FACTORS AFFECTING TREATMENT COMPLIANCE AMONG TB/HIV CO-INFECTED PATIENTS AT RURAHO MISSION HOSPITAL, MBARARA DISTRICT

A RESEARCH REPORT SUBMITTED TO UGANDA NURSES AND MIDWIVES EXAMINATIONS BOARD

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF A

DIPLOMA IN NURSING

NATUMANYA MEDARD

N16/U011/DNE/022

MAY, 2018

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Abstract

A study was carried out at Ruharo Mission Hospital, MbararaDistrict to identify the factors affecting treatment compliance among TB/HIV co-infected patients. A descriptive design was employed and 30 (thirty) respondents were selected to the study using stratified and convenience sampling procedure. Data was collected using questionnaire. This study found out that respondents faced various social economic factors affecting treatment compliance among TB/HIV co-infected patients. For instance, most respondents 20 (67%) didn't have an anti TB treatment partner, 20 (67%) sometimes felt like not taking anti TB drugs due to 10 (50%) medication fatigue and taking too many tablets, 6 (30%) feared the side effects of the medication and 4 (20%) did not notice much change which was not surprising as most 20 (67%) were required to take more than 4 tablets daily and 12 (40%) were required to take TB drugs for more than 7 months. However, 20 (67%) physical difficulties in opening medicine containers, handling small tablets and swallowing difficulties as well as 30 (100%) TB costs were not among the social economic factors affecting treatment compliance among TB/HIV co-infected patients.

The findings show that that respondents faced various health facility factors affecting adherence to anti TB drugs among TB/HIV co infected patients and although most respondents 18 (60%) had ever been taught how to take anti TB drugs, factors such as 15 (50%) long distance moved to collect medication, 20 (66.7%) unavailability or shortage of health workers, 30 (100%) unavailability or shortage of drugs hinders, 20 (66.7%) long waiting time to receive services/drugs, 18 (60%) feared being discriminated by the community or health workers as well as 20 (66.7%) lacked confidentiality and privacy in TB services all affected adherence to anti TB drugs among TB/HIV co infected patients.

In conclusion, the study findings revealed that TB/HIV co-infected patients faced various socio economic and health facility factors which affected treatment compliance.

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Notice of Research Study Topic

Name of Student **NATUMANYA MEDARD**

Title of Research Study: **FACTORS AFFECTING TREATMENT COMPLIANCE AMONG TB/HIV CO-INFECTED PATIENTS AT RURAHO MISSION HOSPITAL, MBARARA DISTRICT**

I hereby agree to serve as the supervisor of the research study/ Project for the above named student.

Name:.....

Signature:.....

Date:.....

Approved

Principal (Signature)**:**.....

Date:.....

Authorization

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Declaration

I, **Natumanya Medard,** hereby declare that this work is my original work and has never been submitted before any School, or institution of learning for any academic award of any qualification. Theories, ideas and materials obtained from existing literature and other sources have been dully acknowledged and referenced.

Signed……..…..…….Date……..……

NATUMANYA MEDARD

(RESEARCHER)

Dedication

I dedicate this work to my parents MR and MRS BEMANYA EDWARD; my brothers; Isaac; Oded; Bosco; Apollo; Arthur; my sister Naome; friends; Phionah; relatives and to all my class mates in their struggle to see me through this course.

Acknowledgement

I would like to thank almighty God for bringing me all this far successfully. My heartfelt gratitude goes to my supervisor Miss Mbattudde Dianah for her unflinching support and kindness; her patience and guidance has helped me greatly in writing this report.

I extend my sincere thanks to Kampala international university school of nursing for having laid a research programme conveniently suiting the time of the course.

My gratitude goes to fellow students especially; Nathan; Simon; Agaba; Armstrong; Adam; Moit and the rest.

Your good company has contributed much to my studies.

My God bless you all!

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Operation definitions

Tuberculosis Is a common and potentially lethal infectious disease caused by various strains of mycobacteria, usually Mycobacterium tuberculosis.

TB medication This is medication specifically meant to cure or treat tuberculosis infection in humans.

TB co infection This is a state whereby an individual is infected by TB in conjunction with another disease, most commonly HIV.

Compliance Is a medical term that means the degree to which a patient correctly follows medical advice

Treatment This is the medical care given to a patient for an illness or injury.

Patient This is a person who is receiving or registered to receive medical treatment.

Acronyms

CBTBC	Community-Based TB Care
DOTS	Directly Observed Treatment Short-Course
HAART	Highly Active Anti-Retro Viral Therapy
HIV	Human Immunodeficiency Virus
KIU	Kampala International University
MoH	Ministry of Health
MTB	Mycobacterium Tuberculosis
NGO	Non-governmental organizations
PTB	Pulmonay Tuberculosis
RMH	Ruharo Mission Hospital
SPSS	Statistical Package for the Social Sciences
TB	Tuberculosis
UNMEB	Uganda Nurses and Midwives Examinations Board
UVRI	Uganda Virus Research Institute
WHO	World Health Organization

CHAPTER ONE

INTRODUCTION

1.1 Introduction

This chapter presents the introduction, problem statement, purpose of the study, specific objectives, research questions and justification of the study.

TB/HIV co-infection has become a major health concern. In TB/HIV patients, their immune system has been compromised and as such immediate intervention for appropriate treatment for TB is needed. However, TB/HIV co-infected patients need to be aware of the long treatment for TB (Kigozi et al, 2010). It should be noted that during the first 2 months, patients usually receive anti TB drugs. If they improve clinically, they are placed on 2 drugs for the remaining 4 or 6 months in addition to their supportive treatment for HIV (Kigozi*et al*, 2010).

Due to long treatment of TB, a good support partner system has to be in place to encourage and motivate the patient as they take their treatment. Failure of the patient to comply with the prescribed anti TB therapy exposes the patients to risk of developing MDR, accelerated progression of HIV with its other opportunistic infections leading to shortening of the patients' life (Mulugeta, Anwar and Fekadu, 2015).

The human immunodeficiency virus (HIV) pandemic presented a significant challenge to global tuberculosis (TB) control and in 2011, 1.1 million (13%) of the 8.7 million people who developed TB worldwide were HIV-positive (Daviaud and Chopra, 2013). TB is a leading killer among people living with HIV. At least one in four deaths among people living with HIV could be attributed to TB.

Purushottam, Deshpande and Phallice (2013) study in Prawara Rural Hospital showed that out of 1012 of patients who attended ART clinic, 172 (17%) were co-infected with TB/HIV. The study further noted that out of the 172 (17%) co-infected with TB/HIV, 87 (50 – 58%) were males and 85 (48.42%) were females.

TB/HIV co-infection is one of the biggest public health challenges in sub Saharan Africa. According to Mulugeta, Anwar and Fekadu (2015) showed that out of 287 patients Pulmonary Tuberculosis (PTB) suspects who were tested for HIV infection, 82 (28.6%) were HIV positive.

Similarly, in East African countries, tuberculosis infection continued to be a challenge as Kenya and Tanzania ranked 18th and 20th respectively on the list of 22 high burden tuberculosis countries in the world (Mukherjee and Eustache, 2007).

Uganda ranked 16th on the list of 22 high-burden tuberculosis (TB) countries in the world and in 2007, the country had almost 102,000 new TB cases (Kigozi et al, 2010). According to Nakanjako et al, (2009), findings showed that, out of 10,924 patients enrolled between 08 – 05 and 02 – 09, co prevalent TB was at 157/10,924 (1.4%) which included 88/157 (56%) with TB confirmed at enrollment and 65/157 (41%) TB diagnoses established during follow up for which symptoms were present at enrollment.

Ministry of Health Uganda (2014) states 2 million people died annually in Uganda because of TB and 60% of the clients die because the disease had developed resistance to the anti TB drugs. In 2014, the statistics showed that 136 people die from Hospital as a result of TB and 122 of them died because the disease had developed resistance to the drugs given.

1.2 Problem Statement

Globally, in countries such as India, failure of TB-HIV co infected patients to comply with treatment remains highly prevalent. A study in Mumbai, India by Suchindran (2015) found out that 37% of patients had failed to comply with treatment. In Abuja, Nigeria, Sterling (2010) revealed that 39% of TB-HIV co infected patients failed to comply with treatment. In South Africa, Daviaud and Chopra (2013) found out that 42% of TB-HIV co infected patients failed to comply with treatment. In Tanzania, Mukherjee and Eustache (2007) also found out that 31% of TB-HIV co infected patients failed to comply with treatment.

Despite the good coverage of Tuberculosis (TB) services in Uganda, adherence to anti TB among TB/HIV co-infected patients had been noted to be low (Amuha, Kutyabami, Kitutu, Odoi and Kalyango, 2015). Study findings revealed prevalence of non-adherence among TB/HIV co-infected patients to be 25% among those on continuous phase of the TB regimen (Amuha et al,

2015). However, despite all these efforts, treatment compliance among TB/HIV co-infected patients at Ruharo Mission Hospital, Mbarara District remains low as evidenced by various measures among patients such as pill count, failure to keep appointments and schedules for refill among others which has also led to a total of 91% clients failing to comply with treatment in 2014 while in 2015, 97% patients failed to comply, Health Management Information System (HMIS, 2016). It was hence upon this reason and figures presented that the researcher picked interest to carry out this study to identify these factors and thus help develop measures to improve treatment compliance among TB/HIV co-infected patients at Ruharo Mission Hospital, Mbarara District.

