FACTORS ASSOCIATED WITH OCCURRENCE OF URINARY TRACT INFECTIONS (UTIs) AMONG PREGNANT MOTHERS ATTENDING ANTENATAL CLINIC AT KISORO DISTRICT HOSPITAL.

A RESEARCH REPORT SUBMITTED TO UGANDA NURSES AND MIDWIVES EXAMINATION BOARD

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR A WARD OF A DIPLOMA IN MIDWIFERY

BY

KAMPIIRE EMERIDAH

REG NO: JAN22/U024/ DME/004

MAY, 2023

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ABSTRACT

Urinary tract infections (UTIs) has become a great burden during pregnancy which has increased maternal and infant morbidity and mortality by increasing preterm labour, low birth weight baby delivery and still birth. The study aimed at "identifying factors associated with occurrence of urinary tract infections (UTIs) among pregnant mothers attending antenatal clinic at Kisoro district hospital" which was investigated under individual related factors associated with the occurrence of UTIs among pregnant mothers and social cultural related factors associated with occurrence of UTIs among pregnant mothers. The study was a descriptive cross sectional study that employed both qualitative and quantitative methods of data collection from 50 respondents who were pregnant mothers diagnosed with UTIs using a systematic probability sampling method, pretested semi-structured interview guides were used to collect data from respondents. Data was analyzed using SPSS version 10 and Microsoft excel2016 and then presented in form of tables, pie charts and graph.

The results from the study showed that 66% of respondents had poor perineal hygiene, 66% of respondent had multiple sexual partners,46% never took water during pregnancy, 74% shared public toilets with infected mothers, 65.8% of respondents did not take the treatment for UTIs as prescribed and 58% of respondents were ignorant of preventative measures of UTIs in pregnancy.

Basing on the findings of the study, the researcher concluded that many pregnant mother had UTIs due to; poor perineal hygiene, having multiple sexual partners, not taking the treatment for UTIs as prescribed, ignorant of preventative measures of UTIs in pregnancy, sharing public toilets with infected mothers, and inadequate taking of water during pregnancy.

Therefore the researcher recommended; health educating mothers on preventative measures of UTIs especially proper perineal hygiene, avoiding multiple sexual partners, and avoiding public seat toilets during pregnancy, increasing screening of mothers for UTIs and emphasizing strongly on completion of treatment and adherence to prescription guidelines.

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FACTORS ASSOCIATED WITH OCCURRENCE OF URINARY TRACT INFECTIONS (UTIs) AMONG PREGNANT MOTHERS ATTENDING ANTENATAL CLINIC AT KISORO DISTRICT HOSPITAL

DECLARATION

I KAMPIIRE EMERIDAH certify that this research report is my original work and has not been submitted either wholly or partially to this institution or any other institution for the award of any degree or diploma.

Signature……. Date……

KAMPIIRE EMERIDAH

(RESEARCHER)

AUTHORIZATION PAGE.

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Author: **KAMPIIRE EMERIDAH**

Signature: …….

Address: **MUTOLERE SCHOOL OF NURSING AND MIDWIFERY**,

P.O BOX 26,

KISORO.

Supervisor: **MR. NSEKUYE PASCHAL**

Signature.....Date.....

Contact address: ……

Principal: **SR. KEMIGISHA CATHELINE**.

Signature …….

Date &stamp

DEDICATION

I dedicate this dissertation to my husband Mr. BUGARAMBE WILLISON, my parents Mr. HUDI JACK and MRS. MUKANDORI FERESTA who natured me and instilled the value of education in me.

May the almighty Lord bless you all.

ACKNOWLEDGEMENT

Great thanks to the almighty God who has enabled me through the ups and downs of this earthly life during my studies. Sincere gratitude to my father MR. HUDI JACK and my mother MRS. MUKANDORI FERESTA for their support rendered to me throughout my education. God bless you for that love and care.

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I also extend my sincere thanks my children; KEN, KEITH and STECY, all my classmates more especially to NYIRAGABIRO MILLIUM and TUMUSHABE JONITA for their efforts towards my research, I wish you success in all that you do.

MAY GOD BLESS YOU ALL.

TABLE OF CONTENTS

LIST OF TABLES.

LIST OF FIGURES

DEFINITION OF KEY TERMS:

Antenatal care: This refers to care given to expectant mothers from the time of conception is confirmed until beginning of labour.

Fetal anomalies: this is defined as structural or functional anomalies including metabolic disorders which are always present at the time of birth.

Maternal health: this is the health of a woman during pregnancy, childbirth and puerperium period.

Maternal mortality rate: this refers to maternal death during a given time period per 100,000 women during the time period.

Pregnancy: This is a condition between conception birth during which fertilized egg develops in uterus.

Still birth. This refers to fetal death at or after 28 weeks of pregnancy.

Urinary tract infections: These are infections which occur when bacteria often from skin, or rectum enter the urethra and infect the urinary tract.

LIST OF ACRONYMS:

ANC: Antenatal Care.

HIV: Human immunodeficiency Virus.

MMR. Maternal Mortality Rate.

PNFP: Private Not For Profit.

UCG: Uganda Clinical Guidelines.

USA: United States of America.

UTIs: Urinary Tract Infections.

WHO: World Health organization.

PNFP: Private Not for Profit.

SPSS: Statistical Package for Social Sciences.

UNMEB: Uganda Nurses and Midwives Examinations Board.

CHAPTER ONE: INTRODUCTION.

1.0 INTRODUCTION.

This chapter covered the background of the study, problem statement, general objectives, and specific objectives of the study, research questions, and justification of the study about factors associated with occurrence of UTIs among pregnant mothers attending ANC clinic Kisoro District Hospital.

1.1BACK GROUND OF THE STUDY.

Urinary tract infection is one of the most common infectious diseases causing over 150 million cases per year worldwide costing the world economy over 6 billion US dollars in treatment and is affecting all age groups (Iregbu&Nwajiobi,2013). Urinary tract infections are common in pregnant women and pose a great therapeutic challenge. The risk of serious complications is very high to both the mother and her child. Pregnant mothers have 4 times higher rate of developing UTI compared with non-pregnant women (Vasudevan, 2014). The prevalence of UTIs among pregnant mothers ranged from 3 to 35% in different parts of the world where increased prevalence was predominantly seen in developing countries including Africa and Asia where it was estimated in many studies that about 2% to 10% of women in more developed countries will experience UTI in pregnancy (Gilbert &Macones, 2013). In a study done in California of United States of America (USA) from 2007 to 2012, outof 2,892,756 women that participated in the study, 140,910 (4.9%) had a diagnosis of a UTI related to an emergency visit or hospitalization during pregnancy (JavaheriTehrani, *et al., 2014).*

Untreated UTI in pregnancy either symptomatic or asymptomatic is associated with a 50% increase in the risk of maternal complications of pregnancy including pyelonephritis,

hypertension, preeclampsia, anaemia, endometritis, renal scarring, renal failure and raise extent of preterm labour and delivery which consequently cause prematurity and low birth weight with high perinatal morbidity and mortality (Amiri,2015). Furthermore, pregnant patients with untreated UTI may suffer from maternal-fetal complications, including septicemia, intra-amniotic infection, and premature rupture of membranes, intrauterine growth restriction and perinatal death (Gilbert &Macones, 2013). Adequate and early treatment reduces the incidence of these complications (Jain, Das, Agarwal &Pandey, 2013)

In developing countries of sub-Saharan Africa, it was approximated that one-third of adult women are diagnosed with UTI before the age of 24 (Badran, *et al.*, 2015) of which 20% was reported among pregnant women and as the leading cause of obstetrical ward admission (Zeyaullah, *et al., 2015).* In a conducted study at the obstetrical ward of Khartoum North Hospital in Sudan, Africa, 20% of the pregnant women admitted were reported to be positive for UTI (Al-Kotb, *et al., 2016).*UTIs was classified to be symptomatic or asymptomatic with 17.9% and 13% in pregnant women respectively where asymptomatic UTI among pregnant women can also lead to complications, not only on women but as well as to the fetus like premature birth, low birth weight, and perinatal death(Emiru, *et al.,2013).* Furthermore, various studies conducted in Ethiopia revealed prevalence of UTI among pregnant mothers in different parts as; Gondar 10.4%, Bahirdar 9.5%, Dire Dawa 14%, Addis Ababa 11.6% and Hawassa 18.8% (Alemu, Moges, Shiferaw, *et al.,* 2012; Tadesse, Teshome ,Merid, *et al.*,2014) while in north eastern Ethiopia the prevalence of UTIs among pregnant mothers was (50/323) 15.5% (Melaku , Ashagrie&Belete, 2020).

In Uganda, the prevalenceof UTIs was found to be 13.3% and had a 20–60% drug resistance rate among antenatal mothers in Mulago hospital (Kabugo, Kizito, Ashok, et al., 2016), 22.33% in Bushenyi District (Tibyangye, Okech, Nyabayo, & Nakavum, 2015) and 31.1% among diabetic pregnant mothers in Bushenyi District (Odoki, Bazira,Moazam,&Agwu, 2015).

At Kisoro District Hospital like other hospitals in Uganda there is a burden of UTIs among pregnant mothers attending ANC clinic where 4 babies were born with UTIs (financial report, 2020/2021) and 160/ 600 (27%) pregnant mothers who attended ANC clinic in 2021/2022 had UTIs with 2 still birth related to UTIs in pregnancy (financial report, 2021/2022) hence the study to find out factors associated with occurrence of UTIs among pregnant mothers attending ANC clinic at Kisoro District Hospital.

