ASSESSING FACTORS INFLUENCING UTILIZATION OF ANTENATAL SERVICES AMONG ADOLESCENTS IN PAJULE HEALTH CENTER IV: PADER DISTRICT

BY

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DECLARATION

I declare that "*The factors influencing utilization of antenatal care among adolescent in Pajule health center: Pader district, Uganda"* is my own piece of work, that it has not been submitted before for any degree or examination in any other University or college, and that all the sources I have used or quoted have been indicated and acknowledged as complete references. This dissertation has been submitted for examination with the approval of my supervisor.

……..	……	…….
RESERACHER	**SIGNATURE**	**DATE**

……	……	…….
SUPERVISOR	**SIGNATURE**	**DATE**

DEDICATION

I dedicate this dissertation to:

My late mom Mrs. Santa To-okema and Justin Obita who did not live to witness the completion of this dissertation.

Their motivation, support and desire for my advancement in studies is greatly appreciated. May you rest in eternal peace.

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LIST OF ABBREVIATIONS/ACRONYMS

ANC	Antenatal care
N/A	Not applicable
UNCEF	United Nations Children's Emergency Fund
WHO	World Health Organization
UNARH	Uganda National Adolescent Reproductive Health
MMR	Maternal Mortality Rates
MOH	Ministry of Health
MM	Maternal Mortality
EmOC	Emergency Obstetric Care
PHC	Primary Health Care
RH	Reproductive Health
MDG	Millennium Development Goal
PEAP	Protected Extensible Authentication Protocol
HIV	Human Immune Virus
STIs	Sexually Transmitted Infections
MISR	Makerere Institute of Social Research
IDP	Internally Displaced People

OPERATIONAL DEFINITIONS

Antenatal care

Skilled care rendered by the health workers in health institution.

Utilization of ANC

It is the uptake of antenatal care services by the pregnant adolescents

Adolescents

In this study, an adolescent is a person in the 10-19 years age group.

Health

Health is the complete physical, mental, and social wellbeing and not merely the absence of disease or infirmity.

Antenatal care

Is the care received during pregnancy from skilled health personnel?

ABSTRACT

Title: Assessing factors influencing utilization of antenatal services among adolescents in Pajule health center IV: Pader district

Background: Antenatal care is a key strategy for reducing maternal mortality but many pregnant adolescents in Pader district do not receive it.

Aim: The purpose of this study was to assess and analyze the main factors affecting the utilization of antenatal care among the pregnant adolescents of Pajule health center IV: Pader district.

Methodology: Raw data collected from Pajule health center from pregnant adolescents 13-19 years of age using simple random sampling method was used. From the large dataset of women, a total of 300 teenage women at the time of their attendance at the post natal clinic were selected and analyzed. Both bivariate and multivariate analyses were performed to determine the differentials of ANC by explanatory variables.

Results: Findings generated by the descriptive analysis of the total 300 respondents revealed that the socio-demographic factors and personal factors were significantly associated to uptake of ANC by the pregnant adolescents while there was no significant relationship between health systems factors and uptake of ANC by the pregnant adolescents.

Conclusion: More qualitative and quantitative research is required to explore the factors influencing ANC utilization among pregnant adolescents with more emphasis on socio-demographic and personal factors. Adequate utilization of antenatal care cannot be achieved merely by establishing good health systems factors in place, adolescent's overall (social, political and economic) status needs to other factors should be considered.

Keywords: Antenatal care, pregnant adolescents, utilization of ANC, postnatal clinic.

CHAPTER ONE
INTRODUCTION/BACKGOUND

This chapter presents the background of the study, the statement of the problem, purpose of the study, objectives of the study, research questions, the significance of the study findings and the conceptual framework adopted.

1.1 Background

There continues to be reports of adolescent pregnancy-related morbidity and mortality and some of these might be attributed to delay in seeking antenatal care (ANC) or the non-utilization of ANC services by pregnant adolescents in Uganda in specific Pader district. With 25% of adolescent girls becoming pregnant before the age of 19, Uganda has one of the highest rates of adolescent pregnancy in Sub-Saharan Africa. The country's high adolescent pregnancy rate has a distinct implication that is the risk of maternal death is higher in adolescents than in older women. A Uganda government survey on demography and health indicates that there is a higher morbidity and mortality rate among pregnant teenagers and their babies as cited by Republic of Uganda (2006).

Furthermore, pregnant adolescent girls are more susceptible to pregnancy and childbirth-related complications because they have not yet developed the physical maturity required for a healthy pregnancy. Other common medical problems associated with adolescent pregnancy include obstructed labour, eclampsia, fistula, low birth weight, stillbirths, and neonatal death (Wallace, 2010). The research was to answer the question ‘’which factors

were influencing utilization of antenatal services among adolescents in Pajule health center IV: Pader district?''

1.1.1 Adolescent

An adolescent is a person undergoing a transition from childhood to adulthood characterized by emotional, biological and psychological changes; putting adolescents at risk for early marriage, unwanted pregnancies, sexual abuse and exploitation. World Health Organization (WHO) defines the age group 10-19 years of age as adolescent. However, the Uganda National Adolescent Reproductive Health (UNARH) policy defines youth as all young people, female and male from the age of 10-24 years, it is however flexible and accommodative to other young people depending on their social and economic circumstances. Despite their high proportions in developing countries like Uganda, available literature shows that young people do not routinely seek appropriate sexual and reproductive health information and care due to various socio-demographic, personal and health systems constraints (Simkhada et al, 2007).

Adolescent pregnancy is common in many countries Uganda inclusive. An estimated 14 million women aged 15–19 years gave birth each year in 1995–2000, with 12.8 million births occurring to adolescents in developing countries. More than half the adolescents in Sub-Saharan Africa and about one third in Latin America and the Caribbean give birth before the age of 20. The regional average rate of births, per 1000 women aged 15–19 years, is 115 in Africa (WHO, 2003).

In Uganda, young people aged 10-19 constitute about 33% while 47.3% of the total population is below 15. Due to the common belief that most adolescents are either too young or are expected to be in schools, antenatal care uptake amongst this group has been accorded less attention contributing to relatively high maternal mortality rates (MMR) (MOH, 2000-2004).

Particularly in most rural areas like northern Uganda, where health facilities may not provide a full range of Primary Health Care (PHC) services, undermining access to reproductive health (RH) services and each year, pregnancy and childbirth claims the lives of over 6,000 pregnant adolescents and approximately 120,000 newborns in Uganda (Asiimwe, 2007). If this persists, negative impacts will be dealt on the Millennium Development Goal (MDG) 5 which is to reduce maternal mortality by three quarters by 2015.

1.1.2 Antenatal care and utilization

An ANC service indirectly saves the lives of mothers and babies by promoting and establishing good health before childbirth and the early post-natal period (Bulatoo 2000). It often presents the first contact opportunities for a pregnant woman to connect with health services, thus offering an entry point for integrated care, promoting healthy home practices, influencing care-seeking behaviors and linking women with pregnancy complications to a referral system; thus impacting positively on maternal and fetal health (Bulatoo 2000).

Ali et al (2010), stresses that ANC is named as one of the four pillars of the Safe Motherhood Initiative. Globally, pregnancy and childbirth kill more than 536,000 women annually, more than half of them in Africa, according to the WHO. In Uganda, more than 600 women die every year due to complications related to pregnancy or child birth and many others suffer disabilities (New-vision, 2009). These issues have been considered as consequences of inadequate antenatal care services and lack of proper Emergency Obstetric care in health care facilities. In order to reduce on the number of death and disabilities that occur during pregnancy and delivery, improved ANC service are prerequisite in all health care facilities (WHO, 2004).

According to the recent WHO recommendation, ANC should be started in the first 2 months of pregnancy. If the pregnant woman has no serious health problem and does not need special attention, only four focused ANC visits suffice. Pregnancy complications such as eclampsia, anemia and syphilis through early detection, management and timely referral of high risk pregnancies, has shown to reduce the rates of maternal mortality.

Generally, ANC during pregnancy can provide an entry into the health system, and for pregnant adolescents in particular such care may be one of the first comprehensive health assessments deemed necessary (Alemayehu, 2010). Most importantly, utilization of ANC provides the opportunity to teach teenaged women on how to recognize and respond to the signs of obstetric complications as they may have little knowledge and experience in reproductive health. The other added values obtained from ANC services are provision of tetanus toxiod immunization, treatment of malaria, anemia and sexually transmitted infections (STIs); and an entry point for prevention of mother to child transmission of

human immune virus (HIV). Provision of health advices on birth spacing and use of institutional delivery which would significantly improve both maternal and fetal outcomes are the other important services obtained in the process (Alemayehu, 2010).

The proportion of pregnant adolescents who use ANC from health professionals is generally very low. In Uganda, young people aged 10-24 constitute about 33% (MISR, 2000) and yet adolescents are at increased risk of experiencing complication during pregnancy and childbirth and at the same time less likely to use maternal health care services including ANC and delivery from skilled health workers. A range of factors have been attributed to the low utilization of ANC service and among these, the most commonly mentioned variables are: socio demographic differences such as educational status, marital status and low wealth index and obstetric factors such as parity, personal factors and health systems factors (Alemayehu, 2010). Therefore, this study is to examine whether the same factors apply to the underutilization of ANC services in Pajule Health Center, Pader District.

1.2 Problem statement

In Uganda, ANC coverage is about 92% and these services are available free of charge at government hospitals and health centers (Makerere Institute of Social Research, 2000). ANC is an opportunity to promote the use of skilled attendance at birth and healthy behaviors such as breastfeeding, early postnatal care, and planning for optimal pregnancy spacing and all pregnant adolescent mothers are expected to attend ANC services at any hospital/health center of their choice after knowing that they are pregnant.