1.3 Purpose of the study

The purpose of the study was to identify the factors affecting treatment compliance among TB/HIV co-infected patients at Ruharo Mission Hospital, Mbarara District.

1.4 Specific Objectives

1) To identify the social economic factors affecting treatment compliance among TB/HIV co-infected patients at Ruharo Mission Hospital, Mbarara District.

2) To assess the health facility factors affecting treatment compliance among TB/HIV co-infected patients at Ruharo Mission Hospital, Mbarara District.

1.5 Research Questions

1) What are the social economic factors affecting treatment compliance among TB/HIV co-infected patients at Ruharo Mission Hospital, Mbarara District?

2) How does health facility factors affect treatment compliance among TB/HIV co-infected patients at RuharoMission Hospital, Mbarara District?

1.6 Justification of the study

The study served the purpose of identifying the factors affecting treatment compliance among TB/HIV co-infected patients at Ruharo Mission Hospital. This may greatly assist health workers at the hospital to come up with improved programs for health educating patients about what could be done to alleviate the challenges faced by TB/HIV patients.

The findings may assist the Ministry of Health to decide on new directions to take in an effort to improve access to TB services as well as adherence to medication.

The study provided a valuable baseline for researchers who intend to undertake similar studies in future and also contributes to the available literature on the factors affecting treatment compliance among TB/HIV co-infected patients at Ruharo Mission Hospital, Mbarara District.

The study will also be beneficial to the researcher as it is a partial requirement to be fulfilled for the award of the diploma in Nursing.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the literature related to the topic and in line with the study objectives including the social economic and health facility factors affecting treatment compliance among TB/HIV co-infected patients. The literature is presented commencing with the social economic factors affecting treatment compliance among TB/HIV co-infected patients.

2.2 Social economic factors affecting treatment compliance among TB/HIV co-infected patients

In a study about patient care seeking barriers and tuberculosis programme reform revealed that some of the social economic factors affecting treatment compliance among TB/HIV co-infected patients is the long travel distances and related transportation costs to health centers which creates a significant burden on patients, while 'special food' expenditures add to their financial constraints (Dale *et al,* 2012).

A study about compliance showed that some of the social economic factors affecting treatment compliance among TB/HIV co-infected patients include insufficient knowledge and awareness about the disease. It was noted that most respondents did not take tuberculosis as a deadly disease which could be fatal (Konstantinos, 2010).

Another study about patient and health service delay in pulmonary tuberculosis patients attending a referral hospital mentioned forgetfulness in taking medication as a social economic factor affecting treatment compliance among TB/HIV co-infected patients (Kiwuwa *et al,* 2012).

Another study narrated how patients reported that the prescribed many tablets to be taken on a daily basis for a long period is one of the major social economic factors affecting treatment compliance among TB/HIV co-infected patients (Ahsan *et al*, 2012).

More studies about the patterns of delays amongst pulmonary tuberculosis patients in Lagos, Nigeria mention that some of the social economic factors affecting treatment compliance among TB/HIV co-infected patients include physical difficulty in complying (e.g. opening medicine

containers, handling small tablets and swallowing difficulties which may sometimes be due to the severity of the illness which all affects taking of medication as required (Odusanya and Babafemi, 2012).

In a study about primary health care nurses' views on HIV counseling and testing services for tuberculosis patients in two districts of the Free State Province of South Africa, findings showed that lack of support by the partner as well as low encouragement and motivation were some of the social economic factors affecting treatment compliance among TB/HIV co-infected patients (Engelbrecht, Heunis and Kigozi, 2014).

Similarly, another study explained how lack of support and having no one to collect TB medication for the patient from the health facility are some of the social economic factors affecting treatment compliance among TB/HIV co-infected patients (Golden and Vikram, 2010).

In a study about knowledge and acceptability of HAART among TB patients in Durban, South Africa, it was revealed that some of the economic challenges faced by TB/HIV co-infected patients is poverty which is a result of high rates of unemployment due to their condition (Gebrekristos, Lurie, Mthethwa and AbdoolKarim, 2014).

Similar findings were reported in the study about high rates of clinical and subclinical tuberculosis among HIV-infected ambulatory subjects in Tanzania that some of the social economic factors affecting treatment compliance among TB/HIV co-infected patients is high cost of medication (Mtei, Matee, Herfort, Bakari and Horsburgh, 2009).

Another study about the prevalence of pulmonary tuberculosis among HIV positive patients attending antiretroviral therapy clinic showed that some of the economic challenges faced by TB/HIV co-infected patients included failure to maintain the recommended diet while on medication due to high cost of food among other things (Purushottam, Deshpande and Phallice, 2013).

A study about diagnostic and treatment delay among pulmonary tuberculosis patients in Ethiopia that some of the social economic factors affecting treatment compliance among TB/HIV co-infected patients included frequent use of health care services due to frequent opportunistic

infections, spending large sums of money which greatly affected their livelihood (Yimer, Bjune and Alene, 2012).

A study about the predictors of uptake of HIV testing by tuberculosis patients in the Free State Province, South Africa mention that lack of financial support had been noted as one of the major social economic factors affecting treatment compliance among TB/HIV co-infected patients (Kigozi*et al*, 2010).

In her study about TB/HIV co-infections and their predictors at hospital based HIV/AIDS clinic in Uganda that some of the social economic factors affecting treatment compliance among TB/HIV co-infected patients include lack of money for transport to health facilities, leading to failure to timely seek and utilize these services (Nakanjako, 2009).

2.3 Health facility factors affecting treatment compliance among TB/HIV co-infected patients

Another study revealed that unavailability or shortage of health workers which led to inappropriate delays to receive medication as well as counseling services on the importance of adherence to medication as health facility factors affecting treatment compliance among TB/HIV co-infected patients (Heunis *et al*, 2011).

A study about compliance reported that unavailability or shortage of doctors and other health staffs offering TB/HIV medication as health facility factors affecting treatment compliance among TB/HIV co-infected patients. Furthermore, the study stated that shortage of health staff led to long delays in the queue to receive medication and this made patients fail to turn up and pick medication due to fear of long waiting time to receive medication (Okot-Chono *et al,* 2009).

Further studies by revealed fear of discrimination from the community and health workers as well as from the patient's family members as some of the health facility factors affecting treatment compliance among TB/HIV co-infected patients (Daviaud and Chopra, 2013).

More studies revealed perceived or actual lack of confidentiality and privacy in accessing TB/HIV services as health facility factors affecting treatment compliance among TB/HIV co-infected patients (Nnoaham, Pool, Bothamley and Grant, 2010).

CHAPTER THREE

METHODOLOGY

3.0 Introduction

The chapter presents the methodology which includes 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, limitation of the study, dissemination of results.

3.1 Study Design and Rationale

The study design was cross sectional and descriptive, employing quantitative data collection techniques. It was a cross sectional type of design because it involved collection of data from a single point in time and from a group of respondents whose characteristics such as age, sex, and marital status was described. The design was descriptive as it described the data as it was without any changes.

3.2 Study setting and rationale

The study was conducted at Ruharo Mission Hospital, Mbarara District which is located in Southwestern Uganda which is 405 kilometres from Kampala city. Mbarara district is bordered by Isingiro district in the southwest, Ibanda in the North, Bushenyi in the West and Lyantonde in the East. The main economic activity carried out is business. The common foods eaten are matooke and kalo and the main tribes are the Banyankole and Bakiga speaking Runyankole and Rukiga. The hospital offers many health care services including TB clinic, family planning, child health services, obstetrics and emergency care, HIV/AIDS management services, general patient management, laboratory services, nutrition services, antenatal services among many others. The study area was selected because it was familiar to the researcher and the necessary respondents were easy to get.

3.3 Study Population

The study targeted male and female patients above 18 years attending health care services at the TB clinic, Ruharo Mission Hospital, Mbarara District. The study population included 60 respondents.

3.3.1 Sample Size Determination

The study consisted of a sample of 30 respondents which the researcher deemed representative enough of the women of child bearing age attending family planning services at the health center. Furthermore, it was the sample size recommended by the Nursing guideline for research. The sample size was determined by using Kish and Leslie (1970)

$$n=\frac{z^2pq}{d^2}$$

Where n=Desired sample size (if the target population is greater than 10,000)

z=Standard normal deviation at 95% confidence interval (i.e.1.96).

p=Proportion of the target (which is 50% or 0.5)

q= 1-p (1-0.5=0.5)

$$n=\frac{z^2pq}{d^2}$$

$$n=\frac{(1.96^2)\ x0.5x0.5}{(0.5)^2}$$

n=384

Since the target population under study is less than 10.000 the required sample size will be smaller and was estimated as follows;

$$nf=\frac{n}{}$$

1+ (n/N), Where N=Number of respondents

=384

1+(384/30)

=30 respondents.

The study consisted of a sample of 30 respondents and all were male and female patients above 18 years attending health care services at the TB clinic, Ruharo Mission Hospital, Mbarara District.