1.2 PROBLEM STATEMENT

There is a great burden of asymptomatic UTIs among pregnant mothers in Uganda 12.2%-13.1% compared to Global 2–11% (Ayoyi, Kikuvi, Bii&, Kariuki, 2017). Kisoro District Hospital have continuously faced the challenge of UTIs during pregnancy where 200/800 (25%) of pregnant mothers who attended ANC in 2020/2021 had UTIs and 4 babies were born with UTIs (financial report 2020/2021) and 160/ 600 (27%) pregnant mothers who attended ANC clinic in 2021/2022 had UTIs with 2 still birth related to UTIs in pregnancy (financial report, 2021/2022). This has led to increased preterm labour, low birth weight baby delivery and still birth.

Despite the effort put in health educating mothers on prevention and risk factors of UTIs in pregnancy and following screening and treatment guidelines from ministry of health (UCG, 2016) some mothers attending ANC clinic at Kisoro District Hospital have continuously faced the challenge of UTIs during pregnancy hence the researcher aims at finding out factors associated with occurrence of UTIs among pregnant mothers attending ANC clinic at Kisoro District Hospital.

1.3 PURPOSE OF THE STUDY.

To identify factors associated with occurrence of UTIs among pregnant mothers attending ANC clinic Kisoro District Hospital.

1.4 SPECIFIC OBJECTIVES.

To identify individual related factors associated with occurrence of UTIs among pregnant mothers attending ANC clinic Kisoro District Hospital.

To find out social cultural factors associated with occurrence of UTIs among pregnant mothers attending ANC clinic Kisoro District Hospital

1.5 RESEACH QUESTIONS

What are the individual related factors associated with occurrence of UTIs among pregnant mothers attending ANC clinic Kisoro District Hospital?

What are the social cultural factors associated with occurrence of UTIs among pregnant mothers attending ANC clinic Kisoro District Hospital?

1.6 JUSTIFICATION OF THE STUDY.

UTIs in pregnancy can progress to serious infection that may lead to preterm labour, fetal anomalies and still birth when they are not identified and treated when still early hence the findings will be of great importance to the government of Uganda, Ministry of Health to lay more strategies to solve the factors associated with occurrence of UTIs among pregnant mothers thus reducing maternal morbidity and mortality in Kisoro and the whole country.

The research results will be used as a reference on factors associated with occurrence of UTIs among pregnant mothers and to the researchers it will act as a data base for further research in future.

To the researcher, it will be a partial fulfillment of requirements for award of a diploma in midwifery.

CHAPTER TWO: LITERATURE REVIEW.

2.0 Introduction

This chapter explores the different views of authors on related literature on factors associated with occurrence of UTIs among pregnant mothers. The information was obtained from different databases and online journals. The views are presented under subheadings; individual related factors associated with occurrence of UTIs among pregnant mothers and social cultural factors associated with occurrence of UTIs among pregnant mothers

2.1 individual related factors associated with occurrence of UTIs among pregnant mothers.

During pregnancy, some anatomical and physiological changes in urinary system occur such as shortening of the urethra, kinking of urethra due to pressure from uterus as the gestation age increases that in turn limits the rateof urine flow hence stasis of urine hence being pregnant itself is a risk factor for UTIs (Nelson & Good, 2015). UTI in pregnancy remains persistent due to poor screening and treating of women after they have already been infected and this is always high in women who never take medications for prescribed duration (Moore, Doull, Grad, et al., 2018).

The amount of water taken per day also influences the occurrence of UTIs in pregnancy where according to Wing, Fassett, and Getahun (2014), women who take less than 2 litres of water per day always have inadequate urinary tract flushing hence a risk for getting UTIs.

The risk of UTIs in pregnancy increases with age where it is more common with women of 14-24 years than those above 24 years and this is attributed to increased sexual activity in this age group(Derese, Kedir, Teklemariam, Weldegebreal&Balakrishnan , 2016), parity where the

prevalence increased with number of children a woman had due to reduction in immunity (Emiru, Beyene, Tsegaye, &Melaku, 2013) and gestational age in which UTIs are more frequent in second and third trimester (Ephrem, 2014). This was attributed to increased weight of uterus pressing on urinary bladder and urethra which reduces urine outflow making a favorable environment for invasion and multiplication of microbes.

Long hospitalization period of a pregnant mother also increases the risk of UTIs through sharing of seat toilets with other women who may be infected (Ali, Gebrecherkos, Gizachew, &Menberu, 2018), long period of indwelling catheter (Behailu, Haji, Zelalem, Fitsum, &Senthilkumar, 2016).

Comorbidities like; diabetes mellitus increase the occurrence of UTIs in pregnancy(Vaijanathrao, Nalini& Reddy, 2015) because diabetic mothers always have too much glucose in urine which favors growth of microorganisms and reduced immunity(Manjula, *et al.*, 2013) and HIV infection which also reduces the immunity of the mother hence making them prone to UTIs (Banu&Jyothi, 2013).Furthermore, previous history of UTI also poses a risk of reoccurrence of UTIs in pregnancy due to reduced immunity of the mother (Sibi , Kumari&Neema , 2014) .

According to a study done by Tadesse, *et al.* (2014) in Asia and Africa, it was revealed that poor general body hygiene especially perineal hygiene also increased the occurrence of UTIs in pregnancy and this was high in women who were very sexually active during pregnancy(Labi, Yawson, Ganyaglo& Newman, 2015). In the same study,women who had urinary tract abnormalities such as urethral strictures and polycystic kidney disease had increased UTIs

prevalence in pregnancy (Mladenovic, Veljovic, Udovicic, *et al.,* 2015). This was attributed to poor urine flow that favored multiplication of microorganisms.

According to a study done by Chaemsaithong, et al. (2013) on potential explanation for the susceptibility of pregnant women to microbial products and infection, lowered immunity and diminished physiological activities in pregnant women also increased the occurrence of UTIs. This was further complicated by being HIV positive mother, diabetic mothers and malnourished (Thairu&Hadijat, 2013).

2.2 social cultural factors associated with occurrence of UTIs in pregnancy.

According to a study done in Uganda urban setting, there was high prevalence of UTIs among the women of low socioeconomic status especially those who stayed in slums (Sujatha&Nawani, 2014). This was attributed to poor hygiene and living conditions in such areas which increase the risk of developing urinary tract infection (Amiri, Lavasani, Norouzirad, *et al.*, 2015). In addition, the risk of UTIs was increased by poor intimate hygiene after sexual relations (Chenoweth, Gould, Saint, 2014). The environment where the pregnant women stayed also increased the occurrence of UTIs especially among those who stayed in areas where they used public toilets with absence of basic sanitary conditions (Okorondu, Akujobi, &Nnadi, 2013)**.** Low education level also limited pregnant mother's knowledge about prevention of UTIs and proper ways of maintaining hygiene which in turn contributed to the development of UTI (Willy, Gichuhi&Mugo, 2015; Vettore, Dias, Vettore& Leal, 2013).

Furthermore, Derese, et al. (2016) revealed that resident area also increased the risk of UTIs among pregnant women especially those who stay in areas of poor hygiene, increased sexual immorality like in slums.Inaddition,maternal occupation can also expose the mother to UTIs

such as mothers who work as sex workers (Taye, Getachew, Desalegn, Biratu, &Mubashir, 2018).

Tadesse, *et al*., (2018), revealed that marital status of a pregnant woman is associated with the risk of getting UTIs where it was high in those who lived regularly with their husbands due to increased frequency of sexual intercourse and those who had multiple sexual partners.

CHAPTER THREE: METHODOLOGY.

3.1 Introduction.

This chapter describes the methods and techniques that the researcher used to investigate the factors associated with UTIs among pregnant mothers attending ANC clinic at Kisoro District Hospital. It consists of the study design and rationale, study setting and rationale, study population, sample size determination, sampling procedure, inclusion criteria, definition of variables, research instruments, data collection procedure, data management, data analysis, ethical consideration, limitations of the study and dissemination of results.

3.2 Study design and rationale.

The study was a descriptive cross-sectional study that employed both quantitative and qualitative methods of data collection to determine factors associated with UTIs among pregnant mothers attending ANC clinic at Kisoro District Hospital. This type of study design was used because the research was conducted in a short period of time and there was no follow up of respondents after data collection. Qualitatively, the respondents were given opportunity to express their views and quantitatively some responses were recorded in numerical form.

3.3 Study setting and rationale.

The study was conducted at Kisoro District Hospital on ANC. The hospital is a district government hospital located in Kisoro municipality, Kisoro district southwestern Uganda, 471km from Kampala the capital city of Uganda. Kisoro district is boarded by Democratic Republic of Congo in the West, Rubanda and Kabale districts in the East,Kanungu district in the Northand Republic of Rwanda in south. The study setting was used becauseit has a functioning ANC clinic which receives around 300 pregnant mothers attending ANC clinic per month of

whom some are always having UTIs and the researcher thought respondents from that study setting would give relevant data about the study topic.

3.4 Study population.

The study population constituted pregnant mothers who had attended ANC clinic at Kisoro District Hospital and had been diagnosed with UTIs. This ensured collection of data from respondents who had relevant data regarding occurrence of UTIs among pregnant mothers attending ANC clinic at Kisoro District Hospital.

3.4.1 Sample size determination

The study involved 50respondents who were selected from pregnant mothers diagnosed with UTIs who had attended ANC clinic at Kisoro hospital.

3.4.2 Sampling procedure.

The study used systematic probability sampling where the researcher involved the midwife on duty as the research assistant who selected antenatal cards of mothers diagnosed with UTIs. The pregnant mothers whose antenatal cards were selected were recruited to participate in the study by choosing the 1^{st} respondent by simple random sampling there after every 3^{RD} mother until the required sample was reached.

