DETERMINANTS OF UTILIZATION OF ANTENATAL CARE SERVICES DURING FIRST TRIMESTER OF PREGNANCY: A STUDY OF ADOLESCENT MOTHERS ATTENDING GULU REGIONAL REFERRAL HOSPITAL

JANE TOLIT AKULLU

RJ20M21/092

A DISSERTATION SUBMITTED TO THE FACULTY OF PUBLIC HEALTH, NURSING AND MIDWIFERY AND IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF A DEGREE OF MASTER OF PUBLIC HEALTH OF UGANDA CHRISTIAN UNIVERSITY

March, 2024

UGANDA CHRISTIAN UNIVERSITY

A Centre of Excellence in the Heart of Africa

ABSTRACT

Adolescents who receive antenatal care (ANC) have the opportunity to recognize and react to the warning signs and symptoms of obstetric issues. One of the most important factors in determining a safe birth and positive birth outcomes is the use of enough ANC.

The goal of this study was to determine the factors that affect utilization of ANC services among adolescents at the Gulu Regional Referral Hospital during the first trimester.

The study used an analytical cross-sectional design with mixed method approach. The study's participants were 402 teenagers (10-19 years old) chosen at random from the ANC clinic. The researcher administered a questionnaire and performed six in-depth interviews. Descriptive and inferential statistics were used to examine the quantitative data that had been collected. Codification and themes were used for qualitative data.

The utilization of ANC in first trimester was at 43.3%. Age (aOR:0.6, 95% CI: 0.41-0.94, p=0.025), being separated (aOR:0.4, 95% CI: 0.23-0.75, p=0.006), being single (aOR:0.2, 95% CI: 0.12-0.33, p0.001), having attained tertiary level of education (aOR:12.2, 95% CI: 3.18-45.1, p0.001), living with little information on the timing of ANC, lack of autonomy, lack of confidentiality, and delays at the clinic severely impacted the utilization of ANC in first trimester.

In conclusion, raising ANC utilization is very important. Intervention for this include giving adolescents the right instructions, moving or setting up a clinic just for teenagers, improving time management, and hiring more midwives.

DECLARATION

I, Akullu Jane Tolit, hereby declare that the aforementioned work is mine alone, that it does not contain any instances of plagiarism, and that it has not been submitted to any organization for consideration of any award. Each and every piece of information that was obtained from other published or unpublished sources has been acknowledged and cited in the appropriate manner.

Name: AKULLU JANE TOLIT [Reg. No: RJ20M21/092] **Signature**: 

Date: 26th March 2023

APPROVAL

The research dissertation titled '*Determinants of Utilization of antenatal care services during first trimester of pregnancy; a study of adolescent mothers attending Gulu Regional Referral Hospital'* has been under my supervision. It is, therefore, ready for submission to the examination board of the University for examination.

Supervisor Signature:  **Date: 22nd, May 2024**

Dr. Omona Kizito [MBChB, PhD] - Supervisor

Tel: 0774849492, E-mail: komona@umu.ac

DEDICATION

The members of my family have been a significant source of inspiration for me throughout the course, and this work is dedicated to them. Because of the aid my spouse, Mr. Tolit, and my children provided monetarily, I am indebted to all of them from the depths of my heart. Without them, I would not have been able to get this far.

ACKNOWLEDGEMENT

My thanks to Dr. Omona Kizito, my supervisor, for his tireless efforts in making this work a success up to this point is already at an all-time high; may the years to come bring you even more success than you've had so far.

Without the great cooperation of the teen mothers who participated in this study and contributed to the data collection, the results of this investigation would not have been attainable.

Throughout the course of my research, the medical director and the midwives working at the Gulu Regional Referral Hospital have been extremely helpful and accommodating.

In addition, I would want to convey my appreciation to all of my teachers at the institution, whose direction, support, and unending encouragement were essential to the accomplishment of my goal.

Without the assistance of the three research assistants who assisted in conducting the interviews with the young mothers, it would not have been feasible to carry out this study.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS AND ABBREVIATIONS

ANC	Antenatal Care
DHIS	District Health Information System
FANC	Focused antenatal care
GRRH	Gulu Regional Referral Hospital
HBM	Health Belief Model
IDI	In-depth Interviews
MMR	Maternal Mortality Rate
MOH	Ministry of Health
STDs	Sexually Transmitted Diseases
STIs	Sexually Transmitted Infections
TBAs	Traditional Birth Attendant
TT	Tetanus Toxoid
UDHS	Uganda Demographic Health Survey
UNICEF	United Nations Children's Fund
UNCST	Uganda National Council for Science and Technology
WHO	World Health Organization

CHAPTER ONE:

INTRODUCTION AND BACKGROUND

1.1 Introduction

Adolescent pregnancies are a major global health problem, affecting communities everywhere from resource-poor Uganda to the advanced and industrialized nations of the West. Because it marks the passage from childhood to adulthood, adolescence is a delicate time in a person's life. When looking at the global mortality rate for teenage girls, maternal conditions rank first. Due to their still-developing bodies, adolescents who become pregnant, especially those between the ages of 10 and 14years, are at increased risk for difficulties and unfavorable obstetrical outcomes. This burden is borne disproportionately by young adolescents in sub-Saharan Africa, where the prevalence of teen pregnancies is highest. 17 sub-Saharan countries have adolescent birth rates at or exceeding 120 births per 1,000 girls aged 15 to 19 (UNICEF, 2019).

Antenatal Care(ANC) is defined as “care provided by skilled healthcare professionals to pregnant women and adolescent girls in order to ensure the best health conditions for both mother and baby during pregnancy” and includes four categories of interventions: 1) risk identification; 2) prevention; 3) management of pregnancy-related or concurrent diseases; and 4) health promotion and education, including counseling on the importance of giving birth with assistance from a skilled provider (WHO 2017).

1.2 Background to the Study Context

It is widely acknowledged that the years between the ages of 10 and 19 are crucial to a person's growth and development on a variety of levels, including biological, psychological, and social (Dick and Ferguson 2015). As a result, adolescent sexual and reproductive health issues are common in many regions of the world. Young mothers are particularly vulnerable to these dangers because of their own physical and mental immaturity. Pregnancies in young women are considered to be a high-risk condition (Vanderpuije, 2012).

Prenatal care helps teen mothers anticipate and respond to problems that may arise during labour and delivery. A mother's access to and utilization of antenatal care (ANC) is widely acknowledged as a crucial factor influencing the prevalence of normal deliveries and the prevalence of favorable delivery outcomes. Adolescent mothers in low-resource settings are more likely to be underserved by ANC services. Who uses ANC services is affected by a variety of personal, social, and cultural factors. The first three months of a pregnant woman's time during pregnancy are known as the first trimester. Prenatal care rate is abysmal in most impoverished nations, notably in Sub-Saharan Africa, where Uganda is located (Sagalova, et al., 2012).

Complications during pregnancy and childbirth pose a serious risk to the health of thousands of mothers and their newborns every year. Pregnancy and childbirth-related causes of death accounted for the deaths of around 303000 mothers and 2.6 million infants in 2015 (WHO, 2015; Blencowe, et al., 2016). The number of maternal deaths that can be prevented by providing high-quality care to all pregnant mothers, and young adolescents has increased over the past two decades, but more work has to be done

(Requejo, et al., 2015). Most studies of pregnant adolescents in Sub-Saharan Africa have found that they do not start antenatal care visits until late in their pregnancies, when it is too late to be of any real benefit. This occurs because of widespread ignorance regarding the value proposition of ANC services and due to the fact that they are often misunderstood. Complications during pregnancy, labour and the postpartum period are a major cause of infant and maternal mortality, making this a priority issue. Sub-Saharan Africa has the world's highest teen pregnancy rate. Despite the higher risks to the mother and child, maternity care is rarely used to offset the impacts of adolescent pregnancy (Mekonnen, et al., 2019). A third of Ugandan pregnant women (29%) had their first visit to an ANC during the first trimester (UDHS, 2016a). Women often presented for their first ANC visit between the 4.7 and 5.5 months of their pregnancies. This suggests that women begin attending ANC about the middle of their pregnancies, even if attending earlier would improve the chances of identifying complications or issues as early as feasible (UDHS, 2016b). In Gulu district, only 15.3% of pregnant women had their first ANC visit during the first trimester of pregnancy with 2035 out of 13310 adolescents (DHIS, 2022).

In Gulu regional referral hospital (GRRH), teenage mothers are putting both their own and their unborn children's health at risk by not taking full advantage of the antenatal care offered to them throughout the first trimester of their pregnancies. However, there is a scarcity of first-trimester prenatal care studies including adolescent women. This study was conducted at Gulu Regional Referral Hospital (GRRH) in Gulu City to identify such factors associated with low utilization of antenatal care by adolescents within the first trimester.

1.3 Statement of the Problem

Cultural and social norms and practices around pregnancy and childbirth have been found to significantly impact maternal health, as reported by Good-burn, et al. (1995). In Kenya, those who disclosed cultural ideas (such as the belief that avoiding evil eyes in early pregnancy) were less likely to utilize ANC care services than those who stated no discouragement (Ismail, et al., 2020). Also, in Bangladesh, some women and communities view childbirth as a test of strength and they consider seeking medical attention to be a sign of weakness, and they reserve hospital births for the most difficult and lengthy pregnancies and childbirths (Walton, et al., 2013). Ethnographic study in Mozambique and Southern Tanzania discovered that expecting mothers put off beginning anti-natal care (ANC) until later in their pregnancies so that their unborn children would be safe from witchcraft and sorcery attacks from jealous neighbours (Chapman 2003; Haws 2010). It was widely held among Zimbabwean women that being known to be pregnant in the first trimester made them more susceptible to witchcraft, hence many of them avoided going for ANC during that time (Mathole, et al., 2004). In Gulu hospital, despite efforts by the hospital or government to sensitize and health educate pregnant women and teenagers about free ANC services, under utilization of ANC services remains. Teenage adolescent girls' ANC attendance rate in Gulu city stands at 15.3% (DHIS 2, 2022)

Pregnant women of all ages, including teenagers, are failing to take advantage of antenatal treatment during the first trimester at the Gulu Regional Referral Hospital. Adolescent and mature pregnant women use ANC differently during the first and third trimesters of their pregnancies.

The deprivation of prenatal care can lead to daring consequences such as premature pregnancy, intrauterine growth retardation, low weight at birth and maternal and child mortality as a result of infections in the perinatal and postnatal periods. Women without prenatal care are seven times more likely give birth to premature babies, and five times more likely to have infants who die. These consequences are not only poor health outcome, but also higher cost passed down to taxpayers. This study sought to investigate the determinant of utilization of ANC services among adolescents in Gulu regional referral hospital with the aim to improve utilization.

1.4 Purpose and Objectives of the study

1.4.1 Purpose

The purpose of this study was to establish the factors influencing utilization of antenatal care services by adolescents within first trimester of pregnancy in Gulu Regional Referral Hospital, Northern Uganda so as to improve strategies to alert adolescents about the value of early ANC services.

1.4.2 Specific Objectives

The study had four specific objectives;

a) To establish the knowledge of adolescents about the benefits of seeking ANC services in Gulu Regional Referral Hospital

b) To determine the individual barriers to accessing ANC services by adolescents within the first trimester in Gulu Regional Referral Hospital

c) To determine the institutional barriers to accessing ANC services by adolescents within the first trimester in Gulu Regional Referral Hospital

d) To explore perceptions of adolescents about the utilization of ANC services within the first trimester of pregnancy in Gulu Regional Referral Hospital

1.5 Research Questions

The study sought answers to the following research questions;

a) What is the knowledge of adolescents about the benefits of seeking ANC services within the first trimester?
b) What are the individual barriers to accessing antenatal care services by adolescents in first trimester of pregnancy in Gulu Regional Referral Hospital?
c) What are the institutional barriers to accessing ANC services by Adolescents in first trimester of pregnancy in Gulu Regional Referral Hospital?
d) What is the perception of adolescents about the utilization of ANC services within the first trimester of pregnancy in Gulu Regional Referral Hospital?

1.6 Justification of the study

According to the World Health Organization's Focused Antenatal Care (FANC) model, all pregnant women should begin scheduling ANC checkups as soon as they realize they are pregnant, or within 12 weeks (WHO, 2002). It's useful for preventing complications from occurring and solving them quickly. The Gulu regional referral hospital, like all public hospitals, faces a number of challenges that make it difficult to provide adequate care to pregnant teenagers. This research will aid the medical staff at Gulu hospital in understanding the barriers that prevent pregnant teenagers from seeking care in the first trimester. As a result of the findings and recommendations, stakeholders will be better able to design programmes or educate adolescent mothers on the value of early

ANC services, which will lead to a greater proportion of teen mothers in the district making use of these resources.

Lastly, in order to acquire a Master of Public Health in partial completion status from Uganda Christian University Mukono, students are also required to conduct research.

1.7 Significance of the Study

The results of this study will help the medical staff at the Gulu hospital better understand the barriers that prevent adolescents from accessing prenatal care during the first trimester.

A further benefit of this research is that it will inform health professionals about the difficulties teenagers experience while trying to access prenatal care. In turn, this would lead to more adolescent mothers receiving prenatal care, which in turn would reduce maternal and infant mortality.

The findings and recommendations will aid stakeholders in either implementing programmes to increase adolescent prenatal care utilization or educating adolescent mothers on the necessity for early ANC services. Possible implications for the field of maternal health research are also discussed. The results can inform treatments and policies to enhance the quality of adolescent prenatal care, ultimately encouraging more young women to get checked out.

1.8 Scope of the study

Teenage mothers who were pregnant and enrolled at the Gulu Regional Referral Hospital (GRRH) in Gulu City, Northern Uganda, participated in this study. The purpose of this study was to collect data on the factors that influence antenatal care (ANC)

utilization by adolescents during the first trimester of pregnancy. The study's primary population was pregnant teenage girls who attended ANC between July and October 2022.