3.3.2 Sampling procedure

The researcher first utilized stratified sampling procedure to create two sub groups, one for men and another for women. After creating the sub groups, the researcher used convenience sampling procedure to select the respondents for the study. In this procedure, the researcher conveniently selected any available respondents who met study criteria and agreed to voluntarily consent to participate in the study. This continued until the total of 30 respondents to be interviewed was achieved.

3.3.3 Inclusion criteria

The study included only male and female patients above 18 years attending health care services at the TB clinic, Ruharo Mission Hospital who were available at the clinic during the data collection period and were free and willing to voluntarily consent to participate in the study.

3.4 Definition of Variables

The independent variables for the study included:

Treatment compliance among TB/HIV co-infected patients

The dependent variables for the study included:

Socio economic factors

Health facility factors

3.5 Research Instrument

The researcher utilized a structured questionnaire to collect data from the respondents. The questionnaire had both closed and open-ended questions and was written in English.

3.5.1 Pilot study

The questionnaire was pre-tested among 10 TB/HIV co-infected patients at Ruharo Mission Hospital to help the researcher to assess the reliability and relevancy of the tool before using it for data collection.

3.6 Data Collection Procedure

A letter of introduction was obtained from Kampala International University, introducing the researcher to the administration of Ruharo Mission Hospital seeking permission to carry out the study. After permission was granted, the administrator introduced the researcher to the in-charge of the TB clinic who then introduced the researcher to the respondents. The researcher administered the questionnaires to respondents from the TB clinic. This helped improve efficiency and maintain privacy during data collection. Data was collected for 3 days and the researcher interviewed 10 respondents every data collection day.

3.6.1 Data management

Data management included data editing before leaving the area of study to ensure that there were no mistakes or areas left blank, and any mistakes found were corrected before leaving the area of study. Data management also included double checking all the questionnaires for completion before losing contact with the respondents.

3.6.2 Data analysis and presentation

The study data was analyzed using SPSS version 22 after which it was presented in tables and transferred to Microsoft Excel 2010 for presentation of graphs and pie charts.

3.7 Ethical Considerations

A letter of introduction was obtained from Kampala International University, introducing the researcher to the administration of Ruharo Mission Hospital seeking permission to carry out the study. After permission was granted, the administrator introduced the researcher to the in-charge

of the TB clinic who then introduced the researcher to the respondents. The study only commenced after the objectives of the study had been clearly and well explained to participants and they had understood and voluntarily consented to participate in the study. Respondents were assured of maximum confidentiality of all the information given and numbers were used instead of respondents' names.

3.8 Dissemination of results

The results were forwarded to UNMEB, a copy was submitted to KIU, another copy was given to the administration of Ruharo Mission Hospital and the researcher also got a copy for future reference.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION

4.1 Introduction

This chapter presented results from respondents. The researcher gathered data using interview guides. The findings were analyzed and presented in form of tables, figures and graphs where frequency and percentages were used. The study interviewed a sample of 30 respondents.

4.2 Demographic and social characteristics n=30

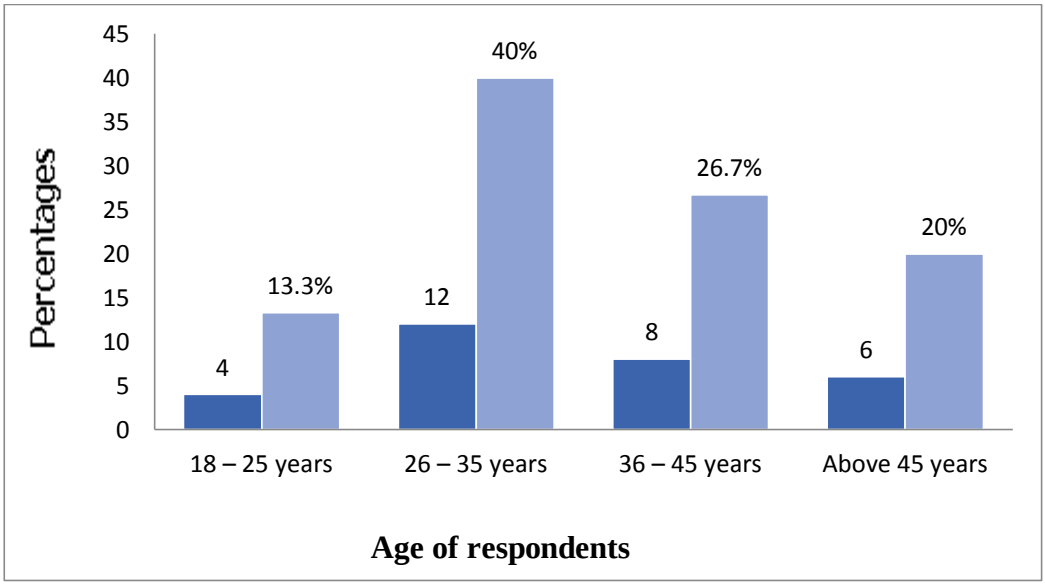

Figure 1: Distribution of respondents by age

Most respondents 12 (40%) respondents were in the age range 26 – 35 years, followed by 8 (26.7%) who were in the age range of 36 – 45 years, 6 (20%) were above 45 years while the least 4 (13.3%) were 18 – 25 years.

n=30

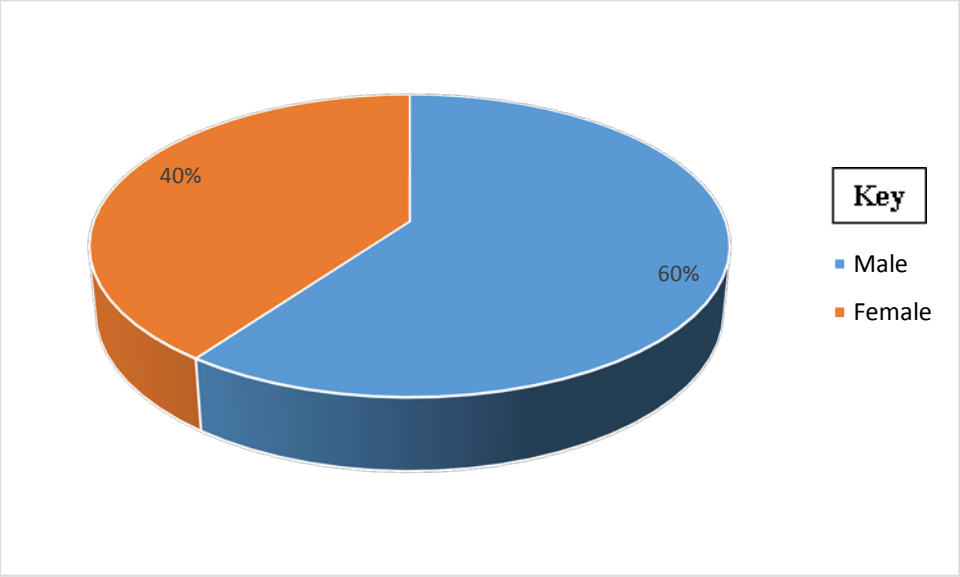

Figure 2: Distribution of respondents by gender

The majority of respondents 18 (60%) were male while the least 12 (40%) were female.

Table 1: Distribution of respondents by marital status n=30

Marital status	**Frequency**	**Percentage (%)**
Single	9	30
Married	15	50
Divorced	6	20
Total	**30**	**100**

Results showed that half 15 (50%) of the respondents were married, followed by 9 (30%) who were single while the least 6 (20%) were divorced.

n=30

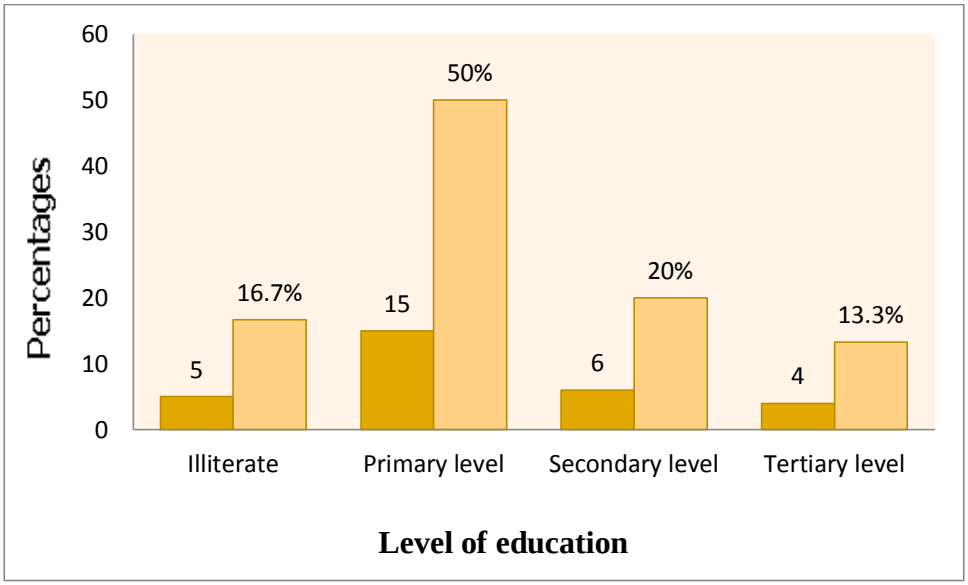

Figure 3: Distribution of respondents by level of education

Findings showed that half 15 (50%) of the respondents attained primary level education, followed by 6 (20%) attained secondary level education, 5 (16.7%) were illiterate while the least 4 (13.3%) attained tertiary level education.

