THE PREVALENCE OF TUBERCULOSIS IN HIV/AIDS PATIENTS. A CASE OF COMBONI HOPITAL

BY

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DECLARATION

I TOM MBOYA NYANG'WARA declare that this desertation is my original work and has not been submitted for any other academic award to any University or Institution of higher learning.

RESEARCHER

Signed …… Date……

TOM MBOYA NYANG'WARA

SUPERVISOR

Supervisor's name ……..

Signature……..date……..

DEDICATION

This work is devoted to my family members: my wife Emily, my children, Yvonne and Michael.

Acknowledgement

I am indebted to all the academic staff in Kampala International University Western Campus and classmates who assisted me in the preparation of this research. Special appreciation goes to my supervisor. Finally I am grateful to all the participants who participated in the study.

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List of Acronyms

AIDS-Acquired Immune Deficiency Syndrome

ART-Anti Retroviral Treatment

CBTBCDOTS- community based TB care with Direct Observatory Therapy

CV-Community Volunteers

HIV-Human Immunodeficiency Syndrome

MDR-Multi Drug Resistance

NCC-TB/HIV National Coordination Committee for TB and HIV

SCHW-Sub County Health Workers

TB-Tuberculosis

WHO-World Health Organization

ABSTRACT

In this study, the prevalence of Tuberculosis (TB) among HIV/AIDS patients Comboni Mission hospital was investigated. In addition, the comparison between microscopical and radiological techniques of TB diagnosis was studied as well as the specimen of most diagnostic value.

Out of 86 confirmed Acquired Immunodeficiency Syndrome (AIDS) patients examined microscopically with Ziehl Neelson (ZN) cold staining method for Acid Fast Bacilli (AFB) in sputa, were positive for AFB showing a prevalence of 13.8%. the prevalence of TB in AIDS patients with regards to age group and sex distribution showed the highest number of positive cases to be in age group 21-30 yr (5.8%), males made up of 7 (8.1%) and females (5.8%).

The radiological technique proved more sensitive with 52 (60%) positive cases than the microscopic technique with only 12 (13.9%). In the study of the most valuable specimen, early morning specimens (Collection samples) were of more diagnosis value than others (collected at the clinic between 9am and 12 noon) and gave the highest positive result of 13.9% while samples I and III were 10.5% and 9.3% respectively.

The high proportion of negative results (86%) obtained from microscopic examination underscores the need for cultural method and clinical diagnosis to accurately identify and confirm TB in HIV/AIDS patients who are sputum negative but may be co-infected. This work confirms that there is a close link existing between active tuberculosis and HIV/AIDS infection in Ile-Ife, Nigeria. This calls for urgent need to always screen HIV carriers for TB and recommend preventive therapy to stop latent TB developing into active form as advocated by the UNAIDS (WHO).

CHAPTER ONE

1.0 Introduction

In this chapter, there is the background, the problem statement, objectives, and significance of the study. It elaborates on the concepts of Tuberculosis, what it is and how it spreads. It further gives an insight on the origin of the problem statement and how the problem has affected the case study.

1.1 Back ground

Tuberculosis (TB) also known as Koch's disease is a systematic mycobacterium infection generally caused by mycobacterium tuberculosis, but also occasionally, M.bovis. In most cases, the lungs are involved (pulmonary tuberculosis) but other organs such as the brain, intestines and bones may also be affected (AMREF 1999, communicable diseases). TB is endemic in most developing countries, and mostly in Africa. The disease is on the increase mostly in countries with HIV/AIDS problem. If left untreated or treated inadequately, TB can kill or render the person disabled for life. Because of its frequent and severity, TB is always an important public health problem (AMREF 1999, communicable diseases)

1.1.1Burden of Tuberculosis

Mycobacterium tuberculosis infects a third of the world's population. In 2003 there were an estimated 8.8 million new cases of tuberculosis (TB) worldwide (WHO, 2005). The African region (24%), South-East Asia region (35%), and Western Pacific region (22%) together accounted for 82% of all notified cases and similar proportions of new smear positive cases(WHO, 2005). Developing countries had 95% of TB cases and 98% of TB deaths (WHO, 2005). Uganda is one of the world's 22 high-burden countries with TB. The country has an estimated annual risk of infection (ARI) of 3% -equivalent to 150-165 new smear positive TB cases per 100,000 population per year or 300-330 total TB cases per 100,000 per year. Uganda is yet to attain the global case detection and treatment success targets of 70% and 85%,

respectively. In 2003, the country detected 52% of the expected new smear positive cases. Of these cases, 67.6% were successfully treated.

1.1.2 Burden of HIV/AIDS.

At the end of the year 2004, a total of 39.4 (35.9 – 44.3) million people were estimated to be living with HIV/AIDS worldwide, of whom 25.4 (23.4 – 28.4) million which is 64.5% were in sub-Saharan Africa and 7.1 million (18%) were in South East Asia, (UNAIDS/WHO, 2004).

In Uganda, an estimated two million people have been infected with Human Immunodeficiency Virus (HIV) and 900,000 people have died since the onset of the Acquired Immunodeficiency Syndrome (AIDS) epidemic. The national HIV sero-behavioural survey that was conducted in 2004/05 shows adult prevalence of 7% in the 15-59 age group. Currently, an estimated 120,000 - 150,000 people have AIDS in Uganda (MOH, HSSP-II). High mortality due to AIDS in Uganda has significantly contributed to the currently estimated 2.1 million orphans in the country, (MOH,HSSP-II).

1.1.3 Burden of TB-HIV co-infection

The human immunodeficiency virus (HIV) pandemic presents a massive challenge to the control of tuberculosis (TB) at all levels. Tuberculosis is also one of the most common causes of morbidity and the leading cause of mortality in people living with HIV/AIDS (PLWHA). By the end of 2000, about 11.5 million HIV-infected people worldwide were co-infected with M.tuberculosis. 70% of them were in sub-Saharan Africa, 20% in South-East Asia and 4% in Latin America and the Caribbean, (WHO,2004). In Uganda, the interaction of TB and HIV is increasing the burden of both diseases.

It is well established that HIV is the biggest risk factor for the development of active TB among individuals infected with M. tuberculosis. At present, an estimated 50% of TB patients are also co-infected with HIV, (MOH-NTLP, 2004). At the same time, TB remains a leading cause of

morbidity and mortality for PLWHA. An estimated 30% of all deaths among PLWHA are attributed to TB (MOH-NACP, 2003).

