC registers. Then introduce short message (SMS) and or phone call as a reminder system either two weeks, a week and a day prior to the appointment, to remind

the mother to return for subsequent ANC visits. Also teaching mothers with mobile phones on how to set return reminders in their phones.

2. Scale up the current community initiatives/programs that promote ANC completion, such as: The voucher system from Marie Stopes' program that targets ANC vulnerable mothers currently at Hospital, Health Centre IVs and private clinics should be expanded to include health centre IIIs that offer ANC services to increase the accessibility of ANC services.

3. Districts should incentivize VHTs for the ANC services they render in the community such as: home visits, supply of voucher cards, mobilization, and referral. The inceptives may include: token of appreciation, bicycles to easy their transport among others

4. Health facilities should introduce integrated community outreaches where ANC can also be offered in addition to the routine static clinic days to increase the accessibility and availability of ANC services within reach to mothers in rural areas.

5.4 Suggestions for Further Research

From the research findings, below are the areas for further research:

Other studies should be conducted to assess the impact or effectiveness of the community initiatives such as the voucher system by Marie Stopes on utilization and completion of ANC services.

Studies on how women and health system can use the available technology to promote ANC completion.

The other suggested studies would be to find out evidence based interventions that are provided by VHTs and other community structures to promote ANC completion.

REFERENCES

Acharya, L.B. and Cleland, J., 2000. Maternal and child health services in rural Nepal: *does access or quality matter more?'* Health Policy and Planning 15: pp. 223 -240.

Adam, M.B., *et al,* 2014. Improving Maternal and Newborn Health: Effectiveness of a Community Health Worker Program in Rural Kenya. *PLoS ONE9 (8):* e104027.

Ahmed, S. and Mosley, W. H., 2002. 'Simultaneity in the use of Maternal-Child Health care and contraceptives: *evidence from developing countries*'*, Demography* 39: 75 -93.

Al hazmi, J., *et al.,* 2017. Awareness of Antenatal Care Importance among Saudi Pregnant Women in Madina. *Journal of Gynaecology and women's health,* Volume 4 Issue 4.

Amin, M.E., 2005. *Social science research: conception, methodology and analysis*. Kampala, Uganda, Makerere University.

Amoah, B., *et al.,* 2016. Boosting antenatal care attendance and number of hospital deliveries among pregnant women in rural communities: a community initiative in Ghana based on mobile phones applications and portable ultrasound scans. *BMC Pregnancy and Childbirth*.

Andersen, R., and Newman, J.F., 1973. Societal and individual determinants of medical care utilization in the United States. *Milbank Mem Fund Q Health Soc*. **51** (1): pp. 95–124.

 Andersen, R.M., 1995. Revisiting the behavioural model and access to medical care: *does it matter?* Journal of health and social behaviour, 36, pp. 1–10.

Andrade, *et al.,* 2017. Family health strategy and equity in prenatal care: a population based cross sectional study in Minas Gerais, Brazil. *International Journal for Equity in Health,* 16, p. 24.

Atekyereza, P. and Mubiru. K., 2014. Influence of pregnancy perceptions on patterns of seeking antenatal care among women in reproductive age of Masaka District, Uganda. *Tanzania Journal of Health Research.*

Babalola, S., and Fatusi, A., 2009. Determinants of use of maternal health services in

Nigeria-looking beyond individual and household factors. *BMC Pregnancy*

Childbirth, 9, p. 43.

Bbaale, E., 2011. Factors influencing the utilisation of antenatal care content in Uganda. AMJ. Pp.4, 9, 516-526.

Bethan, H., *et al.,* 2016. Timing of the initiation of antenatal care: An exploratory qualitative study of women and service providers in East London. *Midwifery,* 36, pp. 1–7.

Bhatia, J.C., and Cleland, J., 1995. Determinant of maternal care in a region of south India. *Health Transition Review 5,* pp. 127–142.

Browne, J.L., *et al.,* 2016. Health insurance determines antenatal, delivery and postnatal care utilisation: *evidence from the Ghana Demographic and Health Surveillance data*.

Byamugisha, R., *et al.,* 2011. Male partner antenatal attendance at HIV testing clinic in Eastern Uganda: A randomized facility-based intervention trial. *Journal of International Aids Society*.

Campbell-Grossman, C., Hudson, D.B., Keating-Lefler, R., and Yank, J.R., 2009. Issues Compr PediatrNurs. *Community leaders' perceptions of Hispanic, single, low-income mothers' needs, concerns, social support, and interactions with health care services,* 32(1): pp. 31-46.

Chiang, C., *et al.,* 2013. Barriers to the use of basic health services among women in rural southern Egypt. Nagoya *Journal of Med Sci.*

Chiliba, C.M.C., and Koch, S.F., 2015. Utilization of focused antenatal care in Zambia: examining individual- and community level factors using a multilevel analysis. *Health Policy Plan,* 30 (1): pp. 78-87.

Chivonivoni, C., Ehlers, V.J., Roos, J.H., 2008. Mothers' Attitudes towards using Services Preventing Mother-to-Child HIV/AIDS Transmission in Zimbabwe: An Interview Survey. *International Journal of Nursing Studies*, 45, no. 11: pp. 1618–1624.

Chiwaula, C.H., 2011. *Factors Associated with Late Initiation of Antenatal Care among Women of Lilongwe, Malawi.*

Cochran, W.G., 1963. *Sampling Techniques*, 2nd Ed., New York: John Wiley and Sons, Inc. p.75.

Colomar, M., *et al.,* 2017. Reproductive Health. Supply kits for antenatal and childbirth care during antenatal care and delivery: *a mixed-methods systematic review, the qualitative approach.*

Conrad, P.S., *et al.,* 2011. Tropical medicine and international health: TM and I. *T1 - Compliance with focused antenatal care services:* Do health workers in rural Burkina Faso, Uganda and Tanzania perform all ANC procedures. Volume - 1.

Cramér, 1946. *Mathematical Methods of Statistics*. Princeton: Princeton University Press, page 282 (Chapter 21. The two-dimensional case)

Creswell, J.W., 1998. *Qualitative inquiry and research design:* Choosing among five traditions. Thousand Oaks, CA: Sage Publications.

Creswell, 2014. Research Design: Qualitative, Quantitative and Mixed Methods Approaches (4th ed). Thousand Oaks, CA: Sage.

Dairo, M.D., and Owoyokun, K.E., 2010. Factors Affecting the Utilization of Antenatal Care Services in Ibadan, Nigeria. *Benin Journal of Postgraduate Medicine*. 12, pp. 5–7.

Dako-Gyeke, P., *et al.,* 2013. The influence of socio cultural interpretations of pregnancy threats on health-seeking behaviour among pregnant women Accra, Ghana. *MC Pregnancy Childbirth*. Nov 19; 13:211.

Ebuehi, O.M., and Akintujoye, I.A., 2012. Perception and Utilization of Traditional Birth Attendants by Pregnant Women Attending Primary Health Care Clinics in a Rural Local Government Area in Ogun State, Nigeria. *International Journal of Women's Health*, 4, pp. 25–34.

Ediau, M., *et al.,* 2013. Trends in antenatal care attendance and health facility delivery following community and health facility systems strengthening interventions in Northern Uganda. *BMC Pregnancy and Childbirth,* 13(189), p. 11.

Egbewale, B.E., and Bamidele, J.O., 2009. Demographic profile of mothers and their utilization of maternal health-care services, Osun State, Nigeria. *Niger Postgrad Med J. Jun; 16(2):132.*

Fentahun, M.K., 2017. Quality of antenatal care services and completion of four or more antenatal care visits in Ethiopia: A finding based on a demographic and health survey. *BMC Pregnancy and Childbirth.* 17.

Finlayson, K., and Downe, S., 2013. Why Do Women Not Use Antenatal Services in Low- and Middle-Income Countries? A Meta-Synthesis of Qualitative Studies. *PLoS Med,* 10(1): e1001373.

Frumence, G., Nyamhanga, T., Mwangu, M., and Hurtig, A.K., 2014. Participation in health planning in a decentralised health system: Experiences from facility governing committees in the Kongwa district of Tanzania. *Glob Public Health*, 9(10), pp. 1125-38.

Gaudenzi, B., Quazi, A., Quigley, J., and Dicson, A., 2015. Evaluation of control strategies for managing supply chain risks using Bayesian belief model networks. In: *International conference on industrial Engineering and system management*.

Gazali, W.A., and Gana, M., 2012. Barriers to utilisation of maternal health care facilities among pregnant and non-pregnaint women of child bearing age in Council (MMC) and Jere Igas of Borno State, Nigeria.