However, there is a great concern about the small numbers of pregnant adolescents who turn up for the ANC services despite the recommended focused ANC guidelines and yet seen in large numbers when they bring their children for immunization programs later and other postnatal services. At the postnatal clinic, many of the adolescents report deaths and complications like STIs, eclampsia, anemia, malaria, bleeding, postpartum hemorrhage that they sustained during pregnancy and childbirth which could have been prevented during ANC (Magnussen, 2003). Therefore, the factors that cause the adolescent mothers failure to use these freely available antenatal services have to be assessed and reasons identified for the non-utilization of these services will be used to make recommendations for enhancing the utilization of these services to all women, but especially to adolescents.

1.3 Research objectives

General objective

To assess factors influencing utilization of antenatal services among adolescents in Pajule health center IV: Pader district.

Specific objectives

2 To determine the prevalence of ANC utilization among pregnant adolescent in Pajule health center in 2012.

3 To establish the socio-demographic factors influencing utilization of ANC among pregnant adolescent in Pajule health center in 2012.

4 To examine the personal factors that influence ANC utilization among pregnant adolescent in Pajule health center in 2012.

5 To establish the health systems factors that influence pregnant adolescent utilization of ANC in Pajule health center in 2012.

1.4 Research questions

6 What is the prevalence of ANC utilization among pregnant adolescent in Pajule health center?

7 What are the socio-demographic factors influencing utilization of ANC in Pajule health center?

8 What are the personal factors that influence ANC utilization among pregnant adolescent in Pajule health center?

9 What are the health systems factors that influence pregnant adolescent utilization of ANC in Pajule health center?

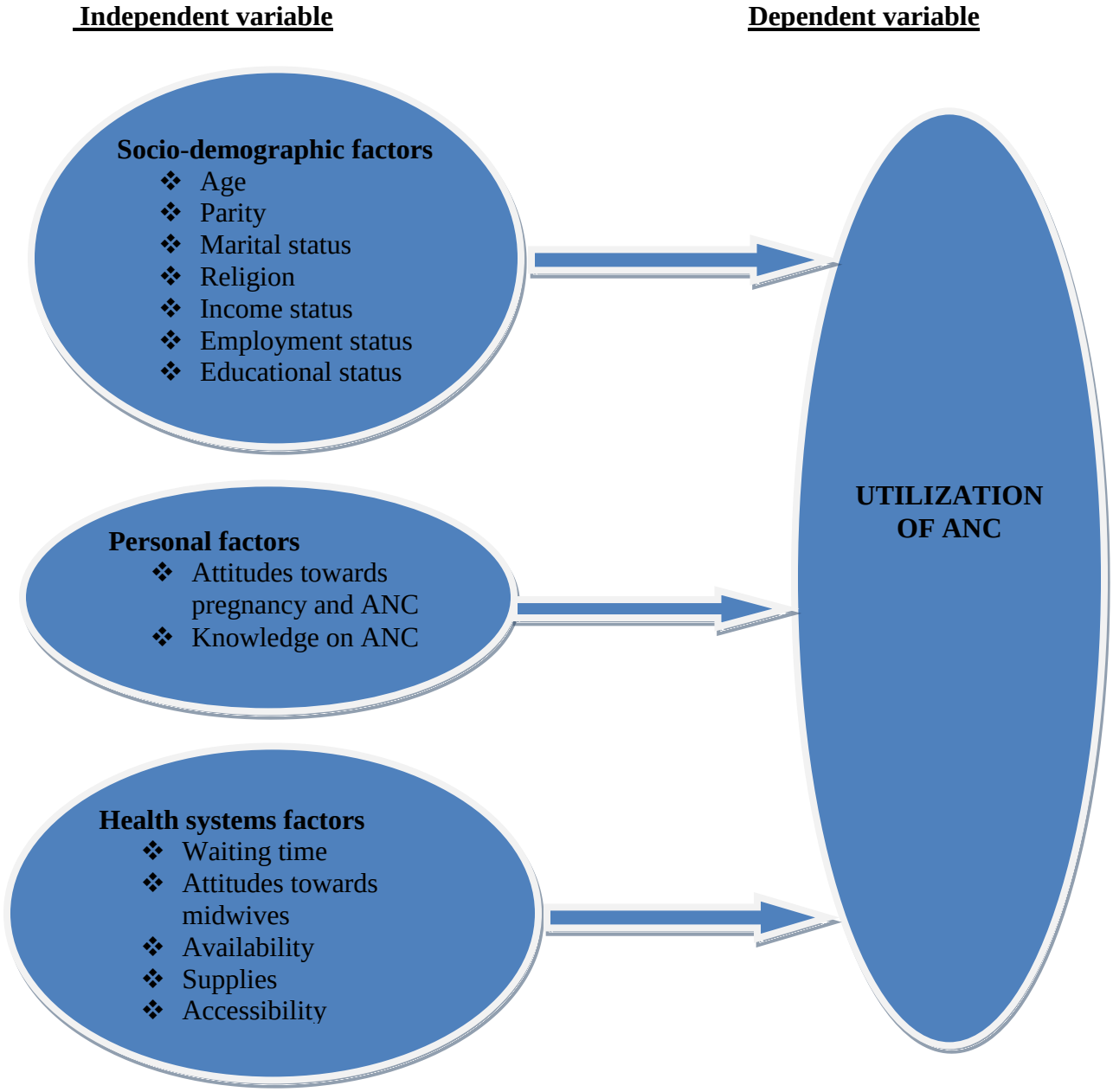
1.5 Significance of the study

Effective utilization of ANC services, through early booking for ANC, receiving health promotion information and health care, is crucial to enhancing maternal and fetal health during pregnancy and reducing mortality and morbidity statistic.

The identified factors that influence the utilization of ANC services in Pader district are to assist in:

- Promoting quality ANC through evidenced based practice.
- Enhancing the utilization of ANC services by pregnant adolescent in Pader.
- Strengthening Uganda's MOH strategy aimed at improving maternal health and reduction of maternal mortality between 2005 and 2015 through enhanced access to ANC services.
- Empowering pregnant adolescents to make informed and independent decisions about health care during pregnancy; identify danger signs and initiate appropriate actions.
- Influencing midwifery education and practice settings to review curricula and incorporate essential content on pregnant adolescent's ANC
- Advocating for adolescent friendly policies that minimize barriers to ANC services for pregnant adolescents.

1.6 Conceptual frame work



The illustration above will try to show the association between the independent variables with the dependent variable.

Socio-demographic factors

The socio-demographic data will include age, parity, marital status, religion, income status, employment status, educational status of both the pregnant adolescent mother and the husband and all this having an influence on the pregnant adolescent's utilization of ANC services.

Personal factors

Those are factors that could have an influence on the pregnant adolescent’s utilization of the ANC services such as attitudes towards pregnancy and ANC, unwanted pregnancy, and psychosocial problems.

Health systems factors

The health systems factors may include waiting time, attitudes of midwives, availability, supplies and accessibility.

Utilization of ANC services

Utilization of ANC is the uptake of antenatal services. Socio-demographic factors, personal factors and the health systems factors are the independent variables that could have influence the utilization of ANC services by pregnant adolescents.

CHAPTER TWO
LITERATURE REVIEW

2.1. Introduction

This chapter will review literature related to utilization of ANC by pregnant adolescents and will be guided by the research objectives. It will include the prevalence of utilization of antenatal care, socio-demographic factors (age, religion, marital status, parity, education levels of both the woman and the husband, and income index), personal factors (knowledge, perception and attitude), and health systems factors (availability, waiting time, midwives attitudes, accessibility and supplies).

2.2. Prevalence of ANC utilization

WHO (2003) showed that 71% of the pregnant adolescents utilized ANC services worldwide, with industrialized countries contributing about 95% while South Asia 54% and Sub-Saharan Africa 64% (Yang et al, 2010). In 1995–2000, the adolescent fertility rate was 54 births per 1000 adolescents worldwide. In developed countries it was 29 births per 1000 adolescents, while in developing countries it was as high as 133 births per 1000 adolescents. On average, adolescent childbearing is most common in Africa (115 births per 1000 adolescents) and least common in Europe 25 births per 1000 adolescents (WHO, 2007).

Antenatal care among pregnant adolescents is one of the important factors in reducing maternal morbidity and mortality. Unfortunately, many adolescent in developing countries do not receive such care (Yang et al, 2010). Reports from some countries show

that a high utilization rate of the ANC service results in lowering the risk of maternal mortality. For example, in South East Asia in 2000–2006, based on the ANC coverage among five member countries, Thailand had the highest rate at 98.0%, whereas Laos had the lowest at only 27.0%. The highest rates after Thailand were: Viet Nam (91.0%), Myanmar (76.0%), and Cambodia (69.0%). According to the 2005 statistics of Maternal Mortality in South East Asia, Laos had the highest maternal mortality rate at 660 per 100,000 live births.