Uganda ranks 16th on the list of 22 high-burden tuberculosis (TB) countries in the world. In 2007, the country had almost 102,000 new TB cases, with an estimated incidence rate of 330 cases per 100,000 population. The DOTS (the internationally recommended strategy for TB control) case detection and treatment success rates (51 and 70 percent, respectively) for new sputum smear-positive (SS+) cases are still below the World Health Organization's (WHO's) global targets of 70 and 85 percent, respectively. These low rates are mainly due to insufficient case reporting, non- adherence to TB treatment, poor access to health care services, and a limited number of skilled staff and diagnostic facilities. In addition to these challenges, Uganda has the highest default rate of any high-burden country. According to UNAIDS, the prevalence of HIV/AIDS, at 5.4 percent, further exacerbates the problem of TB control. However, while the TB incidence rate is still quite high, it fell by 5.7 percent between 2006 and 2007, and TB mortality has declined over the past four years. Collaborative TB-HIV/AIDS activities are expanding slowly; in 2006, only one-quarter of TB patients were tested for HIV. According to WHO, around 38.7 percent of new TB patients are HIV positive. (WHO Global TB Report 2009)

According to WHO (Health report 2002) between 2002 and 2020, approximately 1000 million people worldwide will be newly infected with TB, of which 150 will die of TB, if control is not further strengthened. Presently, the principle factor which contributed to the development of TB is HIV/AIDS epidemic. Other predisposing factors are; overcrowding, staying in close contact with a TB patient who has not been on medication, staying with animals in the same house, general poor nutrition status due to poverty, lack of immunization, infection at the same time with or a recent history of measles and metabolic diseases such as diabetes mellitus. In the past, Tuberculosis treatment used to involve hospitalisation of patients thoughout the whole course of treatment, however, there used to be a high rate of defaulters, limited drug compliances, and high rates of emergency of multi drug resistance Tb and increase of toxicity of drugs in HIV/AIDS patients. The recent recommended approach to TB treatment by WHO is the CB-DOTS strategy (community based direct observed therapy short course), an inexpensive strategy that could

prevent millions of TB cases and deaths in the coming decade. DOTS strategy has five elements which are; political commitment, diagnosis, short course treatment with effective management, regular drug supply and systematic monitoring to assess the outcome of every patient that is started on the TB treatment plan. Since DOTS introduction, more than 17 million patients have received treatment under this strategy (the Lancet Vol.362 sept 13th 2003)

1.2 Statement of the problem

The epidemics of HIV/AIDS and TB are sweeping across Africa. About 25 million people in Africa are infected with HIV/AIDS, a third of which are also infected with TB (USAID, Press release, Geneva, 2007). An HIV/AIDS patient has 50% chance of developing TB within 2months. There is need to monitor the trend of TB in HIV/AIDS patients so as to impose controls and check on these TB patients. To avoid father infection, monitoring TB prevalence in these patients should be done in short time intervals like a period of six months so as to prevent the disease from spreading to many people or running out of control. Comboni Mission hospital has a problem determining the prevalence of Tb among HIV/AIDS patients, and as a result, control and treatment of TB in HIV/AIDS is difficult, which puts these patients in a more complicated state. More so, the community workers at large in Comboni don't know exactly how to deal with such cases effectively, due to lack of information.

1.3 Objectives

1.3.1 Main objective

To assess the prevalence of TB in HIV/AIDS patients visiting Comboni Hospital.

1.3.2 Specific objectives

1. To determine the prevalence of the number of TB cases in HIV/AIDS cases.
2. To determine the possible causes related to the prevalence of TB cases in HIV/AIDS at Comboni Hospital.
3. To determine the extent to which the CB-DOTS is being applied to TB patients, especially those with HIV/AIDS.

1.4 Research questions

1. What is the prevalence of TB in patient with HIV/AIDS that visit this hospital?
2. What has led to the prevalence of TB in HIV/AIDS patients in Comboni Hospital?
3. Is CB-DOTS being used in this hospital to treat TB patients, especially those with HIV/AIDS?

1.5 Significance of the study

1. The community was informed on how HIV/AIDS presents together with TB.
2. The community health workers was called upon to visit homes of new HIV/AIDS patients to assess progress and monitor drug taking and the risk paused to other house hold members.

CHAPTER TWO

2.0. Literature review

In this chapter literature reviewed presents the guiding themes of the study that include the previous writings about the prevalence of TB in HIV patients, the treatment of TB and HIV in hospitals.

2.1 Control of Tuberculosis in Uganda

Community based TB care (CBTBC) with directly observed therapy (DOTS) was adopted by the MOH in Uganda as the best strategy for controlling TB. To date, this strategy has been expanded to all districts in the country although the sub-county and patient coverage is still wanting. In the CBTBC with DOTS model, a public health worker (referred to as a Sub-County Health Worker (SCHW) links the formal health system to communities in their respective sub-counties. SCHWs conduct community mobilization, facilitate communities through their leaders to select community volunteers (CVs) and train those selected. In addition they supervise CVs and replenish their TB drugs fortnightly. The CVs are responsible for administering and directly observing therapy. The CVs are also responsible for referring the TB patients to health center for appropriate follow-up sputum testing.

2.2 Control of HIV/AIDS in Uganda

In the past five years (HSSP-I, 2000-2005), government focused on mainstreaming HIV/AIDS into all sectors and decentralization of the implementation plan. A comprehensive patient care package was developed which included the management of opportunistic infections (including TB), palliative care, and the provision of antiretroviral drugs. The home based care approach has been adopted to care for the persons living with AIDS at the community level and this has the advantage of relieving the already over strained health facilities. Challenges in the control of HIV/AIDS in Uganda include inadequate access to IEC messages, condoms and safe blood, limited coverage of VCT and PMTCT services, especially in the rural areas.

There is also limited access to clinical, palliative, and home based care, and HIV counseling and testing services, as well as inadequate supply of drugs including those for opportunistic infections and ART. In addition, human resource capacity in terms of numbers and skills poses a

special challenge especially in the areas of counseling, laboratory and clinical management for patients on ART. Anecdotal reports indicate increasing number of HIV positive patients that do not use condoms because they are on ART, a behavior that puts many people at risk of acquiring new infection.