Gele, A.A., and Sundby, J., 2013. *Attitudes toward female circumcision among people in the Hargeisa district.* Oslo and Akershus University College of Applied Science.

Gharoro, P., and Igbafe, A.A., 2000. *Pattern of drug use amongst antenatal patients in Benin City, Nigeria*. Med. Sci. Monit, 6(1), pp. 84-87.

Ghosh, R., 2012. Child Mortality in India: A Complex Situation. *World Journal of Pediatrics*. 8:11– 18.

Gitonga, E., 2017. Determinants of Focused Antenatal Care Uptake among Women in Tharaka Nithi County, Kenya. *Advances in Public Health.* Volume 2017, pp.1-4.

Glei, D.A., Goldman, N., and Rodriguez, G., 2003. Utilization of care during pregnancy in Rural Guatemala: does obstetrical need matter? *Social Science and Medicine*, 57(12), pp. 2447–2463.

Gross, K., *et al.,* 2013. Timing of Antenatal care for adolescent and adult pregnant women in South-Eastern Tanzania. *BMC pregnancy and childbirth.* Volume – 12.

Gupta, S., *et al.,* 2014. Factors Associated with Four or More Antenatal Care Visits and Its Decline among Pregnant Women in Tanzania between 1999 and 2010. *PLoS ONE*, 9(7): e101893.

Hallowell, *et al.,* 2012). A qualitative study of patients' perceptions of the value of molecular diagnosis for familial hypercholesterolemia (FH). *Journal of Community Genetics*. 8:45–52

Hasan, I.J., and Nisar, N., 2012. Women's Perceptions regarding Obstetric Complications and Care in a Poor Fishing Community in Karachi. *Journal of Pakistan Medical Association (JPMA), 52:148.*

HDP, 2016/2020. Kiruhura District Health Development Plan. Financial year 2016/ 2020

Heaman, M., *et al.,* 2014. Barriers, motivators and facilitators related to prenatal care utilization among inner-city women in Winnipeg, Canada: a case–control study. *BMC Pregnancy and Childbirth.*

Hofmeyr, G.J., and Hodnett, E.D.H., 2013. Antenatal care packages with reduced visits and perinatal mortality: a secondary analysis of the WHO antenatal care trial - Comentary: routine antenatal visits for healthy pregnant women do make a difference do make a difference. *Reproductive Health.*

Hogan, M.C, *et al.,* 2010. Maternal mortality for 181 countries, 1980-2008: a systematic analysis of progress towards Millennium Development Goal 5. *The Lancet*; 375(9726):1609-23.

Hurst, T.E., *et al.,* 2015. Demand-side interventions for maternal care: evidence of more use, not better outcomes. *BMC Pregnancy and Childbirth*, 15:297. Department of Global Health and Population, Harvard School of Public Health, USA.

Ibnouf, A.H, van den Borne, H.W. and Maarse, J.A., 2007. Utilization of Antenatal Care Services by Sudanese Women in their Reproductive Age. *Saudi Medical Journal.* 28 (5), pp. 737-743.

Joshi, C., Torvaldsen, S., Hodgson, R., and Hayen, A., 2014. Factors associated with the use and quality of antenatal care in Nepal: *BMC Pregnancy Childbirth*. 2014 Mar 3; 14:94.

Karl, P., and Ajegbomogun, B., 2005. Utilization of Antenatal Care in a Nigerian Teaching Hospital. *African Journal of Reproductive Health*, 9, pp. 159–161.

Kawungezi, P.C., et al., 2015. Attendance and Utilization of Antenatal Care (ANC) Services: Multi-Center Study in Upcountry Areas of Uganda**.** *Open Journal of Preventive Medicine.* 05(03):132–42. doi:10.4236/ojpm.2015.53016.

Khan M, *et al*., 2015. Prenatal care in Kinshasa: Knowledge, beliefs, and barriers to timely care. Volume 15. P.93; 7.

Khanal, V., Zhao, Y., and Sauer, K., 2014. *Role of antenatal care and iron supplementation during pregnancy in preventing low birth weight in Nepal*: comparison of national surveys 2006 and 2011. Archives of Public Health, 72:4

Kiruhura district, 2012. *Statistical Abstract.*

Kiruhura district, 2016. *Annual Report.*

Kiruhura District Health Office, 2017. District Health Information System (DHIS) II.

Klaiman, T., Pantazis, A., Chainani, A., and Bekemeier, B., 2016. Using a positive deviance framework to identify Local Health Departments in Communities with exceptional maternal and child health outcomes: a cross sectional study**.** *BMC Public Health.*

Kraschnewski, J.L., *et al.,* 2014. Does Technology Fill the Gap Created by the Prenatal Care Visit Structure? Qualitative Focus Group Study with Pregnant Women. *Journal of Medical Internet Research.* 16 (6) e147.

Kyomuhendo, G.B., (2003) .Low Use of Rural Maternity Services in Uganda: Impact of Women's Status, Traditional Beliefs and Limited Resources. Makerere University, Kampala, Uganda.

Lagarde, M., and Palmer, N., 2008. The impact of user fees on health service utilization in low- and middle-income countries: how strong is the evidence? *Bull World Health Organ,* 86(11), pp. 839-848. Pub Med.

Lee, L.C., Yin, T.J.C., and Yu, S., 2009. Prenatal examination utilization and its determinants for immigrant women in Taiwan: an exploratory study. *The journal of nursing research*: JN; 17(1), pp.73–82.

LeFevre, A.E., *et al.,* 2017. Mobile Technology for Community Health in Ghana: what happens when technical functionality threatens the effectiveness of digital health programs?

BMC Medical Informatics and Decision Making. BMC series.

Lincetto, O., Anoh, S.M., Gomez, P., and Munjanja, S., 2015. *Opportunities for Africa's Newborns*. pp. 51 – 58.

Mahshid, A., *et al.,* 2002. Factors associated with successful pregnancy outcomes in Upper Egypt: A positive deviance inquiry. *Food and Nutrition Bulletin,* Volume. 23, The United Nations University.

Mathole, T., Lindmark, G., Majoko, F., and Ahlberg, B.M., 2004. A qualitative study of women's perspectives of antenatal care in a rural area of Zimbabwe. *Midwifery,* 20(2), pp. 122–132.

Matsumura, M., and Gubhaju, B., 2011. Women's status household structure and the utilization of maternal health services in Nepal. *Asia-Pacific Population Journal*, 16 (1), pp. 23– 44.

Mesganaw, F., Olwit, G., and Shamebo, D., 1990. Determinants of ANC Attendance and Preference of Site or Delivery in Addis Ababa. *Ethiopia Journal of Health Development*, 6, pp. 17–21.

Millikin, L., 2017. *Representative Samples: Does Sample Size Really Matter?*

Ministry of Health Uganda, 2010. *Health Sector Strategic and Investment Plan; 2010/11 – 2014/15*

Ministry of Health Uganda, 2010. Annual Health Sector Performance Reports 2011 – 2016.

Ministry of Health Uganda, 2016. Annual Health Sector Performance report 2015/2016

Ministry of Health Ethiopia, 2014. *Mini Demographic and Health Survey*.

Ministry of Health, 2014. Health Sector Investment plan.

Mohan, D., *et al.,* 2015. Determinants of postnatal care use at health facilities in rural Tanzania: multilevel analysis of a household survey. *BMC Pregnancy and Childbirth*, 15, pp. 282.

Mugenda, O.M., and Mugenda, A.G., 2003. *Research Methods: Quantitative and Qualitative Approaches*. Revised. Nairobi, Kenya: ACTS Press.

Mullick, S., Kunene, B., Wanjiru, M., 2005. *Involving men in maternity care:* health service delivery issues.

Mumtaz, Z., and Salway, S., 2005. I never go anywhere: extricating the links between women's mobility and uptake of reproductive health services in Pakistan. Social Science and Medicine; 60(8), 1751–1765.

Navaneetham, K., and Dharmalingam, A., 2002. Utilization of maternal health care services in southern India. *Social Science and Medicine,* 55(10), pp. 1849–1869.

The New Vision, October 6, 2017.

Nguyen, H.T.H., *et al.,* 2012. Encouraging Maternal Health Service Utilization: An Evaluation of the Bangladesh Voucher Program. *Social Science and Medicine,* 78, pp. 989–996.

Obale, F., and Bellows, B., 2015. *Community-level effect of the maternal health voucher program on out-of-pocket spending on delivery services at private health facilities in Uganda.*

Oyerinde, K., 2013. Can Antenatal Care Result in Significant Maternal Mortality Reduction in Developing Countries? *Journal of Community Medicine and Health Education,* 3:e116.