3.4.3 Inclusion criteria.

The study included only pregnant mothers who had attended ANC clinic at Kisoro District Hospital and were diagnosed with UTIs who were not severely ill and were able to undergointerview by the researcher.

3.5 Definition of variables.

3.5.1 Independent Variables.

Factors associated with UTIs occurrenceamong pregnant mothers. This refers to factors that increase likelihood of UTIs among pregnant mothers attending ANC clinic at Kisoro Hospital.

3.5.2 Dependent Variable.

UTIs occurrence among pregnant mothers. This refers to invasion and multiplication of microorganisms within the urinary system of pregnant women attending ANC clinic at kisoro hospital.

3.6 Research instruments.

The researcher used pre-tested semi-structured interview guide for pregnant mothers diagnosed with UTIs. This was set in simple English with short open and closed ended questions which were interpreted to pregnant mothers because some were illiterate. Other instruments included; pens, papers, pencils, a hand-held calculator, and a computer.

3.7 Data collection procedure.

After obtaining consent from respondents, the researcher conducted a face to face interview with respondents and the interview guide was interpreted to pregnant mothers and responses were recorded in the interview guide immediately by the researcher.

3.7.1 Data management.

The interview guides were numbered before the researcher conducted interview with the respondents and then recorded to ensure none of them was missing. The researcher checked whether all the preset questions in the interview guide had been answered before the interview

was terminated. Data editing and coding was done for error correction and easy entry into the computer for proper analysis. The researcher managed the filled interview guides herself and then kept them under lock and key only accessible by the researcher to ensure privacy and confidentiality.

3.7.2 Data analysis

The researcher organized the collected data and analyzed it using statistical package for social science (SPSS) and Microsoft Excel Program 2016 which was later presented in form of tables, graphs and pie charts for easy interpretation according to the objectives.

3.8 Ethical considerations.

After the researcher had finished the research proposal, she obtained an introductory letter from the principal tutorMutolere School of nursing and midwifery who recommended her and introduced her to the medical director Kisoro District Hospital and then to the in-charges ofANC clinic. Explanation was given to the respondents that the research study is purely for academic purposes but results were to be handed over to the school and hospital administration for improvement of the situation therefore their active participation was of great importance and consent form was signed not exposing their names which ensured confidentiality by those who accepted to voluntary participate in the study.

3.9 Limitations of the study.

Some pregnant mothers feared to give sensitive correct information this was minimized by explaining to them that correct information was helpful to them, their community and hospital health workers to solve the factors associated with occurrenceof UTIs among pregnant mothersattending ANC clinic at Kisoro District Hospital.

Some mothers were in severe pain making them unable to answer all the questions in the interview guide however the researcher solved this by only interviewing those who were not severely ill and in stable condition.

3.10 Dissemination of the results.

The results of the study were compiled into a research report. Four copies of report were produced and were disseminated as follows; one copy submitted to school library, one copy to UNMEB, one copy to the researcher and another copy was submitted to Kisoro District Hospital.

CHAPTER FOUR: RESULTS.

4.1 Introduction.

This chapter shows presentation of data on the factors associated with occurrence of UTIs among pregnant mothersattending ANC clinic Kisoro district hospital. Pretested semi-structured interview guides were used to collect data from the respondents. The study involved a sample size of 50 pregnant mothers who attended ANC clinic at Kisoro District Hospital as respondents and all of them responded appropriately to the questions asked. Data obtained was analyzed using a computer Microsoft excel 2016, and SPSS. The responses were presented in form of tables and figures arranged as; Bio-demographic information of respondents, individual factors associated with the occurrence of UTIs among pregnant mothers and social cultural factors associated with occurrence of UTIs among pregnant mothers attending ANC clinic at Kisoro District Hospital.

4.2 Bio-demographic data of respondents.

Table 1 : bio-demographic data of respondents

Variables		**frequency (N=50)**	**percentage (%)**
age of respondents in years	15-24	20	40
	25-34	24	48
	35-44	4	8
	45 and above	2	4
marital status	single mother	5	10
	Married	39	78
	Divorced	6	12
Occupation	Peasant	22	44
	private worker	13	26
	business woman	12	24
	civil servant	3	6
level of education	never went to school	13	26
	Primary	17	34
	Secondary	12	24
	Institution	6	12
	University	2	4

Among the respondents who participated in the study, 24 (48%) respondents were aged between 25-34 years, 20 (40%) were aged between 15-24 years, 4 (8%) respondents were aged between 35-44 years and only 2 (4%) were aged 45 years and above. Majority of the respondents (78%) were married, 6 respondents (12%) were divorced and 5 respondents (10%) were single mothers. Many of the respondents (44%) were peasant, 26 % were private workers, 24% were business women and 6% were civil servants. Many respondent (34%) attained primary level of education, 26% of respondents never went to school, 24% of respondents attained secondary level of education, 12% attained institution level of education and 4% attained university level of education.

4.3 Individual related factors associated with occurrence of UTIs among pregnant women attending ANC clinic Kisoro District Hospital.

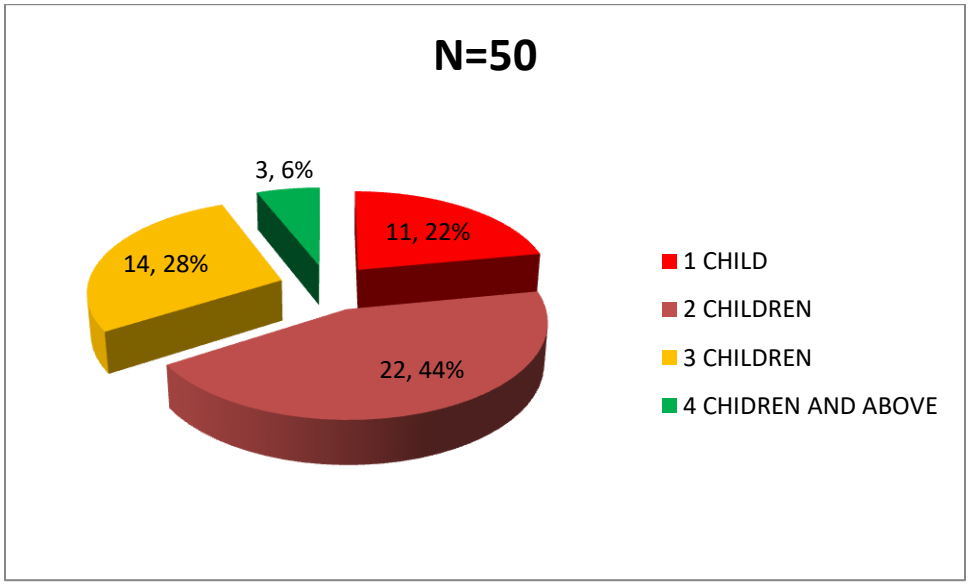

Figure 1: A pie chart showing the number of children whom the respondent had

Majority of respondents 22(44%) had 2 children, 14 respondents (28%) had 3 children, 11 respondents (22%) had 1 child and 3 respondents (6%) had 4 children and above.

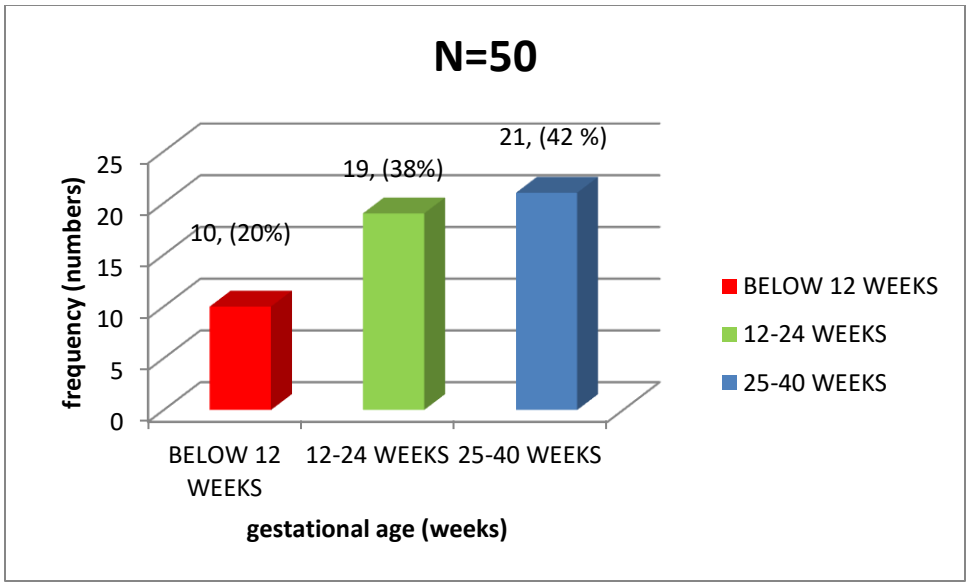

Figure 2: a graph showing the gestational age of the pregnancy of the respondent.

Majority of respondents (42%) had pregnancies of between 25-40 weeks of gestation, 19 (38%) had pregnancies of between 12-24 weeks of gestation, 10 respondents (20%) had pregnancies below 12 weeks of gestation.