2.3 Collaborative TB and HIV Programme Activities

Although some collaborative activities have been implemented in a few public facilities and NGOs like AIC, AIM, Mbuya Reach Out, Nsambya and TASO, these have not been standardized and depend largely on the knowledge and motivation of an individual health worker or counselor. An external evaluation of the TB Program that was carried out in May 2005 revealed that a number of activities with regard to TB-HIV collaboration were taking place and partners were engaged though following individualized approaches that were not always technically sound. A biannual review of the TB Program which was conducted by IUATLD1 and GDF2 mission in August 2005 showed that most health workers lacked knowledge on TB/HIV collaborative activities which resulted in poor implementation.

2.4 Coordination of TB/HIV collaborative activities in Uganda.

To coordinate the national response to the intersecting epidemic of TB and HIV, the Ministry of Health instituted the National Coordination Committee for TB/HIV collaborative activities (NCC-TB/HIV). The NCC-TB/HIV is charged with overall coordination of TB/HIV collaborative activities in the country. The NCC is chaired by the Assistant Commissioner of Health Services (National Disease Control) and is co-chaired by the Programme Managers for TB and for ACP/STDs. It is comprised of representatives from NTLP, NACP, WHO, development agencies, Civil Society Organizations (CSO), nongovernmental organizations, academic institutions, special groups (army, police etc), PLWHA, activists, patient-support groups and district representatives

The NCC is divided into four working groups;

- Policy & Guidelines
- District Implementation
- Advocacy, Communication and Social mobilization
- Monitoring and Evaluation.

Although the human immunodeficiency virus (HIV) infection pandemic has had a catastrophic impact on tuberculosis (TB) control efforts, especially in sub-Saharan Africa, most of the fundamental concepts reflected in the directly observed treatment, short course (DOTS) strategy still hold true in the HIV era. What has changed, and dramatically, is the importance of speedy and accurate TB diagnosis and the difficulty of achieving this. The disproportionate amount of smear-negative disease in sub-Saharan Africa, which shoulders two thirds of the global burden of HIV infection and acquired immunodeficiency syndrome, has greatly complicated TB case detection and disease control. Now, 15 years after TB rates began to soar in countries where HIV infection is prevalent, we have learned that the conventional approach—passively waiting for patients with advanced symptomatic disease to make their way to microscopy centers for diagnosis—has disastrous consequences. Without better diagnostic tools for TB and effective strategies for their implementation, transmission will not be interrupted, mortality will not be checked, and TB will not be controlled in areas where HIV infection is prevalent. Fortunately, a number of technical opportunities exist for the creation of improved diagnostic tests. Developing and exploiting such tests to support TB control in HIV-infected populations is an urgent priority. A substantial public sector effort is under way to work in partnership with the biotechnology industry to accelerate progress toward that goal. In this article, we will define the need for better TB tests and describe technologies being developed to meet that need. (Mark D. Perkins and Jane Cunningham, 2006).

2.5 Diagnostic priorities

Much is being done to identify HIV-associated TB more quickly by implementing active case finding and abbreviating clinical algorithms; clearly, however, better tests are needed.

The greatest need is for tests that can improve the detection of active TB among symptomatic individuals. Better tests could abbreviate the period between the onset of symptoms and the initiation of therapy by being more sensitive, faster to yield or simpler to use. An ideal test would combine these features in a simple point-of-care format that could replace microscopy and

culture and yield a confirmatory diagnosis at the first clinic visit. Such a test would, of course, have an important impact on both HIV-infected and HIV-uninfected populations.

Improved detection of multidrug resistant Tb (MDRTB) is also needed. Global surveillance data, when adjusted for prior TB, have not shown a close link between HIV infection and the risk for multidrug-resistant TB (MDR-TB). However, in some settings in developing countries, striking levels of HIV related MDR-TB have been found, often related to nosocomial transmission through hospitals and clinics. Recent reports, accompanied by substantial news coverage, of lethal outbreaks of extensively drug-resistant TB (XDR-TB) in South Africa and elsewhere have highlighted the need for rapid methods to identify highly resistant M. tuberculosis strains. Lastly, improved detection of latent infection with M. tuberculosis in patients with HIV infection, with greater negative and positive predictive values than current tuberculin skin testing, could better target preventive therapy.

2.6 Drug susceptibility testing

Disease control efforts in TB-endemic countries have traditionally focused on case detection and not on DST. In most developing countries, DST, where available, is usually performed on solid media, such as Lowenstein-Jensen. Results often come back after 8–18 weeks of waiting, during which time many patients with MDR-TB or XDR-TB may have died, transmitted their disease, or both. Disease control efforts in TB-endemic countries have traditionally focused on case detection and not on DST. Ten years ago, the phenomenon of MDR-TB gained attention as high prevalence foci in developing countries were recognized, prompting the expansion of DOTS treatment strategies to cover MDRTB (DOTS Plus). Recent recognition of clusters of rapidly fatal cases of XDR-TB has, in a similar way, underscored the need for expanded diagnostic strategies under DOTS.

2.7 TB control through community-based DOTS in Ndola, Zambia

Ndola, with a population of 500 000, has 42 townships with several shanty compounds. Back in 1995, performance indicators for the TB control programme were dismal. The cure rate was low,

at 15-20%; the default rate in the initial phase was 25%, i.e. 25% of the patient population did not complete the entire treatment regimen for this phase; and in 75% of smear-positive cases there was no follow-up sputum smear at 2 months.

Potential community resources for community-based DOTS (CB DOTS) included several community-based home care programmes for chronically ill HIV/AIDS patients, run by the Catholic Diocese of Ndola. One of these programmes incorporated TB care into their menu of services, and achieved treatment completion rates of more than 80%. Based on this, a pilot project introduced CB DOTS using the existing HIV/AIDS home care programmes.

New patients over the age of 15 with smear-positive TB from one shanty compound were given the option of receiving DOTS through an existing community-based HIV/AIDS home programme, using standard National Tobacco Control Programme guidelines. Community volunteers were trained to serve as DOTS treatment partners. Outcomes were compared to another shanty compound where ambulatory DOTS treatment was provided by health staff at the regular health centre.