Pallikadavath, S., Foss, M., and Stones, R.W., 2004. Antenatal care: provision and inequality in rural North India. *Social Science and Medicine,* 59(6), pp. 1147–1158.

Paredes, I., *et al.,* 2015. Factors associated with inadequate prenatal care in Ecuadorian women. *International Journal of Gynecology and Obstetrics,* 88(2), pp. 168–172.

Pathak, P.K., Singh, A., and Subramanian, S.V., 2010. Economic inequalities in maternal health care: antenatal care and skilled birth attendance, India, 1992-2006. *PLoS One*, 5 (10):e13593.

Pell, C., *et al.,* 2013. Factors Affecting Antenatal Care Attendance: Results from Qualitative Studies in Ghana, Kenya and Malawi. *PLoS ONE* 8(1): e53747.

Rahman, M., 2011. Wealth Inequality and Utilization of Reproductive Health Services in the Republic of Vanuatu: Insights from the Multiple Indicator Cluster Survey, 2007. *International Journal for Equity in Health,* 10, pp. 58.

Zuhal Rahmani1 and Mette Brekke, 2013. Antenatal and obstetric care in Afghanistan – a qualitative study among health care receivers and health care providers. *BMC Health Services Research*.

Ramazani, N., *et al.,* 2014. *Effect of Anticipatory Guidance Presentation Methods on the Knowledge and Attitude of Pregnant Women Relative to Maternal, Infant and Toddler's Oral Health Care*, Mephis.

Regassa, N., 2011. Antenatal and postnatal care service utilization in southern Ethiopia: a population-based study. *African Health Sciences*, *11*(3), pp. 390–397.

Rurangirwa, A.A., *et al.,* 2017. Determinants of poor utilization of antenatal care services among recently delivered women in Rwanda; a population based study. *BMC Pregnancy and Childbirth*, 17:142.

Say, L., *et al.*, 2014. Global causes of maternal death: a WHO systematic analysis. *Lancet Glob Health,* 2(6):e323-33.

Ghosh, R., and Sharma, A.K., 2010. Intra- and inter-household differences in antenatal care, delivery practices and postnatal care between last neonatal deaths and last surviving children in a peri-urban area of India. *Journal of biosocial science,* 42, pp. 511–530.

Shekar, M. Habicht, J.P, Lathan, M.C., 1992. Use of Positive-Negative Deviant Analyses to Improve Programme Targeting and Services: Example from the TamilNadu Integrated Nutrition Project . *International Journal of Epidemiology*, Volume 21, Issue 4, 1 August 1992, Pages 707–713.

Simkhada, B., Teijlingen, E.R., Porter, M., and Simkhada, P., 2008 a). Factors Affecting the Utilization of Antenatal Care in Developing Countries: Systematic Review of the Literature. *Journal of Advanced Nursing,* 61, pp. 244–260.

Simkhada, B.D, Van Teijlingen, E.R., Porter, M., and Simkhada, P., 2008 b). Factors affecting the utilization of antenatal care in developing countries: systematic review of the literature. *Journal of Advanced Nursing*, 61(3), pp. 244-60.

Singh, D.R and Jha, T., 2016. Exploring Factors Influencing Antenatal Care Visit Dropout at Government Health Facilities of Dhanusha District, Nepal. *American Journal of Public Health Research, 2016,* Vol. 4, No. 5, 170-175.

Ssengooba, F., *et al.,* 2010. *Maternal Health Review*. Makerere University Institute of Public Health Systems Development Programme Uganda.

Sumankuuro, J., Crockett, J., and Wang, S., 2017. The use of antenatal care in two rural districts of Upper West Region, Ghana. *PLoS ONE.* 12(9): e0185537.

Turyasiima, M., Tugume, R., and Odongo, A.A., 2014. Determinants of First Antenatal Care Visit by Pregnant Women at Community Based Education. Research and Service Sites in Northern Uganda. *East African Medical Journal.* 91(9), pp. 317–322.

Uganda Bureau of Statistics, 2016. *The National Population and Housing Census 2014 – Main Report*, Kampala, Uganda.

Uganda Bureau of Statistics, 2015. *Uganda Malaria Indicator Survey 2014-15*. Kampala, Uganda, and Rockville, Maryland, USA: UBOS and ICF International.

UDHS, 2005. Uganda Demographic and Health Survey, 2005.

Fotso J.C, Ezeh A, Oronje R. 2008. Provision and use of maternal health services among urban poor women in Kenya: what do we know and what can we do? *Journal of urban health*. 85(3):428-42.

UDHS, 2016. *Uganda Demographic and Health Survey.*

UNAPR, 2015. *Uganda National Annual Health Sector Performance Report.*

UNAPR, 2016. *Uganda National Annual Health Sector Performance Report.*

UNFPA Uganda, 2014. *Maternal health thematic fund annual report*. Improving maternal health: Surging towards the 2015 deadline.

UNICEF, WHO, UNFPA and World Bank, 2014. Trends in maternal mortality in 1990 to 2013: *estimates by WHO, UNICEF, UNFPA, World Bank and United Nations population division.* Geneva: World Health Organization.

UNICEF, 2015. Keeping children alive, safe and learning. *Government of Uganda/ UNICEF Uganda Country Programme Action plan.*

USAID, 2015. *Maternal Health Vision for Action Evidence for strategic approaches report.*

USAID Uganda, 2015. *Barriers and coping strategies with the uptake of MCH/ANC-linked services in a selected health facility catchment area in Uganda.* Findings of a Rapid Qualitative Assessment. Communication for Healthy Communities.

USAID, 2016). USAID social and behaviour change programs for ending preventable child and maternal deaths.

Villar, J., *et al.,* 2002. The WHO Antenatal Care Randomized Controlled Trial: *Manual for Implementation of New Model.* 2002. pp. 6-28.

Wangalwa, G., *et al.,* 2012. Effectiveness of Kenya's Community Health Strategy in delivering community-based maternal and newborn health care in Busia County, Kenya: non-randomized pre-test posttest study. *Pan Afr Medical Journal*, 13(Supp 1):12.

Weller, S.C., Ruebush II, T.R., and Klein, R.E., 1997. Predicting treatment-seeking behaviour in Guatemala: A comparison of the Health Services research and Decision-Theoretic approaches. *Medical Anthropology Quarterly*, Volume: 11 (2), pp. 224-245.

World Health Organization, 2017. WHO guidelines: *maternal, reproductive and women's health.*

World Health Organization, 2017. World Health Statistics. *Monitoring Health for the SDGs.*

World Health Organization, 2015. *The World Health Report:* Make Every Mother and Child Count.

World Health Organization, 2015. *World Health Statistics*. Geneva:

WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. 2015. *Trends in Maternal Mortality: 1990 to 2015*. Estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. P.xi.

World Health Organization, 2015. *Reproductive Health Indicators.*

World Health Organization, 2016. *WHO recommendations on antenatal care for a positive pregnancy experience.*

World Health Organization, 2013. *Global health expenditure database*. Geneva.

World Health Organization, 2014. *Maternal mortality*. In: Fact sheets. N348th ed. 2014.

World Health Organization, 2014. Evidence and recommendation on community mobilization through facilitated participatory learning and action cycles with women's groups from maternal and new born health. *Maternal mortality. In: Fact sheets*. N348th edition.

Wray, J.D., 1972. Can we learn from successful mothers? *Journal of Tropical Pediatric Environment Child Health.*

Yaya, S., *et al.,* 2017. Timing and adequate attendance of antenatal care visits among women in Ethiopia. *PLOS.*

Zeine, A., Mirkuzie, W., and Shimeles, O., 2010. Factors Influencing Antenatal Care Service Utilization in Hadiya Zone. *Ethiopian Journal of Health Sciences,* 20: pp. 75–82.