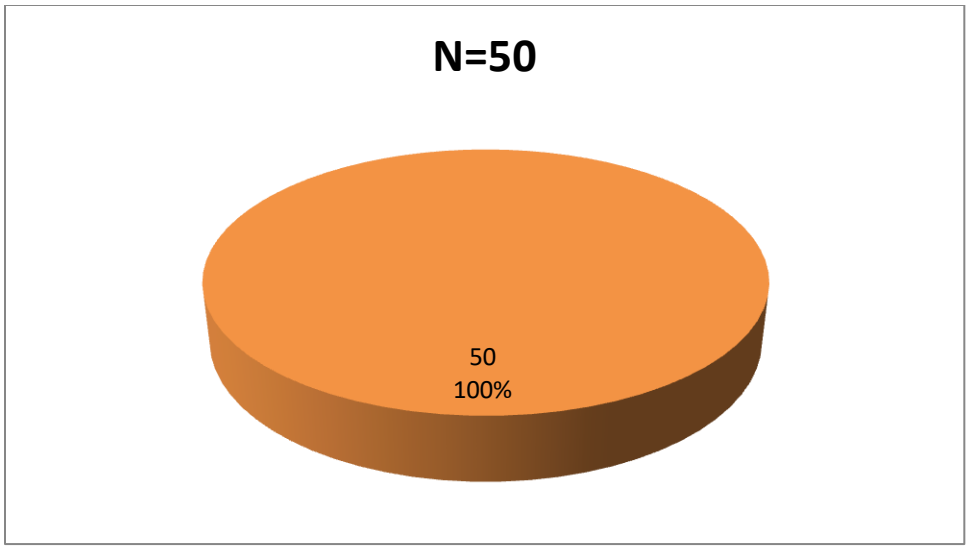

Figure 3: a pie chart showing occurrence of UTIs among the respondents.

All the respondents (100%) who were interviewed had UTIs in the current pregnancy and or in the previous pregnancy.

Table 2: showing what predisposed the respondents to UTIs

Predisposing factors to UTIs		**Frequency (N)=50**	**Percent**
poor hygiene	Yes	33	66
	No	17	34
increased sexual activity as a cause of UTIs	Yes	26	52
	No	24	48
lack of physical activities as a cause of UTIs	Yes	14	28
	no	36	72
long hospitalization period as a cause of UTIs	Yes	9	18
	No	41	82

From the table above, 66%of respondents were predisposed to UTIs in pregnancy by poor hygiene, 52% byincreased sexual intercourse,28% by lack of physical activityand18% by long hospitalization period.

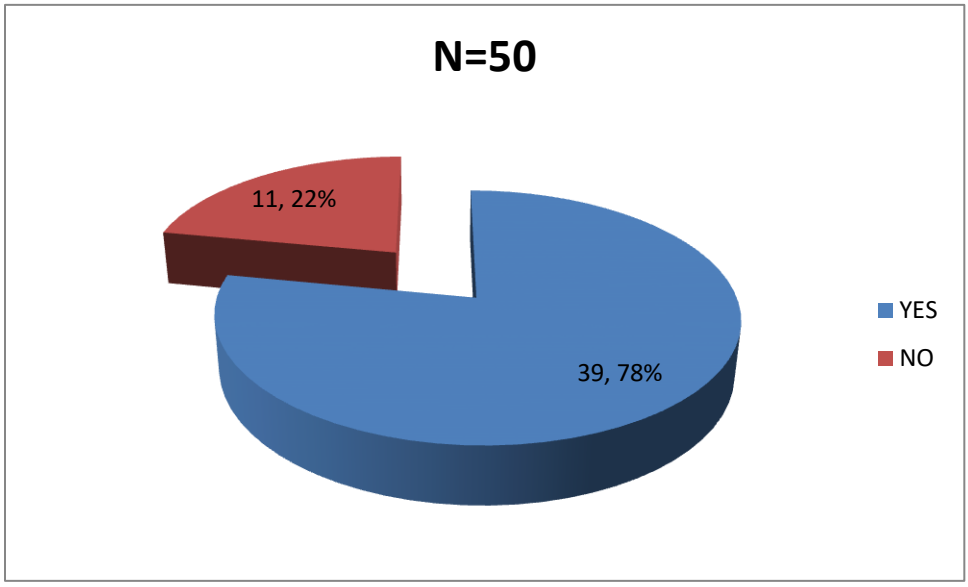

Figure 4: a pie chart showing whether the respondents got treatment when they had UTIs in pregnancy

Majority of respondents (78%) who had UTIs in pregnancy received treatment and only 11 mothers (22%) were not treated.

Table 3: showing where the respondents got treatment from and whether they completed it

where the treatment was got	**Frequency (N)=39**	**percentage (%)**
health facility	33	84.6
native doctors	3	7.7
both health facility and native doctors	3	7.7
completion of treatment		
Yes	13	34.2
No	26	65.8

Most respondents (84.6 %) got treatment from health facility, 3respondents (7.7%) got treatment from native doctors, 3 respondents (3.7%) got treatment from both health facility and native doctors. However, many of those who received treatment never completed the treatment (65.8%) and only 13 respondents (34.2 %) completed the treatment given to them.

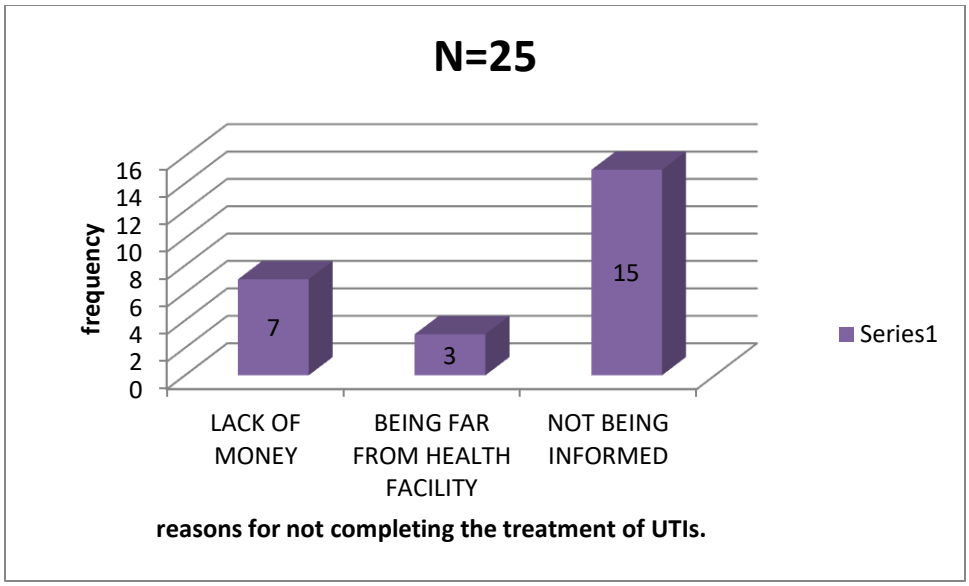

Figure 5: A graph showing reasons why respondents did not complete their treatment

Among the respondents who never completed treatment, many of them 15 (60 %) were not informed of completion of treatment received, 7(28%) lacked money to complete dose and 3 respondents (12%) never completed the treatment because of being far from the health facility.

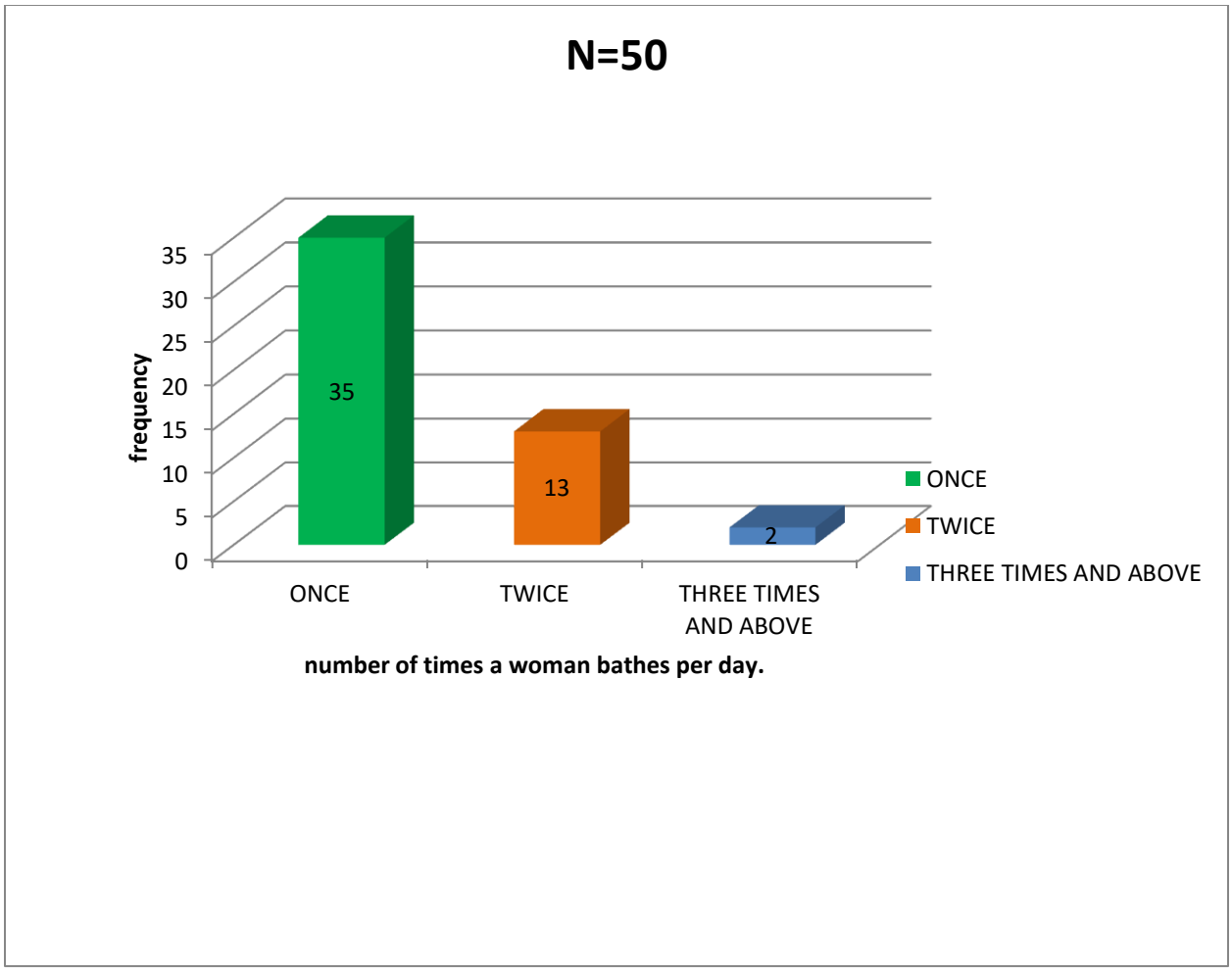

Figure 6: showing number of times the respondents bathed per day

Majority of respondents 35(70%) bathed once a day, 13 respondents (26%) bathed twice a day and only 2 respondents (4%) bathedthree times and above in a day.