1. 9 Conceptual Framework

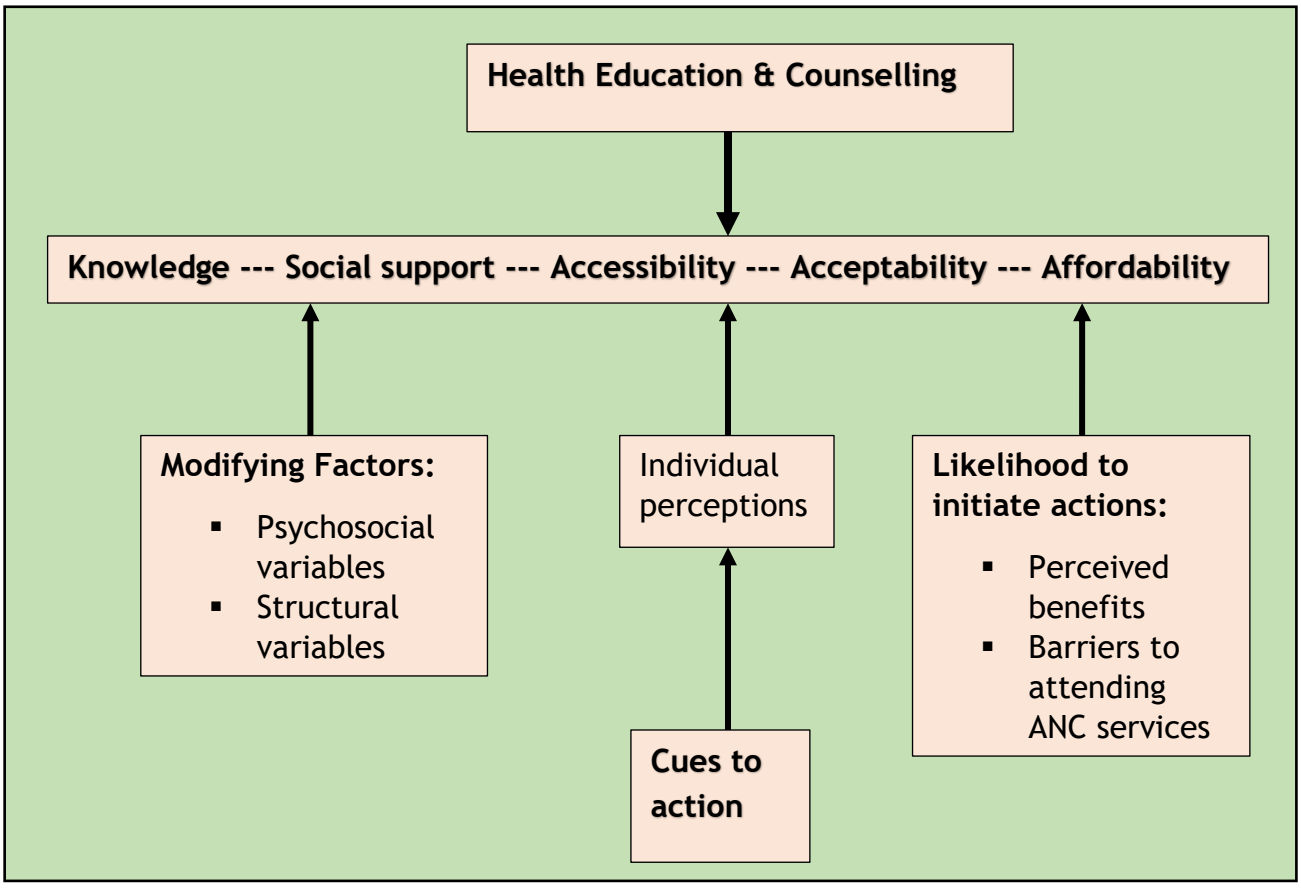


Figure 1: Conceptual Framework Depicting the Health Belief Model [adapted from Stretcher and Rosenstock, (1997)]

Figure 1 above illustrates the variables identified in this study to address factors which could influence the pregnant adolescents' utilization of ANC. The first variable is conceptualized as modifying factors which include socio demographic variables (age, gender, ethnicity, employment, educational level) Structural variables are related to teenagers' knowledge about the benefits of attending and dangers of not attending

ANC. The second variable is the individual perception. The theory of the HBM is that individual pregnant teenagers' health beliefs are influenced by their perceptions of the prenatal services. The HBM will help in determining the impressions of teenage mothers about ANC and what factors influence the utilisation of prenatal services. The third variable is the likelihood to initiate action. Variables related to perceived benefits might motivate the pregnant teenagers to utilise prenatal services. Perceived barriers such as the skilled workers' negative attitudes and inaccessibility, acceptability and availability of the ANC services could influence the decision not to utilise prenatal services. Cues to action are likely to be initiated by health education, counselling and effective social support systems. The HBM could be used to motivate pregnant adolescents to take positive health actions through attending ANC in time and minimizing obstetric and/or health complications. Thus, utilization of ANC in first semester depends on knowledge, social support, accessibility, acceptability and affordability.

CHAPTER TWO:

LITERATURE REVIEW

2.1 Introduction

When antenatal care is sought early in the pregnancy, it becomes more important and effective in preventing adverse fetal and maternal outcomes. WHO proposed improved ANC criteria, as well as other adjustments to the focused ANC (FANC) model. The initial ANC visit, according to this revised guideline, should occur at 12 weeks' gestational age (GA), followed by visits to a skilled health care practitioner at 20, 26, 30, 34, 36, 38, and 40 weeks' GA (WHO, 2016a). The idea that a woman's "engagement" with her provider should extend beyond a single "visit" is also emphasized by these additional standards. Pregnant women should have access to high-quality treatment during this "contact" with a healthcare professional (Tunclap, 2017). These new rules are meant to guarantee a healthy pregnancy and a smooth transition to labour and delivery (WHO, 2016b). In addition to maternal and fetal screening, these recommendations are more comprehensive, emphasizing counselling, maternal nutrition, prevention and treatment of common illnesses, support for women at risk of experiencing intimate partner violence, and preventative measures for specific regions such as malaria and/or HIV endemic areas (WHO, 2016c). Data reveal that younger pregnant women are less likely than older pregnant women to receive quality ANC and skilled delivery care (WHO, 2016d). Medical practitioners must thoroughly monitor and screen mothers and their newborns during a quality antenatal care (ANC) visit in order to detect any maternal health challenges or abnormalities, such as infections, anemia, and other diseases. Above all, professional birth attendance is crucial for minimizing maternal mortality.

Health outcomes for both mothers and newborns can be improved by providing appropriate preventive and treatment care.

2.2 Theoretical Analysis

The Health Belief Model (HBM) is a theoretical model that can be used to guide health promotion and disease prevention programs. It is used to explain and predict individual changes in health behaviors and is one of the most widely used models for understanding health behaviors. The key elements of the Health Belief Model focus on individual beliefs about health conditions, which predict individual health-related behaviors. The Health Belief Model (HBM), places a focus on patient compliance and medical processes, served as the basis for this investigation (Polit and Beck, 2008). The model is an attempt to back up the claim that people's health-seeking behaviour is affected by their perceptions of the risks posed by a health issue and the advantages of taking steps to alleviate such a problem. According to Brink and Wood (2001), the purpose of a theoretical framework is to explain the interplay between many factors, such as ANC and teenage mothers in this case. The key elements of the Health Belief Model focus on individual beliefs about health conditions, which predict individual health-related behaviors. The model defines the key factors that influence health behaviors as an individual's perceived threat to sickness or disease (perceived susceptibility), belief of consequence (perceived severity), potential positive benefits of action (perceived benefits), perceived barriers to action, exposure to factors that prompt action (cues to action), and confidence in ability to succeed (self-efficacy).

In this study, this HBM provided insight into the decision-making process of a subset of adolescent mothers to seek prenatal care later in or earlier in their pregnancies. The

HBM served as a useful tool for gauging adolescent opinion of ANC and the factors that influenced their use of ANC services.

Dennill, et al. (1999, p. 156) described that the HBM "is separated into three core components that seek to explain human behaviour in connection to health." Demographics include things like age, marital status, education level, location, and sex discrimination. Examples of socio-demographic variables include personality traits, social standing, and the impact of contemporaries. How adolescent mothers' understanding of the pros and cons of skipping ANC is shaped by systemic factors; and Pregnant teenage mothers' chance of attending ANC is only somewhat affected by a small subset of the moderating factors that can impact their decision to attend or not attend. Adolescent mothers' unique health ideas are shaped by their impressions of ANC services, says the HBM. Use of ANC services may be affected by factors like as age, gender, marital status, education level, and parity (Matua, 2004). Adolescent mothers' usage of ANC services may also be affected by socio-cultural variables.

The decision of adolescent mothers to take ANC therapies may be influenced by factors associated to the perceived benefits. The decision to not use ANC services may be influenced by perceived barriers, such as the unfavorable views of healthcare providers and the difficulty in gaining access to, and feeling comfortable with, these treatments (Kiptanui, et al., 2015). When it comes to boosting the use of ANC services and decreasing high-risk behaviour among adolescents, having access to health care is crucial (Slap, 1995).

2.3 Adolescents' understanding of the benefits of accessing ANC services

According to research conducted in Lesotho by Phafoli et al. (2007), pregnant teenagers' failure to schedule ANC appointments promptly is caused by their ignorance of the importance of doing so. Similar findings were reported in a study conducted in Kenya by Ndambuki, et al. (2017), which discovered that the majority of adolescent mothers lack appropriate understanding of important ANC services, such as the proper scheduling time and the necessary amount of visits. As a result, the majority reported less than the needed four ANC visits and erroneous or late reservations. Nonetheless, most people were able to correct widespread myths about ANC care, and everyone had a good understanding of the most critical warning signs to look out for while pregnant.

2.4 Individual Barriers to Adolescents Accessing Antenatal Care Services

According to Eshetu and Selamwit (2016), Kenyan teens didn't want to be seen at ANC services. This is often due to a rejection of religion, a lack of knowledge, cultural influences, and societal and ethical norms against young pregnancies outside of marriage. If driven by fear of judgement, such attitudes may predict teens' tardiness to ANCs and lower use of ANC services.

A Tanzanian qualitative study indicated that young and teenage pregnant women delayed ANC attendance for many reasons (Saidi and Oswald, 2019). These findings matched international studies. A comparative study in Kenya, Ghana, and Malawi found that adolescent and unmarried young women delayed ANC and concealed their pregnancies to avoid social consequences such expulsion from school, displacement from their homes, partner abandonment, stigmatization, and gossip (Pell, et al., 2013).

According to Mudokwenyu-Rawdon and Chaibva (2010), older teens with simple pregnancies and deliveries may not realize they require ANC. However, Anderson and Rahn (2016) found that older youth were more likely than the very young youth to use prenatal care. New research expands on these investigations. In a related study, more education was associated with reduced likelihood of first-trimester prenatal care and frequent ANC among unmarried young. Numerous studies have shown that women with greater education use prenatal care more often (Haque, et al., 2012; Singh, et al., 2021; Ziblim, et al., 2018).

Peninah, et al. (2016) found that encouraging pregnant women to attend ANC with their partners or husbands may deter unmarried youth with secondary education or above from attending ANC. Senderowit (1999) also suggested that married women may benefit more from health care and spousal assistance. The national policy on boosting male involvement in reproductive health, which prioritizes couples over unmarried youth who do not seek ANC with partners, may discourage Ugandan unmarried young from getting ANC early (UNICEF, 2016).

Marital status and youth ANC visits were examined in Ghana. 16 (43.2%) of 66 (58.9%) unmarried youths cohabitated, and 15 (48.4%) were married (Kparu,2016). Peninah, et al. (2015) found that unmarried youths with at least a secondary education were 36% less likely to attend ANC in the first trimester than those without education. Maluleke (2017) found no correlation between pregnant women's education and prenatal service comprehension in a South African study. Yet, several studies suggest that reading level affects women's antenatal care utilization.

In their recent study on women of reproductive age's usage of ANC services, Ismail et al. (2020) found that certain respondents, particularly those who resided far from the facilities, sometimes didn't seek ANC treatment because they couldn't afford transportation. In Shanghai, Zhao, et al. (2012) found that pregnant women with enough money were twice as likely as those with less to seek ANC services. So, an adolescent's financial situation may influence their maternal health care selection.

According to Hokororo, et al. and Reibel, et al. (2015), most unmarried women's pregnancies are unwanted, therefore, they hide them until late stages for fear of their families' and the community's reaction. In this way, prenatal care is delayed or neglected (Peninah, et al., 2016). Geographic accessibility also delayed the ANC's start. Nsibu, et al. (2016) found statistically significant associations between place of residence and the first ANC visit in the first trimester. Mwangome, et al. (2012) found that the distance between a mother's residence and a health facility decreased the likelihood of attending ANC in a rural area in Coast Province, Kenya. ANC attendance was twice as high for mothers living 5 km from a major road. Women who resided farther from transit networks or healthcare institutions were more likely to skip antenatal care. Pregnant women's use of modern health care depends on the nearest medical facility's distance. Many mothers who would have sought antenatal care escaped to TBAs, which are cheaper and more accessible, due to their distance from local healthcare institutions, notably public health clinics. 70% of developing country mothers cannot easily attend maternity homes to monitor their pregnancies. Due to distance to the health centre and fewer health issues in the first trimester, few women

get prenatal care. This makes it hard for low-paid women to afford transportation (WHO, 2014a).

According to Chimatiro, et al. (2018), long treks from homes to medical facilities affect teens' decisions to check for pregnancy. Other teens said they couldn't finish the initial ANC because it was too far from home and they didn't want to be tired before giving birth. According to Haddrill (2014), some teens hide their children from social services or treat the baby's father, family, and close friends poorly because of negative views about underage pregnancy. This inhibits early arrival.

Michelle, et al. (2020) reported that unmarried pregnant teens postpone telling others about their pregnancy to avoid violating social and religious norms. These statistics show that younger adolescents, particularly those under 17, feel more anxiety and shame than older teens. De Villiers and Kekesi (2004) found that teens felt self-blame and guilt before announcing their pregnancy. Cultural standards can create a self-regulating populace. Pino (2019) claims that adolescent sexuality myths, such as the assumption that talking about it makes kids sexually active, hinder free speech. The idea that something isn't happening unless it's discussed is detrimental for kids and based on fanaticism over freedom.

Social and gendered adolescent sexuality norms influenced family interactions. Richter (2006) and Wiemann (2015) say deviating from societal pregnancy expectations harms family values (Richter et al. 2006; Wiemann et al. 2005. al 2015).

Van et al. (2015) found that internalized social and cultural standards cannot explain the dread of family punishment. The same research found that pregnant youths were ejected from their homes as punishment.

2.5 Institutional barriers to accessing ANC services by adolescents

Teens in Tanzania are less likely to use ANC due to a lack of privacy, unpleasant waiting rooms, long wait periods, and prejudice that only HIV positive females are given HIV test results in private (Hokororo, et al., 2015). In their study, Reibel, et al. (2015b) discovered that teenagers travelled a significant distance to health services due to a lack of privacy. Several teenagers expected to be chastised by nurses for becoming pregnant. Although having limited prior experience with maternal healthcare services, this was notable and resulted from unfavourable talk (Loxton, et al., 2007). Although the prevalence of such treatment is unknown, there is evidence that healthcare professionals have negative opinions towards married pregnant teenagers (Jonas, et al., 2017), which has been demonstrated to be a barrier to adolescents' access to maternal health care (Silal, et al., 2012). Teenagers expect ANC providers to treat them with the same dignity as adults. As a result, health practitioners are expected to behave consistently across all patient age groups. A good working relationship between medical professionals and patients reflects the quality of the healthcare services provided (Freed, 2016).

2.6 Adolescents' perceptions of how frequently they use ANC services

Individual perceptions centres on pregnant teenagers' beliefs is that if they attend ANC late in their pregnancies, they will be more likely to have pregnancy complications.

Ndambuki, et al. (2017b) likewise discovered that the majority of participants considered ANC clinics to provide satisfactory service. Nonetheless, the majority of participants were uncomfortable receiving ANC services beside older ladies. The findings were corroborated further by key informant interviews, which suggested that teenage mothers fear judgement and scorn from older women and that the majority of adolescent girls do not attend ANC on their own. Separate maternal care services for adolescent girls could increase ANC utilization because young women are sometimes uncomfortable receiving ANC services alongside older women.

Recent research (Mumah, 2014; Singh and Hamid, 2015; Van zyl, 2015) showed that a number of factors interact to influence teenagers' health-seeking behaviour. Pregnant teenagers may postpone disclosing their pregnancy because they are concerned about how their family and community would respond. They put themselves at risk of pregnancy complications that may be recognized and treated with ANC. The teens don't start going to ANC until they notify their parents or other adults about the pregnancy, but once they do, their mothers and grandmothers play an important role in pushing their participation. Further findings from the Reibel, et al. (2015) study suggested that returning to ANC may be impacted by the sense of family and respect provided by health providers. Teenagers are delighted to receive special attention from someone performing a health assessment.

Duggan and Adejumo (2012) concluded in their study on adolescent patients' perceptions of maternity care that health practitioners should be able to make patients feel at ease when checking their pregnancy. Health practitioners can greet and show attention to patients during consultations. Health workers must also be able to

empathize with and connect with patients. Also, study participants (Noirhomme-renard, et al., 2010) indicated fear about not having enough money to have their pregnancy evaluated.

Individual characteristics that restrict people from attending ANC, according to new research Amroussia, et al. (2017), are shame and remorse for being pregnant, fear of penalties from family and the greater community, and ignorance of ANC. Several religious and cultural conventions prevent pregnancy until after marriage. "A societal silence surrounding adolescent sexuality often fosters emotions of shame and guilt, resulting in ignorance of what ANC entails and when to seek help" (Ngabaza, 2011 pp. 42-51). Peninah et al. (2016) discovered that married young adults who listened to the radio on a virtually daily basis were 19% more likely to attend ANC in the first trimester than married young adults who did not (OR = 1.193, 95% CI = 1.007-1.413). Access to information via radio, television, and print media has been associated to a better possibility of an acceptable ANC and an early ANC start, according to Singh (2014) and Arthur (2007). Noirhomme-renard, et al. (2010) discovered that teenagers had practical expectations during pregnancy, such as knowledge about changes to their bodies, when to see a doctor, and how to prepare for labour, among other things. They went on to suggest that ongoing communication between young people and medical experts is critical during pregnancy.