Zikmund, W.G., 2003. *Business Research Methods*. 7th Edition, Thomson South Western, Ohio

APPENDICES

Appendix I: Data Collection Tools

Table of Variables

#	Objectives	Variables	Indicators	Source of data	Data collection methods	Data collection tools
1.	To examine the status in utilization of ANC services	The level of completion of ANC on schedule	No. of women completing 4 ANC visits on Schedule	Health facility records for 1 year, Maternal passports or community inquiry.	Records review, individual survey, health centre survey.	Checklist Interviewer administered questionnaire and interview guide.
2.	To establish predisposing factors that influence women's perception on value of focused ANC	Predisposing factors that influence ANC completion of ANC on schedule	Age, parity, marital status, education level, income status, occupation, tribe, distance from health facility, etc.	Women that have recently given birth –during post-natal and child immunization sessions.	Interview	Interview guide and interviewer administered questionnaire
3.	To determine the unique enabling factors that motivate women to complete ANC on schedule	Enabling factors for ANC completion on schedule	No. of Women who completed 4 recommended visits	Women that have recently given birth – during child immunization sessions	Interview	Interview guide and interviewer administered questionnaire
4.	Then the relationship between predisposing factors and enabling factors with ANC completion. objective	Predisposing factors and level of ANC completion	No. of women who completed ANC in relation to predisposing factors	Women that have recently given birth during immunization and Women in the community	Interview and Focus Group Discussion (FGD)	Interview guide, questionnaire and Focus Group Discussion guide
		Enabling factors and the level of ANC completion	Level of ANC completion in relation to enabling factors	Women that have recently given birth at immunization sessions and in the community	Interview and Focus Group Discussion (FGD)	Interview guide and Focus Group Discussion guide

#1: Questionnaire for ANC completion targeting mothers attending immunization clinic with children up to the age of nine (9) months in Kiruhura district

Introduction

Dear respondent, you have been selected to participate in this study, entitled **Factors Influencing Completion of Antenatal Care among Women in Kiruhura District, Western Uganda. The purpose of the study is in partial fulfilment** for the award of Master of Public Health - Health promotion of Uganda Martyrs University. The findings from the study will be shared with relevant stakeholders, with the hope of informing decision making. This may not only help inform key stakeholders in Kiruhura in making decisions for better health related ANC services but also Ministry of Health and other health institutions may also use the findings to clearly understand the antenatal needs of women in Uganda to relevantly put in remedies to mitigate the challenges undergone by pregnant mothers and design appropriate interventions to promote maternal and child health.

Informed Verbal Consent (Interviewer will read the consent to the respondent to agree/ disagree)

I am going to explain to you about the study and you will be required to agree or disagree to participate in this study that focuses on **Factors Influencing Completion of Antenatal Care among Women in Kiruhura District, Western Uganda.**

You are assured of privacy, anonymity and confidentiality and that you have the option not to participate, and the right not to respond to some questions or to withdraw your participation anytime if you are uncomfortable with the questions.

You have been informed that the study is voluntary and the findings can be given to you if you ask.

Following this explanation, are you willing to participate in the study? Yes☐ No ☐

Date: _____

Direction: *This questionnaire will take about 20 minutes which is not a lot of time. Thank you for your patience and time in advance. I am going to ask you questions and I expect you to answer as honest as possible. Feel free to let me know if the question is not clear, I will repeat it for you. I will be writing your responses in the spaces provided in this questionnaire.*

Section 1: Personal Information

1. Area of residence: Sub County:...

2. Age: Tick appropriate: 15-19 ☐ 20-24 ☐ 25-29 ☐ 30-34 ☐ 35-39 ☐

40 to 44 ☐ 45 and above ☐

4. Occupation: Housewife ☐ Business Woman ☐ Civil servant ☐ Farmer ☐
Others please specify..

5. Marital status: Married ☐ Single ☐ Divorced ☐ Widowed ☐ Others
specify...

6. Religion: Christian ☐ Muslim ☐ Traditionalist ☐ Others
specify:..........................

7. Highest level of education: Primary level ☐ Secondary ☐

Tertiary institution ☐ None ☐

8. Level of income every three months: 10,000 -100,000 ☐ 110,000 – 200,000 ☐
210,000 -300,000 ☐ 310,000 – 400,000 ☐ 410,000 – 500,000 ☐

Above 500,000 ☐

9. a) Number of pregnancies you have had: 1-2 ☐ 3 ☐ More than 4 ☐

b) Number of children ever born by you: 1-2 ☐ 3-4 ☐ Above 4 ☐ None ☐

c) Number of children alive ☐

d) Name all the children below five years and provide information when they were born:

e) Review for each child ANC attendance in the table below (**By interviewer**)

#	Name of the Child	When he/she was born	Number of ANC visits during pregnancy	Health facility
1.				
2.				

10. a) For this baby you are immunizing, did you attend ANC visits? Yes ☐ No ☐ If
no,

why?...

b) If yes, state the number of times you visited a health facility for antenatal care services during pregnancy for this baby? 1 ☐ 2 ☐ 3 ☐ 4 ☐ more than 4 ☐

c) If less than 4, find out why? ....

11. If you attended 4 or more ANC visits, what were the reasons for all the visits...

12. How many times should a pregnant mother attend ANC visits?.......................................

13. Which health facility did you visit for ANC?..

14. How far is the health facility from your home? 0-5 km ☐ 6-10km ☐ more than 10 kms ☐

15. How many people do you live with in your household?....... ....

16. Which family member escorted you to the health facility during ANC visits?...

Section 11: ANC services and perceptions

1. Do you know why a woman should go for antenatal care during pregnancy? Yes ☐ No ☐ If yes, give reasons………………………………………….

2. a) Mention any challanges you faced while accessing Antenatal care (ANC) during the last pregnancy..
b. How did you overcome some of those challanges?...

3. a) When you compare with your previous pregnancies, have things improved, are they still the same or they have become worse?……………………………………………………………………………
b) What could have contributed to your answer above?...

4. Please tell me the services you received during ANC
   …………………………………………………………………………………………

5. Do you think the ANC services offered to you at the health facility met your individual needs as a mother during pregnancy? Yes ☐ No ☐ if yes, give reasons for

your response……………………………………………………………………………………

6. If no, explain any additional ANC services that you feel need to be added or removed to the current package to benefit you as a mother……………………………………………………………………………………

7. In your opinion, are the ANC services delivered at the health facility mother friendly? Yes ☐ No ☐ Please tell me why you think that ANC services are friendly……………………………………………………………………………………

8. If No, please tell me some of the reasons why you think such ANC services are not mother friendly……………………………………………………………………………………

9. Please explain to me ways on how such services can be improved:……………………………………………………………………………………

10. Interacting with the health care service providers during ANC, explain your perspective about their attitude towards mothers attending ANC..

Section 111: Enabling Factors to ANC completion

1. What enabled you to complete the 4 ANC visits? (Transport, VHTs, Program etc). Describe?..

3. From records, you were able to go for ANC for the number of times you were required to attend. Were you aware of the services offered on each scheduled ANC visits? ……………………………………………………………………………………………… Do you know of any reasons why other women that you have interacted with complete ANC?..

4. a) How difficult was it to get to the health center for all 4 ANC visits during your recent pregnancy? Very easy to reach ☐ Easy to reach ☐ Not easy to reach ☐

b. Why? …………………………………………………………………………………

c. What kind of mode of transport have you used to get to this health facility for ANC services? ...Walking ☐ Bicycle ☐ Motorcycle ☐ Vehicle ☐

5. What are the opening days for ANC at the facility you visited during the last pregnancy? Daily ☐ Weekly ☐ Twice a week ☐ Monthly ☐ Don't know ☐

6. Are the opening days convenient for you? Yes ☐ No ☐ Give reasons for your answer: ....

7. When you realized that you were pregnant, what did you
do?..

8. How long did it take you to go for the first ANC visit at the health facility?

9.   What made you to go for ANC at that time you decided to go?

10. What kind of information did you receive from health workers during ANC?
....

11. Was there any other information you expected to receive from health workers but was not
given?...

12. a) Apart from the health facility, did you receive or use any support from any other
source? Yes ☐   No ☐

b. If yes, please tell me the nature of support you
received……………………………………………………………………………

13. Are there any community initiatives/programs that promote ANC completion in your
community? Yes ☐ No ☐ If yes, mention the initiatives and explain their roles in the
community……………………………………………………………………………………

14. Please explain, if there is any kind of support from government through Kiruhura as a

district that you think influenced your completion of ANC

visits?...

*This is the end of the interview. I once again thank you for your time and for accepting to
participate in this study. The information you have provided will remain confidential.*

Thank you!

c.   Translated version of individual questionnaire

Okwanjura

Omukundwa, waatooranwa kwejumba omu kucondooza oku. Omutwe gw'okucondooza oku
ni   "**enshonga
ezirikukwata aha kumarayo emirundi yoona omu okukazi w'enda ashemereire
kutaayayira eirwariro kutunga obuheereza bw'okukyebera enda omu distrikiti ya
Kiruhura, omuri Burengyerwa eizooba bwa Uganda"** Omugasho gw'okucoondooza oku
n'okwenda kuhiikiriza okutunga eidaara ry'eby'obwegyese erya diguri ya kabiri ya Public
Health - Health promotion kuruga omu Yuniversity ya Uganda Martyrs. Ebirarugye omu
kucondooza oku nibyaija kbaganwa n'abakuru abu kirikukwataho, obwo nyine amatsiko ngu
nibiija kubahwera kukora enteekateeka nungi. Ekindi, okucpndooza oku aihireho kuhwera

abakuru omu Kiruhura district kukora enteekateeka nungi omu by'amagara ebiine akawate na obuheereza bw'okukyebera abakazi b'enda, nibyija kuyamba ekitongore ky'eihanga eky'eby'amagara ekikuru n'ebindi bitongore ebirikukora aha by'amagara kumanya enshonga z'abakazi b'enda omu Uganda kwenda kubasa kutaho oburyo bw'okumaraho ebizibi ebi bari kurabamu kandi bakongyera omutindo aha buheereza bw'eby'amagara ga baamaama n'abaana.