Table 2: Distribution of respondents by occupation n=30

Occupation	**Frequency**	**Percentage (%)**
Self employed	20	66.7
Civil servant	6	20
Unemployed	4	13.3
Total	**30**	**100**

Most respondents 20 (66.7%) were self-employed, followed by 6 (20%) were civil servants while the least 4 (13.3%) were unemployed.

Table 3: Distance to health facility from respondents' home n=30

Distance	Frequency	Percentage (%)
1 – 2 km	4	13.3
3 – 4 km	6	20
5 – 6 km	12	40
More than 6 km	8	26.7
Total	**30**	**100**

Results showed that 12 (40%) respondents resided 5 – 6 km away from the nearest health facility, followed by 8 (26.7%) who resided more than 6 km, 6 (20%) resided 3 – 4 km while the least 4 (13.3%) resided 1 – 2 km away from the health facility.

4.3 Socio-economic factors affecting treatment compliance among TB/HIV co-infected patients

n=30

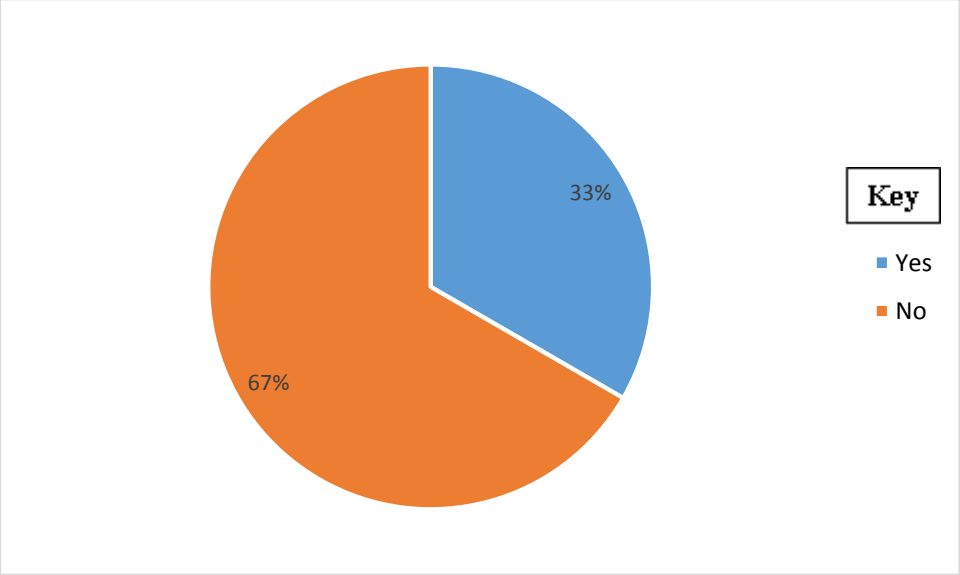

Figure 4: Distribution of respondents who had an anti TB treatment partner

The majority of respondents 20 (67%) did not have an anti TB treatment partner while the least 10 (33%) had an anti TB treatment partner.

Table 4: Whether respondents' partner had been supportive as far as taking anti-TB Drugs

n=10

Responses	Frequency	Percentage (%)
Yes	8	80
No	2	20
Total	**10**	**100**

Out of the 10 respondents who reported receiving support from their partners as far as taking anti TB drugs, most 8 (80%) said their partners had been supportive as far as taking anti TB drugs while the least 2 (20%) said they had not been supportive.

n=30

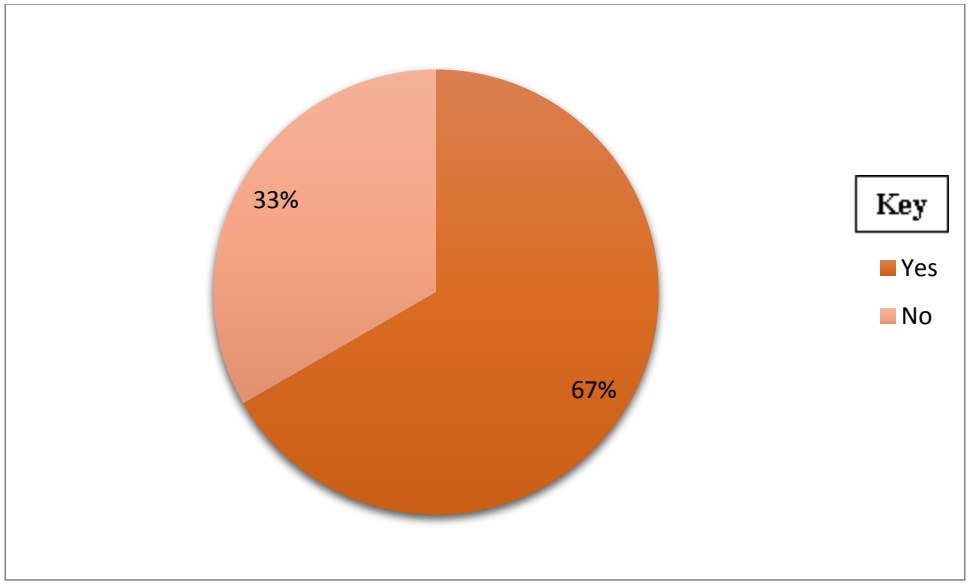

Figure 5: Whether respondents at times felt like not taking anti TB drugs

The majority of respondents 20 (67%) reported that they sometimes felt like not taking anti TB drugs while the least 10 (33%) never felt so.

Table 5: Reasons why respondents at times felt like not taking anti TB drugs

n=20

Reasons	Frequency	Percentage (%)
Medication fatigue and taking too many tablets	10	50
Fear of side effects	6	30
Not noticing much change	4	20
Total	**20**	**100**

Out of the 20 respondents who reported feeling like not taking anti TB drugs, half 10 (50%) reported medication fatigue and taking too many tablets as a reason, compared to 4 (20%) reported not noticing much change.

n=30

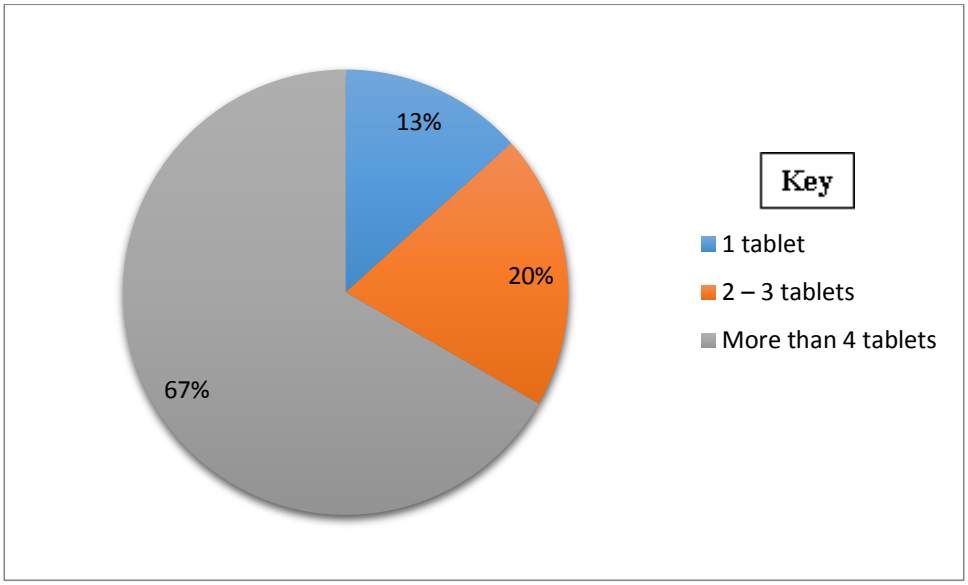

Figure 6: Number of tablets taken daily

Most respondents 20 (67%) reported that they were required to take more than 4 tablets daily, compared to 4 (13%) reported 1 tablet.

n=30

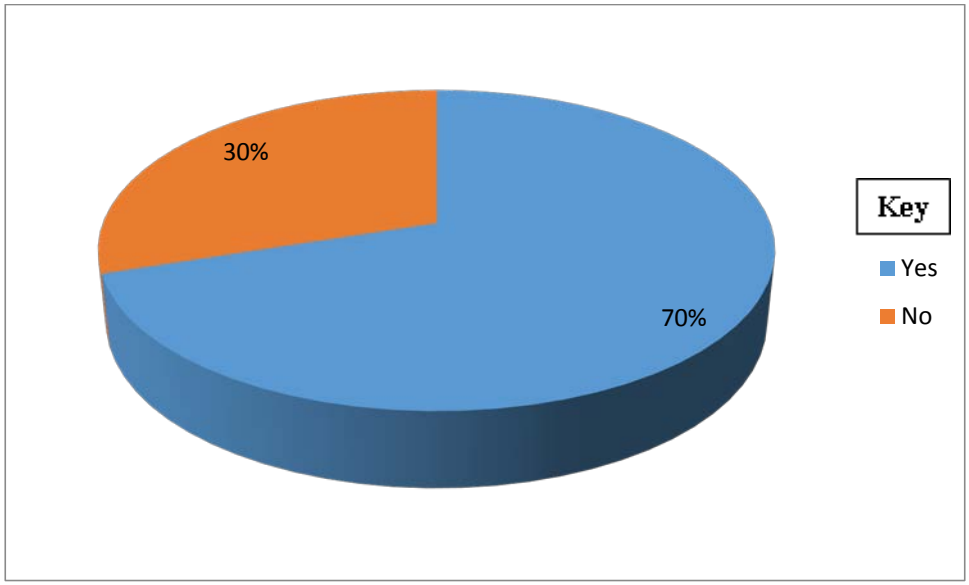

Figure 7: Whether high number of tablets taken per day hinders adherence to anti TB drugs

The majority of respondents 21 (70%) agreed that high number of tablets taken per day hinders adherence to anti TB drugs while the least 9 (30%) disagreed.