Several youngsters also discussed their experiences with technological issues and counselling provided by the ANC. Teenagers who participated in ANC stated that communication between health professionals about the results of health assessments

was insufficient, thus they were unable to recollect specifics of the counselling that was offered, and the counselling had to be repeated (Freed, 2016a).

2.7 Research Gap and Conclusion

According to the literature, some adolescent mothers do not have access to or use Antenatal care services throughout the first trimester. A number of factors influence adolescent ANC utilisation during the first trimester, including inadequate knowledge about the benefits of ANC services, individual barriers, and institutional barriers; some adolescents avoid antenatal care because they perceive pregnancy as a source of guilt, shame, and fear of repercussions from family and the wider community; and a lack of knowledge about ANC. In this regard, however, the above literature does not show that there are similar studies in the hospital or region directly linking to teenage ANC utilisation among adolescents during first trimester. This shows a gap in literature and therefore this study intended to investigate the determinants of ANC utilisation during first trimester of pregnancy, a study of adolescent mothers attending GRRH.

CHAPTER THREE:

METHODOLGY

3.1 Introduction

A rigorous approach to methodology was used. This served as the basis for the construction of this research. The process through which the research was conducted, how data were collected and processed, and the results have been presented. This chapter also covered a variety of sections, including but not limited to, the design, study site and population, determination of sample size, sampling technique and eligibility for recruitment, among others.

3.2 Study Design

An analytical cross-sectional study design was adopted, employing mixed method approach. The choice was made because it allowed for the collection of timely information by directly questioning respondents about pertinent topics. Both quantitative and qualitative data collection methods were used, an explanatory concurrent mixed methods approach. Because of the integration of the two types of data, the researcher was able to completely appreciate the information provided by the quantitative or qualitative results. This strategy incorporated two data sets to provide a complete picture of the topic under inquiry and to cross-validate one set of findings with the other (Creswell and Plano, 2018).

3.3 Study Area

The study was conducted in Gulu regional referral hospital (GRRH). The Hospital is located in Gulu City, Gulu District, northern Uganda, between the longitudes of 30-32 degrees east and the latitudes of 02-4 degrees north. Gulu district is bordered by Amuru

district in the west, Lamwo in the north east, Pader in the east, Kole in the south east, Oyam in the south, and Nwoya in the south west. Gulu district encompasses 3,449.08 square kilometres, or 1.44% of Uganda's total land area. Open water covers 96.9 square kilometres (0.8%) of the land area. The city is 332 kilometres from Kampala, along the Great North Road, which also leads to the Democratic Republic of the Congo and Sudan. The city of Gulu has a population of 436,345 people, with a male population of 215,901 and a female population of 220,439 (UBOS, 2016).

Although the Luo dialect is spoken by the majority of Gulu's population, other tribes from all over Uganda have migrated and resided there as a result of the city's development, trade, and migration. The MOH funds Gulu regional referral hospital, which has 370 beds and provides free general care, which is why youngsters prefer to seek treatment there. With the exception of public holidays, the hospital's established Adolescent and Antenatal Care Clinic is open Monday through Friday from 8:30 a.m. to 5:00 p.m. Being a Regional Referral hospital, the facility treats around 60 youths per day and provides comprehensive general medical care, specialist services, and teaching services. Everyone in the Acholi sub-region is served by the hospital.

3.4 Study Population under investigation

The study sample consisted of adolescent pregnant women aged 10 to 19 years who attended ANC appointments at the Gulu Regional Referral Hospital, with a focus on those in their first trimester.

3.5 Sample Size Determination

The sample size is influenced by the research strategy (Cohen, et al., 2000). In order to generalize the study results, a representative sample of the population was necessary in the study. At Gulu hospital, there had been no previous studies on adolescent usage of ANC during the first trimester. As a result, with a 5% margin of error, it was anticipated that 50% of teens would use the programme. Following that, the maximum sample size was calculated using the Leslie Kish (1965) formula and the 95% confidence level, as shown below:

$$n = \frac{Z^2 pq(1-p)}{d^2}$$

Where:

Z = is the level of significance in z scores =1.96

p = prevalence =50%, which is 0.5 because the researcher does not know the prevalence of ANC utilization in first trimester among adolescents at GRRH.

d =is the absolute precision =0.05

n = estimated sample size

n = 1.96*1.96*0.5(1-0.5)/0.05*0.05 =384.16

n = 384 respondents.

Researcher expects 5 % of respondents not to respond.

384 x 0.05 =19.2 +384, therefore sample size would be 403 respondents.

3.6 Study Variables and Measurements

The dependent variable was utilization of ANC services which was assessed based on a binary outcome as shown in table 1. The independent variables were: adolescent mother's age (10-19 years), education level, marital status, religion, residence, whom respondent live with, husband's occupation, Knowledge of benefits of ANC, having ever attended ANC and others as shown in table 1.

Table 1: Variables and Measures

Variables	Indicators/measure	Scales of measurement
Dependent variable		
ANC Utilization	▪ Yes ▪ No	Binary /dichotomous
Independent variables		
1.Socio demographic characteristics		
Age in years	e.g 18 years	Numerical interval
Marital status	▪ Single ▪ Married ▪ Separate ▪ widow	Categorical nominal
Religion	▪ Catholic ▪ Anglican ▪ Moslem ▪ others	Categorical nominal
Level of education	▪ Never went to school ▪ Primary secondary ▪ tertiary	Categorical ordinal
Residence	▪ Urban ▪ rural	Categorical nominal
Whom do you live with?	▪ Parents ▪ Husband ▪ others	Categorical nominal
Husband's occupation	▪ Peasant ▪ Self employed ▪ Civil servant, student.	Categorical ordinal

2.Knowledge of adolescents on benefits of ANC		
Have you ever attended ANC?	▪ Yes ▪ No	Binary or categorical dichotomous
If ANC should be started in the first trimester?	▪ Yes ▪ No	Binary
ANC provides an opportunity to learn about HIV Status, and STI	▪ Yes ▪ No	Binary
ANC empowers one to be able to identify danger signs in Pregnancy	▪ Yes ▪ No	Binary
ANC provides increased knowledge about Reproductive health services	▪ Yes ▪ No	Binary
Where did you get information about ANC	▪ Radio ▪ Health facility ▪ Friends ▪ others	Categorical ordinal
Respondent is knowledgeable of ANC services she is supposed to receive	▪ yes ▪ No	Binary
3.Individual barriers to ANC		
Do you think the age of an adolescent can affect utilization of ANC	▪ Yes ▪ No	Binary
Do you think educational level of an adolescent can affect utilization of ANC?	▪ Yes ▪ No	Binary
Do you think marital status of an adolescent can affect utilization of ANC?	▪ Yes ▪ No	binary
Does religion have a role in adolescent? Can it affect utilization of ANC?	▪ Yes ▪ No	binary
Does distance to health facility affect utilization of ANC?	▪ Yes ▪ No	binary
Could there be any cultural taboo or reason that prevent adolescents from using ANC	▪ Yes ▪ No	Binary

Respondent sought permission from husband or family to attend ANC?	▪ Yes ▪ No	Binary
Where do you intend to deliver?	▪ Hospital ▪ TBA ▪ Others	Categorical nominal
Do you have support from family and husband now that you are pregnant?	▪ Yes ▪ No	Binary
4.Institutional barriers to ANC		
Is the hospital easily accessible	▪ Yes ▪ No	Binary
Does the hospital have enough skilled staff able to offer ANC services to adolescents	▪ Yes ▪ No	Binary
Are the health workers friendly to pregnant adolescents in ANC clinic	▪ Yes ▪ No	Binary
Do you pay for the Antenatal Care Services	▪ Yes ▪ No	Binary
5. Perception of adolescents		
Do you think utilization of ANC services is beneficial to mother and baby	▪ Yes ▪ No	Binary
What can you say about ANC Services in the hospital	▪ Very good ▪ Good ▪ Fair ▪ Poor	Categorical ordinal
Do you think attending ANC is important to pregnant adolescents	▪ Yes ▪ No	Binary
Magnitude of importance of ANC.	▪ Less important ▪ Important ▪ Very important ▪ I can't tell	Categorical ordinal

3.7 Data Collection Procedures

The researcher approached the pregnant teenagers, greeted them, and introduced herself as the ANC staff was ready to begin a health session. She also explained to the

teenagers what she was doing there, who was qualified to participate, and what the benefits of participation in the study were.

Using a simple random sampling technique, all youths who satisfied the inclusion requirements were given an equal chance to participate in the study. On that specific day, the number of pregnant adolescent females was recorded on small pieces of paper, which were then folded, placed in a basket, and carefully shaken. The respondents then chose one of the sheets at random, i.e., without altering the numbers, and made a note of it. Those who had little pieces of paper with the word "yes" on them were handed the questionnaire.

Following the provision of informed consent, data were gathered by distributing questionnaires to adolescent mothers who could read and understand the questions, allowing them to complete the form on their own while the data collectors remained present to clarify any ambiguities. The data collectors filled out the questionnaire for mothers who couldn't read or write while asking the questionnaire questions to the respondents. Questions addressed sociodemographic characteristics, teens' understanding of the benefits of requesting ANC services during the first trimester, institutional and personal hurdles to doing so, and adolescents' attitudes towards the use of ANC. The procedure was repeated every day until a total of 402 respondents were gathered.

The researcher used the purposive sample technique to select six youths who had attended ANC and given birth before for interviews. An intentional sample is one who selects persons who have witnessed the occurrence of interest. This type of sampling

is very useful when developing a historical reality, describing a phenomenon, or creating something about which little is known (Ranjit, 2014).

3.8 Operational definitions

In the study the following definitions were used;

1) **Adolescent mother:** These are women between the ages of 10 – 19years who become pregnant and parent their children.
2) **First ANC visit:** The first ANC timing to be before 12 weeks of gestational age

3.9 Data Collection Tools

The researcher used two main instruments to collect data; a questionnaire for quantitative data and an interview guide for qualitative data.

3.9.1 Interview Guide

In order to learn more about these young women's experiences, six of them were interviewed in depth. While investigating a phenomenon's surrounding experience, six people is the optimal sample size (Morse, 2000). Face-to-face in-depth interviews are frequently conducted with a single participant and one interviewer. In-depth interviews were useful for understanding people's perspectives. A probe in the form of a structured question guide was used to acquire in-depth information on the qualitative element of the data in order to clarify the information presented and evaluate the reliability of the qualitative results (Doyle, 2007). To properly capture all material during the interview, the researcher employed a tape recorder. This was done to make it easy to record all of the specifics of the information. It would also keep the individual from omitting important facts.

A female study assistant conducted interviews with adolescent mothers due to the sensitivity of some themes that may come up during interviews. Each interview was between 30 and 45 minutes long. Participants were interviewed in Luo because it is the major language spoken in the Gulu district. The one-on-one interviews took place in a separate section of the Antenatal clinic. Adolescents were allowed to use the midwives' services prior to being interviewed. The interviews were audio recorded in Luo and then written verbatim into English for transcription. Field notes were taken to offer contextual information that could not be captured on tape but could improve the understanding of the research findings. Within a short period of time after the interviews, the important findings from each interview were collated and provided to the participants for member verification. Transcripts were assigned code numbers in order to be identified.

3.9.2 Questionnaire

To acquire information, respondents were given a self-administered questionnaire. Personal survey submission may enhance response rate (Sitzia and Wood, 1998). As a result, a high response rate could be influenced by the researcher and/or assistance personally handing out the questionnaires. Questionnaires are often used because of the huge number of participants in the study, the accompanying costs, and the requirement for both qualitative and quantitative data (Kothari, 2004). It is the easiest method for contacting responders and gathering information in the little amount of time available. The researcher and a second Luo speaker who is fluent in both languages wrote the questionnaire in English and translated it into Luo. A Luo translation

professional then did a reverse translation into English to check the questionnaire's accuracy and to avoid distorting the words' intended meaning.

3.10 Quality control

Although complete reliability and validity are practically impossible to obtain, reliability is concerned with the consistency of measures, and validity is concerned with what the researcher's instruments are intended to measure in the study (Neumann, 2000).

The study aimed to improve study reliability by piloting the research instruments to verify clarity and validity, as well as designing the data collection methods to capture the main elements in the general and specific objectives. After completing all of the questionnaires, a spot check was undertaken to ensure that there were no data collection errors or missing questions. When this occurred, the researchers re-interviewed the respondent to check the data, which improved the quality of the data. The questionnaire was pre-tested on 20 teenage mothers receiving ANC at Awach H/C IV between July 11 and July 15, 2022. This was done prior to starting the actual study to aid in identifying areas of weakness and compensating for questionnaire ambiguity. After the pretest, small revisions were done before it was finalized and used for the primary study.

3.11 Data Management and Analysis

Both qualitative and quantitative data were collected. Data was managed and evaluated independently.

3.11.1 Analysis of qualitative data

The qualitative data was analyzed narratively, with direct quotations on some of the material provided by respondents without affecting the meaning. The researcher also searched for trends and patterns during the interview, organized the data into themes, and then coded the themes based on the research objectives.

3.11.2 Analyzing quantitative data

MS-Excel version 21 was used to clean the data, which was then coded, entered, and imported into the statistical software for social scientists (SPSS) Version 17.0 for analysis. This statistical tool was chosen since the data consisted of quantitative data, and SPSS has the capability of analyzing such data. Descriptive statistics were presented using frequency and percentage, whilst numerical data was summarized using mean and standard deviation or median and interquartile range, depending on the data's normalcy.

3.12 Ethical considerations

The researcher sought and gained permission from Uganda Christian University's Research Ethics Committee (UCUREC) which approved the study **(Ref. No: UCUREC-2022-310).** It was later reviewed and approved by the Gulu Regional Referral Hospital-REC and the GRRH In-charge of Antenatal Care prior to data collection. Subjects supplied written informed consent before participating in the study.

Furthermore, all of the study's methodology, benefits, and participant expectations were thoroughly provided in a language that was easily understood. Participants had the option of withdrawing from the study without penalty. To affirm their willingness to participate, prospective participants were given consent papers that underlined their

willingness to participate in the study. For emancipated minors, the adolescent mothers consented. These participants were asked to consent or assent before the interviews or data gathering began (UNCST, 2014). Pseudonyms were used to protect and maintain the participants' anonymity, and all information provided by participants was kept strictly confidential.

3.13 Methodological limitation

The study had no major limitation. However, Gulu Regional Referral Hospital was purposively selected. As a result, the study's findings are limited to regional referral hospitals and may not be easily extrapolated to the district hospitals. The findings of the study may not be indicative of all adolescent mothers in their first trimester who do not receive Antenatal care. A more geographically and demographically representative study is, thus, required.

CHAPTER FOUR:

RESULTS

4.1 Introduction

This chapter presents the main results and findings obtained from the study.

4.2 Demographic characteristics of participants

The study included 402 people, with a median age of 18 years (interquartile range: 17–18). The vast majority of participants (n = 148) were married (38.3%) or single (36%). The majority (51.7%, n=208) lived in a city. In terms of religious affiliation, Catholics made up the plurality of participants (48%, n=193), while Muslims made up 7.7%, n=31. The vast majority (44%, n=177) of individuals had only completed primary school. More than half of the participants (40.8%, n = 164; 38.1%, n = 153) lived with their husbands or parents. In addition, 37.3% of the 150 adolescent ladies had "boda-boda" cyclist husbands, according to Table 2.