Informed Verbal Consent (Interviewer will read the consent to the respondent to agree/ disagree)

Naaza kukushoboororera okucondooza oku kandi noija kushabwa kwikiriza nari kwanga kwikiriza kwejumba omu kucondooza oku okurikukwata aha **enshonga ezirikukwata aha kumarayo emirundi yoona omu okukazi w'enda ashemereire kutaayayira eirwariro kutunga obuheereza bw'okukyebera enda omu distrikiti ya Kiruhura, omuri Burengyerwa eizooba bwa Uganda.**

Ninkuhamiza ngu ebi oraagambe byona ni byija kuba eby'ekihama kandi n'eziina byawe tiririkwija kuhandikwa ahantu hoona. Kandi oine obugabe kwaga kwejumba omu kucondooza oku nari kwanga kugarukamu ebibuuzo bimwe nari kurekyera rwagati waahurira otarikwenda kugumiza kugarukamu ebibuuzo bitaribimwe na bimwe.

Waagambirwa ngu okucondooza oku n'okwokwekundira kandi waaba nooyenda kutunga ninga kumanya ebyakurugamu, noikirizibwa kubishaba kandi okabitunga.

Mbwenu, turikugyendera aha oku naakushoboororera, waikiriza kwejumba omu kukyondooza oku? Eaago ☐ Ingaaha ☐

Ebiro:……………………………………

Okworekyerara: *Ebibuuzo ebi nibyija kutwara edakiika abiri ezitari nyingi munonga. Webare kugumisiriza n'okumpa obwire bwawe. Naaza kukubuuza ebibuuza kandi ninteekateeka ngu nooza kugarukamu n'amazima oku krirkubaasika. Hurira otaine okutiina kwona kungambira ngu ekibuuzo tiwaakikyenga, ninyija kukikugarukiramu. Ninyija kuba nimpandiika ebigarukwamu byawe omu myanya eri aha rupapura or.*

Section 1: Personal Information

1. Nootuura nkahi: Egomborora:...

2. Emyaka: Tick appropriate: 15-19 ☐ 20-24 ☐ 25-29 ☐ 30-34 ☐ 35-39 ☐

40 to 44 ☐ 45 and above ☐

4. Omurimo gwawe? Omukyara w'ahaka ☐ omukyara omushuubuzi ☐ omukozi wa Gavumenti ☐ omuhingi ☐ ebindi...

5. Eby'obufumbo: oshwirwe ☐ Toshwirwe ☐ okataana na Baro ☐ efaakazi ☐
Ebindi. ....

6. Ediini: Omwikiriza wa Kristu ☐ Omusiraamu ☐ Ow'eby'obuhangwa ☐
Ebindi:..

7. Orurengo rw'eby'obwegyese: Puraimaare ☐ Siniya ☐

Insitushoni ☐ Tinshomire ☐

8. Entasa y'esente buri myezi eshatu: 10,000 -100,000 ☐ 110,000 – 200,000 ☐
210,000 -300,000 ☐ 310,000 – 400,000 ☐ 410,000 – 500,000 ☐

Ahaiguru ya 500,000 ☐

9. a) oragizire enda zingahi?: 1-2 ☐   3 ☐ ahaiguru ya 4 ☐

b) Abaana obu ozaire: 1-2 ☐ 3-4 ☐ ahaiguru ya 4 ☐ Tinkazaaraga ☐

c)Abaana abariho hati ☐

d) Amaziina g'abaana boona abari ahnsi y'emyaka etaano n'obubaazarwa:

e) Review for each child ANC attendance in the table below (**By interviewer**)

#	Eiziina ry'omwana	Obu yaazaarwa	Emirundi ei waagire kukyebeza oine enda	Eirwariro
1.				
2.				

10. a) Ahabw'omwana ogu ou oriyo nooteeza poliyo, okaza kukyebeza enda ye?   Eego ☐
Ingaaha ☐ yaaba eri ingaaha, ahabw'enki?...

b) If yes, Ngambira emirundi ei waagiire aha eirwariro kukyebeza obu waabaire oine enda
y'omwana ogu? 1 ☐ 2 ☐ 3 ☐ 4 ☐ ahaiguru y'emirundi 4 ☐

c) If less than 4, ahabw'enki? ....

11. If you attended 4 or more ANC visits, ni nshonga ki ezakureetiire waaza kukyebeza
emirundi egyo yoona?...........……………………………….......................................

12. N'emirundi engahi ei omukazi w'enda ashemereire kuza ahairwariro kukyebeza enda?...

13. Ni rwariro ki eri waataayayiire kukyebeza enda?...

14. Hariho orugyendo rurikwingana ki kuruga omu ka yaawe kuza aha eirwriro eryo? 0-5 km ☐ 6-10km ☐ ahaiguru ya 10 kms ☐

15. Omu ka yaawe n'otuuramu n'abantu bangahi?....... ....

16. Omu b'eka yaawe, nooha owaakushendekyereize orikuza kukyebeza enda?...

Section 11: ANC services and perceptions

1. Noomanya ahabw'enki abakazi b'enda bashemereire kuza kukyebeza? Yes ☐ No ☐
If yes, ha enshonga…………………………………………

11. a) Ngambira obuzibu obu waabugaine omu kutunga obuheeraza bw'okukyera enda obu waabaire oine enda yaawe arikushembayo..
   b. Obuzibu obwo okaburabamu ota?. ....……………………………………

12. a) Waagyeragyeranisa n'enda zaawe ez'enyimaho, nooteekateeka embeera zihindukireho, nizikushushana ninga zeeyongyeire kuba mbi? ……………………………………………….

   b) Niki ekyakubaasa kuba kireetsire eki waagarukamu omu kibuuzo eki twaheza? ....

13. Ninkunshaba kungambira obuheereza obu waatungire omu kukyebeza enda …………………………………………………………………………………………………

14. Nooteekateeka obuheereza bw'abakazi b'enda oburikuheebwa nibuhikiiriza ebyetenga byawe nk'omuzaire omu bwire bw'enda? Yes ☐ No ☐ if yes, ahabw'enki/…………………………………………………………………

15. If no, nshoboororera obuheereza obundi obu orikuteekateeka ngu nibwetenga kwongyerwaho nari kwihwaho aha mubaro gw'obuheereza bw'abakazi b;'enda obwa kubaasa kukuhwera nka maama……………………………………………………………

16. Omunteekateeka yaawe, obuheerza oburikuhebwa abakazi b'enda aha eirwariro nibukwatagana gye n'aba maama? Yes ☐ No ☐ ninkushaba kungambira ahabw'enki nooteekateeka ngu nibukwatagana gye n'aba

116

maama…………………………………………………………………………………………

17. If No, ninkushaba kungambira ahabw'enki nooteekateeka ngu tiburukukwatagana gye n'aba maama …………………………………………………………………………………

18. Ninkushaba kungambiri emiringo ei orikuteekateeka ngu obuheereza obwo nibubaasa kwongyerwamu
omutindo:…………………………………………………………………………………

19. Mbwenu iwe kuwaabaire nooganiira n'abazaarisa obwo ogiire kukyebeza enda, nooreeba ngu nibateekateeka ki aha bakazi b'enda abarikuba bagiire kukyebeza

………………………………………………………………………………………………

Section 111: Enabling Factors to ANC completion

2. Niki ekyakubasiise kumarayo entaayaayo zoona 4 ez'okukyebeza enda? (entabura, ba VHT,   enteekateeka   etc). shoboorora?..
....

3. Nindeeba okabaasa kumarayo emirundi yoona ei waabaire oine kuza kukyebeza, okaba noomanya ebiro n'obwire ebi waabaire oine kuguma noogiraho kukyebeza?
………………………………………………………………………………………………

5. Noomanya enshonga yoona ahabw'nki abakyara abandi obu oragaaniireho naabo barikumarayo entaayaayo z'eirwariro zoona z'okukyebeza enda?