Table 4: showing presence of chronic co-morbidity and the examples of chronic co-morbidities the respondents had.

Variable		**Frequency (N=50)**	**Percentage (%)**
Presence of a chronic co-morbidity	YES	6	12
	NO	44	88
	Total	50	100
examples of co-morbidity in pregnancy mothers had	Diabetes mellitus	4	66.7
	HIV/AIDS	1	16.7
	Hyper tension	1	16.7
	Total	6	100

Majority of respondents (88%) had not had any chronic co-morbidity in pregnancy and only 6(12%) respondents had had chronic co-morbidity in pregnancy of which 4 (66.7%) respondents had diabetes mellitus, 1 (16.7%) respondent had HIV and another 1(16.7%) respondent had hypertension.

Table 5: showing whether the respondent fell sick and was hospitalized during pregnancy and the period of hospitalization

Variables		**Frequency (N)**	**Percentage (%)**
falling sick and get hospitalized	Yes	26	52
	No	24	48
Total		**50**	**100**
period of hospitalization when sick during current pregnancy	less than a week	13	50
	1 week	10	38.5
	2 weeks	3	11.5
Total		**26**	**100**

More than a half of respondents (52%) had fallen sick and had been hospitalized and 24 respondents (48%) had never fallen sick during pregnancy and had never been hospitalized. Among the respondents who fell sick and got hospitalized, a half of them (50%) had been

hospitalized for less than a week, 10 respondents (38.5 %) had been hospitalized for 1 week and 3 respondents (11.5%) had been hospitalized for two weeks.

Table 6: showing what predisposed respondents to UTIs in pregnancy during hospitalization period.

Variable		**Frequency (N=50)**	**Percentage (%)**
sharing public toilets with other mothers with UTIs	yes	45	90
	no	5	10
long period of indwelling catheterization	yes	29	58
	no	21	42
poor hygiene of mothers	yes	39	78
	no	11	22

During hospitalization 90% of respondents had been exposed to UTIs in pregnancy due to sharing toilets with mothers who had UTIs, 78% had been exposed to UTIs in pregnancy due to poor hygiene and 58% had been exposed to UTIs in pregnancy due to long period of catheterization when they were sick.

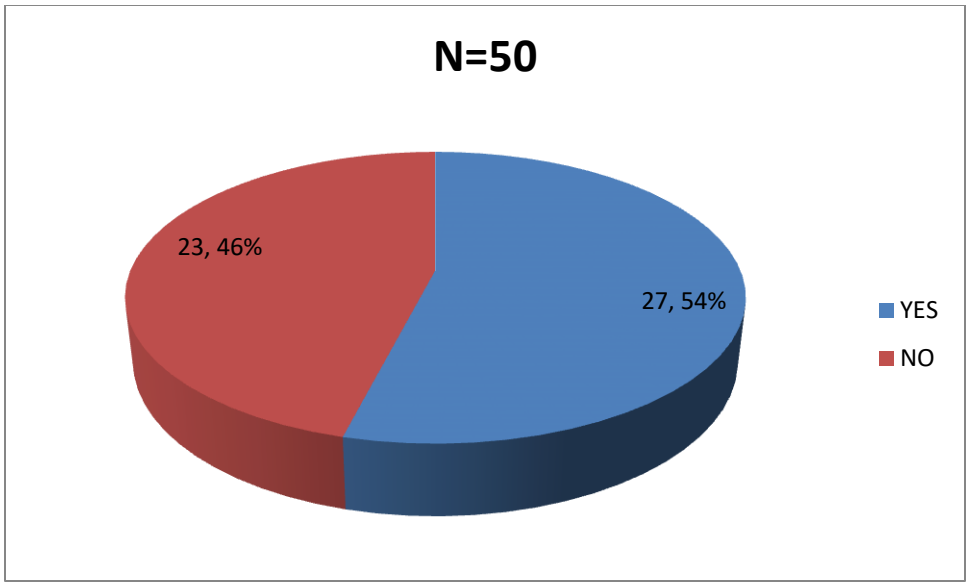

Figure 7: pie chart showing whether the respondents took water during pregnancy.

More than a half (54%) of respondents took water during pregnancy and 23 respondents (46 %) had not taken water during pregnancy.

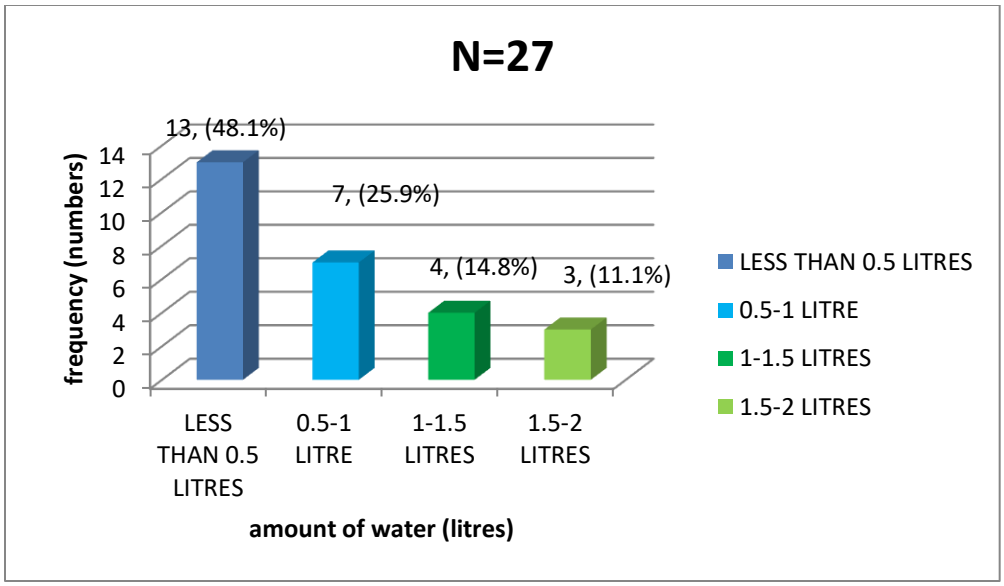

Figure 8: showing amount of water taken by the respondents during the pregnancy per day.

Many respondents(48.1%) who took water during pregnancy took less than 0.5 litres per day, 7 respondents (25.9%) took 0.5-1 litre of water per day, 4 respondents (14.8%) took 1-1.5 litres of water per day, and 3 respondents (11.1%) took 1.5-2 litres of water per day.

Table 7: showing what the respondents knew as influence of taking water during pregnancy on occurrence of UTIs.

Influence of water on occurrence of UTIs in pregnancy.	**frequency (N=50)**	**Percentage (%)**
it flushes kidneys (urinary system)	16	32
I don't know	34	68

Many respondents (68%) did not know the influence of water on occurrence of UTIs in pregnancy while 16 respondents (32%) knew that water flashes urinary system there by reducing the risk of UTIs in pregnancy**.**

4.4 social cultural factors associated with occurrence of UTIs among pregnancy mothers attending ANC clinic at Kisoro District Hospital.

Table 8: showing social cultural factor associated with occurrence of UTIs among pregnant women.

Variables		**frequency (N=50)**	**percentage (%)**
use of public toilets	yes	37	74
	no	13	26
poor hygiene after sexual intercourse	yes	37	74
	no	13	26
multiple sexual partners	yes	33	66
	no	17	34
cultural practice such as treating genital diseases with native medicines	yes	7	14
	no	43	86

The respondents said, social cultural factors associated with occurrence of UTIs among pregnant women were; 74% as use of public toilets, poor hygiene especially after sexual intercourse (74%), having multiple sexual intercourse (66%) and cultural practices such as treating genital diseases with native medicines(14%).

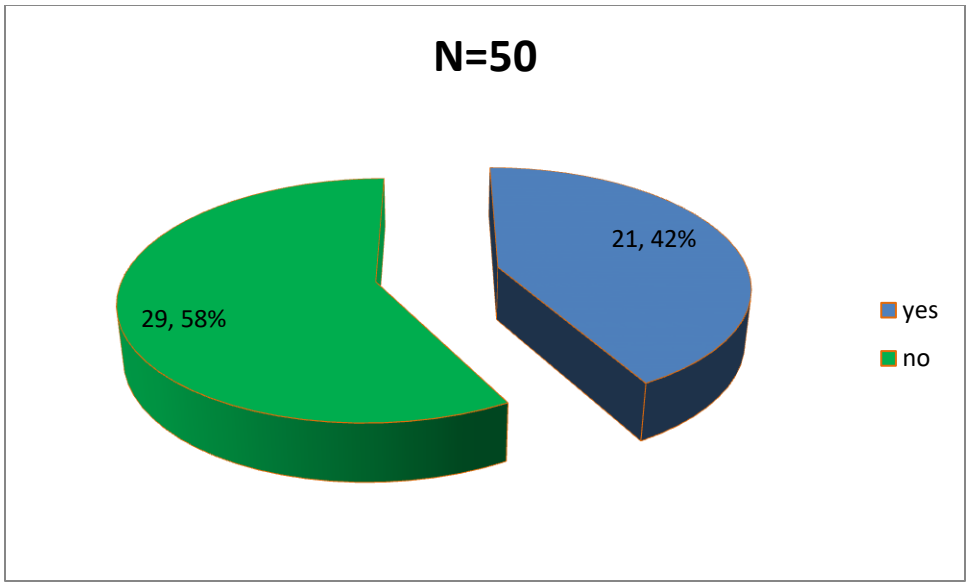

Figure 9: a pie chart showing whether the respondents were aware of preventive measures of UTIs in pregnancy.