Table 2:Summary of the socio-demographic characteristics

Variable	Frequency	Percentage
Median age (in years)	18	17-18
Marital status		
▪ Married	154	38.3%
▪ Separated	68	16.9%
▪ Single	148	36.8%
▪ Widow	32	8.0%
Religion		
▪ Others	80	19.9%
▪ Anglican	98	24.4%
▪ Catholic	193	48.0%
▪ Moslem	31	7.7%
Education level		

▪ Never	47	11.7%
▪ Primary	177	44.0%
▪ Secondary	140	34.8%
▪ Tertiary	38	9.5%
Residence		
▪ Rural	194	48.3%
▪ Urban	208	51.7%
Whom do you Live with?		
▪ Others	65	16.2%
▪ Alone	20	5.0%
▪ Husband	164	40.8%
▪ Parents	153	38.1%
Husbands' occupation		
▪ Boda-boda	150	37.3%
▪ Businessman	99	24.6%
▪ Civil servant	13	3.2%
▪ Peasant farmer	59	14.7%
▪ Student	51	12.7%
▪ N/A	30	7.5%

4.3 Knowledge of adolescents about benefits of ANC services within 1st trimester

Awareness of prenatal care service and understanding of its benefits to adolescent mothers during the first trimester is thought to be a primary influential element in pregnant adolescent's decision to use ANC service.

It is predicted that the more knowledgeable the adolescent is of the benefits and treatments available, the more likely they will begin ANC as soon as they conceive or during the first trimester.

A question was thus directed to the adolescent mother in order to determine whether she had ever attended ANC. "Yes" and "No" responses were elicited from those present. 56.7% (n=228) of respondents said no, while 43.3% (n=174) said yes.

Teenagers were asked about the benefits of ANC programmes (Table 3). According to the data, the majority of adolescent mothers were well-versed in ANC programmes. The majority of adolescent mothers agreed that ANC should be obtained during the first trimester (77%, n=310), that it allows people to learn about their HIV status and STIs (83.3%, n=337), that it teaches people how to recognize pregnancy danger signs (80.6%, n=324), and that it increases their knowledge of reproductive health services. 77.6% (n=321) of those polled were aware of the services they were to receive at the medical facility. They were also particularly questioned about the services given. The majority of respondents mentioned STI and HIV testing. Teens also reported checking their blood pressure, weight, and palpating their abdomen.

Another essential purpose of the study was to learn from adolescents about their primary sources of information about ANC services. As seen in table 3, 53.3% of teenagers who mentioned it (n=214) did so in reference to other sources of knowledge.

Table 3: Univariate Analysis of factors influencing utilization of ANC during 1st Trimester (n= 402)

Variable	Frequency	Percentage
Knowledge related factors		
Have you ever attended ANC?		
▪ No	228	56.7%
▪ yes	174	43.3%
Do you think ANC should be accessed in first trimester?		
▪ No	92	22.9%
▪ Yes	310	77.1%
ANC provides opportunity to learn about HIV status and STI.		
▪ No	65	16.2%
▪ Yes	337	83.8%
ANC empowers one to be able to identify danger signs in pregnancy		

▪ No	78	19.4%
▪ Yes	324	80.6%
ANC provides increased knowledge about reproductive Health services.		
▪ No	82	20.4%
▪ Yes	320	76.6%
Where did you get Information about ANC?		
▪ Friends	52	12.9%
▪ Others	38	9.5%
▪ Radio	214	53.2%
▪ Health facility	98	24.4%
Individual related factors		
Do you know of ANC services supposed to receive at a health facility?		
▪ No	90	22.4%
▪ Yes	312	77.6%
Do you think age of adolescent can affect utilization of ANC?		
▪ No	258	64.2%
▪ Yes	144	35.8%
Do you think educational level of adolescent can affect uptake of ANC?		
▪ No	299	74.4%
▪ Yes	103	25.6%
Do you think marital status of adolescents can affect their ANC uptake**?**		
▪ No	278	69.2%
▪ Yes	124	30.9%
Does religion have any role in ANC among adolescents?		
▪ No	393	97.8%
▪ Yes	9	2.2%
Does distance to health facility affect uptake of ANC?		
▪ No	214	53.2%
▪ Yes	188	46.8%
Could there be any Cultural taboo that prevents adolescents from using ANC?		
▪ No	396	98.5%
▪ Yes	6	1.5%
Did you need permission you're your husband or family to attend ANC?		
▪ No	136	33.8%
▪ Yes	266	66.2%
Where do you intend to delivery?		

▪ Hospital	379	94.3%
▪ TBA	23	5.7%
Do you have support from family and husband?		
▪ No	197	49%
▪ Yes	205	51.0%
Institutional related factors		
Is the hospital easily accessible?		
▪ No	133	33.1%
▪ Yes	269	66.9%
Does the hospital have enough skilled staff able to offer ANC services to adolescents?		
▪ No	78	19.4%
▪ Yes	324	80.6%
Are the health workers friendly to pregnant adolescents?		
▪ No	120	29.9%
▪ Yes	282	70.2%
Do you pay for ANC services		
▪ No	402	100.0%
▪ Yes	00	00.0%
Perception of adolescents about ANC utilization		
Do you think utilization of ANC is beneficial to mother and baby?		
▪ No	17	4.2%
▪ Yes	385	95.8%
What can you say about ANC services in the hospital?		
▪ Good	188	48.0%
▪ Very good	96	24.5%
▪ Fair	108	27.5%
Do you think ANC is important to adolescents?		
▪ No	2	0.5%
▪ Yes	400	99.5%

Source: Primary data (2022)

4.4 Individual Determinants of Utilization of ANC Services

The study also highlighted the specific barriers that keep youth from utilizing ANC in hospitals. In order to obtain findings, certain demographic characteristics were

questioned (Table 3) The survey gave high marks to age (64.2%, n=258), educational attainment (74.4%, n=299), and marital status (69.2%, n=278). Virtually all respondents (97.8%, n=393) said that cultural taboos and religion were not impediments to utilizing ANC (98.5%, n=396). The majority of respondents (53.2%, n=214) agreed that the distance to the healthcare facility has little impact on ANC uptake. The majority of adolescent mothers (66.2%, n=266) required the aid of their husband or family (51%, n=205) in addition to receiving it themselves. Because adolescent pregnancy is unpredictable, the vast majority of adolescents (94.3%, n=379) reported that they intended to give birth in a hospital. See table 4 for detailed analysis.

Table 4: Bivariate analysis for Individual Determinants of Utilization of ANC Services

Variable	**All (n=402)**	**ANC utilization**		**P value**
		Yes (n=174)	**No (n=228)**	
Median age & age range (in years)	18(17-18)	17(16-17)	18(18-19)	**0.001***
Marital status				
▪ Married	154	39(22.4%)	115(50.4%)	**0.001***
▪ Separated	68	30(17.2%)	38(16.7%)	
▪ Single	148	93(53.5%)	55(24.1%)	
▪ Widow	32	12(6.9%)	20(8.7%)	
Religion				
▪ Others	80	33(19%)	47(20.6%)	0.578
▪ Anglican	98	43(24.7%)	55(24.1%)	
▪ Catholic	193	81(46.6%)	112(49.1%)	
▪ Moslem	31	17(9.8%)	14(6.1%)	
Level of Education				
▪ Never went	47	24(13.8%)	23(10.1%)	**0.001***
▪ Primary	177	92(52.9%)	85(37.3%)	
▪ Secondary	140	55(31.6%)	85(37.3%)	
▪ Tertiary	38	3(1.7%)	35(15.4%)	
Residence				
▪ Rural	194	85(48.6%)	109(47.8%)	0.841
▪ Urban	208	89(51.2%)	119(52.2%)	
Whom do you live with?				

▪ Others	65	32(18.4%)	33(14.5%)	**0.001***
▪ Alone	20	2(1.2%)	18(7.9%)	
▪ Husband	164	43(24.7%)	121(53.1%)	
▪ Parents	153	97(55.8%)	56(24.6%)	
Do you think ANC should be accessed in 1st trimester?				
▪ No	92	61(35.1%)	31(13.6%)	**0.001***
▪ Yes	310	113(64.9%)	197(86.4%)	
ANC provides an opportunity to learn about HIV/STI				
▪ No	65	34(19.5%)	31(13.6%)	0.132
▪ Yes	337	140(80.5%)	197(86.4%)	
ANC empowers on Danger signs in pregnancy				
▪ No	78	35(20.1%)	43(18.9%)	0.800
▪ Yes	324	139(79.9%)	185(81.1%)	
ANC provides increased knowledge about Reproductive Health Services				
▪ No	82	39(22.4%)	43(18.7%)	0.385
▪ Yes	320	135(77.6%)	185(81.1%)	
Source of Information about ANC				
▪ Friends	52	29(16.7%)	23(10.1%)	**0.001***
▪ Others	38	28(16.1%)	10(4.4%)	
▪ Radio	214	84(48.3%)	130(57%)	
▪ Health facility	98	33(19.0%)	65(28.5%)	
ANC services supposed to receive				
▪ No	90	51(29.3%)	39(17.1%)	**0.005***
▪ Yes	312	123(70.7%)	189(82.9%)	
Do you think age of adolescent affect ANC utilization				
▪ No	258	101(58.1%)	157(68.9%)	0.028
▪ Yes	144	73(41.9%)	71(31.1%)	
Do you think educational level of adolescent affect ANC uptake**?**				
▪ No	299	133(76.4%)	166(72.8%)	0.422
▪ Yes	103	41(23.6%)	62(27.2%)	

Do you think marital status of adolescents affect ANC uptake?				
▪ No	278	119(68.4%)	159(69.7%)	0.828
▪ Yes	124	55(31.6%)	69(30.3%)	
Does religion have a role in ANC uptake?				
▪ No	393	168(96.6%)	225(98.7%)	0.184
▪ Yes	9	6(3.4%)	3(1.3%)	
Does distance to health facility affect ANC uptake?				
▪ No	214	100(57.5%)	114(50.0%)	0.158
▪ Yes	188	74(42.5%)	114(50.0%)	
Any Cultural taboo that prevents using ANC				
▪ No	396	172(98.9%)	224(98.3%)	0.702
▪ Yes	6	2(1.2%)	4(1.8%)	
Did you need Permission to attend ANC?				
▪ No	136	66(37.9%)	70(30.7%)	0.137
▪ Yes	266	108(62.1%)	158(69.3%)	
Where do you intend to deliver?				
▪ Hospital	379	165(94.8%)	214(93.9%)	0.829
▪ TBA	23	9(5.2%)	14(6.1%)	
Do you have Family and husband support?				
▪ No	197	79(45.4%)	118(51.8%)	0.227
▪ Yes	205	95(54.6%)	110(48.3%)	
Is the hospital easily accessible?				
▪ No	133	58(33.3%)	75(32.9%)	0.999
▪ Yes	269	116(66.7%)	153(67.1%)	
Does the hospital have enough Skilled staff?				
▪ No	78	37(21.3%)	41(18.0%)	0.446
▪ Yes	324	137(78.7%)	187(82.0%)	
Are health workers Friendly to adolescents in ANC clinic				
▪ No	120	60(34.5%)	60(26.3%)	0.080
▪ Yes	282	114(65.5%)	168(73.7%)	
Benefit of ANC Services to mother and baby				
▪ No	17	10(5.8%)	7(3.1%)	0.216

▪ Yes	385	164(94.3%)	221(96.9%)	
ANC services in the hospital				
▪ Good	188	84(48.6%)	104(47.5%)	0.245
▪ Very good	96	36(20.8%)	60(27.4%)	
▪ Fair	108	53(30.6%)	55(25.1%)	
Do you think attending ANC is important to adolescents?				
▪ No	2	0(0.0%)	2(0.9%)	0.508
▪ Yes	400	174(100.0%)	226(99.1%)	
Magnitude of ANC importance				
▪ Less important	4	0(0.0%)	4(1.8%)	0.177
▪ Important	28	15(8.6%)	13(5.7%)	
▪ Can't tell	265	118(67.8%)	147(64.5%)	
▪ Very Important	105	41(23.6%)	64(28.1%)	

Table 4 showed that adolescent mothers' marital status (p=0.001) had a significant influence on ANC attendance in the first trimester among adolescent mothers at the bivariate level, and the influence remained significant at the multivariate level analysis, being separated (aOR:0.4, 95% CI: 0.23-0.75, p=0.006) and being single (aOR: 0.2, 95% CI: 0.12-0.33, p=0.001). This suggests that separated adolescent mothers were 60% less likely to attend ANC in the first trimester. Single women are 80% less likely to attend ANC in the first trimester.

Table 4 shows that the level of education of adolescent mothers affects ANC in the first trimester at the bivariate level. After controlling for confounding variables, educational level (achieving tertiary level) remained significant (aOR: 12.2, 95% CI: 3.18-45.1, p=0.001). This finding indicated that educational level has a significant influence on ANC utilization during the first trimester among adolescent mothers attending ANC at GRRH.

Table 4 demonstrates that who the adolescents lived with (p=0.001) had a significant bivariate influence on ANC visit in the first trimester. It remained significant at the multivariable level for those who lived with their husband (aOR: 0.01, 95% CI: 0.02-0.53, p=0.006) and parents (aOR: 0.1, 95% CI: 0.01-0.29, p=0.001). According to these findings, people who lived with husbands were 0.99 less likely to use ANC than those who lived alone, with parents, or with other relatives. The findings also indicate that those who lived with their parents were 0.9 less likely to use ANC than those who lived alone or with other relatives.

Table 4 also revealed that visiting ANC in the first trimester (p=0.001) had a significant impact on ANC consumption at the bivariate level. That was also the case after controlling for confounding factors (aOR: 3.4, 95% CI: 2.10-5.60, p=0.001). This finding indicates that knowing how to get ANC in the first trimester has a significant influence on ANC consumption at GRRH. Adolescent mothers who were aware that ANC should be accessed during the first trimester were 3.4 times more likely to use ANC during the first trimester than those who were unaware.

The table also indicated that knowing what ANC services were available at ANC Clinics had a significant impact on ANC consumption during the first trimester at the bivariate level (p=0.005). After controlling for confounding variables, knowing what is in ANC services remained significant at the multivariable level (aOR: 2.0, 95% CI: 1.25-3.23, p=0.004), implying that those who knew of ANC supposed to be received at the health facility were twice as likely to have their first ANC visit in the first trimester.

Table 4 further demonstrated that age(p<0.001) was significant at bivariate level. When correcting for confounding factors, age remained significant at the multivariable level

(aOR: 0.6, 95% CI: 0.41-0.94, p=0.025), indicating that adolescent age is a significant predictor of ANC usage in GRRH during the first trimester. Adolescent women were 40% less likely to use ANC during the first trimester.