During the study period, there were 104 new cases (72 smear positive) in the intervention compound, compared to 176 cases (96 smear positive) in the control compound. Among new smear-positive cases, treatment success was 61% in the compound employing CB DOTS, versus 48.9% in the shanty compound receiving DOTS through the health centre. The rate of default was 8.3% with CB DOTS compared to 22.9% in the health centre-based DOTS. There was evidence for a gradual and increasing acceptance of community volunteers in providing DOTS.

2.8 A case of Uganda

Two of the core components of DOTS (smear microscopy for diagnosis and direct observation of treatment) are still not routinely performed in all districts of Uganda. Treatment outcomes were reported for almost all patients included in the 2004 and 2005 cohorts of new smear-positive cases. However, in both years Uganda had the highest default rate of any high-burden country, despite the use of community-based TB care. Collaborative TB/HIV activities are expanding, but

still in 2006 only one quarter of TB patients were tested for HIV. Although funding needs for 2007–2008 are higher than for previous years, the amount available is lower and limited funding is expected from central government for 2007–2008, resulting in increasing funding gaps. Even where funds are allocated, disbursement and absorption are problematic. (WHO REPORT 2008 | Global Tuberculosis Control)

2.8.1 Control of Tuberculosis in Uganda

Community based TB care (CBTBC) with directly observed therapy (DOTS) was adopted by the MOH in Uganda as the best strategy for controlling TB. To date, this strategy has been expanded to all districts in the country although the sub-county and patient coverage is still wanting. In the CBTBC with DOTS model, a public health worker (referred to as a Sub-County Health Worker (SCHW) links the formal health system to communities in their respective sub-counties. SCHWs conduct community mobilization, facilitate communities through their leaders to select community volunteers (CVs) and train those selected. In addition they supervise CVs and replenish their TB drugs fortnightly. The CVs are responsible for administering and directly observing therapy. The CVs are also responsible for referring the TB patients.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

In this chapter the researcher used various methods of data collection, which included interview guide, questionnaire and observation among others. The research included different sessions of research design sampling techniques, data collection and data analysis, ethical considerations, and the anticipated problems.

3.1 Research design

This research was descriptive in nature, quantitative methods were employed because there was the issue of statistics, tables and percentages in order to help in describing observed activities.

3.2 Sampling techniques

Purposive and Random sampling technique was used to locate 42 respondents at Comboni hospital. All the study respondents had equal chances of being included in the sample. The simple random sampling was used with a homogenous population, that is, one composed of members who all possess the same attributes that the researcher was interested in measuring.

3.3 Study population and sample size

The study was carried out in Comboni hospital with 3 doctors, 10 nurses, 7 lab technicians and 10 midwives and 3 clinical officers. The study covered 42 respondents in Comboni hospital. The study population in these clusters included 3 doctors, 3 clinicians, 9 nurses, 6 lab technicians. A total of 21 respondents were consulted to get the reliable data related to irregularities existing in the current records system. The table below shows the selection of the respondents.

Category	Population	sample
Nurses	10	9
Doctors	3	3
Lab technicians	7	6
Clinicians	3	3
Total	23	21

3.4 Data Collection Methods and Instruments

3.4.1 Interviews:

Face to face interviews were conducted so as to hear from the persons dealing with records management in the records office, and the management of the hospital. This method was used to obtain first-hand information on how people feel about the current system being used, their hopes for the future system and recommendations they give. Interviews were used because: Interviews are cheaper and quicker to conduct because respondents give answers there and then compared to questionnaires that require typing, printing costs, the researcher gets primary data first hand from the authenticated personnel, while in questionnaires, one can never know who filled the questionnaires. With interviews, the researcher gets a chance to ask the same questions again for clarity, (Kvale, 1996).

3.4.2 Participation

The researcher participated physically in the running and maintenance of the current system used to get a feel of what really happens on the ground. Participation is preferred because: This will help the researcher to verify what was said in the interviews; get to know how users feel about the existing system, and gain a further insight of the system as compared to interviews where respondents may give you biased answers due to fear or lack of knowledge about

information systems, it will help the researcher verify reasons as to certain requirements desired by users.

3.4.3 Questionnaires

The researcher designed a series of questions that respondents answered at their own convenience, in order to get to know at length the strengths and weaknesses of the records system, the decisions they take with the available data, how soon they process records to get results. Questionnaires were used because: respondents would have enough time to give reasonable answers compared to interviews, respondents had a chance to write requirements without influence or fear of anything, and gave detailed answers thereby contributing towards system development.

3.4. 4 Procedure for data collection

The procedure of data collection involved the use of an introductory letter from the directorate of postgraduate studies and research and an informed consent letter from the researcher to the respondents. Interviews were conducted and where it was not possible, a questionnaire would be left behind and collected later.

3.4.5 Data analysis

Data was collected and analyzed as a means of interpreting it, to compile the report using Ms. Excel in generating tables and figures. The quantitative data was used to generate statistics of tables. Data from the field was processed and analyzed qualitatively using simple statistics, tables, pie charts percentages

3.6 Limitations to the study

The following are the limitations/ problems the researcher met during the duration of carrying out this study.

1. The researcher experienced delays from respondents who took the questionnaires about the study.
2. Lack of adequate financial support. But none the less, the researcher used the available resources to conduct the research.
3. It was not easy to get the right respondents to give you the right information that is relevant to the study. Some tended to shy away from the interviews and the questionnaires.
4. This study concerned patient information which is always confidential, so, in fear of violating confidentiality, the researcher was not always treated in a friendly manner

3.7 Ethical considerations

The researcher obtained an introductory letter from the school of Clinical Medicine and Dentistry, which was circulated in different data collection centers. Interviews were carried out upon making appointments with respondents, questionnaires were issued to those who did have time for interviews, and, all these were done after issuing an informed consent document to the respondent. In this informed consent, the respondents were told about the purpose of the research, confidentiality, security, and none monetary terms that punctuate the process of data collection or participation in data collection. In this case, the respondents were informed of the fact that they were to participate willingly in the survey not on monetary terms. This was to enable the researcher to collect valuable requirements as far as building the new system was concerned. The respondents then countersigned in agreement to participate in the research.