Majority of respondents (58%) did not know preventive measures for occurrence of UTIs in pregnancy and only 21 (42%) of respondent knew some preventative measures against the occurrence of UTIs in pregnancy.

Table 9: showing preventative measures for the occurrence of UTIs in pregnancy that the respondents were aware of.

Measures	**Frequency (N=20)**	**Percentage (%)**
avoiding multiple sexual partners	8	40
good personal hygiene	8	40
wearing dry clean under wears	4	20

From the table above, 40% of respondents were aware of avoiding multiple sexual partners, 40% were aware of good personal hygiene and 20% were aware of wearing of dry clean underwear as a measure to prevent UTIs

CHAPTER FIVE: DISCUSSION, CONCLUSION AND RECOMMENDATIONS.

5.0 Introduction.

This chapter presents discussion of the study findings, conclusions and recommendations of factors associated with occurrence of UTIs among mothers attending ANC clinic at Kisoro District hospital. The study findings are discussed in the following headings; individual related factors associated with occurrence of UTIs and social cultural factors associated with occurrence of UTIs among pregnant mothers attending ANC clinic at Kisoro District Hospital.

5.1 DISCUSSION

5.1.1 Individual related factors associated with occurrence of UTIs among pregnant mothers attending ANC clinic at Kisoro District Hospital.

All the respondents (100%) had ever had UTIs in the current pregnancy and or in the previous pregnancy. This ensured collection of data from mothers who had much experience and knowledge about occurrence of UTIs in pregnancy.

Majority of the respondents (48%) were aged between 25-34 years and 40% of the respondents were aged between 15-24 years. The age group of 25-34 years and 15-24 years is highly sexually active which increased the occurrence of UTIs in pregnancy. This was in line with a study by Derese, Kedir, Teklemariam, Weldegebreal&Balakrishnan (2016) where it was found that the risk of UTIs in pregnancy increased with age where it was more common with women of 14-24 years than those above 24 years and this was attributed to increased sexual activity in this age group.

The study found that majority of respondents (44%) had 2 children, 28% of respondents had 3 children and 6% of respondents had 4 children and above. This increased number of children predisposed pregnant mothers to UTIs due to reduction in the strength of physical microbial barriers due to complications associated with pregnancy, delivery and puerperium. This was in correlation with a study by Emiru, Beyene, Tsegaye, &Melaku (2013)who found that the prevalence of UTIs in women increased with the number of children a woman had due to reduction in immunity.

The study found that majority of respondents (42%) had pregnancies between 25-40 weeks of gestation, 38% of the respondents had pregnancies between 12-24 weeks of gestation, and 20% of respondents had pregnancies below 12 weeks of amenorrhea. This increased gestational age of pregnancy is always associated with increased amount of vaginal secretions and shortening of urethra there by creating a favorable environment for multiplication of bacteria. In addition, increased size of the belly with increase in gestational age of the pregnancy makes the mother not flexible enough to maintain perineal hygiene by herself. This was in line with a study by Nelson &Good (2015) which found that during pregnancy, some anatomical and physiological changes in urinary system occur such as shortening of the urethra, kinking of urethra due to pressure from uterus as the gestation age increases that in turn limits the rate of urine flow hence stasis of urine hence being pregnant itself is a risk factor for UTIs. In addition, gestational age was also found to be a risk factor in which UTIs were more frequent in second and third trimester (Ephrem, 2014) and this was attributed to increased weight of uterus pressing on urinary bladder and urethra which reduced urine outflow making a favorable environment for invasion and multiplication of microbes.

The study results showed that 66% of respondents had UTIs due to poor hygiene especially perineal hygiene where many respondents (70%) bathed once a day, 26% of respondents bathed twice a day and only 4% of respondents bathed three times and above a day. This was similar to findings from a study by Tadesse, *et al.* (2014) in Asia and Africa, where it was foundthat poor general body hygiene especially perineal hygiene also increased the occurrence of UTIs in pregnancy.

From the study it was found that majority of respondents (78%) who had UTIs in pregnancy received treatment where most of the respondents (84.6 %) got treatment from a health facility, 7.7% of respondents got treatment from native doctors, 3.7% of respondents got the treatment from both health facility and native doctors. However many of those who received treatment never completed it (65.8%) and only 34.2 % of respondents completed the treatment given to them. This increased bacterial resistance and caused frequent re-occurrence of UTIs in pregnancy irrespective of them receiving treatment for UTIs in pregnancy. In addition, among the respondents who did not complete treatment many of them (60 %) were not informed of completing the treatment received, 28% of respondents lacked money to complete dose and 12% of respondents did not complete the treatment because of being far from the health facility. This was similar to findings in a study by Moore, Doull, Grad, *et al.* (2018) which found that UTI in pregnancy remained persistent due to poor screening and treating of women after they had already been infected and this is always high in women who never take medications for prescribed duration.

The study results found that 12% of respondents had chronic co-morbidity in pregnancy of which they were; diabetes mellitus, HIV/AIDs and hypertension. These conditions weakened mother's

immunity making normal floras of genitor-urinary system get opportunity to cause UTIs. This correlated with a study by Vaijanathrao, Nalini& Reddy (2015) which found that Co-morbidities like; diabetes mellitus increased the occurrence of UTIs in pregnancy because diabetic mothers always have too much glucose in urine which favors growth of microorganisms and reduced immunity and also correlates with a study by Banu&Jyothi (2013) which found that HIV infection also reduces the immunity of the mother hence making them prone to UTIs.

From the study findings, more than a half of therespondents (52%) fell sick and got hospitalized and among the respondents,who fell sick and got hospitalized, a half of them (50%) were hospitalized for less than a week, 38.5 % were hospitalized for 1 week and 11.5% were hospitalized for two weeks. This weakened their immunity and 90% of the respondents were exposed to UTIs in pregnancy due to sharing toilets with other mothers who had UTIs, 78% were exposed to UTIs in pregnancy due to poor hygiene and 58% were exposed to UTIs in pregnancy due to long period of catheterization when they were sick.

From the study, more than a half (54%) of the respondents took water during pregnancy and many respondents (48.1%) who took water during pregnancy took less than 0.5 litres per day, 7 respondents (25.9%) took 0.5-1 litre of water per day, 4 respondents (14.8%) took 1-1.5 litres of water per day, and 3 respondents (11.1%) took 1.5-2 litres of water per day. This was in line with a study by Wing, Fassett, and Getahun (2014) which foundthat the amount of water taken per day also influenced the occurrence of UTIs in pregnancy where women who took less than 2 litres of water per day always had inadequate urinary tract flushing and had increased risk of getting UTIs.

Majority of respondent (68%) did not know the influence of water on occurrence of UTIs in pregnancy while 16 respondents (32%) knew that water flashes urinary system there by reducing the risk of UTIs in pregnancy**.**

5.1.2 Social cultural factors associated with occurrence of UTIs among pregnant mothers attending ANC clinic at Kisoro District Hospital.

Majority of the respondent (34%) had attained primary level of education, 26% never went to school, 24% of respondents attained secondary level of education, 12% attained tertially institution and 4% attained university. This limited their knowledge concerning prevention of UTIs during pregnancy. This was in line with findings from studies by Willy, Gichuhi&Mugo, (2015); Vettore, Dias, Vettore& Leal,(2013) which found that low education level limited pregnant mother's knowledge about prevention of UTIs and proper ways of maintaining hygiene which in turn contributed to the development of UTIs.

In addition, many of the respondents (44%) were peasants, 26 % were self-employed, 24% were business women and 6% were civil servants. This low social economic status made pregnant mothers not to have enough money for treatment and screening for UTIs in pregnancy. This was similar to findings from a study done in Uganda urban setting where there was high prevalence of UTIs among the women of low socioeconomic status especially those who stayed in slums (Sujatha&Nawani, 2014) which was attributed to poor hygiene and living conditions in such areas which increase the risk of developing urinary tract infection (Amiri, Lavasani, Norouzirad, et al., 2015).

Majority of the respondents (78%) were married of which these had frequent sexual intercourse with their husbands thus increased risk for UTIs in pregnancy. This correlated with a study by

Tadesse, et al., (2018), which found that marital status of a pregnant woman is associated with the risk of getting UTIs where it was high in those who lived regularly with their husbands due to increased frequency of sexual intercourse and those who had multiple sexual partners.

The respondents said social cultural factors which were associated with occurrence of UTIs among pregnant women were; use of public toilets(74%), poor hygiene especially after sexual intercourse(74%), having multiple sexual intercourse(66%) and cultural practices such as treating genital diseases with native medicines(14%). This was in line with findings from a study by Derese, et al. (2016) which found that resident area increased the risk of UTIs among pregnant women especially those who shared toilet seats, stayed in areas of poor hygiene and had increased sexual immorality

Majority of respondents (58%) did not know preventive measures for occurrence of UTIs in pregnancy and only 21 (42%) of respondent knew some preventative measures against the occurrence of UTIs in pregnancy. This made mothers get UTIs during pregnancy due to failure to prevent them.