To correct for confounding, the study performed a Multivariate Binary Logistic Regression Analysis on components that were significant at the bivariate analysis level, as shown in Table 4. The following are the results showing the Adjusted Odd Ratio (AOR) for each of the components processed, along with the corresponding p-values at a 5% level of significance:

Table 5: Multivariable logistic regression for factors independently associated with ANC utilization

Variable	Adjusted Odds ratio	95 % CI	P value
Marital status			
▪ Married	1.0		
▪ Separated	0.4	0.23-0.78	**0.006 ****
▪ Single	0.2	0.12-0.33	**<0.001****
▪ Widow	0.6	0.25-1.26	0.164
Education			
▪ Never	1.0		
▪ Primary	0.9	0.51-1.83	0.911
▪ Secondary	1.6	0.83-3.14	0.159
▪ Tertiary	12.2	3.28-45.13	**<0.001****
Whom do you Live with?			
▪ Others	1.0		
▪ Alone	0.3	0.07-1.40	0.129
▪ Husband	0.1	0.02-0.53	**0.006****
▪ Parents	0.1	0.01-0.29	**<0.001****
Do you think ANC should be accessed in 1st trimester?			
▪ No	1.0		
▪ Yes	3.4	2.10-5.60	**<0.001****

Source of information about ANC			
▪ Friends	1.0		
▪ Others	2.4	1.25-4.95	0.010
▪ Radio	0.5	0.18-1.11	0.084
▪ Health facility	1.9	1.06-3.59	0.032
Do you know of ANC service supposed to receive?			
▪ No	1.0		
▪ Yes	2.0	1.25-3.23	**0.004 ****
Do you think Age of adolescent affect utilization of ANC?			
▪ No	1.0		
▪ Yes	0.6	0.41-0.94	**0.025****
Are health workers friendly?			
▪ No	1.0		
▪ Yes	0.8	0.52-1.15	0.207

Factors independently associated with ANC utilization(table 5) were , being separated (adjusted Odds ratio, aOR:0.4, 95% CI: 0.23-0.75, p=0.006), single (aOR: 0.2, 95% CI: 0.12-0.33, p<0.001), having attained tertiary level of education(aOR: 12.2, 95% CI: 3.18-45.1, p<0.001), living with the husband (aOR: 0.01, 95% CI: 0.02-0.53, p=0.006), parents(aOR: 0.1, 95% CI: 0.01-0.29, p<0.001), knowing what is in ANC services(aOR: 2.0, 95% CI: 1.25-3.23, p=0.004) and age (aOR: 0.6, 95% CI: 0.41-0.94, p=0.025)

4.5 Institutional Determinants of Utilization of ANC Services

The majority of adolescents (66.9%, n=269) considered it simple to get to the hospital (Table 3). The majority (80.6%, n=324) reported that the hospital had appropriate qualified people able to give ANC services and that health professionals were also

courteous to them (70.2%, n=282). This is primarily due to medical interns and student midwives on placements from universities and adjacent training schools filling the personnel deficit. Another essential aspect of the study was determining whether or not teens were charged for ANC services. 100% of respondents (n=402) stated that they did not pay. This is due to regulation prohibiting government hospitals and health centres from charging for medical services. See detailed analysis in table 6.

Table 6: Bivariate analysis for Institutional Determinants of Utilization of ANC Services

Variable	All (n=402)	ANC Utilization		P-value
		Yes (n=174)	No (n=228)	
Is the hospital easily accessible?				
▪ No	133	58(33.3%)	75(32.9%)	0.999
▪ Yes	269	116(66.7%)	153(67.1%)	
Does the hospital have enough Skilled staff?				
▪ No	78	37(21.3%)	41(18%)	0.446
▪ Yes	324	137(78.7%)	187(82%)	
Are health workers Friendly to adolescents in ANC clinic				
▪ No	120	60(34.5%)	60(26.3%)	0.080
▪ Yes	282	114(65.5%)	168(73.7%)	
Benefit of ANC Services to mother and baby				
▪ No	17	10(5.8%)	7(3.1%)	0.216
▪ Yes	385	164(94.3%)	221(96.9%)	
ANC services in the hospital				
▪ Good	188	84(48.6%)	104(47.5%)	0.245
▪ Very good	96	36(20.8%)	60(27.4%)	
▪ Fair	108	53(30.6%)	55(25.1%)	
Do you think attending ANC is important to adolescents?				
▪ No	2	0(0.0%)	2(0.9%)	0.508
▪ Yes	400	174(100%)	226(99.1%)	

Magnitude of ANC importance				
▪ Less important	4	0(0.0%)	4(1.8%)	0.177
▪ Important				
▪ Can't tell	28	15(8.6%)	13(5.7%)	
▪ Very Important	265	118(67.8%)	147(64.5%)	
	105	41(23.6%)	64(28.1%)	

Table 7: Multivariable logistic regression for institutional factors associated with ANC utilization

Variable	Adjusted Odds ratio	95% CI	P value
Are health workers friendly?			
▪ No	1.0		
▪ Yes	0.8	0.52-1.15	0.207

Source :(Primary Data 2022).

Therefore, as shown in table 6 & 7, there was no statistical finding for institutional determinants of utilization of ANC services.

4.6 Perception of adolescents about ANC utilization

Majority of participants (95.8%) said utilization of ANC was beneficial to the mother and baby (Table 8).

Table 8: Perception of Adolescents about ANC utilization

Perceptions of adolescent mother	ANC Utilization (n= 402)	
	Frequency	Percentage
Do you think utilization of ANC is beneficial to mother and baby?		
▪ No	17	4.2%
▪ Yes	385	95.8%
What can you say about ANC services in the hospital?		
▪ Good	188	48.0%
▪ Very good	96	24.5%
▪ Fair	108	27.5%
Do you think ANC is important to adolescents?		

▪ No	2	0.5%
▪ Yes	400	99.5%

In the assessment on the ANC services at the hospital, adolescent mothers had mixed feelings;(48%, n=188) said it was good, (27.5%, n=108) said it was fair, and (24.5%, n=96) said it was very good. Pregnant teenagers (99.5%, n=400) answered positively to the necessity of attending ANC. The magnitude was deemed important by (65.9%, n=265) and very important by (26.1%, n=105).

Qualitative findings from in-depth interviews with six adolescent mothers highlighted several important trends. The themes (see table 9) were divided into primary and sub themes based on the parameters impacting ANC utilisation:

Table 9: Main themes and Sub-themes from Qualitative Data

Main Themes	**Sub-themes**
Knowledge about benefits of ANC	▪ Important ▪ Prevents mother to child transmission of HIV. ▪ ANC services good ▪ Dislike location of unit ▪ Unit does not warranty confidentiality.
Individual factors	▪ Not sure when to start ANC ▪ Never went to school(ignorance) ▪ Age leading to stigma ▪ Husbands' restriction
Institutional factors	▪ Waiting for long/delays ▪ Lack of confidentiality/insecurity

In reference to knowledge aspects, four respondents were not sure of when to start ANC, however they knew of certain benefits of commencing it during first trimester.

They hypothesised that starting ANC at a young age allows an adolescent mother to learn about her HIV status and other hidden disorders. This is what they showed:

> *"[…] Well, I do not know exactly when to start ANC… it is around four months, but the benefits of starting ANC are quite many. Mothers are taught how to keep safe during pregnancy, taught of thing which are not good signs of pregnancy… like if see blood coming from your private part … also checking Slim, syphilis, hepatitis B and sugar tests. They check your husband for slim also… (looks up). I have seen things like blood measuring your weight and pressure, touching your abdomen, ask you many questions about your pregnancy" [...]* ***(IDI 3)***.
>
> *"[…] I'm not sure when to begin ANC may be if a mother fall sick. Humm…… ANC is good because it helps to check how babies lie and blood tests are done for syphilis and HIV and measure many things, give you nets, drugs for malaria and increasing blood" … I got the information today from the hospital. I was not feeling well so I Adolescent friendly clinic) found out about my pregnancy and escorted me here to start ANC[...]"* ***(IDI 2)***
>
> *"All I know is that you may start ANC when you are ready. Afterall pregnancy is not a sickness. I hear others even come when they are about to give birth"* ***(IDI 6)***
>
> *"[…] I think it is very important because the health workers can detect any problem a mother or a child may be having from the womb and treat it... also these days they test mother's blood for slim disease and in case they get, they give you RVs to prevent your disease passing to the baby […]"* ***(IDI 1)***
>
> *"[…] to prevent HIV from mother to the child in the womb […]* ***(IDI 6)***
>
> *"[…] The services are good but I don't like the location of the place, it is too open. Everyone sees you entering the tents and immediately knows you are expecting. They need to think of also including ANC at the AFHS section[...]* ***(IDI 5)***
>
> *"[…] The services are good. I got my drugs, mosquito net, however that tent (pointing) where we are booked from is too open… everyone sees you entering […]"* ***(IDI 5)***.

Some individual factors were also noted to have resulted in late starting of ANC during first trimester. One participant illustrated this:

"[…] For me I never went to school including my husband so I'm just beginning to understand most of the things related to antenatal care today. […]" ***(IDI 4)***

Another participant said this way:

"Hmmm… I'm so young as you can see, I feel within myself that I'm being looked at from all corners and criticized by many people" ***(IDI 6)***.

Another theme that came up was husband restricting their mobility and negative attitude towards healthcare service. Four respondents complained about the behavior of their husbands. One respondent exemplified it this way:

"[…] For example, when I told him we need to go for ANC, he refused citing busy schedules. Again, I asked after a week and he answered rudely telling me to go and not to delay there(laughing). So, I had to come […]" ***(IDI 3)***.

Participants identified two institutional variables that could prevent adolescent mothers from starting ANC during the first trimester. All six adolescent mothers identified long and excessive delays by facility as the most significant issue preventing adolescent mothers from obtaining early ANC services. They had the following to say:

"[…] Waiting for long to be served is what I have noted. I came here at eight and now it's coming to 4pm still in the queue… I'm feeling hungry and tired(yawning). Even the person who brought me is complaining too much. You can come early but sit for a long time waiting for the nurses to start work. You can be seeing them doing their own things […]" ***(IDI 2)***.

"[…] the question of which people have come as a couple is what I hate to hear. Nurses serve you last simply because you came alone for ANC.It is not easy to convince your boyfriend or husband to come here. they do not chase but tell you couples first. I do not want to wait …. wait for long […]" ***(IDI 1)***.

"[…] They keep us waiting as they take their tea […]" ***(IDI 2) and (IDI 6)***.

"[…] Sometimes they take their time to start the clinic …the situation is somehow better when students are around" […] ***(IDI 4)***.

"[…] mothers take long here waiting especially when only three staff are working. Hospital should think of adding more workers […]" ***(IDI 5)***

Lack of confidentiality and insecurity. Adolescent's mothers' interest to seek ANC services from skilled providers acted as barriers due to lack of confidentiality. Three participants responded that lack of privacy while attending ANC acted as factor influencing ANC utilization during first trimester of pregnancy.

> *"[…] I fear being seen entering the tent. Everyone sees you and comments about the pregnancy…even that one is pregnant […]"* ***(IDI 4)***.

> *"[…] The tent for booking is so open moreover we are mixed together with bigger mothers who talk negatively about us […]"* ***(IDI 5)***
>
> *"[…] hmmm this place is not so good because we are so exposed to outsiders[...]"* ***(IDI3)***.
>
> *"[..]The unit is not conducive and next to mental health unit; even mad people can come and beat up mothers here. […]"* ***(IDI 2)***.

In this study, adolescent mothers were asked to provide suggestions on how to improve utilization of ANC during first trimester at the hospital. This is what they illustrated:

> *"Yeah, they should start the clinic early to avoid delays instead of wasting time"* ***(IDI 1)***.
>
> *"They need to think of transferring the clinic to another location or have a separate clinic for adolescent mothers."* ***(IDI 4)***.
>
> *"They should sensitize parents and the community about the benefits of ANC during first trimester visits."* ***(IDI 6)***.

4.7 Summary of results

We recruited 402 participants for the study. The utilization of ANC among the participants were at 43.3 %, (n=174). Basing on multivariable analysis, knowledge related factor that were significantly associated with ANC utilization in first trimester were knowledge of ANC services (p =0.004) and knowledge of accessing ANC in first

trimester of pregnancy(p=0.001).Individual factors that were significantly related to ANC utilization during were age (p= 0.025), marital status (being separated (p= 0.006) being single (p < 0.001),tertiary education level(p< 0.001), and who the adolescent lives with ;husband (p= 0.006)and parent (p= 0.001). Findings from qualitative interview revealed limited information on ANC timing, lack of confidentiality, education, age, permission from husbands and delays at the clinic.

CHAPTER FIVE:

DISCUSSION

5.1 Introduction

The study's purpose was to identify the characteristics influencing adolescents' use of prenatal care services throughout the first trimester at Gulu Regional Referral Hospital. To accomplish these goals, specific objectives were established, including establishing adolescents' knowledge of the benefits of seeking ANC services, determining individual barriers to accessing ANC services, determining institutional barriers to accessing ANC services by adolescents, and exploring adolescents' perceptions of ANC service utilization during the first trimester.

5.2 Adolescent awareness of the benefits of ANC

According to the survey, only 43.3% of adolescent women used ANC throughout the first trimester. This discovery supports the findings of previous research in another district of Uganda. In their study on the timing and quality of prenatal care among adolescent mothers, Kiyemba, et al. (2022) discovered that only 47% of adolescent mothers received timely ANC visits. Similarly, Nabisere (2019) discovered that only 41% of pregnant adolescent females in Kampala district attended the WHO-recommended eight prenatal appointments. Although about half of the participants commenced ANC in the first trimester of pregnancy, this is still a low rate given that the WHO encourages all pregnant women in developing countries such as Uganda to obtain ANC during the first trimester of gestation (WHO,2018). If this trend continues, it is likely to derail the attainment of the Sustainable Development Goals (SDG) for maternal mortality ratio (MMR) by 2030, ANC having become a crucial element in the determination of maternal

and Neonatal death in each locality. According to Mulondo (2020), underutilization of ANC services is typically connected with personal variables such as late pregnancy recognition and a lack of support. He goes on to say that the majority of women are unaware of the benefits of early ANC services, which contributes to the high prevalence of late ANC booking. This puts adolescent mothers at a significant risk of maternal problems.

In the present study 77.6% of adolescent mothers were aware of the ANC services available at the facility (aOR: 2.0, 95% CI: 1.25-3.23, p=0.004), implying that those who knew of ANC supposed to be received at the health facility were twice as likely to have their first ANC visit in the first trimester. This demonstrated that the majority of participants were well-versed in the bulk of the knowledge items used in the knowledge evaluation. Of those who had knowledge about ANC services radio (53.3%) was the primary sources of information. This can be as a result of the weekly radio shows on reproductive health concerns created by numerous district stakeholders and broadcast on Radio Mega. This finding is consistent with one of the research conducted in Ethiopia, which discovered that women with higher understanding of antenatal care were 3.54 times more likely to use the services than those with no information (Bimeta, et al., 2013). It is possible that certain adolescent mothers who have previously attended ANC are more aware of and knowledgeable about the health providers' maternal health services. Knowledge, according to Abajobir and Seme (2014), is connected with service consumption elsewhere. Individuals who are informed develop a rational approach in utilizing ANC services during first trimester. Adolescents' knowledge of ANC services at GRRH demonstrates that the hospital provides quality ANC services and information.

In addition, adolescent mothers who were aware that ANC should be accessed during the first trimester (aOR: 3.4, 95% CI: 2.10-5.60, p=0.001), were 3.4 times more likely to use ANC during the first trimester than those who were unaware. This finding indicates that knowing how to get ANC in the first trimester has a significant influence on ANC consumption at GRRH. This finding is consistent with another study conducted in Northern Ethiopia, in which pregnant women who had strong knowledge of the time of their first ANC visit were more likely than their counterparts to begin their first ANC visit on time (Fisseha et al 2015). This could be attributable to VHTs educated in family health care sensitizing and mapping pregnant adolescents and mothers in their communities so that they come for antenatal care visits early. As a result, the few teenagers who initiated ANC in the first trimester may have benefited. This finding highlights the importance of increasing and disseminating ANC uptake among adolescents throughout the first trimester, as suggested by national guidelines.

5.3 Individual Factors for ANC Utilization

The age of the adolescent mother was revealed to be a significant predictor of ANC consumption during the first trimester in GRRH. This could be due to the stigma and dread of being pregnant at such a young age. Because of their age, adolescents' mothers were 40% less likely to use ANC during the first trimester (aOR: 0.6, 95% CI: 0.41-0.94, p=0.025). This means they are at a higher risk of pregnancy-related issues, which could affect hospital utilization of ANC given how crucial it is for adolescents to embrace ANC. This finding emphasizes the importance of amplifying advocacy messages aimed at increasing ANC utilization among teenagers. Young girls lack pregnancy experience, and even if she suspects her own pregnancy, she may avoid seeking ANC treatments out

of fear of discrimination or being discovered, a desire to conceal pregnancy, fear of being beaten, chased away from home, or expelled from school, anticipating abortion and being stigmatized by their parents for bringing shame to the family. This could also be related to a lack of awareness of the need for ANC, as well as a lack of knowledge about where to get them, as well as the requirement for authorization from carers to seek health care. This finding is challenged by a study conducted in Ethiopia, which found that pregnant women aged 15 to 19 years were more likely to seek Antenatal care than women aged 35 to 39 years (Bayu, et al., 2015).