A study conducted in Nigeria among teenagers revealed that poor obstetric outcomes were related to poor ANC and poor demographic characteristics rather than to mothers' biological ages (Loto et al, 2004). The same study's findings showed a higher incidence of complications among the teenagers who did not attend ANC (referred to as "unbooked cases" in Zimbabwe) than among those who did do so. Another study on the utilization, quality and effectiveness of free ANC in an informal settlement area in the Gauteng Province of the Republic of South Africa revealed that adolescent mothers tended to seek care late during their pregnancies, with an average of one visit before delivery (Westaway et al, 2000). The findings also showed that care provision was inadequate and free ANC services did not automatically increase the utilization of ANC services. Other factors likely to increase the utilization of ANC services were cited as accessibility, availability and acceptability of the services

A cross sectional study done in Ethiopia showed that most (60%) of the subjects were in the age group between 18 and 19 years. The vast majority (90%) was from the rural

settings and most (87%) were in marital union. Almost three out of four (72.4%) of those who had given birth had no any form of formal education (Alemayehu et al, 2010). Over a quarter (27.3%) of most recent childbirths had at least one ANC service, of this, 21% had started their first antenatal visit in the first trimester of pregnancy. The majority (80.4%) of the adolescents who attended ANC delivered at home without being assisted. The major deriving factors for the utilization of ANC service were education level of adolescents and their male partners, better wealth index and urban residence (Alemayehu et al, 2010). This means that, education of partners, rich wealth index and urban residence seemed to encourage teenagers to utilize ANC. Appropriate interventions targeting adolescent with poor socioeconomic status is recommended with more emphasis on the rural underserved segment of population.

The findings of the study done in Bangladesh suggest that safe motherhood practices among adolescents are poor. Although 52.5 percent of the adolescents received antenatal care services, only 14.4 percent sought assistance from skilled birth assistance during childbirth and 10.7 percent of the babies were delivered at medically-facilitated places. The cross-sectional study yielded quantitatively important and statistically significant ($P<0.001$) socio-demographic factors for the service utilization which included: place of residence, birth order and region. Adolescent's education and wealth index are the most important determinants in maternity care services utilization (Kamal, 2009).

An exploratory, descriptive research done in Lesotho to measure variables influencing delay in antenatal clinic attendance among teenagers showed that out of the twenty-one pregnant adolescents who were interviewed 71.3% started antenatal clinic attendance during the second trimester, while 28 (57%) started during the third trimester. Variables that contributed to the delay in early antenatal attendance included lack of knowledge regarding the importance of early attendance, denial of the pregnancy by the boyfriend, the fact that sex outside of marriage in Lesotho is still taboo and structural variables related to service provision. (Phafoli et al, 2007).

Burtz et al. (2003) and York et al. (2000) studies examined the relationship between levels of prenatal care utilization and postnatal patterns of healthcare behavior among high-risk minority adolescents. The findings indicated that adolescents who sought inadequate or no prenatal care had greater infant morbidity and infant mortality in the postnatal period and had significantly lower levels of attendance at postnatal visits, well-child visits, and immunization completions. Their conclusions confirmed that the level of prenatal care indicates the level of postnatal care adolescents seek for themselves and their children after delivery. This implies that there is a relationship between prenatal care and utilization of postnatal services.

2.3. Socio-demographic factors

Studies have found that ANC utilization is strongly associated with age of adolescents at marriage and at pregnancy. In rural north India (Pallikadavath et al. 2004) and in Nepal (Sharma 2004) age at marriage was positively associated with access of attendance for ANC. Antenatal check-ups were more likely among adolescents who married at the age

of 19 or above, compared with those who married younger (Pallikadavath et al. 2004). However, age at marriage was not a statistically significant predictor of utilization of ANC in Jordan (Obermeyer & Potter, 2000).

Several studies found that adolescent's education was the best predictor of ANC visits. Two of the studies showed that adolescents with better education were more likely to receive the recommended number of ANC visits (Nielsen et al. 2001; Erci, 2003). Educated adolescents are more likely to start ANC visits early than less educated adolescents (Miles-Doan & Brewster 2000; Matthews et al. 2001). In contrast, education did not show any association with utilization of ANC services in Pakistan (Nisar & White, 2003). Adolescent's education emerged as a key factor in a qualitative study leading to an appreciation of the importance of ANC (Mumtaz & Salway, 2005). Five studies indicated that use of ANC increased with husband's educational level. Husband's education was a statistically significant predictor in Andra Pradesh, but not in Karnataka (Navaneetham & Dharmalingam, 2002). Husband's educational level is a stronger predictor $p<0.001$ than adolescent's education in the Philippines (Miles-Doan & Brewster, 2000). Similarly Mwaniki et al. (2002) conducted a cross sectional descriptive study on a sample of 200 adolescent mothers to determine the utilization of antenatal and maternity services in four rural health centers in Mbeere district, Kenya. The findings of the study revealed that utilization of health facilities was significantly influenced by the number of children an adolescent had and the distance to the health facilities. The more the number of children an adolescent had, the less likely she used the services.

There was a strong associations found between parity and ANC utilization. Higher parity was generally a barrier to adequate use of ANC (Celik & Hotchkiss 2000, Magadi et al. 2000, Erci 2003, Overbosch et al. 2004, Sharma 2004, Paredes et al. 2005), but high parity adolescents tended to use the service more often than primiparous adolescents in Ethiopia (Mekonnen & Mekonnen 2003). Similarly, adolescent's first ANC visit was earlier in higher parity adolescents in India (Matthews et al. 2001).

Family size and structure proved significant factors in the use of ANC in four studies. Adolescent from nuclear families were considerably less likely to use ANC than from extended/joint families (Matsumura & Gubhaju 2001). Two studies found birth order and interval were significantly associated with ANC visits. Higher order births were associated with a late start or inadequate use of ANC (Magadi et al. 2000, Navaneetham & Dharmalingam, 2002). Births occurring after an interval of more than three years received more frequent ANC visits than those where the preceding birth was within two years (Magadi et al. 2000).

Married pregnant adolescents were more likely to seek and receive ANC than single or unmarried pregnant adolescents (McCaw-Binns et al. 1999, Glei et al. 2003). Unmarried adolescents in Kenya, who started childbearing before 20 years of age, had fewer antenatal visits than married adolescents who started at a later age (Magadi et al. 2000).

The majority of adolescents in their thirties attend ANC early and more frequently than (Bhattia & Cleland 2000, McCaw-Binns et al. 1999, Miles- Doan & Brewster 1999, Matthews et al. 2001). A qualitative study also showed that adolescents below 35 years preferred frequent clinic visits to be reassured that the baby was growing well and to learn its position, whereas older adolescents who did not experience any problems, were not concerned about having frequent visits (Mathole et al. 2004). However, some of the studies suggested that adolescent's age was not a significant predictor of utilization of ANC (Celik & Hotchkiss 2000, Nisar &White 2003, Overbosch et al. 2004, Kabir et al. 2005).

Muslims were much more likely to seek routine ANC in India (Bhattia & Cleland 2000, Pallikadavath et al. 2004) than other religions. In Hausa culture, 'God's Will' was the strongest factor in non-utilization in Nigeria (Adamu & Salihu 2002). Mekonnen and Mekonnen (2003) found significant variation in the uptake of ANC by religion. Adolescents who followed Muslim, orthodox and protestant religions were more likely to use ANC in Ethipia. In contrast, religion was not a statistically significant predictor of antenatal check-ups in India (Navaneetham & Dharmalingam 2002) and in Ghana (Overbosch et al. 2004).

The timing of the first visit varied between ethnic groups in Kenya (Magadi et al. 2000). Kurdish adolescents were less likely to use ANC services in Turkey (Celik & Hotchkiss, 2000). Non-Spanish speaking indigenous adolescents in Guatemala used biomedical services less (Glei et al. 2003). More marginalized groups were less likely to use ANC.

A number of studies found significant relationships between economic factors (cost of services, socio-economic status or income of the household, occupation of adolescents/husband and employment) and ANC utilization. The costs of the service including transportation and necessary laboratory tests were major factors prohibiting service utilization (Adamu & Salihu 2002, Overbosch et al. 2004). Qualitative studies also support this finding (Griffith & Stephenson 2001, Myer & Harrison 2003, Mathole et al. 2004, 2004, Mumtaz & Salway 2005). Adolescents who received ANC from private hospitals to be superior were prevented from using these services because of the high cost (Griffith & Stephenson 2001).

Free or subsidized services improved uptake of ANC among urban slum-dwelling adolescent (Chowdhury et al. 2003). Household economic status has a positive and significant impact on use of ANC (Table 2). Adolescent with high economic status were more likely to receive adequate and early ANC than those with low economic status (Magadi et al. 2000, Matsumura & Gubhaju 2001, Sharma 2004). In Pakistan, household income was 75% times higher among adolescent receiving ANC than those who received none (Nisar & White 2003). Those in paid employment tend to start ANC earlier (Magadi et al. 2000, Navaneetham & Dharmalingam 2002). Employment outside the home during pregnancy was significantly related to ANC (Erci 2003).

Pregnant adolescents who are working attended ANC than those who were unemployed (McCaw-Binns et al. 1999). In contrast, uptake of ANC through healthcare facilities was higher among non-working adolescents than working adolescents in India (Pallikadavath

et al. 2004). The proportion of adolescents receiving ANC at home was higher among working adolescents although it was not statistically significant (Pallikadavath et al. 2004). Adolescents married to jobless men or whose husbands were laborers had inadequate ANC compared with those whose husband had other jobs (Cicekliogl u et al. 2005), but the sector or field of employment of the household's head was not statistically significant (Obermeyer & Potter 1999).

Low income status of the female adolescent in society, limited decision making powers, and social immaturity might contribute to poor utilization of ANC services, resulting in an increased incidence of pregnancy and obstetric complications (Konje & Ladipo 2000; Nyoni 2006).