Table 6: Duration required to take TB drugs n=30

Duration	**Frequency**	**Percentage (%)**
Less than 2 months	3	10
2 – 3 months	5	16.7
4 – 6 months	10	33.3
More than 7 months	12	40
Total	**30**	**100**

Results showed that 12 (40%) respondents reported that they were required to take TB drugs for more than 7 months, followed by 10 (33.3%) who reported a period of 4 – 6 months, 5 (16.7%) required 2 – 3 months while the least 3 (10%) reported less than 2 months.

Table 7: Whether duration of taking TB medication hinders adherence to drugs

n=30

Responses	Frequency	Percentage (%)
Yes	30	100
No	0	0
Total	**30**	**100**

All of the respondents 30 (100%) reported that the duration of taking TB medication hinders adherence to drugs. n=30

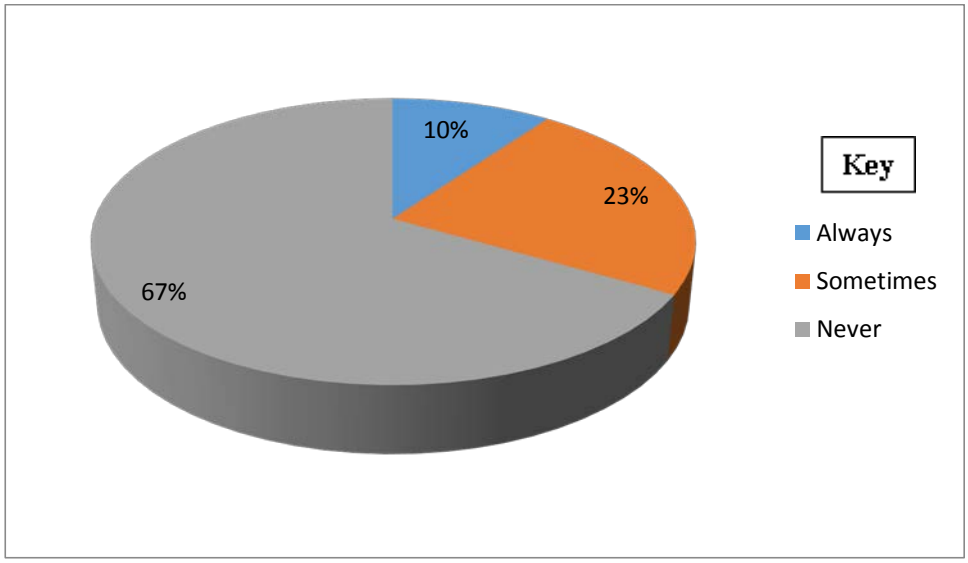

Figure 8: Whether respondents had any physical difficulty in opening medicine containers, handling small tablets and swallowing difficulties

The majority of respondents 20 (67%) reported that they never had physical difficulties in opening medicine containers, compared to 3 (10%) always had difficulties.

Table 8: Whether there is any cost attached to TB investigations n=30

Responses	Frequency	Percentage (%)
Always	0	0
Sometimes	0	0
Never	30	100
Total	**30**	**100**

All of the respondents 30 (100%) reported that there is no cost attached to TB investigations.

4.4 Health facility factors affecting treatment compliance among TB/HIV co infected patients

n=30

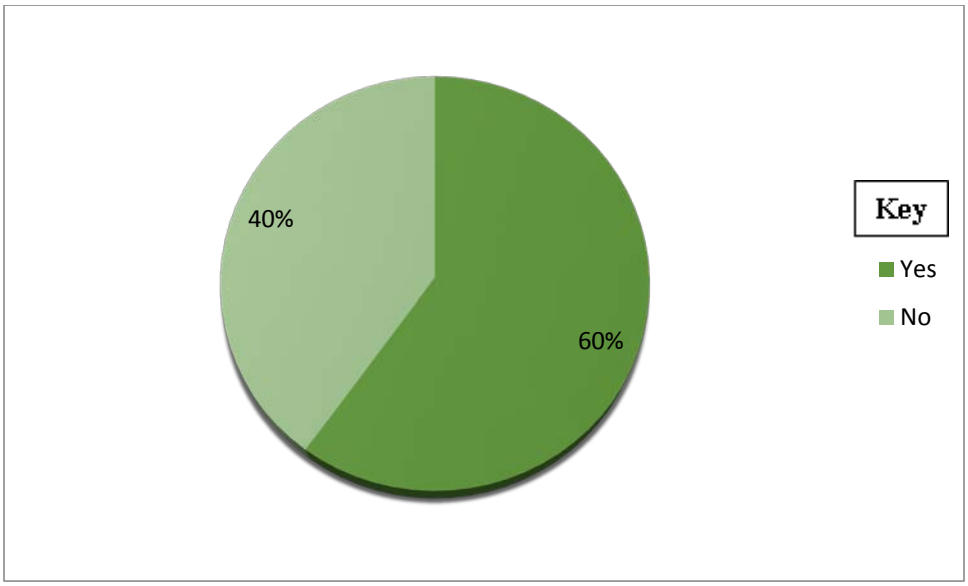

Figure 9: Whether respondents had ever been taught how to take anti TB drugs

Most respondents 18 (60%) had ever been taught how to take anti TB drugswhile the least 12 (40%) had never been taught how to take anti TB drugs.

Table 9: Source of information on how to take anti TB drugs

n=18

Information source	Frequency	Percentage (%)
Peers	0	0
Friends/Relatives	0	0
Elders	0	0
Health workers	18	100
Total	**18**	**100**

All of the 18 (100%) respondents who were taught how to take anti TB medication were taught by health workers and they reported that the medication should be taken in the mornings after taking meals.

n=30

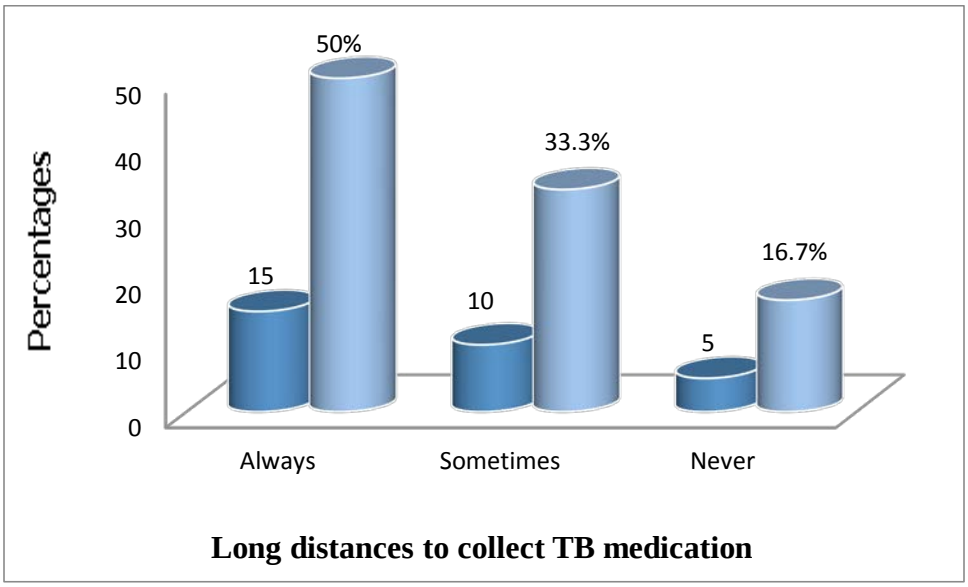

Figure 10: Long distance to collect TB medication affects compliance to anti TB drugs

Half of the respondents 15 (50%) reported that long distance to collect medication always affected compliance to anti TB drugs, followed by 10 (33.3%) who said it sometimes affected while the least 5 (16.7%) said it never affected them.

Table 10: Unavailability of shortage of health workers hinders adherence to TB drugs

n=30

Responses	**Frequency**	**Percentage (%)**
Always	20	66.7
Sometimes	6	20
Never	4	13.3
Total	**30**	**100**

Most respondents 20 (66.7%) reported that unavailability or shortage of health workers hinders adherence to TB drugs, followed by 6 (20%) who said it sometimes affected them while the least 4 (13.3%) said it never affected them.