Owolabi, et al. (2017) discovered that adult mothers stigmatize pregnant adolescent females, causing them to avoid visiting ANC.

The study also found that adolescent mothers' marital status influenced their use of ANC throughout the first trimester. Those who are separated (aOR:0.4, 95% CI: 0.23-0.75, p=0.006) and single (aOR: 0.2, 95% CI: 0.12-0.33, p=0.001). This suggests that separated adolescent mothers were 60% less likely to attend ANC in the first trimester. This could be due to the stigma and dread of being pregnant at such a young age. Single women are 80% less likely to attend ANC in the first trimester, which can be related to irritation and misinformation about the hazards of not attending ANC.This could be linked to frustration, a lack of funds to maintain oneself, and apprehension about seeking ANC without a partner. This finding is consistent with previous research conducted in Rwanda by Rurangirwa et al (2017), who discovered that single, divorced, widowed, or separated women were at a higher risk of poor utilization of ANC services. This could be due to financial constraints that restrict them from attending ANC. Steele V et al 2021 discovered that unmarried adolescent women were less likely to seek ANC

because of unfamiliarity with healthcare services, a lack of awareness of the pregnancy process, and a fear of social shame in a study conducted in Uganda. The findings are also consistent with a qualitative study conducted in Tanzania by Hororo, et al. (2015), who discovered that pregnant adolescents who were not married felt ashamed and stigmatized in front of their peers and neighbours, and were afraid to visit health services. This finding contradicts a study conducted among teenagers in Amfeni West, Ghana, which found no significant relationship between marital status and ANC attendance (Kparu, 2016). When seeking antenatal care, adolescent women may face social stigma from peers, family members, and healthcare providers, according to global studies.

The study also found that an adolescent mother's degree of education influenced her use of ANC throughout the first trimester, particularly for those who had completed a tertiary education. Mothers whose educational status were at tertiary level education (aOR: 12.2, 95% CI: 3.18-45.1, $p<0.001$) in this study were 12 times likely to initiate ANC during first trimester compared than individuals who never went to school or had only a primary or secondary level. This finding indicated that educational level has a significant influence on ANC utilization during the first trimester among adolescent mothers attending ANC at GRRH. This finding implies that mothers with a higher educational level have a better understanding of the benefits of scheduling ANC earlier.

This discovery is consistent with the findings of a study conducted in some low- and middle-income nations. Efendi, et al. (2017) discovered that Indonesian adolescent mothers with higher education were more likely to use ANC services than those with lesser education. Similarly, Simakhada, et al. (2008) found that women with higher

education were more likely to receive recommended Antenatal care visits in Sub-Saharan Africa. Young mothers with inadequate education are sometimes unaware of the benefits of getting early ANC. As a result, educating young women on health issues is one of the most effective approaches to increase ANC utilisation. Maluleke (2017), on the other hand, claims that there is no link between pregnant women' educational level and their understanding of antenatal care.

Another element that the study revealed to have influence on ANC consumption during first trimester of pregnancy was who the young mothers reside with. Our study found that those who lived with husbands (aOR: 0.01, 95% CI: 0.02-0.53, p=0.006) and parents (aOR: 0.1, 95% CI: 0.01-0.29, p=0.001) were less likely to use ANC than those who lived alone or with other relatives. This is also evident in the descriptive analysis, which found that 66% of adolescent mothers need permission from their husband or family to attend ANC. This means they do not have the authority to make judgements about ANC visits. This finding is congruent with a study conducted in Malindi, Kenya, which found that adolescent women whose decision to begin ANC clinic was made by others were less likely than those whose decision was made by themselves to schedule their first ANC visit in the first trimester (Ndambuki SM et al 2017). This could be due to the adolescent mother's young age and need on her spouse or parents for care and support, including when to begin ANC. This could be ascribed to "controlling conduct of men," as current protocol requires men to attend ANC with their wives, and they may be afraid to go, discouraging the wife as well. Opposition toward ANC by male partners provides evidence that education and promotional efforts should tar get both men as well as women.

In a study conducted in Uganda by Atuyambe et al (2008), it was discovered that teenagers were more likely to endure parental abuse and so hid their pregnancy, prohibiting them from receiving early ANC. In contrast, Patricie-Mukandagano et al (2022) discovered that adolescents who live with their parents are more likely to seek reproductive health services than those who do not live with their parents in a recent study conducted in Rwanda. The findings were also disputed by a study conducted in South Africa by Hill et al (2015), who reported pregnant teenagers naming their mothers as crucial in providing support and guidance throughout their pregnancy experience, including encouragement to attend ANC. Relationships between teenagers and their parents that encourage and reward beneficial health-related behaviours are needed. Interventions aimed towards adolescent parents, such as parental education on parent-child communication, can be implemented.

5.4 Institutional barriers to ANC Utilization

The study discovered that the attitude of health staff, whether friendly or not, had no effect on the use of ANC during the first trimester among adolescent mothers attending GRRH. This might be linked to the continual counselling sessions at AFHS to encourage teenagers to embrace ANC despite all odds, as well as the continuous professional education sessions that have always been delivered to health workers on Fridays regarding the provision of ANC by the hospital staff. In a recent study, Athuhaire, et al. (2020) found that institutional factors and health personnel' attitudes accounted for 72.04% of ANC attendance. Similarily in this study, adolescent mothers also indicated that health professionals were also courteous to them (70.2%, n=282. Nevertheless, the findings differ with those of a study conducted in Chikwawa, Malawi on barriers to

maternal health service utilization, which found that most health personnel are unpleasant, discouraging many teenagers from obtaining maternal health services (Kambala, et al., 2011).

5.5 Attitudes about ANC Utilization

We also investigated adolescent mothers' perceptions of ANC utilization in this study, and we discovered that adolescent mothers thought ANC services were good. However, in the qualitative interviews, they mentioned the following challenges: extended waiting times, a lack of confidentiality, and a lack of information about ANC scheduling.

Extended wait times are frequent in government-funded hospitals where services are free, and it is not unexpected to see a big number of people waiting to be attended to by health personnel for various services. According to this study, as stated by qualitative study from participants: "mothers take long here waiting especially when just three employees are working. Hospital should think of adding more personnel". This data is comparable with research conducted in Kenya, in which 38.7% of women reported having to wait nearly an hour before receiving ANC services (Dorah-Chorongo, et al., 2016). This issue may have arisen as a result of a high number of mothers requesting ANC at the hospital and a shortage of trained health care workers. Such delays deter teenagers from seeking ANC and have an impact on adolescent mothers' capacity to report for ANC on time.

Lack of anonymity was also cited by adolescent mothers as a barrier to ANC use during the first trimester. Privacy and secrecy are crucial issues in adolescent mothers' use of ANC. If receiving services identifies them as pregnant, adolescents are terrified of being seen by members of the public. The findings are consistent with a study conducted in

Bangladesh on the determinants of adolescent maternal health care utilization, in which most health care services are provided in an open setting, preventing many health care seekers from sharing their health concerns, which they regard as private (Sarker, et al., 2018). This suggests that adolescent mothers may avoid ANC services during the first trimester due to a lack of privacy and fear of nondisclosure. According to Fuentes, et al. (2018), the lack of health corners contributes to shyness, doubts, and confusion among adolescent users owing to stigmatization. They also point out that using local solutions, such as existing safe rooms, has the potential to enhance adolescent health-care consumption. Confidentiality, therefore is a crucial factor in most service utilization.

Although the majority of adolescent women in the study (77%) believed ANC should be obtained during the first trimester, some had inaccurate information about ANC timing. This implies and implies that theory does not always translate into practise. "Well, I don't know exactly when to start ANC... it is approximately four months," said one participant in this study. This discovery demonstrated that some adolescent mothers lack adequate understanding regarding proper booking time. This could be due to their youth and a lack of knowledge about ANC services. This study was consistent with an Ethiopian study that looked at the timing of the first ANC visit and its associated factors among pregnant women. They discovered that key barriers to women booking early ANC services were a lack of information about when to book first ANC services and not knowing if they were pregnant (Hanna, et al., 2017). Early ANC booking was connected with awareness of the best time to commence first ANC booking (Gross, et al., 2012).

5.6 Ways to Increase ANC Utilization

The researcher wanted to know what the respondents thought could enhance ANC service utilization among adolescent mothers based on their responses. It is sometimes easier to grasp matters from the point of view of individuals who are directly involved.

The majority of them emphasized the importance of health workers starting the clinic early to avoid unnecessary delays at the hospital, providing adequate education to adolescent mothers on the benefits of ANC in the first trimester, having a specific day for Adolescent mothers, and relocating the clinic to a different location.

CHAPTER SIX:

CONCLUSION AND RECOMMENDATION

6.1 Introduction

In this chapter, the researcher presents conclusions made from this study based on the objectives and the research questions. The recommendations are drawn based on the conclusions. Limitations and areas for future research are further suggested herein.

6.2 Conclusion

6.2.1 Knowledge about the benefits of ANC services in first trimester

The study concludes that there is low utilization of ANC during first trimester of pregnancy by adolescents. According to the findings of this study, less than half of the participants (43.3%) commenced ANC within the first trimester. Those who believed that ANC should be accessed during the first trimester were 3.4 times more likely to use ANC during the first trimester, and those who were aware of ANC services that were intended to be available were 2 times more likely to use ANC during the first trimester.

6.2.2 Individual determinants of utilization of ANC Services

The study concludes that age, marital status, educational status, and who teenagers live with were individual characteristics that strongly affected ANC utilisation throughout the first trimester. Because of their age, adolescent mothers were 40% less likely to use ANC during the first trimester. Separated and single women were 60% and 80% less likely to attend ANC in the first trimester, respectively. Those who lived with husbands and parents, on the other hand, were 0.99 and 0.9 less likely to use ANC, respectively, than those who lived alone or with other relatives. In this study, mothers

with college education were 12 times more likely to commence ANC during the first trimester.

6.2.3 Institutional determinants of ANC services

The study found that there was no significant association for institutional determinants of ANC utilization. Majority(66.9%.n=269) considered it simple to get to hospital, and majority(80.6%, n =324) reported the hospital had appropriate qualified personnel able to give ANC services and that health personnels were courteous to them.

6.2.4 Perception of adolescents towards ANC services

In this study, the majority of adolescent mothers (98.8%) view ANC services as beneficial to mothers and babies and they evaluated ANC services as good (48.0%) and important (99.5%). However, the findings of the qualitative analysis showed that there is a lack of knowledge on the timing of ANC, a lack of autonomy in ANC decision making, a lack of confidentiality, and delays at the clinic.

6.3 Recommendations

It is crucial for the hospital to consider the knowledge and specific characteristics including attitudes of the adolescent while encouraging them to utilize ANC treatments during first trimester.

The researcher, thus, recommend as follow;

1) The hospital should invest in communication initiatives that provide adequate information to adolescent mothers about the benefits of timely Antenatal care in order to boost their awareness.

2) The hospital should raise and sustain awareness of ANC services to the community on maternal health issues through meaningful participation of males and adolescent parents.
3) The hospital must provide a secure and safe setting for ANC treatment. Identifying a better location for ANC and establishing a designated day for adolescent mothers are two actions that can be used to this effect.
4) The hospital must solve time management concerns and recruit more midwives to minimize adolescent mothers being delayed at the clinic.
5) For future researchers, the investigator recommends more community-based research, since this was a facility-based study. This is needed to better understand why teenagers underutilize ANC services in the first trimester.

REFERENCES

Agaba, P., Magadi, M., Onukwugha, F. and Misinde, C. (2016). Factors Associated with the Timing and Number of Antenatal Care Visits among Unmarried Compared to Married Youth in Uganda between 2006 and 2016.

Amroussia N, Hernandez A, Vives-Cases C, Goicolea I. (2017). "Is the doctor God to punish me?!" An intersectional examination of disrespectful and abusive care during childbirth against single mothers in Tunisia. *Reprod Health*. 2017;14(1):32. doi: 10.1186/s12978-017-0290-9

Anderson, Cheryl Ann, and Brittani Rahn. (2016). Factors related to the seeking and contribution of prenatal care among ethnically diverse adolescents. Journal of Child and Family Studies 25: 2211–22.

Arthur, Angela, Sally Unwin, and Theresa Mitchell. (2007). Teenage mothers' experiences of maternity services: A qualitative study. *British Journal of Midwifery,* 15: 672–77. [CrossRef].

Atuhaire S, Mugisha JF. (2020). Determinants of antenatal care visits and their impact on the choice of birth place among mothers in Uganda: a systematic review. Obstetric Gyneco Int J., 11(1):7781.OI:10.15406/ogij.2020.11.00492https://doi.org/10.15406/ogij.2020.11.00492

Bayu. H., Adefris. M., Amano, A. & Abuhay, M. (2015). Pregnant women's preference and factors associated with institutional delivery service utilization in Debra Markos Town, North West Ethiopia: a community based follow up study.

Birmeta K, Dibaba Y, Woldeyohannes D. (2013). Determinants of maternal health care utilization in Holeta town, Central Ethiopia. *BMC Health Serv Res.*, 13(1):1.

Blencowe H, Cousens S, Jassir FB, Say L, Chou D, Mathers C, et al.(2016) National, regional, and worldwide estimates of stillbirth rates in 2015, with trends from 2000: a systematic analysis. *Lancet Glob Health*, 4(2):e98–e108.

Brink, P. J., & Wood, M. J. (2001). *Basic steps in planning nursing research from question to proposal (5th ed.)*. Boston, MA: Jones and Bartlett

Chapman RR. (2003) Endangering safe motherhood in Mozambique: Prenatal care as pregnancy risk. *Soc Sci Med.*, 57:355–74.

Chimatiro CS, Hajison P, Chipeta E, Muula AS. (2018). Understanding barriers preventing pregnant women from starting antenatal clinic in the first trimester of pregnancy in Ntcheu District-Malawi. 2018;1–7.

Creswell J. W & Plano Clark, V. L (2018). Designing and Conducting Mixed Methods Research (3rd Ed.). Sage Publications

De Villiers FPR, Kekesi J. (2004). Social interaction of teenage mothers during and after their pregnancy. S Afr Fam Pract. 2004; 46(2):21–24. doi: 10.1080/20786204.2004.10873041.

Dennill, K, King, L, Lock, M & Swanepoel, T. (1999). Aspects of primary health care. Midrand: Southern.

Dick. B and Ferguson B.J. (2015). Health for the world's Adolesent: A second chance in the second decade. *Journal of Adolescent Health*, 56(1), pp. 3-6.

District health information system (2022). Overview of health sector performance amidst covid-19 Gulu district.

Doyle, S. (2007). Member checking with older women: A framework for negotiating meaning. *Health Care for Women International,* 8, 888–908.

Duggan R, Adejumo O. (2012). Adolescent clients' perceptions of maternity care in KwaZulu-Natal, South Africa. *Women and Birth [Internet],* 25(4). [cited 2018 Dec 8]; 25(4):e62–7.Available from: https://linkinghub.elsevier.com/retrieve/pii/S1871519211002459.

Efendi F, Chen C-M, Kurniati A, Berliana SM (2017). Determinants of utilization of antenatal Care services among adolescent girls and younger women in Indonesia. *Women Health*, 57(5):614

Eshetu Bekele Worku, Selamawit Alemu Woldesenbet (2016).Factors that Influence Teenage Antenatal Care Utilization in John Taolo Gaetsewe (JTG) District of Northern Cape Province, South Africa: Underscoring the Need for Tackling Social Determinants of Health.

Freed P. Mental Health (2016). Wolters Kluwer Health, Inc.

Fuentes, L, Ingerick, M., Jones, R., & Lindberg, L. (2018). Adolescents' and Young Adults' Reports of Barriers to Confidential Health Care and Receipt of Contraceptive Services. *Journal of Adolescent Health,* 62(1), 36–43. h t t p s : / / d o i . o r g / 1 0 . 1 0 1 6 / j.jadohealth.2017.10.011

Ghana Statistical Service and ICF Macro (2009). *Demographic and Health Survey,* Accra and Calverton, Maryland.