Delvaux et al. (2001), show that there are also similar barriers to antenatal care among European countries. Kalmuss and Fennely (1999) examined the barriers to prenatal care in the United States and found it related to attitudes. Dunlop et al. (2000) assessed the extent to which Canada's universal health care system has tried to eliminate socio-economic barriers in the use of physician services. However, in the United Kingdom, Gulliford et al. (2001) recapitulated the findings of a scooping exercise on access to health care and noted that there was little evidence for the effects of user charges on access to primary healthcare services. This means socio- economic and cost barriers may be responsible for hindering the access to health services. However this does not tally with a study by Griffiths & Stephenson (2001) on utilization of maternal healthcare services in the rural and urban areas in Maharashtra, India. Their study revealed

controversial results, which showed that socio-economic status was not a barrier to service use if the adolescents perceived the benefits of the service to outweigh the costs. However, there is an assumption in this UK study that the adolescents can ultimately afford the service. This study did not consider the adolescents who have no or very few resources.

2.4. Personal factors

Knowledge of ANC has a positive and statistically significant effect on ANC use. Adolescents with ANC knowledge were more likely to attend ANC visits in Nepal (Sharma 2004; Pallikadavath et al. 2004). Family planning users attended ANC in Jamaica (McCaw-Binns et al. 1999, Magadi et al. 2000). (Alama et al, 2005; Nisar & White, 2003) found that adolescent's knowledge on diet was significantly associated with utilization of ANC; knowledge about pregnancy danger signs was found to be significant in Pakistan (Nisar & White 2003) and in Ecuador (Paredes et al. 2005). Bhattia & Cleland (2000) found that personal hygiene happened to be one of the important predictor of ANC.

A qualitative study in India showed that the perception of pregnancy as a natural process that only warranted ANC use when problems arose (Griffith & Stephenson 2001). One reason for not attending ANC was fear associated with the cultural belief that the early period of pregnancy was most vulnerable to witchcraft. The fear was that blood could be used for bewitching pregnant adolescents if the wrong hands handled it, or that it would be tested for HIV and the result reflected on their ANC card in Zimbabwe (Mathole et al.

2004). Some adolescents attended ANC very late because they were not sure whether they were pregnant (Myer & Harrison 2003).

(Mathole et al. 2004, Mumtaz & Salway 2005) showed that shame related with the pregnancy was one of the many reasons why pregnant adolescents do not attend ANC. Pregnant adolescent's perceptions of the risk factors associated with obstetric outcomes were related to the probability of use of ANC. Adolescents who had prior neonatal death are more likely to take up ANC services (Glei et al. 2003, Bhattia & Cleland 2000, Cicekliogl u et al. 2005). McCaw-Binns et al. (1999) and Paredes et al. (2005) showed that the complications experienced during pregnancies had a positive effect on adequate attendance for ANC. Similarly in India, pregnant adolescents who did not have any previous obstetric problems were more likely to attend late Matthews et al. (2001).

Adolescent's attitude towards her pregnancy has been found to influence ANC use. In the U.S., a comparative study found that adolescents with few or no ANC visits had more negative attitudes about being pregnant and the importance of ANC than those who had adequate care (Simkhada, 2008).

In Latin America and the Caribbean, 25–50% of adolescent mothers aged 15–19 years reported that their pregnancies were unplanned. In North Africa and the Middle East, the proportion is in the range of 15–30%. Some 10–16% of adolescent births in India, Indonesia and Pakistan are unplanned, compared to 20–45% in the rest of Asia. The variation is even greater in sub-Saharan Africa – from a relatively low 11–13% in Niger

and Nigeria to a high 50% or more in Botswana, Ghana, Kenya, Namibia and Zimbabwe (WHO, 2007).

There were no studies that examined adolescent's satisfaction with ANC therefore we do not know whether usage is related to satisfaction with the experience in developing countries. Yet on the other side satisfaction is one of the major determinant of health service utilization in general (Aldana et al. 2001). Patient satisfaction as a component of quality of care has been given high priority in maternity care in developed countries van Teijlingen et al. (2003). Lack of satisfaction among pregnant adolescents with quality of care could be a major demotivating factor in the use of maternity care facilities. Complaints about the services offered in Kenya poor quality of food, included shortage of drugs and essential supplies, lack of commitment by staff and lack of cleanliness Mwaniki et al (2002). A study has looked at the effect of the quality of services on their uptake and the result showed negative attitudes of healthcare workers and poor relations between healthcare workers and pregnant adolescent as major barriers Mathole et al (2004).

In the study carried out by Hulsey et al. (2000), the relationship of feelings about the pregnancy and utilization of prenatal and postnatal services was examined on a convenience sample of adolescents who had delivered. The findings showed that adolescents who liked the pregnancy used antenatal services, while those who did not like the pregnancy did not use the services after delivery. This means that attitude towards the pregnancy has a great influence on utilization of antenatal services in South Africa.

Other studies showed that exposure to mass media especially television and radio significantly affected utilization of ANC. Pregnant women with high levels of exposure were more likely to receive ANC (Navaneetham & Dharmalingam, 2002). Pallikadavath et al. (2004) and Sharma (2004) found that watching television every week gradually increased the chances of women using ANC.

Furthermore, planned pregnancy was a significant determinant of ANC use in several studies, women whose pregnancies were 'unwanted' did not take up ANC services (McCaw-Binns et al. 1999, Paredes et al. 2005Magadi et al. 2000, Erci 2003).

2.5. Health systems factors

Some studies showed that use of ANC was associated with the availability of the service or a healthcare professional and waiting time for services. A study done in Kenya on 5104 adolescents aged 15–25 using ANC who lived near a village health worker/nurse showed that pregnant adolescent were more likely to use ANC services than adolescents without a village health worker (Magadi et al. 2000; Nielsen et al. 2001). In a qualitative study done suggested that availability of healthcare workers in the local community encouraged adolescents to use ANC services (Griffith & Stephenson, 2001). The opening time of the service health center was important for urban slum-dwelling adolescents in Bangladesh (Chowdhury et al. 2003), whereas long waiting times were a barrier to ANC use as showed by Chowdhury et al. 2003, Mathole et al. 2004.

Studies have found that ANC use is influenced by accessibility of the services, mainly place of residence, distance and transport to the health care facilities. Place of residence was a significant factor identified in several studies. Adolescents in urban areas used ANC more than rural adolescents (Paredes et al. 2005, Sharma 2004, Obermeyer & Potter, 1999). Adolescents in urban areas were more likely to use ANC from a health care professional in Ethiopia (Mekonnen & Mekonnen, 2003). In contrast, adolescents in urban areas of Karnataka in India were about 45% less likely to receive ANC than those living in rural areas (Navaneetham & Dharmalingam, 2002). Urban and rural status did not emerge as statistically significant after holding constant regional status and other variables in Turkey (Celik & Hotchkiss, 2000). There was no significant difference relationship between urban and slum areas regarding utilization of ANC in Pakistan (Alam et al. 2005). Whereas living in urban area of the country was positively and significantly associated with ANC use (Celik & Hotchkiss, 2000).

Distance was significantly associated with ANC use (Magadi et al. 2000, Glei et al. 2003). An increase in distance to the nearest health care facilities was associated with less antenatal use (Magadi et al. 2000), and lower uptake of ANC services (Nielsen et al. 2001). Qualitative studies also showed that the distance to services was a barrier to ANC services utilization (Griffith & Stephenson 2001, Chowdhury et al. 2003, Mathole et al. 2004, Myer & Harrison 2003,). And other studies found that poor road conditions uncomfortable transport, and difficulties in crossing big rivers were also barriers (Mathole et al. 2004, Mumtaz & Salway 2005).

The mothers who were living in a distance less than 5 kilometers to the healthy facilities utilized the services better than those who lived in a distance 5 kilometers away and beyond. Reasons for not utilizing the services, which were mentioned in the study include, lack of satisfaction with the quality of the services, lack of cleanliness in the health facilities, poor quality of catering services, lack of money for transport and hospital fee as cited by Mwaniki et al. (2002) who conducted a cross sectional descriptive study.

According to a report by Safe Motherhood (1999), the significant barriers that prevent adolescents from utilizing maternal health services include physical, financial, and socio-cultural. Where by distance and lack of transport is a key factor. Nearly 80 percent of rural adolescents live more than five kilometers from the nearest hospital, and many have no way to get to health facilities except by walking.

Mathole et al. (2004) found out that poor quality of care and negative attitudes of service providers were factors affecting up take of ANC in Zimbabwe. It showed that poor relationships between patients and health care providers, rude and unfriendly attitudes of nurses, reasons adolescents preferred not to be referred to some health centers. Pregnant adolescents' poor uptake of ANC services may also be influenced by the health workers' attitudes as well as the nature of the services provided. The findings of a study on health care seeking practices among adolescents in Cape Town by Jewkes et al (2000) supported the premise that focused and individualized ANC that is accessible and acceptable is likely to enhance effective utilization of ANC services by pregnant adolescents in

Bulawayo. Aretakis (2004) cites some of the barriers, especially among African adolescent mothers, related to delays in seeking ANC, as dislike towards providers' care and offensive attitudes towards pregnant adolescents. Edelman et al (1999) health care providers, including midwives in many of the developing countries, have been described as lacking humanity; they might insult pregnant adolescents by using abusive language hence affecting ANC utilization.

Studies conducted by Matua, (2004), as well as by Omolola et al 2004, revealed that pregnant adolescents sometimes met unfriendly nurses and might even be turned away from ANC clinics. These pregnant adolescents would then lose confidence in the service provider and eventually stop using the facility. It is therefore important that adolescents, including pregnant adolescents, in Zimbabwe are provided with improved and user-friendly ANC service.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1. Introduction

Chapter three describes the methodology used in establishing the factors that influence the uptake of antenatal services by pregnant adolescent. The chapter explains the study area, study population, the study design, data collection, the sample size and selection, the research instrument, the procedure followed in obtaining the information, the analysis used to interpret the information, and the ethical issues.