Table 11: Unavailability of shortage of drugs hinders adherence to TB drugs

n=30

Responses	**Frequency**	**Percentage (%)**
Always	30	100
Sometimes	0	0
Never	0	0
Total	**30**	**100**

All of the respondents 30 (100%) reported that unavailability or shortage of drugs hinders adherence to TB drugs.

Table 12: Long waiting time to receive services/drugs hinders adherence to TB drugs

n=30

Responses	**Frequency**	**Percentage (%)**
Always	7	23.3
Sometimes	20	66.7
Never	3	10
Total	**30**	**100**

Most respondents 20 (66.7%) reported that long waiting time to receive services/drugs sometimes hinders adherence to TB drugs, compared with 3 (10%) said it hindered adherence.

Table 13: Fear of discrimination from the community or health workers had made TB patients avoid taking their treatment n=30

Responses	**Frequency**	**Percentage (%)**
Always	18	60
Sometimes	7	23.3
Never	5	16.7
Total	**30**	**100**

Most respondents 18 (60%) reported that fear of discrimination from the community or health workers always made TB patients avoid taking their treatment, compared to 5 (16.7%) said it never made them avoid taking their treatment.

n=30

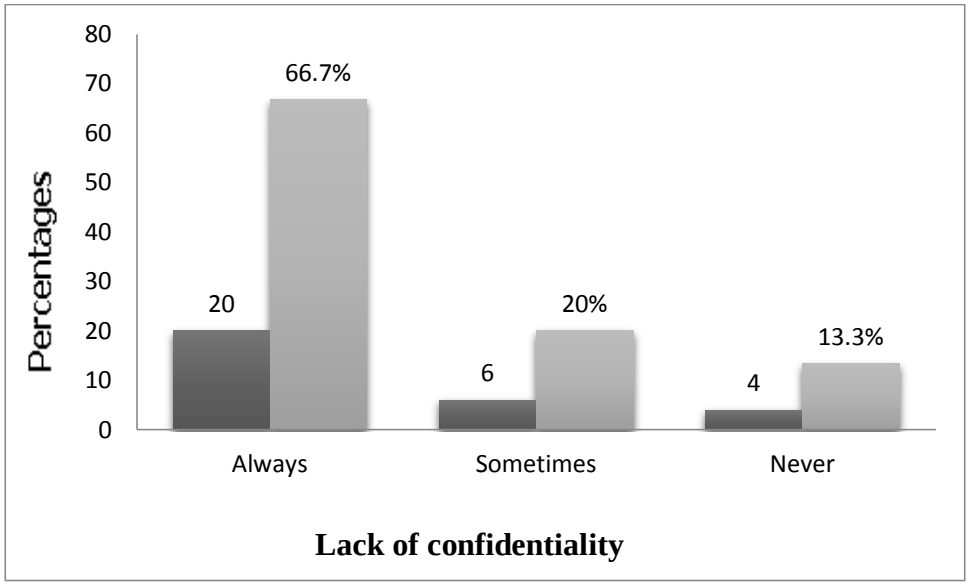

Figure 11: Lack of confidentiality and privacy in TB services hinders TB patients from availing themselves to the service

The majority of respondents 20 (66.7%) reported that lack of confidentiality and privacy in TB services always hindered TB patients from availing themselves to the service, 6 (20%) reported that it sometimes hindered TB patients while the least 4 (13.3%) said it never hindered TB patients.

CHAPTER FIVE
DISCUSSION, CONCLUSIONS, RECOMMENDATIONS AND NURSING IMPLICATIONS

5.0 Introduction

This chapter presented the discussion of findings, conclusions and recommendations of the study which were obtained after data analysis.

5.1Discussion of findings

According to the research findings majority of respondents 20 (67%) studied did not have an anti TB treatment partner and this study finding was in line with Engelbrecht, Heunis and Kigozi (2014) whose study in South Africa showed that lack of support by the partner as well as low encouragement and motivation were some of the social economic factors affecting treatment compliance among TB/HIV co-infected patients. This implied that lack of anti TB treatment partner could affect treatment compliance among TB/HIV co-infected patients.

Furthermore, out of the 10 respondents who reported receiving support from their partners as far as taking anti TB drugs, most 8 (80%) said their partners had been supportive as far as taking anti TB drugs and this study finding was consistent with a study done by Engelbrecht,Heunis and Kigozi(2014) in South Africa which revealed that lack of support by the partner as well as low encouragement and motivation were some of the social economic factors affecting treatment compliance among TB/HIV co-infected patients . This could be due to good cooperation among family members.

According to the research findings majority of respondents 20 (67%) reported that they sometimes felt like not taking anti TB drugs and the findings are in support of those of Ashan*et al*, (2012) whose study revealed that many prescribed tablets to be taken on a daily basis for a long period is one of the major social economic factors affecting treatment compliance among TB/HIV co-infected patients. This could be because of the bulk of medication given and so they get tired of taking them.

Most respondents 20 (67%) reported that they were required to take more than 4 tablets daily and the findings are in support of those of Ashan*et al*, (2012) whose study revealed that many

prescribed tablets to be taken on a daily basis for a long period is one of the major social economic factors affecting treatment compliance among TB/HIV co-infected patients. This shows that taking of many tablets daily greatly hindered adherence to these medications as patients suffered from medication fatigue, hence improved medications and regimens requiring fewer drugs to be taken daily will greatly improve adherence to the medication.

More so, most of respondents 21 (70%) agreed that high number of tablets taken per day hinders adherence to anti TB drugs and the findings are in support of those of Ashan*et al*, (2012) whose study revealed that many prescribed tablets to be taken on a daily basis for a long period is one of the major social economic factors affecting treatment compliance among TB/HIV co-infected patients. This shows that taking of many tablets daily greatly hindered adherence to these medications as patients suffered from medication fatigue, hence improved medications and regimens requiring fewer drugs to be taken daily will greatly improve adherence to the medication.

Results showed that 12 (40%) respondents reported that they were required to take TB drugs for more than 7 months and the findings are in support of those of Ashan*et al*, (2012) whose study revealed that many prescribed tablets to be taken on a daily basis for a long period is one of the major social economic factors affecting treatment compliance among TB/HIV co-infected patients. This showed that long duration of taking medication could greatly affect adherence to anti TB drugs, hence measures should be put in place to reduce the duration of taking medication in an effort to improve adherence.

The majority of respondents 20 (67%) reported that they never had physical difficulties in opening medicine containers, handling small tablets and swallowing difficulties and this study finding was in agreement with Odusanya and Babafemi (2012) whose study showed that some of the social economic factors affecting treatment compliance among TB/HIV co-infected. This demonstrated that in this case, failure to adhere to medication could not be attributed to physical difficulty in opening medicine containers but to other factors, patients include physical difficulty in complying for example opening medicine containers, handling small tablets and swallowing difficulties which may sometimes be due to the severity of the illness which all affects taking of medication as required.

All of the respondents 30 (100%) reported that there is no cost attached to TB investigations of which the finding was contrary to Mtei, Matee, Herfort, Bakari and Horsburgh (2009) whose study in Tanzania showed that some of the social economic factors affecting treatment compliance among TB/HIV co-infected patients is high cost of medication. This implied that in this case, failure of TB/HIV patients to comply with treatment could not be attributed to high costs attached to TB investigations but to other factors like the health facility factors affecting treatment compliance among TB/HIV co infected patients.

According to the research findings, most respondents 18 (60%) studied had ever been taught how to take anti TB drugs and the findings are contrary to the study done by Konstantinos, (2010) which showed that some of the social economic factors affecting treatment compliance among TB/HIV co-infected patients include insufficient knowledge and awareness about the disease. This could be because the health workers are strongly sensitizing the patients about the disease.

All of the 18 (100%) respondents who were taught how to take anti TB medication were taught by health workers and they reported that the medication should be taken in the mornings after taking meals and this study finding was contrary to Heunis*et al* (2011) who revealed that unavailability or shortage of health workers led to inappropriate delays to receive medication as well as counseling services on the importance of adherence to medication as health facility factors affecting treatment compliance among TB/HIV co-infected patients. This showed that in this case, failure to adhere to anti TB drugs among TB/HIV co infected patients was in this case not attributed to lack of health education on how to take anti TB drugs but on other factors.

Half of the respondents 15 (50%) reported that long distance to collect medication always affected compliance to anti TB drugs and the findings are in agreement with Dale *et al,* (2012) whose study findings revealed that some of the social economic factors affecting treatment compliance among TB/HIV co-infected patients is the long travel distances and related transportation costs to health centers which creates a significant burden on patients, while 'special food' expenditures add to their financial constraints .This could be because most patients stay very far away from the hospital.

Most respondents 20 (66.7%) reported that unavailability or shortage of health workers hinders adherence to TB drugs. This study finding was not different from another study revealed that unavailability or shortage of health workers which led to inappropriate delays to receive medication as well as counseling services on the importance of adherence to medication as health facility factors affecting treatment compliance among TB/HIV co-infected patients (Heunis*et al*, 2011). This showed that the availability of health workers should be ensured in an effort to improve adherence to anti TB drugs among TB/HIV co infected patients.