....

a) Kikaba kiine obuzibu buta kuhaza aha eirwariro omu ntaayaayo zaawe zoona ina ahabw'end ayaawe erikushembayo? Very easy to reach ☐ Easy to reach ☐ Not easy to reach ☐

b)ahabw'enki? …………………………………………………………………….

c. Ni ntambura ki ei orikukoresa kuza aha eirwariro eri? ...Walking ☐ Bicycle ☐ Motorcycle ☐ Vehicle ☐

5. Eirwariro ryawe niriha mazooba ki abakazi b'enda kuza kukyebeza? Daily ☐ Weekly ☐ Twice a week ☐ Monthly ☐ Don't know ☐

6. Nooteekateeka amazooba ogo nikwatagana gye n'emirimo yaawe? Yes ☐ No ☐ heereza enshonga:

………………………………………………………………………………………………

7. Ku waakimanyire ngu oine enda, okakora ki?..

8. Okatwara obwire burikwingana ki kuza aha eirwariro kukyebeza omurundi gw'kubanza?

....

9. Niki ekyakuhaririize kuza kukyebeza obwire obu waagiireyo? ....

10. Aha'eirwariro, abashaho bakakuha butumwa ki omu ntaayaayo z'okukyebeza enda? ....

Haine obundi butumwa obu waabaire nooteekateeka kutunga kuruga aha bashaho kwonka obu otaratungire?...

12. a) Oihireho aha eirwariro, haine obuyambi obundi bwona obu waatungire nari obuwaakoreise kuruga ahand hantu hoona ⬚⬚ No ⬚⬚

b. If yes, ninkushaba kungambira omuringo gw'obuyambi obwo ....

13. Hariho enteekateeka/entebeekanisa z'omubyanga/z'omubyaro zoona ezirikushagika/kuhwera abakazi b'enda kumarayo entaayaayo zoona z'okukyebeza enda omu kyaro kyawe? Yes ⬚⬚ No⬚⬚ If yes, ngambira enteekateeka/entebeekanisa ezo kand onshoboorore omurimo gwazo/oku zirikukora omu kyanga

…………………………………………………………………………………………………

Ninkusha kusoboorora haaba hariho obuyambi bwona kuruga omu Gavumenti obwo burikurabira ha disturikiti ya Kiruha obu orikuteekateeka bukakusikiriza kumarayo enyaayaayo zaawe z'okukyebeza enda?

....

Okugaanira kwaito kwahika aha muheru. Ninyongyera kukwebaza ahabw'okuma obwire bwawe n'okwikiriza kwejumba omu kucondooza oku. Byona ebi waagamba nibyija kukumwa kandi bigume biri eby'ekihama.

Webare munonga

#2: Focused Group Discussion guide for general women in the population community- Key informants

Introduction: In this FGD you will provide information regarding ANC services. The information you provide will be confidential and you are free to opt out in case you feel uncomfortable. Thank you for accepting to participate.

The group was composed of 13 women in the general population

FDG Question Guide

1. Mention the available health facilities in your community and the services they offer?

2. From your opinion, what time would pregnant women start seeking ANC services?

3. Why do you think they should start ANC at such a time?

4. (a) What have you observed about the ANC practices in this community? (Herbs, TBAs)

   (b) For those who do not attend, why?

   (c) For those who attend, why?

5. What information do health workers give during ANC visits?

6. How many times is a pregnant mother supposed to go for ANC services?

7. When should a pregnant mother start ANC? .When did you start?

8. How and where do women get information about ANC attendance in your area?

9. Which category of women that attend and complete ANC mostly?

10. Are women aware of dangers associated with not completing ANC in pregnancy? What are these dangers?

11. What reminds women to go for subsequent ANC visits during pregnancy?

(a) How many of you use possess mobile phones,

(b) How many of you use your phones as a reminding tool to ANC attendance or an medical appointment?

(c) Why do mothers not use their mobile phones as a reminder tool to ANC attendance?

   (d) Out of 10 families how many families possess a phone?

12. Are there any traditional practices done by pregnant women in your area? What are these practices and why do they do them?

13. Do pregnant women consult TBAs in your area and why?

14. Are ANC services in your area in line with opening days and hours? Are they convenient?

15. (a) What is the attitude of men towards their wives who seek ANC?

    (b) What are strategies for male involvement in ANC services?

16. What measures if any are in place to improve women's completion of ANC services?

17. What in your opinion should be improved?

18. Please explain, if there is any kind of support from government through Kiruhura as a district that you think influenced completion of ANC visits?

19. What are supportive structures that influence completion of ANC visits?

This is the end of the FGD. The information you have provided will remain confidential.

Thank you for your time and cooperation

#3: In-depth interviews for women that completed four or more ANC visits

Introduction: In this interview, you will provide information regarding ANC services. The information you provide will be confidential. Thank you for accepting to participate

1. What is the attitude of pregnant women towards ANC services in your area?

2. Do most women seek antenatal care services in your area/District? If Yes or No, give reasons

3. How early do women go for Antenatal care (In which month of pregnancy)? Why do they go at that time? Why earlier or later?

4. How often do pregnant women go for antenatal care? Why that frequency?

5. How do women think Antenatal care helps them during pregnancy?

6. How important do women seem to think Antenatal care is?

7. If women do not go for Antenatal care what are their reasons?

   b) Are all mothers abiding to their clinic dates?

   c) Why mothers complete?

8. What are some of the roles that husbands play to support women in ANC completion during pregnancy?

9. What are the programs in place from community to government level that help promote ANC completion?

10. What do you think are the barriers to women's utilization of ANC services in Kiruhura District?

11. What could be Solutions in place to improve women's access and completion of ANC services in Kiruhura?

12. What are traditional /cultural beliefs that influence women's completion of ANC services in Kiruhura?

13. How do mothers overcome ANC completion barriers

14. What would you say about ANC services in your community as someone who completed all the visits?

15. What's your pledge?

This is the end of the interview. The information you have provided will remain confidential.

Thank you for your cooperation

Translated in-depth questionnaire

#3: In-depth interviews for women that completed four ANC visits at the health facility

OKWANJURA:

1. Abakazi b'enda baine nteekateeka ki aha buheereza bw'okukyebeza enda omu kyanga kyawe?

2. Nooteekateeka ngu abakazi b'enda abarikukira obwingi nibaza omwirwariro kutunga obuheereza bw'okyebeza enda omu kyanga kyawe/disiturikiti? Yaaba eri **Eego** ninga **Ingaaha**, heereza enshonga ahabw'enki.

3. Abakazi nibatandika ryari kuza omwirwariro kukyebeza enda (aha myezi engahi)? Ahabw'enki nubazayo omu bwire obwo? Ahabw'enki nibatandika kare ninga bakyerereirwe?

4. Abakazi nibaza omwirwariro kukyebeza enda emirundi engahi? Ahabw'enki barikuzayo emirundi egyo ei waagamba?

5. Abakazi nibateekateeka ngu okukyebeza enda nikubayamba ki omu bwire bw'enda?

6. Abakazi baine nteekateeka ki aha migasho y'okukyebeza enda?

7. Abakazi baaba batagiire kukyebeza enda, nibaha nsonga ki? Nooteekateeka abazi b'enda boona nibahiikiriza ebiro by'okukyeberezaho ebi bahairwe eirwariro?

8. Niki ebirikukorwa omu kyanga kyawe ebirikusikiiriza abakazi b'enda kuza kutunga obuheereza kukyebera enda obwo ekiri nto?

9. Nooteekateeka ngu abakazi n'abaami baabo nibamanya ebirungi ebiri omu kukyebeza enda omu myezi ey'okubanza; hamwe n'ebibi ebiri omu kukyerererwa kutandika kuza omwirwariro kukyebeza enda?

10. Ni nteekateeka ki ezitiirweho aharurengo rw'ebyanga na Gavumeni kwenda kusikiiriza abantu kwejumbira omu kukyebeza enda okwijwire?

11. Niteekateeka ni bizibu ki ebi akabazi b'enda barikushanga omu kukozesa obuheereza bw'okukyeza enda omu disiturikiti ya Kiruhura?

12. Ni bintu ki ebitairwe omu nkora kuhwera aha kwongyera omutinda n'okuyamba abakazi kutunga obuheereza bw'okukyebeza kandi obwijwire omuri kiruhura?

13. Ni nteekateeka z'eby'obuhangwa abantu ezi barikwikiririzamu ezakubaasa kuhindura enteekateeka y'abakazi b'enda aha buheereza bw'okukyebeza enda omuri Kiruhura?

Webare munonga ahabw'obuyambi bwawe.