CHAPTER FOUR

4.0 STUDY FINDING AND PRESENTATION

4.1 introduction

This chapter presents the findings of the research in tabular and graphical form**.** Questionnaires, observation and interviews were used to gather data about the current system. The researcher used Microsoft Excel to analyze the data from the field. This chapter also covers the population, the sample, functional and non-functional requirements of the new system, and the existing system

4.2 Respondent by age and sex.

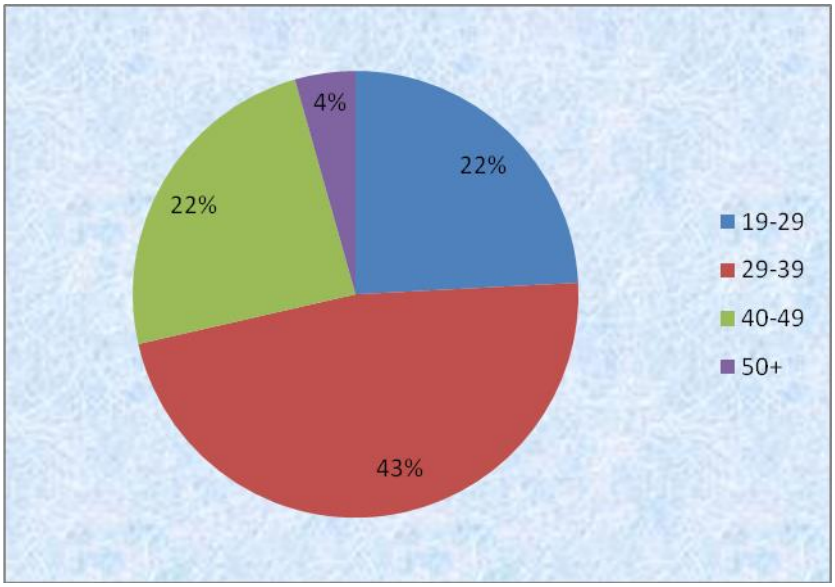
Table 1:shows the mean and standard deviation of age and sex

category		**Frequency (N = 23)**	**Percent of Sample**
Age	19-29	5	22%
	29-39	10	43%
	40-49	5	22%
	50+	3	4%
Sex	Male	15	67%
	Female	8	35%

The majority of participants were between the age of 29 and 39 years and this represented 43%. Those between the ages of 19 and 29 years were 22%, and the participants who were between the

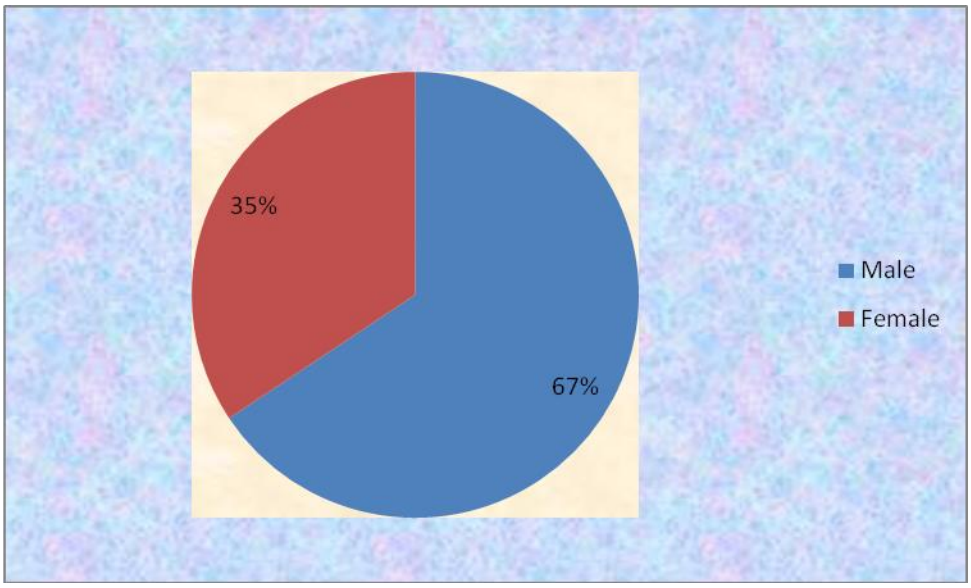
age of 40 and 49 were representing 22%. The sample had only 3 representing 50 years of age and above which was 4%.

Figure 1: shows the ages of respondents in percentages



source : primary data

Figure 2: the age distribution of respondents

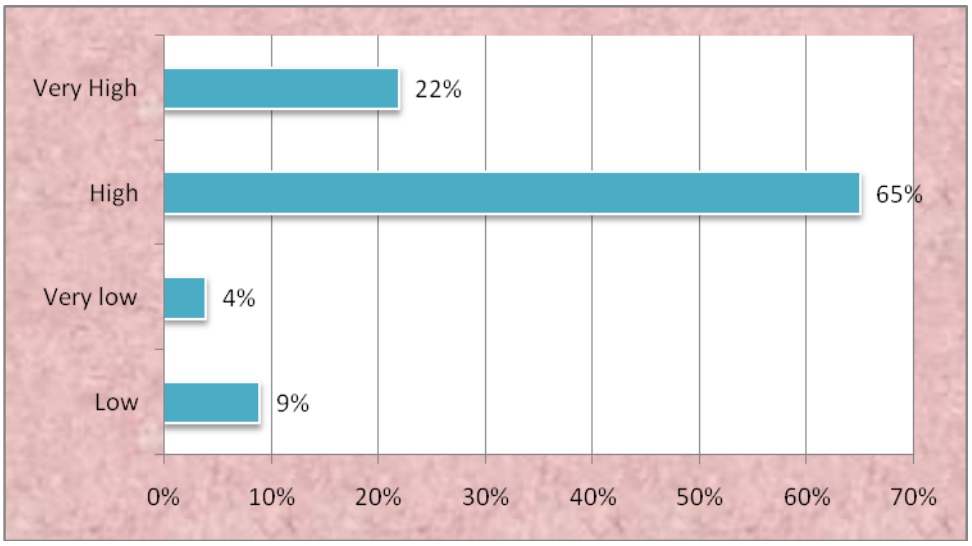


Source: primary data. The chart above indicates that the majority of the respondents were male during the survey.