All of the respondents 30 (100%) reported that unavailability or shortage of drugs hinders adherence to TB drugs. This study finding was in agreement with Heunis *et al* (2011) study which revealed that unavailability or shortage of health workers which led to inappropriate delays to receive medication as well as counseling services on the importance of adherence to medication as health facility factors affecting treatment compliance among TB/HIV co-infected patients. This could be because this could bring about the patients to be diaspointed after moving long distances only to find no drugs.

Most respondents 18 (60%) reported that fear of discrimination from the community or health workers always made TB patients avoid taking their treatment. This study finding was supported by Daviaud and Chopra (2013) who revealed fear of discrimination from the community and health workers as well as from the patient's family members as some of the health facility factors affecting treatment compliance among TB/HIV co-infected patients. This demonstrated that discrimination of patients with these diseases remained highly rampant and this greatly contributed to poor rates of adherence to the medication as patients feared being seen picking the medication.

The majority of respondents 20 (66.7%) reported that lack of confidentiality and privacy in TB services always hindered patients from availing themselves for the service. This study finding was in line with Nnoaham, Pool, Bothamley and Grant (2010) whose study revealed that perceived or actual lack of confidentiality and privacy in accessing TB/HIV services as health facility factors affecting treatment compliance among TB/HIV co-infected patients. This showed one of the major factors affecting adherence to medication among TB/HIV patients.

5.2 Conclusion

The study found out that respondents faced various social economic factors affecting treatment compliance among TB/HIV co-infected patients. For instance, most respondents did not have an anti TB treatment partner, sometimes felt like not taking anti TB drugs due to medication fatigueand taking too many tablets, fear of side effects of the medication and not noticing much change which was not surprising as most were required to take more than 4 tablets daily and were required to take TB drugs for more than 7 months. However, physical difficulties in opening medicine containers, handling small tablets and swallowing difficulties as well as costs attached to TB investigations were not among the social economic factors affecting treatment compliance among TB/HIV co-infected patients.

The study also found out that respondents faced various health facility factors affecting treatment compliance among TB/HIV co infected patients and although most respondents had ever been taught how to take anti TB drugs, factors such as long distance to collect medication, unavailability or shortage of health workers, unavailability or shortage of drugs hinders, long waiting time to receive services/drugs, fear of discrimination from the community or health workers as well as lack of confidentiality and privacy in TB services all affected adherence to anti TB drugs among TB/HIV co infected patients.

5.3 Recommendations

5.3.1 Recommendations for government/Ministry of Health

The Ministry of Health should ensure that there are adequate sensitization programs on the benefits and importance of compliance to TB/HIV medication as well as the potential dangers of failing to adhere.

The Ministry of Health should ensure that all hospitals and health institutions are well facilitated to offer outreach sensitization programs to improve community members' awareness and knowledge about the benefits and importance of compliance to TB/HIV medication.

The Ministry of Health should also endeavor to bring TB/HIV screening and testing services closer to the clients to reduce on distances covered to get to the health facilities which is also

another factor contributing to poor adherence. This could be done through opening up more facilities.

5.3.2 Recommendations for health workers at Ruharo Mission Hospital

Health workers should initiate and maintain community/peer support groups for patients who receive TB/HIV medication.

Health workers should always ensure ready availability of TB/HIV medication as inability to access medication/drugs at the health facility is one of the reported factors contributing to poor compliance.

Health workers should sensitize all TB/HIV co-infected patients on the importance of compliance to TB/HIV medication and they should also endeavor to provide private and confidential services to patients.

Health workers should also improve follow ups and supervision of TB/HIV co-infected patients in the community as well as ensure that they always supply medication with clear, easy to understand instructions.

Health workers should assist TB/HIV co-infected patients in the community to form and maintain community peer support groups in an effort to help them adhere to their medication.

There is also need for regular community outreaches to health educate community members about TB/HIV in an effort to reduce on the level of stigma and discrimination experienced by patients once people understand and appreciate these diseases.

5.3.3Recommendations for TB/HIV co-infected patients at Ruharo Mission Hospital

TB/HIV co-infected patients at Ruharo Mission Hospital should ensure they comply to their TB/HIV medication as this provides many benefits and advantages.

TB/HIV co-infected patients at Ruharo Mission Hospital should get actively involved in income generating activities to enable them to stop overreliance on other people for money and support from other people.

5.4 Implications to the nursing practice

The implications of these findings to the nursing practice include the following:

Health workers, especially those working with TB/HIV co-infected patients at Ruharo Mission Hospital and any other health care institution should take every opportunity to encourage and motivate these patients to ensure full compliance to TB/HIV co-infected patients as recommended by health workers as this has many benefits for them.

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Appendix I: Consent Form

My name is **NatumanyaMedard,** a student of KIU, Western Campus. I am carrying out a study to identify the factors affecting treatment compliance among TB/HIV co-infected patients at Ruharo Mission Hospital, Mbarara District.You have voluntarily consented to participate in the study and all the information you give will be kept confidential. You are under no obligation to participate in the study, and refusal to participate will not block your access to any services at the hospital.

I have explained the study the purpose and objectives of the study to the participant, and they have understood and voluntarily consented to participate in the study.

Researcher's Signature…….Date…….

(RESEARCHER)

The topic and its objectives have been fully explained to me, and I have understood and voluntarily agreed and consented to participate in the study.

Respondents Signature……Date……

(RESPONDENT)

Appendix II: Questionnaire

My name is **Natumanya Medard,** a student of KIU, Western Campus. I am carrying out a study to identify the factors affecting treatment compliance among TB/HIV co-infected patients at Ruraho Mission Hospital, Mbarara District.You have voluntarily consented to participate in the study and all the information you give will be kept confidential.s

Instructions

Please respond to all questions asked

Please answer as accurately as possible to enhance data quality

Section A: Demographic Characteristics

1) State your age in complete years…….

2) Gender

   Male ☐

   Female ☐

3) Marital status

   Single ☐

   Married ☐

   Divorced ☐

4) Level of education

   Illiterate ☐

   Primary level ☐

   Secondary level ☐

Tertiary level ☐

Others (specify)……..

5) Occupation

Self employed ☐

Civil servant ☐

Unemployed ☐

Others (specify)……..

6) Distance from your home to nearby health facility

1 – 2 km ☐

3 – 4 km ☐

5 – 6 km ☐

More than 6 km ☐

Section B: Socio-economic factors affecting treatment compliance among TB/HIV co-infected patients

7) Do you have anti TB treatment partner?

Yes ☐

No ☐

8) If yes in question 10 above, has your partner been very supportive as far as taking drugs is corrected?

Yes ☐

No ☐

9) Do you at times feel like not taking your anti TB drugs?

Yes ☐

No ☐

10) If yes to question 12 above, briefly explain why at times you feel like not taking your drugs?.....
.....

11) How many tablets are you required to take every day?

1 tablet ☐

2 – 3 tablets ☐

More than 4 tablets ☐

12) Does the high number of tablets taken per day hinder adherence to TB drugs?

Yes ☐

No ☐

13) How long are you required to take the TB drugs for?

Less than 2 months ☐

2 – 3 months ☐

4 – 6 months ☐

More than 7 months ☐

14) Does the duration of taking TB medication hinder adherence to TB drugs?

Yes ☐

No ☐

15) Do you have any physical difficulty in opening medicine containers, handling small tablets and swallowing difficulties?

Always ☐

Sometimes ☐

Never ☐

16) There are costs attached to TB investigations

Always ☐

Sometimes ☐

Never ☐

17) Does the cost attached to TB investigations affect patient access to the service?

Yes ☐

No ☐

Section C: Health facility factors affecting adherence to anti TB drugs among TB/HIV co infected patients

18) Have you ever been taught on how to take the anti TB drugs?

Yes ☐

No ☐

19) If yes from question 7 above, from whom did you obtain information of taking anti TB drugs from?

Peers ☐

Friends/Relatives ☐

Elders ☐

Health workers ☐

20) Briefly explain how you were taught to take the anti TB drugs?.....

……

……

……

21) Long distance to collect TB medication affects compliance to anti TB drugs?

Always ☐

Sometimes ☐

Never ☐

22) Unavailability or shortage of health workers hinder adherence to TB drugs

Always ☐

Sometimes ☐

Never ☐

23) Unavailability or shortage of drugs hinders adherence to TB drugs

Always ☐

Sometimes ☐

Never ☐

24) Long waiting time to receive services/drugs hinders adherence to TB drugs

Always ☐

Sometimes ☐

Never ☐

25) Fear of discrimination from the community or health workers had made TB patients avoid taking their treatment?

Always ☐

Sometimes ☐

Never ☐

26) Lack of confidentiality and privacy in TB services hinders TB patients from availing themselves to the service?

Always ☐

Sometimes ☐

Never ☐

Thanks for your participation

Appendix III: Introductory Letter

KAMPALA INTERNATIONAL UNIVERSITY
WESTERN CAMPUS
EXPLORING THE HEIGHTS

School of Nursing Sciences,
P.O.BOX 71 Bushenyi, Ishaka
Tel: +256 (0) 701 975572
E-mail: akabanyoro@gmail.com
Website:http://www.kiu.ac.ug

Office of the Dean - School of Nursing Sciences

Date: 01/Feb. /2018

To:

.....