Appendix II: Introduction Letters

Introduction letter from UMU

Uganda Martyrs University

Making a difference

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

1st July 2017

TO WHOM IT MAY CONCERN
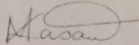
RE: INTRODUCING MS. TUKASHABA COTIOUS (REG. NO. 2015-M282-20047)

This is to introduce to you Ms. Tukashaba Cotious as a bona fide student of Uganda Martyrs University. She is pursuing a program leading to the award of Master of Public Health –Health Promotion. She is collecting data on '**Factors Influencing Completion of Antenatal Care among Women in Reproductive Age in Kiruhura District, Western Uganda'.** Cotious will be collecting data from selected facilities in Kiruhura District.

The relevant university authorities have approved the topic and protocol.

Any assistance rendered to her in this respect will be highly appreciated by the university

Yours sincerely,

DR. Miisa Nanyingi

Faculty of Health Sciences,
Uganda Martyrs University

Uganda Martyrs University P.O. Box 5498 – Kampala – Uganda
Tel: (+256)038-410611   Fax: (+256) 038-410100 E-mail; umu@umu.ac.ug

Introduction Letter from District Health Office

KIRUHURA DISTRICT LOCAL GOVERNMENT
HEALTH DEPARTMENT
P.O BOX 05
RUSHERE – KIRUHURA

Telephone-General:	0392-724623	C/Administrative Officer	0772-413380
Chairperson LC V	0782156066	Fax	0392-254623
Vice Chairperson	0754869007	e-mail	caokdlg562@gmail.com

18/7/2017

To: Health Facility Incharges

Kiruhura

Received and allowed to Conduct the study 18/07/2017

RE: STUDY ON FACTORS INFLUENCING COMPLETION OF ANTENATAL CARE AMONG WOMEN IN REPRODUCTIVE AGE IN KIRUHURA DISTRICT

I have read through this study and found it useful and ethical.

Please allow Tukashaba Cotious to conduct the study in Kiruhura District.

Thanks.

[Stamp: KIRUHURA DISTRICT LOCAL GOVERNMENT 17 JUL 2017 DISTRICT HEALTH OFFICER]

Dr.Kamya David Ivan

DISTRICT HEALTH OFFICER- KIRUHURA

Copy to:

Chief Administrative Officer-Kiruhura

Appendix III: Map of Uganda and Kiruhura District
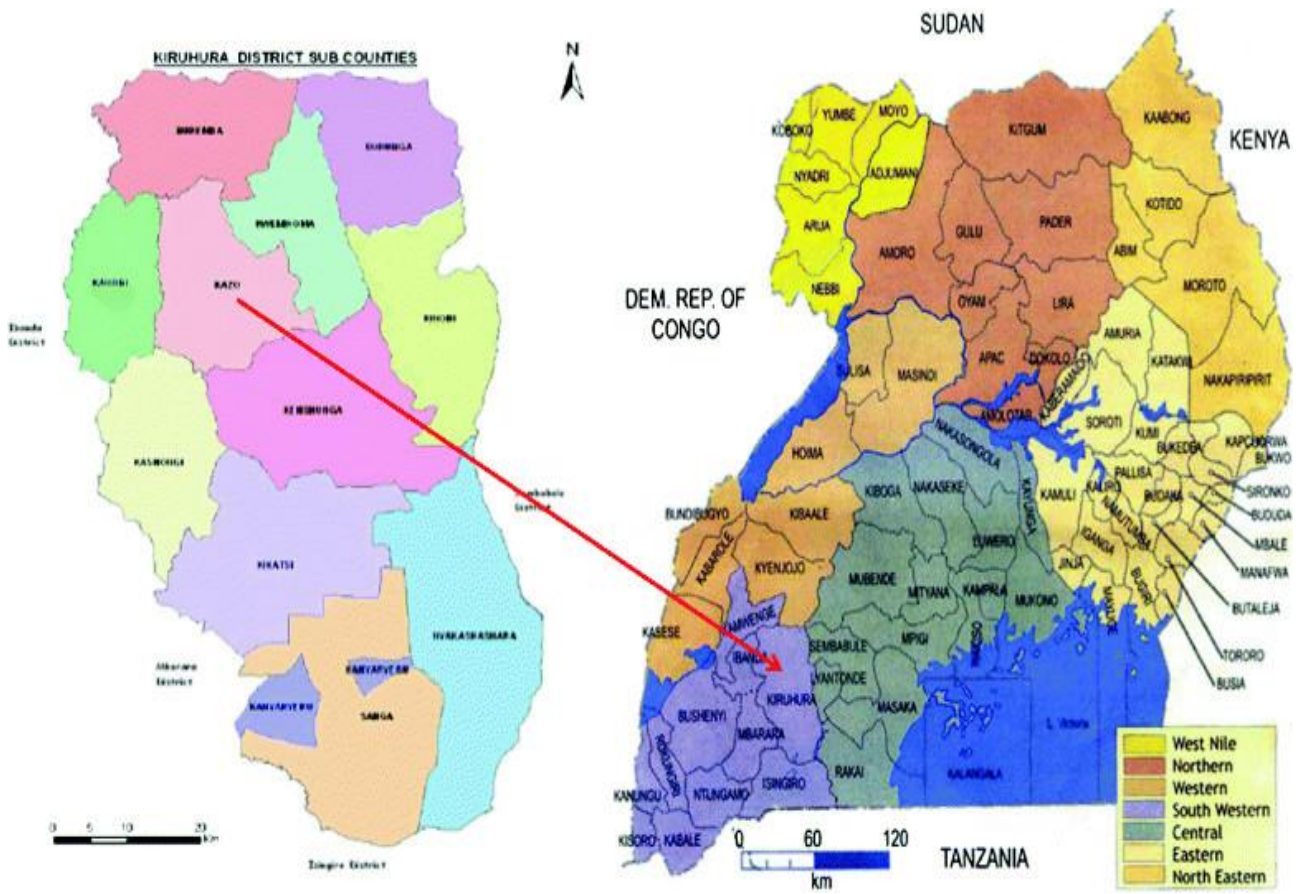
Appendix IV: Other statistical output tables

Table 24: linear regression model summary for ANC initiation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.725(a)	.526	.525	.674

a Predictors: (Constant), S3.8. How long did it take you to go for the first ANC visit at the health facility?

Table 25: Descriptive statistics for ANC initiation

	N	Minimum	Maximum	Sum	Mean	Standard Deviation
How long did it take you to go for the first ANC visit at the health facility	385	.00	8.00	1359.00	3.5299	1.34136
Valid N (list wise)	385					

Table 26: cross-tabulation of community initiative and programs

		For the baby being immunized, how many times did you visit the HC for ANC_CODED			Total
		3 ANC Visits And Below	4 ANC Visits	5 ANC Visits And Above	
S3.13. Are there any community initiatives/programs that promote ANC completion	Yes	29	60	39	128
	No	92	100	61	253
Total		**121**	**160**	**100**	**381**

Crammers' V = 0.140, P-Value < 0.024

Table 27: Cross-tabulations of ANC services meeting individual needs

		For the baby being immunized, how many times did you visit the HC for ANC			Total
		3 ANC Visits And Below	4 ANC Visits	5 ANC Visits And Above	
Sii.5a. Do you think the ANC services offered to you at the health facility met your individual needs as a mother during pregnancy	Yes	63	107	74	244
	No	58	53	26	137
Total		**121**	**160**	**100**	**381**

Crammers' V= 0.180   P-Value < 0.002

Table 28: Cross-tabulations of government support's influence

		S3.14g. Others support from government that influenced your completion of ANC visit		Total
		Yes	No	
For the baby being immunized, how many times did you visit the HC for ANC_CODED	3 ANC Visits And Below	14	27	41
				99
	4 ANC Visits And Above	59	109	168
Total		**73**	**136**	**209**

Crammers' V= 0.010   P-Value < 0.990

Table 29: Cross-tabulations of why attend ANC

		Sii.1. Do you know why a woman should go for antenatal care during pregnancy?		Total
		Yes	No	
For the child being immunized, how many ANCS did you attend _2LEVELS CODE	3 ANC Visits And Below	92	26	118
	4 ANC Visits And Above	226	26	252
Total		**318**	**52**	**370**

Crammers' V= 0.157   P-Value < 0.003

Table 30: Cross-tabulations of marital status Vs* ANC attendance

		For the baby being immunized, how many times did you visit the HC for ANC_CODED			Total
		3 ANC Visits And Below	4 ANC Visits	5 ANC Visits And Above	
S1.5. Marital status:	Married	107	147	91	345
	Single	11	8	6	25
	Divorced	3	3	3	9
	Widowed	0	2	0	2
Total		**121**	**160**	**100**	**381**

Crammers' V= 0.078   P-Value > 0.597

Table 31: Cross-tabulations of highest level of education Vs* ANC attendance

		For the baby being immunized, how many times did you visit the HC for ANC_CODED			Total
		3 ANC Visits And Below	4 ANC Visits	5 ANC Visits And Above	
S1.7. Highest level of education:	Primary Level	65	70	50	185
	Secondary	36	55	33	124
	Tertiary Institution	6	31	14	51
	None	13	4	3	20
	Others	1	0	0	1
Total		**121**	**160**	**100**	**381**

Crammers' V= 0.181   P-Value < 0.002

.