5.2 CONCLUSION.

Basing on the findings from the study the following conclusions were made on factors associated with occurrence of UTIs among pregnant mothers attending ANC at Kisoro District Hospital: many pregnant mothers had UTIs and this is due to; poor perineal hygiene, having multiple sexual partners, inadequate taking of water during pregnancy, sharing public toilets with infected mothers, not taking the treatment for UTIs as prescribed and ignorance of preventative measures of UTIs in pregnancy.

5.3 RECOMMENDETIONS.

The following recommendations were made based on the study findings.

Health workers should increase on health educating mothers on preventative measures of UTIs especially proper perineal hygiene, avoiding multiple sexual partners, and avoiding public seat toilets during pregnancy.

Health workers should increase on screening mothers for UTIs and emphasize strongly on completion of treatment with poor adherence to prescription guidelines.

Mothers with chronic co-morbidities should properly adhere to their treatment and in case of occurrence of UTIs they should get prompt treatment.

Health workers should conduct community outreaches screening for UTIs, raising awareness of mothers in the community regarding risk factor for occurrence of UTIs and its effects on pregnancy.

5.4 IMPLICATIONS TO NURSING PRACTICE.

When mothers are not properly screened and treated there will be increased abortions due to infections, intrauterine growth restriction of the fetus and increased maternal morbidity.

When mothers do not adhere to treatment of UTIs as prescribed there will always be reoccurrence of UTIs which will be associated with bacterial drug resistance.

When UTIs are not managed properly and promptly there will always be frequent hospitalizationof pregnant mothers.

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United nation, transforming our world (2015): the 2030 agenda for sustainable development, A/RES/70/1, sustainable development.un.org

APPENDICES:

APPENDIX I: CONSENT FORM.

Dear respondent, I am **KampiireEmeridah** a student midwife at Mutolere School of nursing and midwifery offering a diploma in midwifery. I am conducting a study on factors associated with occurrence of UTIs among pregnant mothers attending ANC clinic kisoro hospital.

By participating in this study, you will have greatly contributed to the success of this study. Information obtained from you during this study will be kept confidential and be accessed by the researcher only. There are no risks anticipated in the study and you are free to participate or voluntarily withdraw from the study at any time.

By signing below, it indicates that you have understood the information above concerning the

Study and you voluntarily agree to participate in the study.

Respondent's signature……..

Date ……

Name of the researcher **KampiireEmeridah**

Signature ……

Date ……

APPENDIX II: INTERVIEW GUIDE FOR PREGNANT WOMEN.

Dear respondents I am **KAMPIIREEMERIDAH** a student midwife at Mutolere School of nursing and Midwifery, Iam conducting a study on factors associated with occurrence of UTIsamong pregnant mothers attending ANC clinic Kisoro hospital. The questionnaire will help the researcher to collect data on the above study. The information is for academic purposes and will be kept confidential.

Instructions:

1. Your name should not appear anywhere on this questionnaire.

2. Answer all questions.

3. Tick in the boxes provided or write in spaces provided.

Part A: socio-demographic data of the respondent

1. What is your age in year?

(a) 15-24 ☐ (b) 25-34 ☐

(c) 35-44 ☐ (d) 45 and above☐

2. What is your marital status?

(a) Single mother ☐ (b) Married☐ (C) Divorced☐

PART B: Individual factors related to occurrence of UTIs in pregnancy.

3. How many children do you have?

(a) 1 ☐ (b) 2☐

(c) 3 ☐ (d) 4 and above☐

4. What is the gestational age of your current pregnancy?

(a) Below 12 weeks ☐ (b) 12-24 weeks☐

(c) 25 to 40 weeks☐

5. Have you ever had UTIs during this pregnancy or during previous pregnancy?

(a) Yes☐ (b) no☐

6. If yes to question (5) above, what do you think predisposed you to UTIs (TICK ALL THE APPROPRIATE ANSWERS)

(a) Poor perineal hygiene ☐ (b) increased sexual activity☐

(c) lack of physical activities☐ (d) Long hospitalization period☐

7. When you had UTIs in pregnancy did you go for treatment?

(a) Yes☐ (b) No☐

8. If yes to question (7) above, where did you get the treatment from?

(a) Health facility☐

(b) Native doctors☐

(c) both of above ☐

9. Did you complete the treatment given?

(a) Yes☐ (b) No☐

10. If no to question (9) above, what made you not complete the treatment? (TICK ALL THE APPROPRIATE ANSWERS)

(a) Lack of money☐

(b) Being far from heath unit☐

(c) Not being informed.☐

(d) Others specify ……

11. How often do you bath per day?

(a) Once☐ (b) Twice☐

(c) Three and above☐

12. (a) do you have any chronic co morbidity in pregnancy such as Diabetes Mellitus or HIV.

(a) Yes ☐

(b) No ☐

(b). if yes to above question, which of the chronic diseases do you have? (**TICK ALL THE APPROPRIATE ANSWERS)**

(a) Diabetes Mellitus ☐

(b) HIV/AIDS ☐

(c) Tuberculosis☐

(d) Others specify…….

13. (a) During this current pregnancy, did you ever fall sick and get hospitalized?

(a) Yes ☐

(b) No ☐

(b) If yes to above question, how long were you hospitalized?

……

(c) In your own opinion, what influences occurrence of UTIs in pregnant mothers when they are hospitalized? (**TICK ALL APPROPRIATE)**

(a) Sharing public toilets with other mothers with UTIs ☐

(b) Long period of indwelling catheterization ☐

(c) Poor hygiene of some pregnant mothers. ☐

(d) Others specify

…….

……..

14. (a) During this pregnancy, do always take water?

(a) Yes ☐

(b) No ☐

(b) If yes to above question, how much amount of water to you take per day?

(a) <0.5 liters ☐

(b) 0.5 -1 liters ☐

(c) 1-1.5 liters ☐

(d) 1.5 -2 liters ☐

(e) Above 2 liters ☐

(c) In your opinion, how does taking adequate water during pregnancy influence occurrence of UTIs in pregnancy.

……..

PART C: SOCIAL CULTURAL FACTORS ASSOCIATED WITH OCCURRENCE OF UTIs IN PREGNANCY.

15. What is your occupation?

(a) Peasant ☐(b) Teacher☐

(c)Business woman ☐(d) others specify ……

16. What is your education level?

(a) Primary ☐(b) Secondary ☐

(c) Institution ☐(d) University ☐

17. What do you think predisposes pregnant women to UTIs? (**TICK ALL APPROPRIATE**)

(a) Use of public toilets ☐

(b) Poor hygiene ☐

(c) Multiple sexual partners ☐

(d) Others specify. …….

18. (a) Are your aware of preventive measures for the occurrence of UTIs in pregnancy?

A. Yes

B. No

(b) If yes to question above, which preventative measures are you aware of?

……..

……

APPENDIX III: RESEARCH REPORT APPROVAL FORM

This research report has been done under my supervision as the institution's supervisor and recommends it for submission for award of a diploma in midwifery.

Signature…….. Date……

MR. NSEKUYE PASCHAL

(SUPERVISOR)

APPROVED BY

Signature …… date &stamp…….

Sr. KEMIGISHA CATHELINE

PRINCIPAL

APPENDIX IV: INTRIODUCTORY LETTER

Keep the Candle Burning and Pass on the Light

WE TRAIN FOR QUALITY CARE

MUTOLERE SCHOOL OF NURSING AND MIDWIFERY
P.O. BOX 26, KISORO
Email: mutolerehti@ucmb.co.ug

Your Ref: .....
Our Ref: **NMT/023**

DATE: 29/3/2023

Attention of I/c Maternity + ANC Assist her for her research work.

KISORO HOSPITAL
P.O Box 268, Kisoro
Date: 29/3/2023

TO:
THE MEDICAL DIRECTOR,
KISORO HOSPITAL.
P.O BOX 268,
KISORO.

Dear Sir,

RE: RESEARCH PROJECT FOR DIPLOMA MIDWIFERY EXTENSION:

This is to introduce **KAMPIIRE EMERIDAH** who is a student midwife at Mutolere school of Nursing and Midwifery in her final year of study.

She is required to prepare an individual research project as part of the requirements for the award of Diploma in Midwifery Extension. She has written her research proposal and is at the stage of data collection. She is interested in the area of "**FACTORS ASSOCIATED WITH OCCURRENCE OF URINARY TRACT INFECTIONS (UTIS) AMONG PREGNANT MOTHERS ATTENDING ANTENATAL CLINIC AT KISORO HOSPITAL, KISORO DISTRICT.**

She seeks to collect data in your health facility/Department and therefore requests for your support.

I will be grateful for any relevant support you shall accord her regarding her research study.

Thank you.

Yours Sincerely,

MUTOLERE SCHOOL OF NURSING & WIDWIFERY ST. FRANCIS HOSPITAL 29 MAR 2023 P.O BOX 26 KISORO

.....

SR. KEMIGISHA CATHELINE
PRINCIPAL

APPENDIX V: PROPOSAL APPROVAL FORM.

PROPOSAL APPROVAL FORM

Name of the student: **KAMPIIRE EMERIDAH.**

Title of the research study: **FACTORS ASSOCIATED WITH OCCURRENCE OF URINARY TRACT INFECTIONS (UTIs) AMONG PREGNANT MOTHERS ATTENDING ANTENATAL CLINIC AT KISORO DISTRICT HOSPITAL.**

I hereby accept this research proposal for the above research study and approve it for submission to Mutolere School of Nursing and Midwifery and Institution's Research and Ethics committee.