3.2 Study design.

A descriptive cross sectional study was used to collect data through quantitative approaches to capture complementary data of the topic. Cross sectional design was chosen because it offers information about a population at a given point in time Bliss & Higson-smith (2000). This design was chosen as it is intended to gain immediate knowledge and information on factors influencing pregnant adolescent's utilization of antenatal care in the district of Pader.

3.3. Study area

Pader District is located in the north of Uganda and represents a relatively typical rural district in terms of its population and the service spread. Pader is one of the new districts in Northern Uganda comprising of mainly the Acholi people who speak Luo. The 2002 national census estimated the populations of the district to be 293,679 people, 147,200 are female and 146,479 are Male. The main economic activity is agriculture with main emphasis on food crops such as millet, potatoes, beans, Simsim and sunflower. Cash

crops include cotton, and Vegetables are Cabbage, Tomatoes and Onions. The district has 6 health centers (III) at county and 1 health centre (IV) at sub-district.

3.4 Target population

The target population consisted of adolescent women between the ages of 10- 19 years of age in Pader district.

3.5 Accessible population

The accessible population included all adolescent mothers who had come at Pajule health center in Pader district for postnatal services.

3.6 Study population

All the adolescent women between the ages of 10- 19 years and had consented to participate in the research which was carried out in Pajule health center at the postnatal clinic.

3.7 Inclusion criteria

For inclusion, the adolescents who came to the postnatal clinic for immunization and other services like family planning at Pajule Health Center and were 19 years of age or younger and were willing to participate in the study as well.

3.8 Exclusion criteria

The adolescents who did not participate in the study included those who were out of the research age bracket, had not consented ill and mentally challenged.

3.9 Sources of data

The primary data was got from the adolescent mothers at postnatal clinic using structured questionnaires which was administered by the trained research assistants to the respondents.

3.10 Sample size and selection

3.10.1. Sample size

The sample size was calculated from the Kish and Leslie formula below, (Birch, 2005).

$$N = \frac{Z^2 P (1-P)}{D^2}$$

Where;

N is the required sample size

Z is the confidence level at 95% (standard value of 1.96)

P is the proportion of the utilization of the antenatal care among adolescents, according to WHO 47% is the prevalence in Uganda.

D is the margin error at 5% (standard of 0.05)

$$N = \frac{1.96^2 * 0.47(1-0.47)}{0.05^2}$$

$$N = 382.77$$

$$N = 383$$

Therefore, the sample size will be ~383 for the study to be conducted at Pajule Health Center

3.10.2 Sample selection

Convenience sampling methods was used to enroll participants into the study. Any adolescent mother at the post natal clinic and who consented to participate in the study were recruited consecutively until the required sample size was achieved.

3.11 Research instrument

The research instrument was mainly the questionnaire which was easy to use and could be applied on many respondents. The questions were both closed and open ended in English language. The questionnaire was pre-tested at Kawempe health center to improve quality and minimize information bias and it questionnaire measured both the dependent and independent variables.

3.12 Data collection techniques

Data was gathered through an administered in-depth interview with the adolescents at the postnatal clinic using a pre-tested semi structured questionnaires. The questionnaire was translated to luo orally while being administered and it collected information on socio demographic variables, personal factors and health services factors. Research assistants were trained then recruited to help in administering the questions.

3.13. Study variables

3.13.1. Independent variable

The independent variables of the study are:

- Socio-demographic data (age, occupation, income, education, parity, marital status and religion).

- Personal factors (attitude and knowledge).

  Health systems factors (waiting time, attitudes of midwives, availability, and accessibility).

3.13.2. Dependent variable.

10 (Utilization of ANC services) of which it is the uptake of antenatal care by adolescents in Pajule health center and these services may include tetanus toxoid immunization, malaria control, prevention of sexually transmitted diseases, prevention of mother to child transmission of human immune virus, family planning, preparation for the incoming baby and treatment of pregnancy related complications.

3.14 Data management

The questionnaires where check after being filled by the trained research assistants to ensure there was no questions left unanswered and then kept under key and lock. Data was then coded to increase accuracy. Data was entered using Epidata then exported to SPSS to be analyzed. Descriptive summary statistics such as percentages computed. Both bivariate and multivariate analyses were used during the analysis. Association between independent and dependent variable was tested using chi square test.

3.15 Quality control (Validity and Reliability)

Quantitative data using structured questionnaire which was translated orally into Luo language to facilitate communication. The questionnaire was piloted in Kawempe Health

Center to test it to improve clarity of the question. Research assistants were trained. Data quality was ensured giving identification number and coded to help in data entry and checking.

3.16 Ethical consideration

International Health Sciences University had to approve the research proposal. Permission to carry out the study was obtained from the authority of the Health Center, and the respondents provided with a written consent form before the interviews were conducted. Voluntary participation was emphasized; the participants were given a chance to ask questions and assured them of confidentiality. All information obtained from the study was strictly for academic purposes and not for any other reasons against the respondents. The respondents were informed that they were free to withdraw from the study at any time if they so wish and that their withdrawal would not affect their antenatal care in any way. The questionnaires were designed in a manner that excludes the names of the respondents.

3.17 Plan for dissemination

The information from the study was disseminated by providing handouts to the policy makers and the implementers. A soft copy uploaded onto the intra-net to be easily accessed by the health care students of IHSU and a hard copy availed to the IHSU library.

CHAPTER FOUR

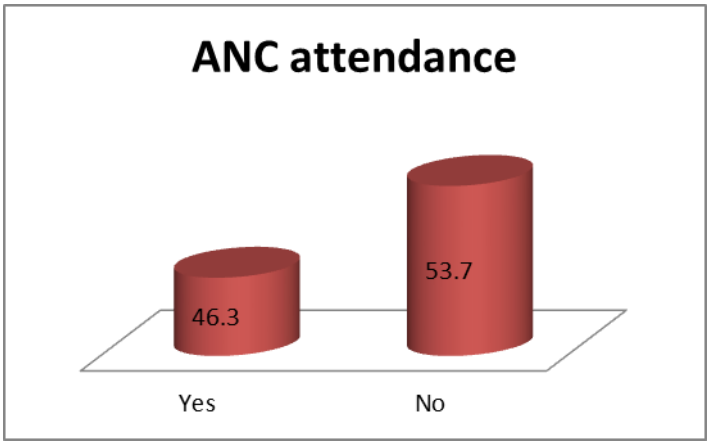
PRESENTATION OF FINDINGS

4.1 Introduction

This chapter gives information about the findings of the study on factors influencing utilization of ANC among pregnant adolescents at Pajule Health Center. This analysis was done by looking at one variable at a time establishing the relationship between the dependent and independent variables.

4.2 ANC utilization prevalence

Figure 1: Level of uptake of ANC services among pregnant adolescents in Pajule Health Centre.



The above figure shows that of the 300 adolescents who were interviewed, 161 (53.7%) did not attend ANC services during their previous pregnancy while 139 (46.3%) attended ANC services during their previous pregnancy.

4.3 Socio-demographic factors

Table 1: Socio-demographic factors influencing utilization of ANC among pregnant adolescents in Pajule Health Centre

Variable	N (%)	ANC attendance		χ^2	P-value
		Yes	No		
Age					
10-13	4 (1.3)	2 (1.4)	2 (1.2)	7.93	0.019
14-16	84 (28.0)	28 (20.1)	56 (34.8)		
17-19	212 (70.7)	109 (78.4)	103 (64.0)		
Education level					
None	146 (48.7)	49 (35.3)	97 (60.3)	21.61	<0.001
Primary	91 (30.3)	49 (35.3)	42 (26.1)		
Secondary	53 (17.7)	33 (23.7)	20 (12.4)		
Tertiary	10 (3.3)	8 (5.8)	2 (1.2)		
Occupation status					
Employed	79 (26.3)	54 (38.9)	25(15.5)	20.91	<0.001
Unemployed	221 (73.7)	85 (61.4)	136 (84.5)		
Religion					
Christian	232 (77.3)	116 (83.45)	116 (72.0)	10.28	0.016
Moslem	35 (11.7)	15 (10.8)	20 (12.4)		
Traditional	33 (10.40)	8 (5.7)	25 (15.5)		
Marital status					
Single	45 (15.0)	16 (11.5)	29 (18.0)	4.56	0.336
Married	237 (79.0)	116 (83.5)	121 (75.2)		
Divorced	2 (0.7)	1 (0.7)	1 (0.6)		
Widowed	2 (0.7)	0 (0.0)	2 (1.2)		
Separated	14 (4.7)	6 (4.3)	8 (4.97)		
Staying with husband					
Yes	137 (45.7)	71 (51.1)	66 (41.0)	6.96	0.031
No	108 (36.0)	51 (37.0)	57 (35.4)		
N/A	55 (18.3)	17 (12.23)	38 (23.6)		
Husbands occupation status					
Employed	100 (33.3)	70 (50.4)	30 (18.6)	33.89	<0.001
Unemployed	142 (47.3)	50 (36.0)	92 (57.1)		
N/A	58 (19.3)	19 (13.7)	39 (24.2)		
Husband's education level					
None	44 (14.7)	11 (7.9)	33 (20.5)	30.25	<0.001
Primary	110 (36.7)	50 (36.0)	60 (37.3)		
Secondary	69 (23.3)	45 (31.7)	25 (15.5)		
Tertiary	22 (7.3)	17(12.2)	5 (3.1)		
N/A	55 (18.3)	17 (12.3)	38 (23.6)		
Number of pregnancy					
1	71(23.3)	38 (28.42)	32 (19.9)	8.73	0.033
2	222 (74.0)	94 (67.6)	128 (79.5)		
More than 3	7 (2.3)	6 (4.3)	1 (0.6)		
Parity					
1 child	224 (74.7)	98 (70.5)	126 (78.3)	5.04	0.081
2 children	73 (24.3)	38 (27.3)	35 (21.7)		
3 and above children	3 (1.0)	3 (2.2)	0 (0.0)		
Income index (Per day)					
2500 /= or less	237 (79.0)	87 (62.6)	150 (93.2)	42.04	<0.001
More than 2500 /=	63 (21.0)	52 (37.4)	11 (6.8)		

The findings in Table 1 shows that the majority, 212 (70.7%) of the respondents were aged between 17-19 years and proportion of adolescents aged 17-19 who attended ANC in their previous pregnancy was 78.4% (109). There was a significant relationship between ANC service uptake (χ^2=7.93, P=0.019).