Table 32: Cross-tabulations of Level of income Vs* ANC attendance

		For the baby being immunized, how many times did you visit the HC for ANC_CODED			Total
		3 ANC Visits & Below	4 ANC Visits	5 ANC Visits And Above	
Level of Income CODED to cater for Chi freq count	10,000-100,000	81	91	63	235
	110,000-200,000	20	23	15	58
	210,000 And Above	16	44	21	81
Total		**117**	**158**	**99**	**374**

Crammers' V= 0.103   P-Value > 0.092

Table 33: Selected health facilities and their labels.

No.	Health Facility Selected	Lebel	Level of HC	ANC attendance (First visit)	Number of respondents selected
1.	Kazo Health Centre	A	IV	1,396	77
2.	Kiruhura Health Centre	B	IV	1,297	72
3.	Kanoni Health Centre	C	III	563	31
4.	Kashongi Health Centre	D	III	715	39
5.	Rwemikoma Health centre	E	III	588	32
6.	Sanga Health Centre	F	III	745	41
7.	Burunga Health Centre	G	III	642	36
8.	Buremba Health Centre	H	III	508	28
9.	Kitura Health Centre	I	III	496	27
Total				**6,950**	**383**

Appendix V: Focused Antenatal Care (ANC):
The four-visit ANC model as outlined in WHO Clinical Guidelines

GOAL				
	First Visit 8 – 12 Weeks	Second visit 24-26 weeks	Third visit 32 weeks	Fourth visit 36-38 weeks
Objective	Confirm pregnancy and EDD, classify women for basic ANC (four visits) or more specialized care. Screen, treat and give preventive measures. Develop a birth and emergency plan. Advise and counsel.	Assess maternal and fetal well-being. Exclude PIH and anaemia. Give preventive measures. Review and modify birth and emergency plan. Advise and counsel.	Assess maternal and fetal well-being. Exclude PIH, anaemia, multiple pregnancies. Give preventive measures. Review and modify birth and emergency plan. Advise and counsel.	Assess maternal and fetal well-being. Exclude PIH, anaemia, multiple pregnancy, malpresentation. Give preventive measures. Review and modify birth and Emergency plan. Advice and counsel.
Activities				
Rapid assessment and management for emergency signs, give appropriate treatment, and refer to hospital if needed				
History **(ask, check** **records)**	Assess significant symptoms. Take psychosocial, medical and obstetric history. Confirm pregnancy and calculate EDD. Classify all women (in some cases after test results)	Assess significant symptoms. Check record for previous complications and treatments during the pregnancy. Re-classify	Assess significant symptoms. Check record for previous complications and treatments during the pregnancy. Re-classify	Assess significant symptoms. Check record for previous complications and treatments during the pregnancy. Re-classification if Needed.
Examination	Complete general,	Anaemia, BP,	Anaemia, BP,	Anaemia, BP, fetal

(Look, listen, feel)	and obstetrical examination, BP	fetal growth, and movements	fetal growth, multiple pregnancy	growth and movements, multiple pregnancy, mal-presentation
Screening and tests	Haemoglobin, Syphilis, HIV Proteinuria, Blood/Rh group* Bacteriuria*	Bacteriuria*	Bacteriuria*	Bacteriuria*
Treatments	Syphilis ARV if eligible Treat bacteriuria if indicated*	Antihelminthic**, ARV if eligible Treat bacteriuria if indicated*	ARV if eligible Treat bacteriuria if indicated*	ARV if eligible If breech, ECV or referral for ECV Treat bacteriuria if indicated*
Preventive Measures	Tetanus toxoid Iron and folate+	Tetanus toxoid, Iron and folate IPTp ARV	Iron and folate IPTp ARV	Iron and folate ARV
Health Education, Advice, and Counselling	Self-care, alcohol and tobacco use, nutrition, safe sex, rest, sleeping under ITN, birth and emergency plan	Birth and emergency plan, reinforcement of previous advice	Birth and emergency plan, infant feeding, postpartum/postnatal care, pregnancy spacing, reinforcement of previous advice	Birth and emergency plan, infant feeding, postpartum/postnatal care, pregnancy spacing, reinforcement of previous advice

Acronyms: (EDD=estimated date of delivery; BP=blood pressure; PIH=pregnancy induced hypertension; ARV=antiretroviral drugs for HIV/AIDS; ECV= external cephalic version; IPTp=intermittent preventive treatment for malaria during pregnancy; ITN=insecticide treated bed net)

*Additional intervention for use in referral centres but not recommended as routine for resource-limited settings

 ** Should not be given in first trimester, but if first visit occurs after 16 weeks, it can be given at first visit and should also be prescribed as treatment if anaemia is diagnosed

Appendix VI: Data Collection Plan and Budget

Activities	Responsible Person(s)	Schedule in 2017								Inputs	Estimated Amount in Uganda Shillings
		May	June	July	Aug	Sept	Oct	Nov	Dec		
Write research proposal and submit to Supervisor for approval.	Researcher	▓	▓							Time, internet, computer and stationary.	400,000/=
Design and develop data collection tools.	Researcher	▓	▓	▓						Computer, time, stationery, language translator.	100,000/=
Pre-test data collection tools.	Researcher		▓	▓						Stationery, printing services, transport, respondent and time.	200,000/=
Review tools and produce final drafts. Print out copies of tools.	Researcher			▓						Stationery (for 400 copies), printing services, transport and time.	400,000/=
Conduct introductory visits to the district and health facilities.	Researcher and Research Assistants			▓						Introduction letters, transport and accommodation.	200,000/=
Identify and train Research Assistants.	Researcher			▓						Meals, stationery, time, transport, personnel, tools and accommodation.	200,000/=

Activities	Responsible Person(s)	Schedule in 2017								Inputs	Estimated Amount in Uganda Shillings
		May	June	July	Aug	Sept	Oct	Nov	Dec		
Identify respondents and collect data.	Researcher and Research Assistants			▓	▓					Data collection tools, transport, accommodation, airtime, refreshments and remunerations to Research Assistants.	900,000/=
Review completed interview guides.	Researcher			▓	▓					Transport, time, airtime.	200,000/=
Code completed interview guides and enter data.	Researcher				▓					Computer, internet, Installing Epi Info and training, time.	100,000/=
Write research report.	Researcher and peer reviewer.					▓	▓	▓		Computer, internet, airtime, time, stationary and meals	400,000/=
Submit drafts of research report to Supervisor to review. Incorporate							▓	▓		Internet, computer and transport	85,000/=

Activities	Responsible Person(s)	Schedule in 2017								Inputs	Estimated Amount in Uganda Shillings
		May	June	July	Aug	Sept	Oct	Nov	Dec		
input from Supervisor into the report.											
Work on final draft of research report and submit to: the Supervisor to sign and UMU to mark.										Computer, internet, stationary, printing and biding services and transport.	200,000/=
Overall Total											3,985,000 /=

Source of funding: *This study was entirely funded by the researcher (student) from her salary.*

Researchers' Bibliography

Cotious' initial education background is in clinical medicine and community health, an area that helped her enjoy clinical practice for five years working in various PNFPs and public health facilities. In 2010, after graduating in Public Health Promotion and Education, she was appointed as a District Health Educator, a position she served in for one year. Her major focus was more on delivering technical trainings and community health activities, with the district and implementing partners at local and national level.

Her qualification and exposure in public health gave her an opportunity to extend her potential and work with an international agency in designing various health technical trainings, implementing programs, monitoring and evaluation in different positions for the last six years. Through her work ethics, she was appointed on different technical working committees at agency and international level in HIV, maternal child health, water sanitation and hygiene and nutrition. This gave her an opportunity to be exposed and travel extensively both in Uganda and abroad for different health related program activities.

After all that exposure, she realized she needed more knowledge and skills especially in designing health interventions, leadership and management, policy interpretation, high level technical training and research. That's how she got interested in pursuing a master's course which is in line with her aspirations for Master of Public Health-Health Promotion (MPH - HP). She hopes that this course will be a bridge to many other opportunities that will help her develop her career. She's looking forward to be an international health expatriate in the near future. What motivates her most is that the sky is no longer the limit; once empowered through education, one can go beyond the sky to even greater heights.