Table 2:shows the findings on prevalence of TB in HIV/TB patients

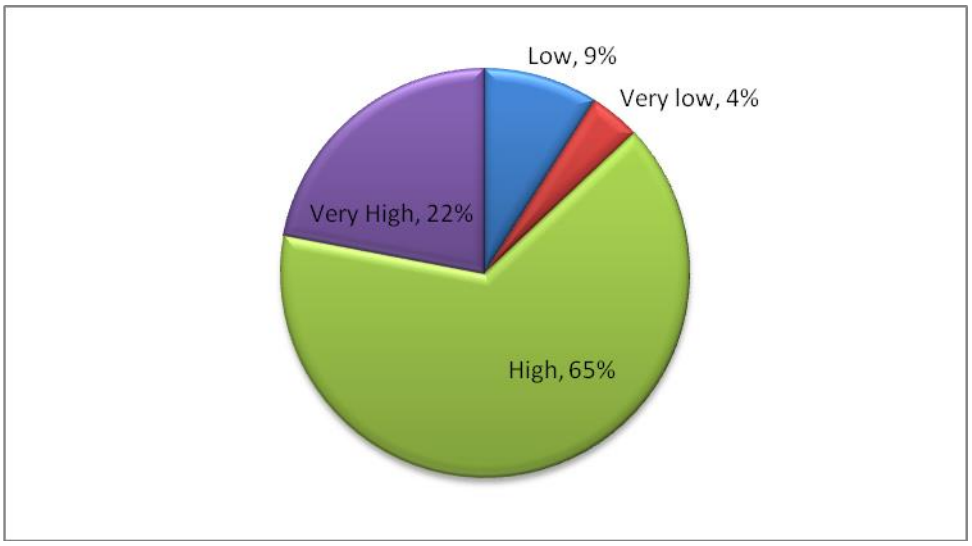
type	Frequency	Percentage (%)
Low	2	9
Very low	1	4
High	15	65
Very High	5	22
TOTAL	23	100

Figure 3; showing the findings on the prevalence of TB in HIV/AIDS patients



The pie chart above shows that the prevalence of TB among HIV is high about sixty five percent of the respondent.

Figure 4: showing the findings on the prevalence of TB in HIV/AIDS patients



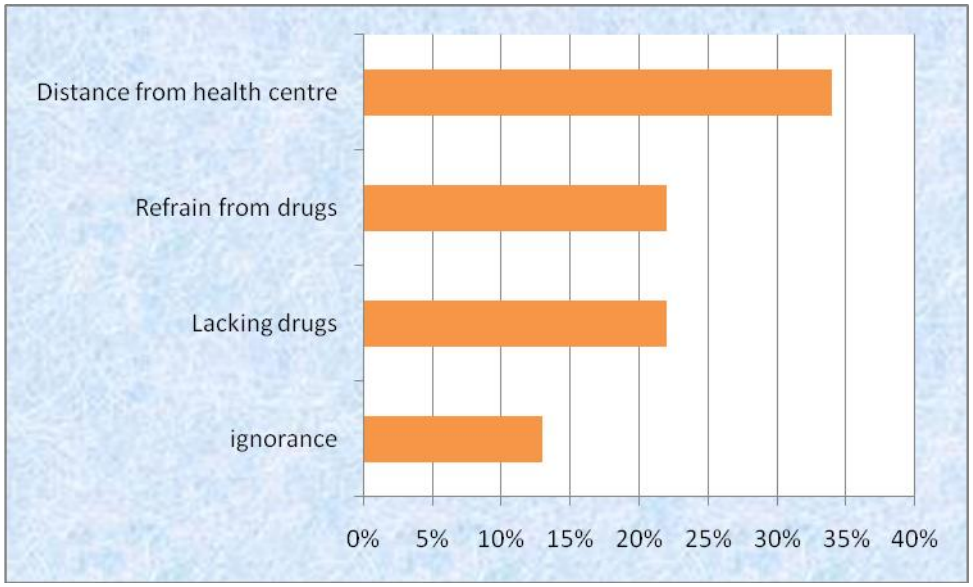
Considering the pie chart above, it is clear that there is a high prevalence of TB in HIV/AIDS patients, taking into account the high value 65%. This is where most of the respondents fall, then followed by very high that takes 22% of the population. Clearly, the researcher discovered that TB is a serious medical problem mostly, when the patient is also HIV positive.

Table 3:shows statistics on the causes of prevalence of TB in HIV/AIDS patients

	Frequency	**Percentage (%)**
ignorance	3	13%
Lacking drugs	5	22%
Refrain from drugs	5	22%
Distance from health centre	10	34%
Total	**23**	**100**

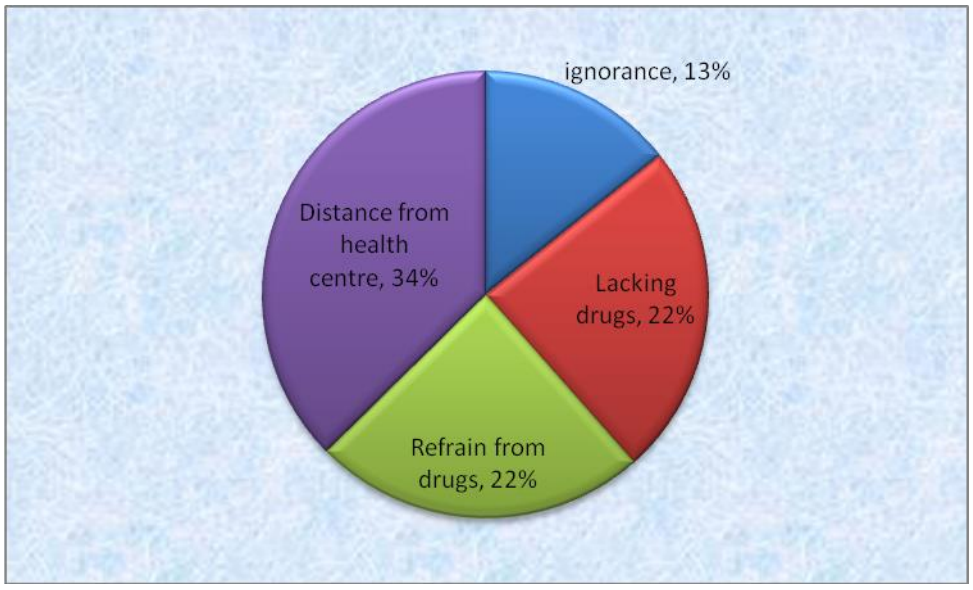
The table above shows that by distance to the health center is among the factors that leads to high prevalence and incidence of TB among the HIV patients, followed by lack of drugs, refrain from drugs and finally ignorance.