Of the 300 adolescents under the study, the majority 146 (48.7%) of the respondents had never attended school and 60.3% (97) of them never attended ANC services in their previous pregnancy. Education level of pregnant adolescents had a significant relationship with antenatal services uptake (χ^2=21.61, P<0.001).

The occupation variable in this study was used to gauge the economic status of a pregnant adolescent and therefore defining the effect of income levels on the use of ANC services. The majority, 221 (73.7%) of the adolescents are unemployed with 84.5% (136) proportion of the pregnant adolescents not have utilized ANC services during their previous pregnancy. There was a significant relationship between the ANC uptake and occupation status of the respondents (χ^2=20.91, P<0.001).

On analysis of the results, respondents were asked to state their religious affiliation. From the results indicated in table 1, the vast majority, 232 (77.3%) of the pregnant adolescents were Christians. The proportion of pregnant adolescents who were Christians, 83.45% (116) had used ANC services showing that uptake of ANC among adolescents depends on religious affiliation (χ^2=10.28, P=0.016).

From table 1, a high number of adolescents, 237 (79%) were married and the proportion of the pregnant adolescents married, 75.2% (121) had not used ANC services in their previous pregnancy. Uptake of ANC among adolescents does not depend on marital status (χ^2=4.56, P=0.336).

The majority, 134 (45.7%) of the respondents were staying with their husbands. The proportion of adolescents who were staying with their husbands and used ANC services in their previous pregnancy was 51.1% (71) with a significant relationship between ANC utilization and pregnant adolescents staying with their husbands (χ^2=6.96, P=0.031).

The majority, 142 (47.3%) of the respondents had unemployed husbands and the proportion of the respondents whose husbands are unemployed and did not use ANC services was 57.1% (92). There was a significant association between ANC uptake and the husbands' occupation status (χ^2 =33.89, P<0.001).

Table 1 show the majority 110 (36.7%) of the respondent's husbands had primary educational level. The proportion of husband's education status at primary level whose wives had used ANC services was 37.3% (60). There was a significant relationship between ANC uptake and husbands education status (χ^2=30.25, P<0.001).

Table 1 shows that the majority, 222 (74.0%) of the pregnant adolescent respondents had had two pregnancies. The proportion of the respondents with two pregnancies who used ANC services in their previous pregnancy was 78.5% (128). There was a significant relationship between number of pregnancy and ANC utilization (χ^2=8.73, P=0.033).

As indicated in table 1 the majority, 224 (74.7%) of the respondents had one child and the proportion of the respondents who had not used ANC services during their previous pregnancy. Was 126 (78.3). Uptake of ANC among adolescents does not depend on the mother's parity as showed by the chi and P-value respectively (χ^2=5.04, P=0.081).

The majority, 237 (79.0%) of the respondents used 2500/= or less and the proportion of them 93% (150) had not used ANC services in their previous pregnancy with (χ^2=42.04, P<0.001) which indicated a significant relationship between the ANC service utilization and income index of the adolescents.

4.4 Personal factors

Table 2: Personal factors influencing ANC utilization among pregnant adolescents in Pajule health Centre

Variable	N (%)	ANC attendance		χ^2	P-value
		Yes	No		
ATTITUDE					
How did you feel about your previous pregnancy					
Good	171 (57.0)	99 (71.2)	72 (44.7)	21.38	<0.001
Bad	129 (43.0)	40 (28.8)	89 (55.3)		
Do you think attending ANC is important?					
Yes	226 (75.3)	134 (96.4)	92 (57.1)	62.53	<0.001
No	24 (8.0)	0 (0.0)	24 (14.9)		
I don't know	50 (16.7)	5 (3.6)	45 (28.0)		
Are you satisfied with the quality of ANC services that are rendered?					
Yes	57 (19.1)	55 (39.5)	2 (1.3)	249.70	<0.001
No	155(51.84)	4 (2.9)	151(94.4)		
I don't know	87 (29.1)	80 (57.6)	7 (4.38)		
KNOWLEDGE					
Do you know who should attend ANC?					
Yes	207 (69.9)	132 (95.0)	75 (47.8)	78.09	<0.001
No	89 (30.1)	7 (5.0)	82 (52.2)		
If yes, could you mention them?					
All pregnant women	36 (17.0)	12 (9.1)	12 (30.0)	20.28	<0.001
Only with complications.	172 (81.1)	118 (89.4)	54 (67.5)		
I don't know	2 (0.9)	2 (1.5)	0 (0.0)		
Others	2 (0.9)	0 (0.0)	2 (2.5)		
When should one start ANC?					
1 month	98 (50.0)	26 (24.8)	72 (79.1)	68.88	<0.001
2 months	2 (1.02)	2 (1.9)	0 (0.0)		
3 months	83 (42.35)	71 (67.6)	12 (13.1)		
4 months	4 (2.04)	3 (2.8)	1 (1.1)		
5 and above months	9 (4.59)	3 (2.9)	6 (6.6)		
How many ANC visits should one receive?					
1 visit	6 (2.1)	1 (0.7)	5 (3.3)	99.12	<0.001
2 visits	8 (2.76)	2 (1.5)	6 (3.9)		
3 visits	20 (6.9)	6 (4.4)	14 (9.2)		
4 and more	57 (19.7)	20 (14.6)	37 (24.2)		
I don't know	199 (68.6)	108 (78.8)	91 (59.4)		

4.4.1 ATTITUDE

Attitude towards previous pregnancy

Table 2 shows the majority, 171 (57.0%) of the respondents were positive about their previous pregnancy. The proportion of pregnant adolescents with positive feelings about their previous pregnancy was 71.2% (99) and there was a significant relationship between ANC utilization and ones feelings about their previous pregnancy (χ^2=21.38, P<0.001).

Importance of ANC

The results in table 2 shows that the majority, 226 (75.3%) of the respondents thought that attending ANC was important. The proportion of pregnant adolescents who thought that it was important to Utilize ANC services and utilized the ANC services was 96.4% (134). There was a statistical significant relationship between ANC utilization and the importance of attending antenatal care (χ^2=62.53, P<0.001).

Level of satisfaction with quality of ANC services rendered.

As indicated in table 2, the majority 155 (51.84%) of the respondents were not satisfied with the quality of ANC services that were rendered at the health center. The proportion of the respondents who did not utilize ANC services during their previous pregnancy was 94.4% (151) which showed that there was a significant relationship between ANC Uptake and satisfaction with quality of ANC services rendered at the health center (χ^2=49.70, P<0.001).

4.4.2 KNOWLEDGE

Knowledge on who should utilize ANC services?

The mast majority, 207 (69.9%) of the respondents knew who should attend ANC. The proportion of the respondents who knew the pregnant adolescents who should use ANC services during their previous pregnancy was 95% (132). There was a significant relationship between ANC uptake and knowledge of who should use ANC (χ^2=78.09, P<0.001).

Who should use ANC services?

As indicated in table 2, the majority 172 (81.1%) of the respondents mentioned that only pregnant adolescents with complications should utilize ANC services and the proportion of the adolescents who used ANC services during their previous pregnancy was 89.4% (118). There was a significant relationship between ANC uptake and knowledge of specific pregnant adolescents who should use ANC (χ^2=20.28, P<0.0001).

When to start ANC services?

The majority, 98 (50%) of the respondents said that ANC should be started at one month. The proportion of pregnant adolescents who said one month and did not utilize ANC services during their previous pregnancy was 79.1% (72). There was a statistical significant relationship between ANC uptake and knowledge on when start ANC (χ^2=68.88, P<0.001).

Number of ANC visits to be received

In table 2, the majority 199 (68.6%) of the respondents did not know how many ANC visits a pregnant adolescent should receive. The proportion of the adolescents who did not know how many ANC visits one should receive and used ANC services during their previous pregnancy was 78.8% (108). There was a significant relationship between ANC utilization and knowledge on how many ANC visits one should receive

(χ^2=99.12, P<0.001).