.....

Received 08/2/2018

RUHARO MISSION HOSPITAL
P.O. Box 14, MBARARA
08 FEB 2018
EXECUTIVE DIRECTOR

Dear Sir/Madam,

RE: NATUMANYA MEDARD **DNS/E/6237/163/DD**

The above mentioned is a student of Kampala International University School of Nursing Sciences undertaking Diploma in Nursing Science – Extension and he is in his final academic year.

He is recommended to carry out his data collection within two weeks from the time of approval as a partial requirement for the award of the Diploma in Nursing Science.

His topic is: **FACTORS AFFECTING TREATMENT COMPLIANCE AMONG TB/HIV CO-INFECTED PATIENTS AT RUHARO MISSSON HOSPITAL MBARARA DISTRICT.**

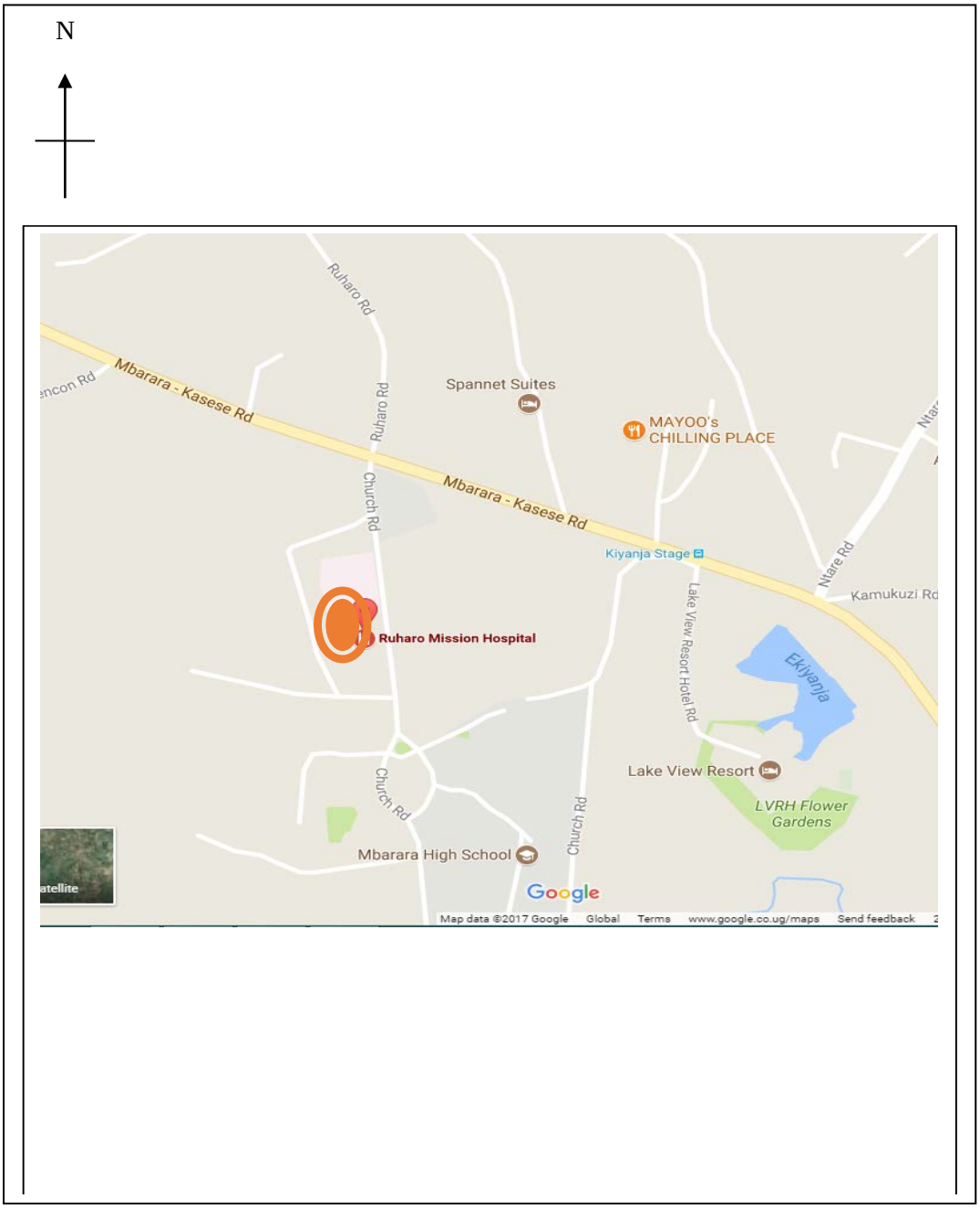
Any assistance rendered to him will be highly appreciated.

KAMPALA INTERNATIONAL UNIVERSITY
01 FEB 2018
ASSOC. DEAN SOH
WESTERN CAMPUS

Thank you in advance for the positive response.

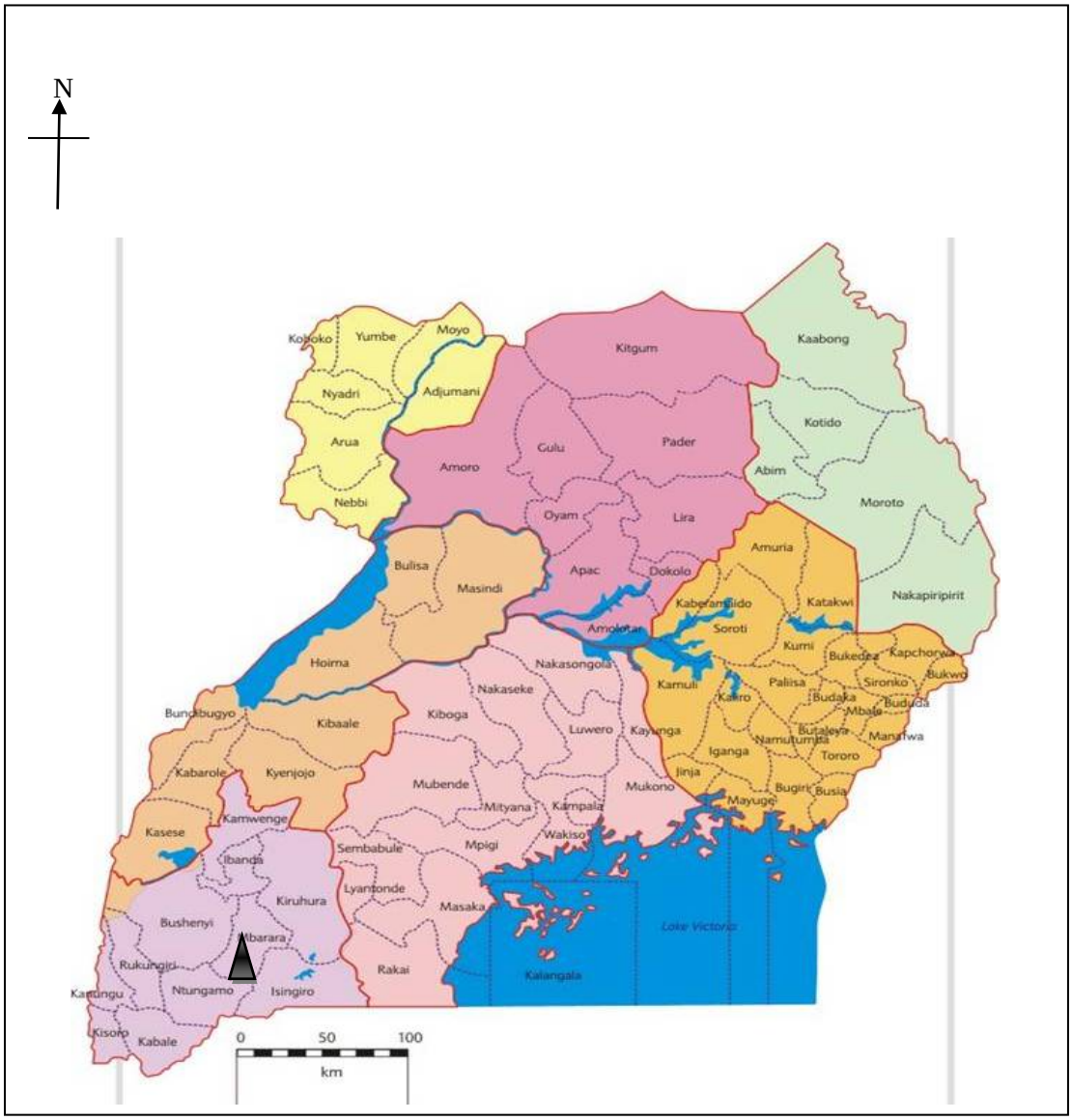
.....
Baluku Yosiah
RESEARCH COORDINATOR
Tel: +256782-835901/756-013899
Email: balyos766@gmail.com

Appendix IV: Map of Mbarara district showing Ruharo Mission Hospital



Key: Ruharo Mission Hospital

Appendix V: Map of Uganda showing Mbarara District



Key: ▲ Mbarara District