Figure 5: the causes of prevalence of TB in HIV/AIDS patients



Among the causes of tuberculosis among HIV patients, distance to health center is great and patients prefer not to seek treatment, lack of antituberculosis drugs is also contributing factor, ignorance is part of the factor since most patients are ignorance on the cause and prevention plus treatment of tuberculosis among the HIV patients.

Figure 6: : the causes of prevalence of TB in HIV/AIDS patients

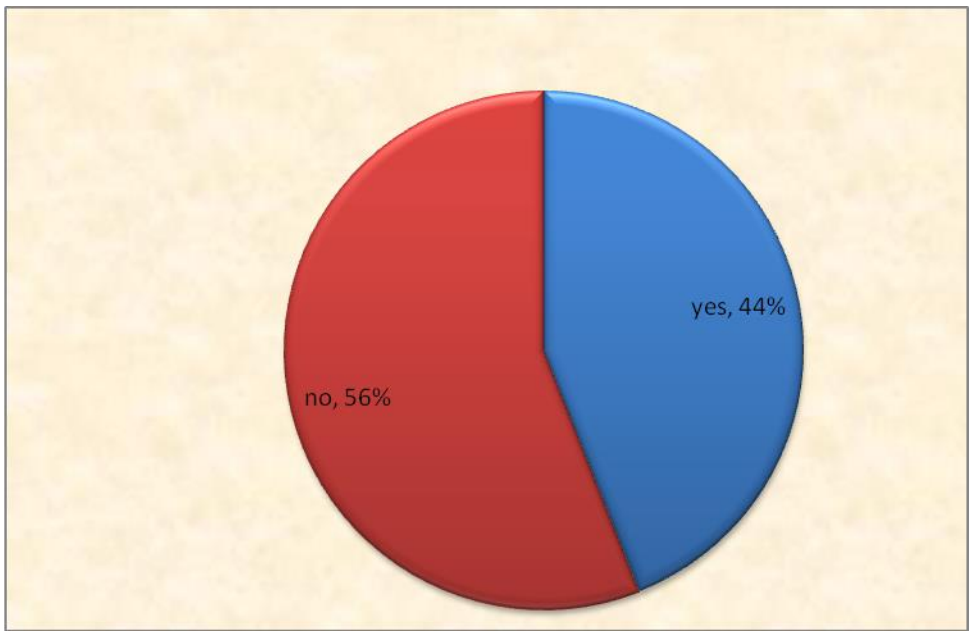


The charts above illustrate the fact that, there are various causes to the prevalence of TB in HIV patients, the biggest factor being the distance from the health centre, this means that most patients are very far away from health centers where they can go and get antibiotics, therefore, they sustain the infection of TB for some time. Those that refrain from drugs are 22%, implying that, whenever they feel okay, they stop taking the drugs, bearing in mind that TB treatment takes long time. Secondly, some are just tired of taking drugs; they want some reliefs off the medication, because it becomes tiresome. Another 22 percent lack drugs at their health centers just like any other developing country, Uganda can lack enough drugs to help TB and HIV patients. Therefore, the HIV patients who have TB tend to have a double edged problem, therefore, TB can easily linger on in HIV patients. Least of all are those who are ignorant about catching TB if have HIV. Some patients admit to doctors that they did not think or know that they can suffer from TB, with HIV, because they did not think that the two can easily go hand in hand. This is mainly due to the fact that they lack health science, or they don't have access to knowledge in form of written material, or talk show or they did not go to school.

Table 4:shows the use of CBT-DOTS in treatment of TB

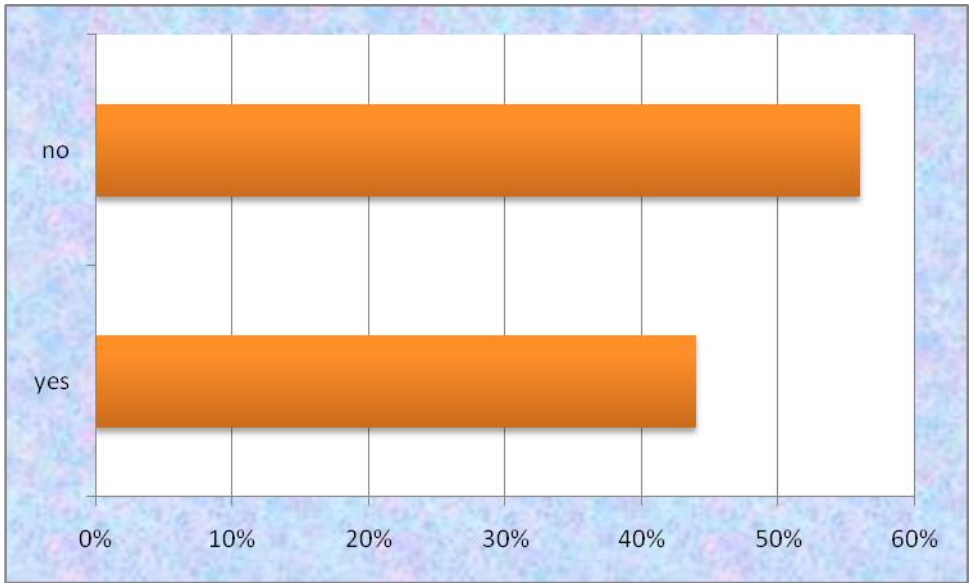
category	**Frequency**	**Percentage (%)**
yes	10	44%
no	13	56%
Total	**23**	**100**

Figure 7: shows the use of CBT-DOTS in treatment of TB



Source: primary data

Figure 8: shows the use of CBT-DOTS in treatment of TB



Source: primary data

The table and figures above indicate that the biggest percentage of the responds did not use CBT-DOTS in treatment of TB, mainly some did not know how to and others found it tiresome, in terms of distance to travel and work to be done. They would rather have patients come to the hospital for treatment. Those that use CBT-DOTS are a good number of 46%, this implies that, there is an effort, that is being put in place to treat TB

CHAPTER FIVE
DISCUSSION, CONCLUSION AND RECOMMANDATION

This chapter discussed the study findings of the research, **questionnaires**, observation and interviews were used to gather data about the current system. The researcher used Microsoft Excel to analyze the data from the field.

According to the respondent by age and sex, the majority of participants were between the age of 29 and 39 years and this represented 43%. Those between the ages of 19 and 29 years were 22%, and the participants who were between the age of 40 and 49 were representing 22%. The sample had only 3 representing 50 years of age and above which was 4%. This indicated that the most reproductive stage is the one mostly affected and most of them are active sexually and leading high prevalence of tuberculosis in HIV patients.