4.5 Health systems factors

Table 3: Health system factors influencing utilization of ANC among pregnant adolescents in Pajule health Centre

Variable	N (%)	ANC attendance		χ^2	P-value
		Yes	No		
Distance to health center					
5 Km or less	87 (63.5)	84 (63.6)	3 (60.0)	1.07	0.587
About 5 km	39 (28.5)	38 (28.8)	1 (20.0)		
More than 5 km	11 (8.0)	10 (7.6)	10 (20.0)		
Waiting time					
30 minutes or less	23 (16.8)	23 (17.4)	0 (0.0)	1.05	0.306
More than 30 minutes	114 (83.2)	109 (82.6)	5 (100.0)		
Availability of health workers					
Yes	19 (13.9)	0 (0.0)	19 (14.4)	0.84	0.361
No	118 (86.1)	5 (100.0)	113 (85.6)		
Attitudes of the health workers					
Good	57 (41.6)	57 (43.2)	0 (0.0)	5.01	0.082
Very good	49 (35.8)	45 (34.1)	4 (80.0)		
Poor	31 (22.6)	30 (22.7)	1 (20.0)		
Availability of supplies					
Yes	68 (49.6)	67 (50.8)	1 (20.0)	1.82	0.177
No	69 (50.4)	65 (49.2)	4 (80.0)		
Supplies given					
Antimalarial	17 (23.9)	17 (24.3)	0 (0.0)	0.37	0.946
Folic acid	1 (1.4)	1 (1.4)	0 (0.0)		
Mabendazole	52 (73.2)	51 (72.9)	1 (100)		
Others	1 (1.4)	1 (1.4)	0 (0.0)		

Health systems factors

In the bivariate analysis shown in the above table, the health systems factors influencing uptake of ANC among pregnant adolescents in Pajule health center which included distance to health center, waiting time, availability of health workers, attitudes of the health workers, availability of supplies and supplies given to the adolescents showed no significant relationship between the utilization of ANC and the different health systems factors.

4.6 Multivariate analysis

Table 4: Multivariate analysis of Factors associated with utilization of ANC among pregnant adolescents in Pajule health Centre

Variable	N (%)	OR (95%CI)	p-value
Number of previous ANC visits			
One	6 (2.07)	1	
Four	57 (19.66)	3.28 (1.0-10.5)	0.045
Satisfaction with quality of service			
Yes	57 (19.06)	1	
No	87 (29.10)	0.03 (0.01-0.16)	<0.001
Occupation of the pregnant adolescents			
Employed	79 (26.33)	1	0.013
Unemployed	221 (73.67)	4.21 (1.34-13.15)	
Stay with Husband			
Yes	137 (45.67)	1	0.015
No	108 (36.00)	0.19 (0.05-0.73)	
Husband's occupation			
Employed	100 (33.33)	1	0.001
Unemployed	142 (47.33)	7.76 (2.28-26.44)	

Number of previous ANC visits

Table 4 shows that adolescent mothers who had at least four or more previous antenatal visits were three times more likely to utilize ANC services than those who had only one previous ANC visits.

Satisfaction with quality of services

Adolescent mothers who were not satisfied with quality of services were less likely to utilize antenatal services then those who were satisfied with the quality of ANC services.

Occupation of the pregnant adolescents

The adolescents who were unemployed were 4.2 times more likely to take up ANC services than those who were employed.

Husband's occupation

The adolescents whose husbands were unemployed were 7.8 times more likely to utilize ANC services than those pregnant adolescents whose husbands were employed.

Stay with husband

The adolescents who were staying with their husbands were less likely to use antennal services than those who were not staying with their husbands.

CHAPTER FIVE
DISCUSSION OF THE RESULTS

5.1 Introduction

According to the WHO recommendation, every pregnant woman should attend at least four meaningful ANC during pregnancy. The study found several factors that emerged consistently to explain the uptake of ANC and differences between studies in the use of ANC.

5.2 Prevalence of ANC utilization

In this study, slightly less than half of the pregnant adolescents had at least attended ANC which was consistent with the report from North Godar zone where 45.7% of the pregnant adolescents had utilized ANC services (Nigussie, 2004) but higher than the 2005 Ethiopian DHS findings which was 29.3% and this could have been because of the time gap difference between the studies. Nonetheless, all the studies still reflect low ANC service utilization by pregnant adolescents. The reasons attributed for such a low ANC utilization among pregnant adolescents in the study included fear/shame, distance of health centers, preference of using traditional birth attendants, rude health workers, lack of knowledge on ANC and busy adolescents with garden work. The fact that the study participants from rural setting presumably with little access to information and health services could be one of the reasons behind lower ANC uptake observed in this study during the study period. However, when compared with other countries the rate observed in the study is low. For instance, the rate of ANC utilization among adolescents was 92%, 84%, 89%, 93% and 94%, Eritrea, Kenya, Mozambique, Rwanda, Malawi, Tanzania

respectively (Marco international, 2008). Nonetheless, our results might have been different if the new innovation health information packages through the health extension program which consists of range of health related information that includes reproductive health information were implemented.

5.3 Socio-demographic characteristics

The study found that ANC uptake is strongly associated with age (P=0.019). The reason for this could be because the younger aged adolescents are ignorant about ANC services, stigmatized about their pregnancy and not expecting to become pregnant. The was in agreement with studies in India, South Asia and Nepal (Pallikadavath et al. 2004; Sharma 2004; Obermeyer & Potter, 2000) which showed that interestingly age at marriage was significant and not in the Middle East like Jordan. It could have be because of early marriage, as Singh and Samara (1996) identified that early marriage is more in South Asia than the Middle East.

The proportion of the adolescents who were Christians, 83.45% (116) had used ANC services showing a significant relationship between religion and ANC uptake. It is unclear whether religions play an important role in ANC uptake, perhaps because the issues vary and the instruments used to examine them may be different. Muslim women are less likely to use reproductive and sexual health services such as ANC because of lack of privacy (Mishra 2004) due to exposure of legs and arms, which is embarrassing for Muslim women (Holland & Hogg 2001). However, they have high ANC use despite this spiritual belief (Pallikadavath et al. 2004; Bhattia & Cleland 1995).

Another important finding observed in the study is the impact of education on utilization of ANC. The finding of this study is consistent with other studies that showed that adolescents with better education were more likely to use ANC services (Nielsen et al, 2000; Erci, 2003) whereby out of 300 interviewed adolescents in this study, the majority 146 (48.7%) of the respondents had never attended school and 60% (97) of the adolescents had never attended ANC services in their previous pregnancy. This shows that adolescents are more likely to realize the benefits of using ANC services than less educated adolescents (Mathews et al, 2001; Mumtaz & Salway, 2005; Miles-Doan & Brewster, 2000; Matsumura & Gubhaju, 2001) and builds more confidence and capability to make decisions regarding their own health (UNICEF & WHO, 2003). In contrast, with previous studies reported in Pakistan and Ethiopia where higher education did not show any significant relationship with ANC utilization (Nisar & White, 2003; Nigusie, 2004) which could have been because of the majority of the adolescents were educated hence employed so they could not get time to attend ANC. Other studies showed that use of ANC increased with husband's education level which was in contrast with this study. Husband's education showed significance predictor in Andra Pradesh, but not in Kamataka which was consistent with this study (Navaneethem & Dhamahngam, 2002). Husband's educational level is stronger factor than pregnant adolescent's education in Philippines which is in line with our study in Pajule Health Centre (Miles- Doan & Brewster, 2000).

Pregnant adolescent's uptake of ANC in the healthcare facilities was higher among non-working women than working women in India which was consistent with this study which showed that that the adolescents who were unemployed were four point two times more likely to take up ANC services than those who were employed (Pallikadavath et al. 2004). The proportion of women receiving ANC at home was higher among working women although it was not statistically significant (Pallikadavath et al. 2004). In contrast, pregnant adolescents who are working attended ANC than those who were unemployed (McCaw-Binns et al. 2000). The adolescents whose husbands were unemployed were seven point eight times more likely to utilize ANC services than those pregnant adolescents whose husbands were employed. In contrast, women married to unemployed men had inadequate ANC compared with those whose husband had other jobs (Cicekliogl u et al. 2005), but the sector or field of employment of the household's head was not statistically significant (Obermeyer & Potter, 2000).

The majority, 237 (79.0%) of the respondents used 2500/= or less a day and 93% (150) had not used ANC services in their previous pregnancy with ($P<0.001$) which indicated a significant relationship between the ANC service utilization and income index of the pregnant adolescents. This finding is comparable with some previous studies, which documented the impact of economic status towards the use of ANC provided by health professionals (Myer & Harrison 2003, Mathole et al. 2004, Griffith & Stephenson 2001, 2004, Mumtaz & Salway 2005). Low income status of the female adolescent may lead to limited decision making powers, and social immaturity which might contribute to poor utilization of ANC services, resulting in an increased incidence of pregnancy and

obstetric complications (Konje & Ladipo 2000; Nyoni 2006). There were no studies that disagreed with the findings of this study which means that any pregnant adolescent with be able to meet costs such as transport when attending ANC.

There was a strong associations found between parity and ANC utilization where by the majority 224 (74.7%) of the respondents had one child and the proportion of the respondents 78.3% (126) had not used ANC services during their previous pregnancy. The low parity pregnant adolescents did not utilize ANC which was consistent with studies which indicated that higher parity was a barrier to adequate use of ANC (Sharma 2004, Celik & Hotchkiss 2000, , Erci 2003, Magadi et al. 2000, Overbosch et al. 2004, Paredes et al. 2005), and in contrast were studies in Ethiopia showed that high parity adolescents tended to use the service more often than primiparous adolescent women (Mekonnen & Mekonnen 2003).