Name of the supervisor: **MR. NSEKUYE PASCAL**

Signature: .....

Date: 03/03/2023

Approved by

Principal Tutor: **SR. KEMIGISHA CATHELINE**

Signature: .....

Date: 03/03/2023

MUTOLERE SCHOOL OF NURSING & MIDWIFERY ST. FRANCIS HOSPITAL 03 MAR 2023 P.O.BOX 26 KISORO

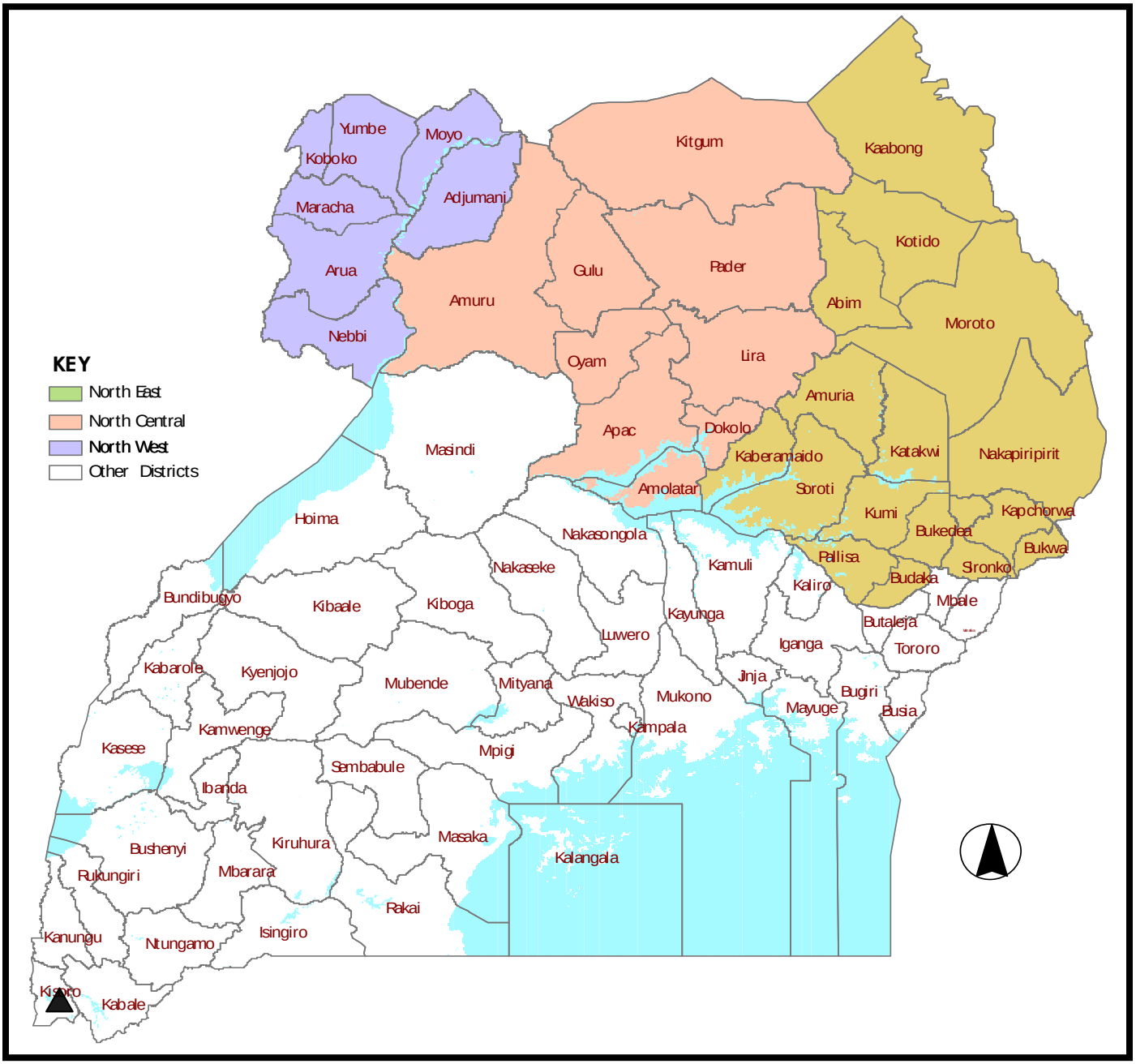
APPENDIX VI: BUDGET FOR THE RESEARCH STUDY.

ITEM	**QUANTITY**	**UNIT COST**	**TOTAL**
SECTION A: STATIONARY			
Ream of paper (plain papers A4)	4	20,000	80,000
Pens (Bic)	5	700	3,500
Internet surfing		50,000	50,000
SECTION B: SECRETARIAL			
Printing		200,000	200,000
Binding	6 copies	3,000	18,000
Flash disk (4 GB)	1	25,000	25,000
SECTION C: PERSONAL			
Transport.			40,000
Airtime			20,000
Miscellaneous			20,000
TOTAL			**446,500**

APPENDIX VII: RESEARCH STUDY WORK PLAN.

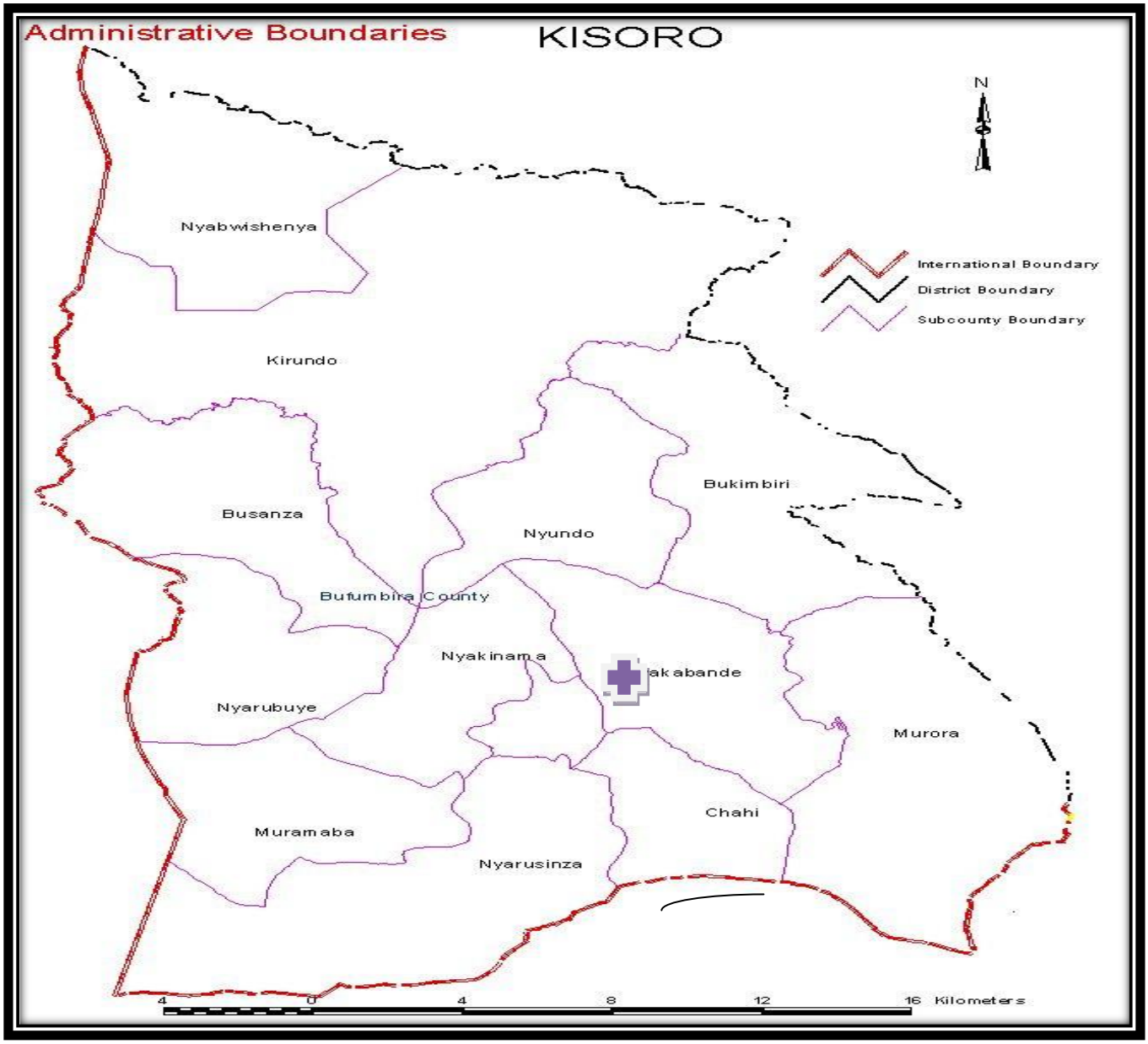
ACTIVITY/ MONTH	OCT 2022	NOV 2022	DEC 2022	JAN 2023	FEB 2023	MARC 2023	APRIL 2023	MAY 2O23	RESPONSILE PERSON
Topic identification									Researcher and supervisor
Proposal writing									Researcher
Proposal defense									Researcher and research committee
Proposal submission									
Data collection									Researcher
Data entry and analysis									Researcher
Report writing									Researcher
Research approval and submission									Researcher, supervisor and school administration

APPENDIX VIII: MAP OF UGANDA SHOWING THE LOCATION OF KISORO DISTRICT.



KEY KISORO DISTRICT

APPENDIX IX: A MAP OF KISORO DISTRICT SHOWING THE LOCATIONOF ST. FRANCIS HOSPITAL MUTOLERE.



Key

St. Francis Hospital Mutolere