Goodburn EA, Gazi R, Chowdhury M. (1995). Beliefs and practices regarding delivery and postpartum maternal morbidity in rural Bangladesh. *Studies in family planning,* 26(1):22-32.

Gross K, Alba S, Glass TR, Schellenberg JA, Obrist B. (2012). Timing of antenatal care for adolescent and adult pregnant women in south-eastern Tanzania. *BMC Pregnancy and Childbirth*, 12:16.

Gross K. et al. (2012). “Timing of antenatal care for adolescent and adult pregnant women in South-Eastern Tanzania”. *BMC Pregnancy Childbirth*, 12(1); 16.

Haddrill R, Jones GL, Mitchell CA, Anumba DOC. (2014) Understanding delayed access to antenatal care: a qualitative interview study. 2014; 1–14.

Hanna G., et al. (2017). “Timing of First Antenatal Care Visit and its Associated Factors among Pregnant Women Attending Public Health Facilities in Addis”. *Ethiopian Journal of Health Sciences*, 27(1): 139.

Haque, Syed Emdadul, Mosiur Rahman, Md Golam Mostofa, and Md Sarwar Zahan. (2012). Reproductive health care utilization among young mothers in Bangladesh: Does autonomy matter? *Women’s Health Issues* 22: e171–e180. [CrossRef] [PubMed]

Haws RA, Mashasi I, Mrisho M, Schellenberg JA, Darmstadt GL, Winch PJ.(2010) “These are not good things for other people to know”: how rural Tanzanian women’s experiences of pregnancy loss and early neonatal death may impact survey data quality. *Soc Sci Med.*, 71:1764–72.

Hokororo, Adolfine, Albert F. Kihunrwa, Samuel Kalluvya, John Changalucha, Daniel W. Fitzgerald, and Jennifer A. Down (2015). Barriers to access reproductive health care for pregnant adolescent girls: A qualitative study in Tanzania. *Acta Paediatrica*, 104:1291–97. [CrossRef].

Ismail Adow; Isaac Mwanzo; Okello Agina; Peter Wanzala; and James Kariuki (2020). Uptake of Antenatal Care Services among Women of Reproductive Age in Mandera County, Kenya.

Jean Paul Safari, Kirst Ashman, Habib Hassan, Ersado Leonard, Dou Eslamic (2020).institutional causes of school drop out in Rwanda. *CEC journal on perspectives of girls in community*, 6(2); 105-243.

Kambala C, Morse T, Masangwi S, Mitunda P.(2011). Barriers to maternal health service use in Chikhwawa, Southern Malawi. *Malawi medical journal,* 23(1).

Kayemba Vincent, Allen Kabagenyi, Patricia Ndugga, Ronald Wasswa, Peter Waiswa (2022). Timing and quality of antenatal care among adolescent mothers in Luuka district, Uganda

Kiptanui, C., Kindiki, J & Lelan, J. (2015). Impact of teenage motherhood on the academic performance in public primary schools in Bungoma County, Kenya. *International Journal of Educational Administration and Policy,* 7 (2), 61-71.

Kish and Leislie. (1965). *Survey sampling*. New York: John Willy and Sons

Kothari, C.R. (2004) Research Methodology—Methods and Techniques. 2nd Edition, New Age, New Delhi.

Kparu, F. E. L. I. X. (2016). *Factors Influencing Adolescent Utilization of Antenatal Care Services in Amenfi West District of the Western Region* (Doctoral dissertation, University of Ghana.

Maluleke, L. (2017). Knowledge and perceptions about ante natal care services by pregnant women at Julesburg local area, *Mopani District in Limpopo Province* (Doctoral dissertation).

Mathole T, Lindmark G, Majoko F, Ahlberg BM. (2004) A qualitative study of women's perspectives of antenatal care in a rural area of Zimbabwe. *Midwifery*, 20:122–32.

Matua, A. G. (2004). Determinants of maternal choices for place of delivery in Ayivu County, Uganda. *Africa Journal of Nursing and Midwifery*, 6(1):33-38

Mekonnen, T., Dune, T. & Perz, J. (2019) Maternal health service utilization of adolescent women in sub Saharan Africa: a systematic scoping review. *BMC Pregnancy Childbirth,* **19(**366). https://doi.org/10.1186/s12884-019-2501-6.

Mgata, S. & Maluka, S. O. (2019). Factors for late initiation of antenatal care in Dar es Salaam, Tanzania: A qualitative study. *BMC Pregnancy Childbirth* **19**, 415 (2019). https://doi.org/10.1186/s12884-019-2576-

Morse J.M. (2000). Determining sample size. *Qual Health Res.*, 10:3-5. https://doi.org/10.1177/104973200129118183.

Mudokwenyu-Rawdon, C., & Chaibva, C. N. (2010). Needs assessment and strengthening midwifery association in Zimbabwe. *African Journal of Midwifery and Women's Health*, *4*(1), 38–41.

Mulondo, S. A. (2020). Factors associated with under utilization of Antenatal Services in Limpopo, South Africa.

Mwangome, F.K., Holding, P.A., Songola, K.M. and Bomu, G.K. (2012). Barriers to hospital delivery in a rural setting in Coast Province, Kenya: community attitude and behaviours. *Rural Remote Health,* 12: 1852.

Nabisere T B (2019). Contraceptive use among women in central Uganda. A case study of Kampala district (doctoral dissertation). Makerere University.

Ndambuki SM, Oyindamola BY, Aimakhu CO. (2017). Factors Influencing Utilization of Antenatal Care Services Among Teenage Mothers in Malindi Sub-County Kenya-A Cross Sectional Study. Sci J Public Heal. 2017; 5:61.

Neuman, W.L. (2000). Social research methods qualitative and quantitative approaches. 4th Edition, Allyn & Bacon, Needham Heights.

Ngabaza S. (2011) Teenage fertility and desire. Agenda Empower Women Gender Equity pp.42–51.

Noirhomme-renard F, Aujoulat I, Libion F, Deccache A. (2010) Patient Education and Counseling Adolescent mothers ' perspectives regarding their own psychosocial and health needs : A qualitative exploratory study in Belgium. 2010; 81:448–53.

Nsibu CN, Manianga C, Kapanga S, Mona E, Pululu P, Aloni MN. (2016). Determinants of Antenatal Care Attendance among Pregnant Women Living in Endemic Malaria Settings: Experience from the Democratic Republic of Congo. *Obstet Gynecol Int*. 2016; 5423413:7.

Oyewale T. O, Mavundia T. R (2013). Socio economic factors contributing to exclusion women from maternal health benefit in Abuja, Nigeria.2013;38;1-11.

Patricie Mukandagano, Monica Mochama, Erigene Rutayisire (2022). Reproductive Health Knowledge and Services Utilization among Rural Adolescents in Rwamagana District, Rwanda.

Pell C, Menaca A, Were F, Afrah NA, Chatio S, Manda-Taylor L, Hamel MJ, et al. (2013) Factors Affecting Antenatal Care Attendance: Results from Qualitative Studies in Ghana, Kenya and Malawi. *PLOS One*. 2013; 8(1):e53747.

Phafoli, S., Aswegen, E. Van, & Alberts, U. (2007). Variables influencing delay in antenatal clinic attendance among teenagers in Lesotho. *SA Fam Pract,* 49(9), 17–. http://doi.org/10.1080/20786204.2007.10873633

Pino, A. (2019). Comprehensive sexuality education: why it matters. Daily Maverick.

Polit, DF, & Beck, CT. (2008). *Nursing research: Generating and assessing evidence for nursing practice*. New York: JB Lippincott.

Polit, DF. & Beck, C.T. (2006). *Nursing research: Generating and assessing evidence for nursing practice*. 8th edition. Philadelphia: Lippincott Williams & Wilkins.

Ranjit Kumar. (2014). Research Methodology. A step by step guide for beginners. 4th Ed. p, 248.

Reibel, Tracy, Lisa Morrison, Denese Griffin, Llinos Chapman, and Heather Woods. (2015). Young Aboriginal women's voices on pregnancy care: Factors encouraging antenatal engagement. *Women and Birth,* 28: 47–53. [CrossRef].

Report on International Religious Freedom (2021): Uganda.

Requejo JH, Bryce J, Barros AJ, Berman P, Bhutta Z, Chopra M, et al. (2015). Countdown to 2015 and beyond: fulfilling the health agenda for women and children. *Lancet*, 385(9966):466–76.

Richter LM, Norris SA, Ginsburg C . (2006). The silent truth of teenage pregnancies—birth to twenty cohort's next generation. *S Afr Med J.,* 96(2):122–124

Rurangirwa, A. A., Nyairazinyaye, L., Ntanganira, J., Krantz G (2017). Determinants of poor utilization of antenatal care services among recently delivered women in Rwanda. A population-based study.

Sagalova V, Le Dain AS, Bärnighausen T, Zagre NM, Vollmer S. (2021) Does early childbearing affect utilization of antenatal care services and infant birth weight: Evidence from West and Central African Region. *J Glob Health*, 11:13003.

Sarker A, Sheikh N, Mahumud R, Sultana M. (2018). Determinants of adolescent maternal healthcare utilization in Bangladesh. *Public Health,* 157:94–103.

Senderowitz, J. (1999). *Making Reproductive Health Services Youth Friendly*. Washington, DC: FOCUS on Young Adults.

Singh, P., Kumar, P., Rai, R. K., Alagarajan, M. and Singh, L. (2012). Determinants of Maternity Care Services Utilization among Married Adolescents in Rural India. *PLoS ONE*, 7: e31666. [CrossRef].

Singh, Pooja, Kaushalendra Kumar Singh, and Pragya Singh. (2021). Maternal health care service utilization among young married women in India, 1992–2016: Trends and determinants. *BMC Pregnancy Childbirth*, 21: 122. [CrossRef]

Sitzia J and Wood,N(1998). Response Rate in Patients Satisfaction Research: An Analysis of 210 Published studies. *International Journal of Quality Health Care,* 10 (4):311-17.

Slap, GB. (1995). Adolescents: access and availability of health care. Issue Brief 2(3):1-4.http://www.uppen.edu/ldi/issuebrief23.htm (accessed on 18/10/2006).

Tunçalp Ö, Pena-Rosas JP, Lawrie T, Bucagu M, Oladapo OT, Portela A, et al.(2017). WHO recommendations on antenatal care for a positive pregnancy experience—going beyond survival. *BJOG Int J Obstet Gynaecol.,* 124 (6):860–2.

Uganda Bureau of Statistics. (2015). *2016 Statistical Abstract*. Kampala: Author

Uganda National Council for Science and Technology (UNCST). (2014). National Guidelines for Research involving Humans as Research participants. Kampala: Author. p.19.

United Nations International Children Emergency Fund (2016). *Improving Male Involvement to Support Elimination of Mother-to-Child Transmission of HIV in Uganda: A Case Study*. New York: UNICEF.

Van Zyl L, van der Merwe M, Chigeza S. (2015). Adolescents' lived experiences of their pregnancy and parenting in a semi-rural community in the Western Cape. *Soc Work,* 51(2):150–172

Vanderpuije, M. A. A. (2012). *Social Support in Pregnant Teens: A Systematic Review of Social Support Interventions, Masters in Public Health, University Of Pittsburgh.*

Walton D, Maria L, Schbley M. (2013). Maternal healthcare in Bangladesh and gender equity: a review article. *Online J Health Ethics*, 9(1):8

WHO, (2014a) Maternal mortality country profiles; Geneva, WHO

WHO, UNICEF. (2015). Trends in maternal mortality: 1990–2015: estimates from WHO, UNICEF, UNFPA, World Bank Group and the United Nations population division.

WHO. (2006). *Opportunities of Africa's new born, Practical data, policy and programmatic support for new born care in Africa*. Retrieved from http://www.who.int/pmnch/media/publications/oanfullreport.pdf.

Wiemann CM, Rickert VI, Berenson AB, Volk RJ. (2005). Are pregnant adolescents stigmatized by pregnancy? *Journal of Adolescent and Health,* 36:352.e1–352.e8. doi: 10.1016/j.jadohealth.2004.06.006.

World Health Organization. (2002). *Antenatal care randomization trial*. Geneva: Author.

World Health Organization. (2016). *WHO recommendations on antenatal care for a positive pregnancy experience*. Geneva: Author. [Cited 2018 23 October 2018]. Available from: https://www.who.int/reproductivehealth/news/antenatal-care/en/.

World Health Organization. (2017). *WHO recommendations on antenatal care for a positive pregnancy experience. Geneva: Author*

Zhao Q, Huang Z.J., Yang S, Pan J., Smith B, Xu B. (2012). The utilization of antenatal care among rural-to-urban migrant women in Shanghai: A hospital-based cross-sectional study. *BMC Public Health;* 12.

Ziblim, Shamsu-Deen, Adadow Yidana, and Abdul-Rashid Mohammed (2018). Determinants of antenatal care utilization among adolescent mothers in the Yendi municipality of northern region, Ghana. *Ghana Journal of Geography*, 10: 78–97.

APPENDICES

Appendix I: Informed Consent Form for Participants

Researcher's Name: Akullu Jane Tolit

Background: student of MPH, UCU-Modular program, Kampala campus

Telephone number: 0772350904 E-mail: akullujane022@gmail.com

Research supervisor's Name: Dr Omona Kizito

Telephone number: 0774849492 E-mail: komona@umu

The purpose of this research is for the fulfillment of an award in MPH of UCU.

The research will be on Factors influencing utilization of ANC during first trimester by adolescents at GRRH.

You have been chosen to participate in this study that will run for 30 working days, because you are an adolescent (10-19 years) and you are requested to participate in the study by responding to the questionnaire and providing information regarding your knowledge of factors influencing utilization of ANC during first trimester of pregnancy.

You are free to ask any questions before agreeing to participate in this research. Once you have had all your questions about this study answered and if you agree to be in this study. You will be asked to sign this form.

The results of this study will ensure anonymity and confidentiality of the information you will provide. Your participation in this study will not have any financial reward, however you will be given an appreciation fee of 5000/=. The study will help address factors influencing utilization of ANC during first trimester of pregnancy by adolescents.

You may choose not to participate or withdraw from the study without any penalty. If you decide to join the study you may withdraw at any time and for any reason without any penalty or loss of benefits.

Signature of participant …… Date ……

Appendix II: Questionnaire for Adolescent Mothers

Section A: Demographic and social characteristics

1. Age in years ……

2. Marital status

a) Single ☐

b) Married ☐

c) Separated ☐

d) Widowed ☐

3. Religion

a) Catholic ☐

b) Anglican ☐

c) Moslem ☐

d) Others (specify……)

4. Level of education

a) Never went to school ☐

b) Primary ☐

c) Secondary ☐

d) Tertiary ☐

5. Residence

a) Urban ☐

b) Rural ☐

6. Whom do you live with?

a) Parents ☐

b) Husband ☐

c) Others (specify……)

7. Husband's occupation:

a) Peasant farmer ☐

b) Self employed ☐

c) Causal laborer ☐

d) Others (specify)…… ……..)

Section B: Knowledge of adolescents about the benefits of seeking ANC services within the first trimester

8. Have you ever attended ANC Services? (Manaka tiko dong I pime ka iyac)

a) Yes ☐

b) No ☐

9. Do you think ANC should be started in the first three months of pregnancy? (Itamo ni pime omyero ocake ma nong ii tye dwe adek odwogo ping?)

a) Yes ☐

b) No ☐

If no why(pingo)……

10. ANC provides an opportunity to learn about HIV Status, and STI(kapime mini kare me bedo ki ngec ikom two jonyo ki two makobo iyo butu I kin lacoo ki dako)

a) Yes ☐

b) No ☐

11. ANC empowers one to be able to identify danger signs in pregnancy (kapime miyo kero ki dano wek oniang kom lanyut maraca me yacu)

a) Yes ☐

b) No ☐

12. ANC provides increased knowledge about Reproductive health services (ka pime medo ngec I lok kom nyodo)

a) Yes ☐

b) No ☐

13. Where did you get information about ANC (Inongo Ngec me pime pi yaco ki kwene)?

a) Radio ☐

b) Health facility ☐

c) Friends ☐

d) Others (specify……..)