5.4 Personal characteristics

In this study mothers who were not satisfied with quality of services were less likely to utilize antenatal services then those who were satisfied with the quality of ANC services as indicated at multivariate analysis. No studies found examined adolescent's satisfaction with ANC so it is not known if usage is related to ANC service satisfaction. Yet satisfaction is a major determinant of health service utilization in general (Aldana et al. 2001 & van Teijlingen et al. 2003). Lack of satisfaction with quality of care could be a major demotivating factor in the up take of ANC services. Complaints about the services offered in Kenya included shortage of drugs and essential supplies, lack of commitment by staff, poor quality of food and lack of cleanliness (Mwaniki et al. 2002) which is the

some case in Pader district. Only one study has looked at the effect of the quality of services on their uptake and reported negative attitudes of healthcare workers and poor relations between healthcare workers and women as major barriers (Mathole et al. 2004). The recent neglect of quality of care in developing countries like Uganda is now being addressed (Peabody et al. 2006).

According to the study findings, the majority, 171 (57.0%) of the respondents were positive about their previous pregnancy. The proportion of adolescents with positive feelings about their previous pregnancy and used ANC services was 71.2% (99) and this showed a significant relationship between ANC utilization and ones feelings about their previous pregnancy (P=0.001). A women's attitude towards her pregnancy has been found to influence ANC use and this is consistent with a comparative study in the U.S which found that women with few or no ANC visits had more negative attitudes about being pregnant and the importance of ANC (Simkhada, 2008; Hulsey et al, 2000).

This study showed that there was a significant relationship between ANC uptake and knowledge of who should use ANC (P<0.001) where the majority, 207 (69.9%) of the respondents knew who should attend ANC and actually attended ANC during the previous pregnancy was 95% (132). This study tallied with the one in Nepal where women with ANC knowledge were more likely to attend ANC visits (Sharma 2004 & Pallikadavath et al. 2004). Additionally, contraceptive users attended early ANC in Jamaica (McCaw-Binns et al. 1999 & Magadi et al. 2000). Alama et al. (2005) and Nisar and White (2003) found that women's dietary knowledge was significantly associated

with utilization of ANC; knowledge about danger signs in pregnancy was found to be statistically significant in Pakistan (Nisar & White 2003) and in Ecuador (Paredes et al. 2005). Bhattia and Cleland (2000) found that personal hygiene appeared to be the important predictor of ANC. There were no studies found disagreeing with the findings of this study. This confirms the importance of the pregnant adolescent's knowledge in relation to ANC utilization.

5.5 Health systems factors

The findings of the study showed that the health systems factors influencing utilization of ANC among pregnant adolescents in Pajule health center included: distance to health center, waiting time, availability of health workers, attitudes of the health workers, availability of supplies and supplies given to the adolescents had no significant relationship with utilization of ANC and the different health systems factors which did not tally with studies which showed significant relationships between health systems characteristics (Mathole et al, 2004; Magadi et al, 2000; Nielse et al, 2001; Griffith & Stepheson, 2001; Chowdhury et al, 2003; Paredes et al, 2005; Mekonnen & Mekonnen, 2003; Mumtaz & Salway, 2005; Mwanik et al, 2000; Omolola et al, 2004; Navaneethan & Dharnmalingam, 2002; Celik & Hotchkiss, 2000) and this could have been because of the difference in research methodologies where by the other studies used both qualitative and quantitative studies compared to this study which used only quantitative studies.

5.6 Study limitations

One of the limitations of the study is lack of literature on adolescent utilization of antenatal care relevant to Uganda and Pader in particular. Most studies discussed either pregnancy in general, with little content on adolescents; or they focused on adolescents' sexual and reproductive health in general, with little focus on pregnancy.

CHAPTER SIX
CONCLUSION & RECOMMENDATION

6.1 Introduction

This chapter gives the study conclusions that are drawn from the study and the recommendations made to improve on the level of utilization of antenatal services among adolescents in the study area.

6.2 Conclusion

Despite the free ANC health services provided by government (92% coverage), the utilization of antenatal services in Pajule health center: Pader district was low. Only 46.3% of the pregnant adolescents utilized ANC services which are not even half of the sample size percentage. The significant factors that were found to influence utilization of antenatal services in Pajule health center included: number of previous ANC visits, satisfaction with quality of services, occupation of the pregnant adolescents stay with husband and husband's occupation status. The health systems factors were not significant to the study.

Having identified these factors, it would be possible to correct the situation through the development and implementation of programs aimed at enhancing antenatal care utilization by focusing on the socio-demographic factors and personal factors of the pregnant adolescents rather than focusing on health systems has it has been the case within the health sector.

6.3 Recommendations

The study findings unveiled a number of gaps in the utilization of ANC services among pregnant adolescents and in this respect the following recommendations have been made.

The ministry of health has to make a comprehensive plan to overcome information barriers by increasing the adolescent understands and awareness of the need to go for, and availability of antenatal care services.

The service providers need to be sensitized more on the value of listening to the clients, and that they should create a supportive environment in which adolescents are sufficiently informed, confident and encouraged to voice their opinions as well. This will help to strengthen the client-service provider relationship, enhance client's satisfaction and therefore help to improve the use of antenatal services.

Further research is recommended in the field utilization of ANC services with more emphasis on why the socio-demographic and personal factors have a greater influence of utilization of adolescents than health systems factors

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APPENDIX 1

Consent form

Introduction

My name is ATIM BRENDA LAKEY; I am a student at International Health Sciences University. I am carrying out a research on *'Factors influencing Antenatal care utilization among the adolescents in Pajule Health Center'*. The purpose of this research is to find out the utilization of antenatal care among the pregnant adolescents. This information that you will provide will be used to help identify the factors influencing the underutilization of the antenatal care services. This will help the policy makers and implementers to improve on the service delivery.

Respondent..... Date.....

Researcher..... Date.....

APPENDIX 2

Assessing factors influencing utilization of antenatal services among adolescents in Pajule health center IV: Pader district

Questionnaire ID.....

INSTRUCTIONS: (Please tick or fill in the appropriate response)

PART A: SOCIO-DEMOGRAPHIC DATA

1. What is your age?

1) [ ] 10-13

2) [ ] 14-16

3) [ ] 17-19

2. What is your education level?

a) [ ] None

2) [ ] Primary

3) [ ] Secondary

4) [ ] Tertiary

3. What is your occupation status?

1) [ ] Employed

2) [ ] Unemployed

4. What is your religion?

1) [ ] Christian

2) [ ] Moslem

3) [ ] Traditional

4) [ ] Others, specify…….

5. What is your marital status?

1) [ ] Single

2) [ ] Married

3) [ ] Divorced

4) [ ] Widowed

5) [ ] Separated

6. If married, are you currently staying with your husband?

1) [ ] Yes

2) [ ] No

7. What is your husbands' occupation?

1) [ ] Employed

2) [ ] Unemployed

8. What is your husband's educational level?

1) [ ] None

2) [ ] Primary

3) [ ] Secondary

4) [ ] Tertiary

9. How many pregnancies have you ever had.....?

10. How many children do you have?

1) [ ] 1child

2) [ ] 2 children

3) [ ] 3 children

4) [ ] 4 and above

11. How much do you use in a day?

1) [ ] 2500/= or less

2) [ ] More than 2500/=

PART B: UTILIZATION OF ANC

12. Did you attend ANC when you were pregnant with this baby?

1) [ ] Yes

2) [ ] No

13. If yes, give reasons for attending

……

……

…….....

.....

14. If no, give reasons for not attending

……

……

…….....**.....**

.....

15. If no skip questions of health system factors.

PART C: ASSESSING PERSONAL FACTORS

a) <u>Attitude</u>

16. How did you feel about your previous pregnancy?

1) [ ] Good

2) [ ] Bad

17. Do you think attending ANC is important?

1) [ ] Yes

2) [ ] No

3) [ ] I don't know

18. If no, give reasons for your answer.

……

……

…….....

19. Are you satisfied with the quality of ANC services that are rendered at the health center?

1) [ ] Yes

2) [ ] No

b) Knowledge

20. Do you know who should attend ANC?

1) [ ] Yes

2) [ ] No

21. If yes, could you mention them?

1) [ ] All pregnant mothers

2) [ ] Only pregnant mothers with complications

3) [ ] I don't know

4) [ ] Others, specify.....

22. When should one start ANC….....?

23. How many ANC visits should one receive?

1) [ ] 1 visit

2) [ ] 2 visits

3) [ ] 3 visits

4) [ ] 4 visits

5) [ ] More than 4

6) [ ] I don't know

PART C: HEALTH SYSTEMS FACTORS

24. What is the distance from your home to this health center?

1) [ ] Less than 5 km

2) [ ] About 5km

3) [ ] More than 5km

25. How long do you take before you are attended to?

1) [ ] 30 minutes or less

2) [ ] More than 30 minutes

26. Are the health workers always there?

1) [ ] Yes

2) [ ] No

27. In your opinion, how do you rate the attitudes of the Health workers?

1) [ ] Very good

2) [ ] Good

3) [ ] Very poor

4) [ ] Poor

28. Are you given some supplies?

1) [ ] Yes

2) [ ] No

29. If yes, mention what is given?

1) [ ] Anti malarias

2) [ ] Folic acid

3) [ ] Mabendazole

4) [ ] Iron supplements

5) [ ] Others, specify.....

END: THANKS FOR YOUR PARTICIPATION

APPENDIX 3

R*esearch budget*

DESCRIPTION	Unit Price(UGX)	TOTAL (UGX)
Stationary	100,000	100,000
Printing services	200,000	200,000
Secretarial Services	50, 000	50,000
Transport	100,000	100,000
Research soft ware	50,000	50,000
Miscellaneous	100,000	100,000
	TOTAL	600,000

APPENDIX 4

Research work plan

Activity **Description**	April 2012	May 2012	June 2012	July 2012	August 2012	September 2012	October 2012	November 2012
Proposal writing								
Data Collection								
Data analysis								
Report writing								
Report binding and hand in first draft								
Submission of final report								