Most of respondent by sex shows that the majority of the respondents were male during the survey. The study finding shows that the prevalence of TB among HIV is high about sixty five percent of the respondent. It is clear that there is a high prevalence of TB in HIV/AIDS patients, taking into account the high value 65%. This is where most of the respondents fall, then followed by very high that takes 22% of the population. Clearly, the researcher discovered that TB is a serious medical problem mostly, when the patient is also HIV positive.

According to the knowledge of the respondent it shows that by knowledge distance to the health center is among the factors that leads to high prevalence and incidence of TB among the HIV patients, there are various causes to the prevalence of TB in HIV patients, the biggest factor being the distance from health centre, means that most patients are very far away from health centers where they can go and get antibiotics, therefore, they sustain the infection of TB for some time. Those that refrain from drugs are 22%, implying that, whenever they feel okay, they stop taking the drugs, bearing in mind that TB treatment takes long time. Secondly, some are just tired of taking drugs; they want some reliefs off the medication, because it becomes tiresome. Another 22 percent lack drugs at their health centers just like any other developing country,

Uganda can lack enough drugs to help TB and HIV patients. Therefore, the HIV patients who have TB tend to have a double edged problem, therefore, TB can easily linger on in HIV patients. Least of all are those who are ignorant about catching TB if have HIV. Some patients admit to doctors that they did not think or know that they can suffer from TB, with HIV, because they did not think that the two can easily go hand in hand. This is mainly due to the fact that they lack health science, or they don't have access to knowledge in form of written material, or talk show or they did not go to school.

According to the research findings it indicated that the biggest percentage of the responds did not use CBT-DOTS in treatment of TB, mainly some did not know how to and others found it tiresome, in terms of distance to travel and work to be done. They would rather have patients come to the hospital for treatment. Those that use CBT-DOTS are a good number of 46%, this implies that, there is an effort, that is being put in place to treat TB

Conclusion

The study finding shows that the prevalence of TB among HIV is high about sixty five percent of the respondent. It is clear that there is a high prevalence of TB in HIV/AIDS patients, taking into account the high value 65%. This is where most of the respondents fall, then followed by very high that takes 22% of the population. Clearly, the researcher discovered that TB is a serious medical problem mostly, when the patient is also HIV positive.

Recommandation.

- The health facilities should be near the community members to avoid long distances which discourage people/patients from accessing health care.
- The government should provide free medication to tuberculosis patients.
- The health workers in collaboration with government and NGOs should provide health education to TB patients.

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4. Health Canada (1994)
5. Lush et al (1995)
6. Kearney 1988, Inch 1989.
7. Janes and Greens 1996, 19 Aubar 1987
8. WHO/UNICEF (1990).

QUESTIONNAIRE.

Your participation is voluntary and the information you give is confidential. You may also stop the interview at any time you wish. Hoping that this information will be used in improving the welfare of our patients.

NB: Tick the correct answer and answer where necessary.

SECTIONAL: SOCIAL DEMOGRAPHIC CHARACTERISTICS.

1. Age of the participant

2. Marital status of the participant

(a) Single ( )

(b) Married ( )

(c) Widowed ( )

(d) Separated/divorced ( )

3. Educational level of the participant

(a) None ( )

(b) Primary ( )

(c) Secondary ( )

(d) Tertiary/University ( )

4. Occupation of the participant

(a) House wife ( )

(b) Civil servant ( )

(c) Self employed ( )

(d) Peasant/farmers ( )

5. Main occupation of the respondent.

(a) Farmer ( )

(b) Civil servant ( )

(c) Businessman ( )

(d) Unemployed ( )

(e) Others ( )

6. Tribe of the participant

(a) Munyankore ( )

(b) Muganda ( )

(c) Mukonjo ( )

7. Religion of the participant

(a) Catholic ( )

(b) Protestant ( )

(c) Muslim ( )

SECTION B, KNOWLEDGE ON TUBERCULOSIS

1. Have you ever heard about Tuberculosis?

(a) Yes ( )

(b) No ( )

2 .What is the cause of tuberculosis?

.....

.....

3. Do you think its dangerous to patients?

(a) Yes ( )

(b) No ( )

If no give reasons?

.....

4. Do you think tuberculosis can be controlled?

(a) Yes ( )

(b) No ( )

(c) I don't know ( )

If yes give reasons-

SECTIONC; DETERMINING CULTURAL PRACTICES AFFECTING TUBERCULOSIS?

What is your tribe? ……

1. When is tuberculosis patient isolated according to your culture?

   ……

2. For how long?……

3. What does your culture say about tuberculosis?

   ……

   ……

4. Should tuberculosis patient be treated if he/she is sick?

(a) Yes ( )

(b) No ( )

5. If no give reasons for your answer

……

……..

7. What do you do if you have a tuberculosis patient in the house?.....

8. How many times do you encourage him/her to go for treatment per month?

(a) 6 times ( )

(b) 8 times ( )

(c) more than 8 times ( )

APPENDIX A: WORK PLAN

OBJECTIVES	ACTIVITIES	TIME FRAME				
		February	**April**	**May**	**July**	**Indicators**
Administrative requirements	Choosing & Presentation of the research topic for approval					Supervisor researcher
proposal writing	• Writing a proposal and preparing research tools • Typing and binding the proposal Handing the proposal to the supervisor					Supervisor Researcher
Gathering data	Distribution of research tools and collection					Researcher
Data analysis	• Making sense of the collected information • Compiling the analyzed information Discussing, finaling, the findings.					Data analyst and Researcher
Dissemination of information	Copies of the dissertation presented to DEAN, KIUWC library and conferences					Researcher

APPENDIX B; ESTIMATED BUDGET FOR THE PROJECT

ACTIVITY	**QUANTITY**	**AMOUNT PER QUANTITY**	**TOTAL AMOUNT**
Reams of plain papers	4	14000	56,000
Pens	4	500	2000
Research assistant	1	50,000	50,000
Collection of information		1000,000	100,000
Typing and printing	6	600,000	600.000
Transport	10	5000	50,000
Miscellaneous		50,000	50,000
Total			**908,000 Ugshs**

Map of Comboni

MAP OF UGANDA