14. Do you know of ANC services you are supposed to receive at a health facility (Ingeyo kwayi kony ma ki miyo ka ibino ka pime)?

a) Yes ☐

b) No ☐

If yes, what are they (labol obedo ngo?) …….

Section C: Individual barriers to accessing antenatal care services by adolescents in first trimester.

Demographic characteristics

15. Do you think the age of an adolescent can affect utilization of ANC (Itamo ni mwaka pa bulu romo gengo en mako kad pime con)?

a) Yes ☐

b) No ☐

If yes explain how (Iyo ma nining?) …….

16. Do you think educational level of adolescent can affect uptake of ANC (Itamo ni rwom kwan pa bulu room bedo lageng me mako kad pime con)?

a) Yes ☐

b) No ☐

If yes explain how (tita kong) ……

17. Do you think marital status of adolescents can affect their ANC uptake (Itamo ni buli ma kinyome gengo cako mako kad pime con)?

a) Yes ☐

b) No ☐

If yes how…… ……

18. Does religion has any role in ANC among adolescents (Dini romo gengo bulu mako kad pime con)?

a) Yes ☐

b) No ☐

If yes how……

19. Does distance to a health facility affect uptake of ANC (Bor ping gengo ngolo kad pime con)?

a) Yes ☐

b) No ☐

If yes how……..

ii. Stigma and fear

20. How did your relatives react when they got to know you were pregnant (Wadi ni gubedo Ki tam ango I kare ma guniang ni iyac)?

……

21. What does the community members say about pregnant adolescents (Lukin gang giloko ningo ikom buli ma oyac)?

……..

SECTION C: Culture

22. Could there be any cultural taboo or reason that prevent adolescents from using ANC(Gwok onyo tekwaro mo tye ma magengo bulu mako kad pime)?

a) Yes ☐

b) No ☐

If yes specify……

23. Did you need permission from your husband or family to attend ANC (Mite ni omyero kong inong twero ki bot luotwu onyo dano mapaco wek ibin ka mako kad me pime)?

a) Yes ☐

b) No ☐

24. Where do you intend to deliver (Tami tye me nywal ki kwene)?

a) Hospital ☐

b) At home with TBA ☐

c) Others (specify)……

25. Do you have support from family and husband now that you are pregnant (onyo tye kit kony moo ma Jo ma gang onyo luotuwu mini ki remo ma itye kwede ni)?

a) Yes ☐

b) No ☐

If no why? .....

If yes, what kind of support……

Section D: Institutional barriers pregnant adolescents' perceived benefits of seeking early ANC services

26. Is the hospital easily accessible (ot yat cok kwedi)?

a) Yes ☐

b) No ☐

If no, how do you access services in the hospital……

27. Does the hospital have enough skilled staff able to offer ANC services to adolescents (Ot yat tye ki ludiro me lutic pi bulu muyac)?

a) Yes ☐

b) No ☐

If no give reasons (man pi tyen lok ango)…….

28. Are the health workers friendly to pregnant adolescents in ANC clinic?

a) Yes ☐

b) No ☐

If no why(pingo)…….

29. Do you pay for the Antenatal Care Services (ka ibino, iculu pi pime)?

a) Yes ☐

b) No ☐

If yes explain and how much …….

30. What are the challenges faced by pregnant adolescents in accessing ANC in the hospital (Peki ango ma bulu muyac nongo ka gubino ka pime iot yat ka pime)?

…….

31. How can adolescent's access to antenatal care be improved? …….

Section E: Perception of adolescents about the utilization of ANC services within the first trimester

32. Do you think utilization of ANC services is beneficial to mother and baby (Itamo ni lok kom pime ka i yac ber pi mego gin ki latine)?

a) Yes ☐

b) No ☐

If yes, in what way…….

If no, could you explain……

33. What can you say about ANC Services in the hospital (Lok ango ma iromo waco ne pi kapime ma kany)?

a) Very good ☐

b) Good ☐

c) Fair ☐

d) Poor ☐

34. Do you think attending ANC is important to pregnant adolescents?

a) Yes ☐

b) No ☐

If yes to what magnitude is its importance? (kapire tek,teko rom kwene?)

a) Less important ☐

b) Important ☐

c) Very important ☐

d) I can't tell ☐

Why did you give the response above? (pingo imiyo tami kumeno?) .....

Thank for your time

Appendix III: Interview Guide for Adolescent Mothers

(a) Knowledge of adolescents about the benefits of seeking ANC Services

1. Please tell me what you know about Antenatal care (ANC)?

2. Can you tell me why you think ANC should be started within the first three months of pregnancy (first trimester)?

3. Which services are you are supposed to receive during first trimester?

4. How did you get information about ANC Services?

(b) Individual barriers to accessing ANC Services by adolescents

5. How does age of adolescent affect utilization of ANC?

6. How does marital status of adolescent affect utilization of ANC?

7. How does religion of adolescent affect utilization of ANC?

8. How does distance to health facility affect utilization of ANC?

9. Can you describe your relationship with your family when they got to know about your pregnancy?

10. Can you describe your relationship with the community when they got to know about your pregnancy?

11. Which pregnancy related traditional beliefs prevent adolescents from starting antenatal care in the first trimester?

12. Have any obstacle prevented you from starting ANC within first trimester? Can you tell me about them?

Institutional barriers to accessing ANC services by adolescents

13. Can you describe for me the health workers attitude towards pregnant adolescents?

14. Can you describe your experience in accessing ANC in the hospital?

15. what can be done to improve access to care at the hospital by adolescents?

(c) Perceptions of adolescents about utilization of ANC Services

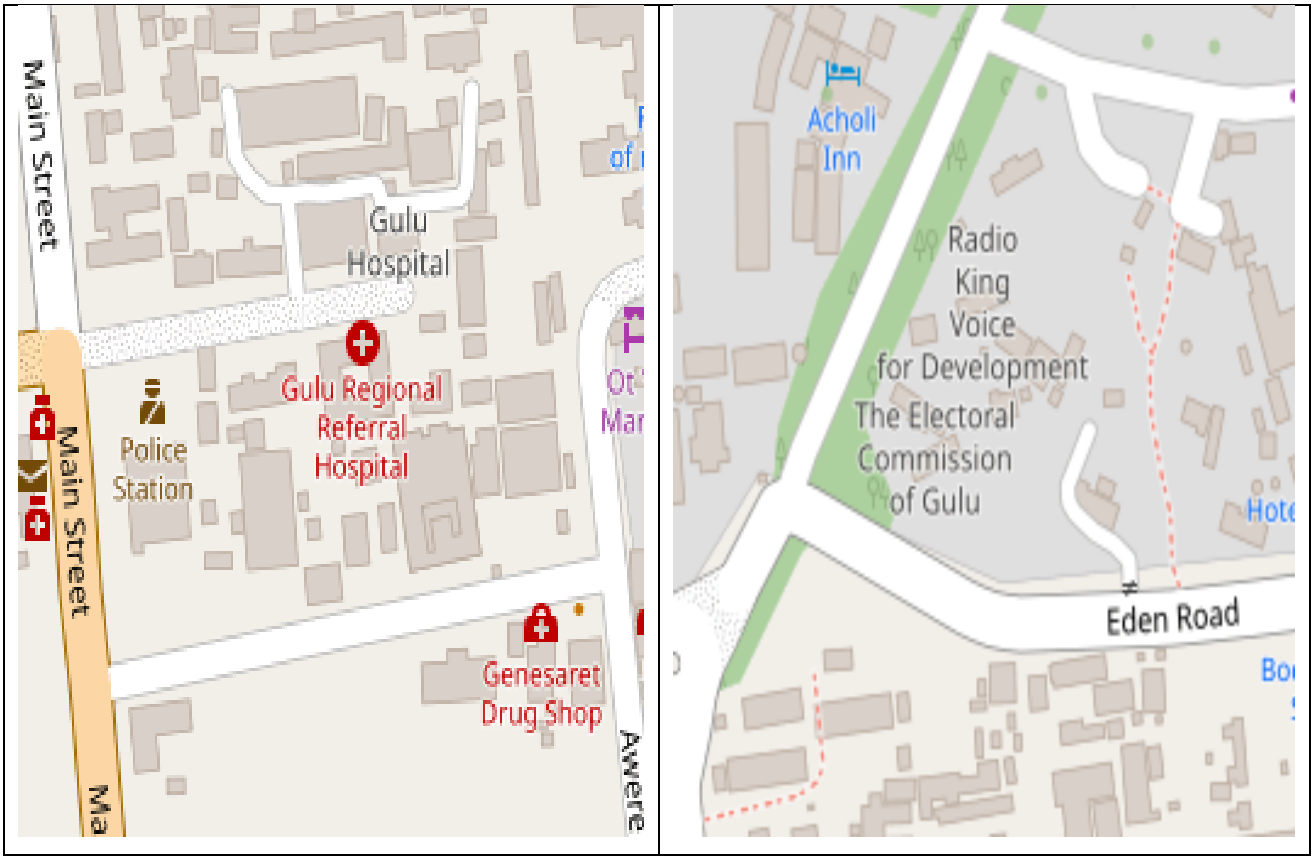
16. Can you explain to me how attending ANC is beneficial to mother and child?

17. In general, how would you describe ANC Services in the Hospital?

18. How important is ANC to Adolescents?

Appendix IV: Map of Uganda Showing Gulu District

Appendix V: Map of Gulu city showing Gulu Regional Referral Hospital



Appendix VI -IRB Approval Letter (UCU REC)

UGANDA CHRISTIAN UNIVERSITY
A Centre of Excellence in the Heart of Africa

23/06/2022

To: AKULLU TOLIT

0772350904

Type: Initial Review

Re: UCUREC-2022-310: Factors Influencing Utilization of Antenatal Care Services by Adolescents during first Trimester of Pregnancy :A study of Gulu Regional Referral Hospital., 2.0, 2022-05-03

I am pleased to inform you that the Uganda Christian University REC, through expedited review held on **20/06/2022** approved the above referenced study.
Approval of the research is for the period of **23/06/2022** to **23/06/2023.**

As Principal Investigator of the research, you are responsible for fulfilling the following requirements of approval:

1. All co-investigators must be kept informed of the status of the research.
2. Changes, amendments, and addenda to the protocol or the consent form must be submitted to the REC for re-review and approval **prior** to the activation of the changes.
3. Reports of unanticipated problems involving risks to participants or any new information which could change the risk benefit: ratio must be submitted to the REC.
4. Only approved consent forms are to be used in the enrollment of participants. All consent forms signed by participants and/or witnesses should be retained on file. The REC may conduct audits of all study records, and consent documentation may be part of such audits.
5. Continuing review application must be submitted to the REC **eight weeks** prior to the expiration date of **23/06/2023** in order to continue the study beyond the approved period. Failure to submit a continuing review application in a timely fashion may result in suspension or termination of the study.
6. The REC application number assigned to the research should be cited in any correspondence with the REC of record.
7. You are required to register the research protocol with the Uganda National Council for Science and Technology (UNCST) for final clearance to undertake the study in Uganda.

The following is the list of all documents approved in this application by Uganda Christian University REC:

No.	Document Title	Language	Version Number	Version Date
1	Informed Consent forms	English	2.0	2022-05-03
2	Data collection tools		2.0	2022-05-03
3	Data collection tools	English	2.0	2022-05-03
4	Protocol	English	2.0	2022-05-03

Yours Sincerely

Peter Waiswa

For: Uganda Christian University REC

Appendix VII: Gulu Hospital REC Approval

Hospital Director's Office:
256-(0)471-432061
E-mail:
gulurrhosptal@gmail.com
elimajames@yahoo.com

THE REPUBLIC OF UGANDA

MINISTRY OF HEALTH
GULU REGIONAL REFERRAL HOSPITAL
P. O. Box 160,
Gulu, Uganda.

27th 06 2022

RESEARCH AND ETHICS COMMITTEE

In any correspondence on this subject,
Please quote no: ADM/2022-/005

AKULLU JANE TOLIT RJ20M21/092

Uganda Christian University Mukono
+256-772350904

Gulu Regional Referral Hospital Research and ethics Committee received your research proposal on 27th-June, 2022. The study is accepted and you shall be updating the committee on the study progress. This is to inform you that after considering above recommendation, you can proceed with your study (data collection) for the above.

At the end of your study: you will be required to submit a copy of your dissertation to the committee for record purposes and future use.

TOPIC FACTORS INFLUENCING UTILIZATION OF ANTENATAL CARE SERVICES BY ADOLESCENTS DURING FIRST TRIMESTER OF PREGNANCY: A STUDY OF GULU REGIONAL REFERRAL HOSPITALIN GULU DISTRICT.

On behalf of the Gulu Research Committee, I wish you the best of luck in your study.
Yours Faithfully

GULU REGIONAL REFERRAL HOSPITAL For: DIRECTOR 27 JUN 2022 P.O. BOX 160, GULU

DR. ARWINYO BAIFA
Gynaecologist/Obstetrician (Chair Research and Ethics- GRRH)

For Hospital Director - GRRH

UGANDA CHRISTIAN UNIVERSITY

A Centre of Excellence in the Heart of Africa

UGANDA CHRISTIAN UNIVERSITY

SCHOOL OF RESEARCH & POSTGRADUATE STUDIES

DISSERTATION CORRECTION COMPLIANCE REPORT BY THE CANDIDATE (POST VIVA FORM)

Date: 22nd MARCH 2024

Name of Candidate: AKULLU JANE TOLIT **Reg. No:** RJ20M21/092

Title of Dissertation

Determinants of Utilization of antenatal care Services during first trimester of pregnancy: A study of Adolescent mothers attending Gulu Regional Referral Hospital.

SN	COMMENTS BY EXTERNAL EXAMINER	ACTION TAKEN	INDICATOR
1	Problem statement does not point out any interventions done but failed to improve ANC attendance	Corrected and explained	Page 4
2	Purpose of study should be made action oriented	Corrected as recommended	Page 5
3	In conceptual framework variable acceptability should appear once	Corrected as recommended	Page 8
4	Methodology: MOH funds not funded Undersection 3.4and3.6 women aged 10 to 19 should have years added Under section 3.7 data collection, attend to errors	Identified sections were corrected as recommended.	Page 22,24 and 27

S N	COMMENTS BY INTERNAL EXAMINER	ACTION TAKEN	INDICATOR
1	This is a good title and the findings should be useful to the people managing Gulu Regional Referral Hospital. There are some suggested changes though on the title	Title changed as recommended	Title page
2	The problem statement should be re-written to have it focused on ANC in adolescent mothers	Problem statement revisited and addressed as guided	Page 4
3	The health belief model was adapted BUT there is no narrative to explain how it was used to guide this study	Explanation provided	Page 8, 11-12
4	Calculation and sample selection is well outlined- random sampling of quantitative sample outline BUT the criteria for selecting the qualitative sample is not well documented	Criteria for qualitative sample document as recommended.	Page 23
5	Findings are poorly presented with discussions mixed with findings. This should be cleaned. Chapter four should be exclusively findings. The discussions and comparing with literature should go to chapter 5!	This was addressed	Page 33-51

SN	COMMENTS BY VIVA VOCE PANNEL	ACTION TAKEN	INDICATOR
1	Problem statement needs to be tightened by including teenage adolescent girls ANC attendance rate.	Corrected as recommended and ANC attendance rate included.	Page 4
2	Candidate should make conclusion for every objective.	Corrected as recommended	Page 62-63
3	The recommendations should be more specific to the different stakeholders	Revised and improved as recommended	Page 63-64
4	The conceptual study was not applied in the study	Conceptual study used, see methodology under study variables and result section under perception.	Page 24-26 Page 46-47
5	Operational definition of the respondents needs to be clearly articulated	Corrected and definition included	Page 28

Candidate's Name Akullu Jane Tolit **Signature** .....

Supervisor's Name Dr. Omona Kizito **Signature** .....