



Knowledge Attitudes and Practices on the Prevention of Tuberculosis Among HIV/AIDS Positive Adult Clients of 18 Years and Above Attending Art Clinic at Namokora Health Center IV Kitgum District Uganda

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ABSTRACT

Tuberculosis is a common and potentially lethal infectious disease caused by various strains of mycobacteria, usually *Mycobacterium tuberculosis* in humans. Tuberculosis usually attacked the lungs but can also affect other parts of the body. People living with HIV are 20 to 30 times more likely to develop active TB disease than people without. The study was carried out among HIV/AIDS positive adult clients attending ART clinic at Namokora HC IV with the purpose of assessing their knowledge, attitudes and practices on the prevention of TB among them. The research questions were; what were the knowledge, attitudes and practices of clients on the prevention of TB? A descriptive and cross-sectional design was employed and 50 (fifty) respondents were taken as sample size. Data was collected using an interview guide. Most respondents had varying levels of knowledge about the signs and symptoms of TB infection. All respondents 50 (100%) had ever heard of tuberculosis with its signs and symptoms. Furthermore, 21 (42%) said staying in overcrowded environment predisposed someone to TB. However, only 3 (6%) mentioned HIV positive people being at most risk of TB infection in the community, 35 (70%) had never used TB screening services, 37 (74%) had never heard about any drug used to prevent TB infection among HIV. Meanwhile 33 (66%) respondents agreed that screening and testing of TB has very many health benefits, 36 (72%) agreed that TB is a very dangerous disease while 23 (46%) strongly agreed that TB screening and testing is acceptable for all community members. Most respondents 35(70%) had never been screened for TB infection yet 25 (50%) had a total of 6-10 people residing in their household which caused overcrowding and highly predisposed to TB infection. The researcher noted that although respondents were knowledgeable about some aspects of TB prevention and had positive attitudes towards prevention of TB infection, their practices remained poor and hence needed interventions to improve practices towards prevention of TB infection.

Keyword: Tuberculosis, HIV/AIDS, *Mycobacterium tuberculosis*, People Living With HIV/AIDS, ART Clinic

INTRODUCTION

Tuberculosis is a common and potentially lethal infectious disease caused by various strains of mycobacterium, usually *Mycobacterium tuberculosis* in humans [1]. It is spread through the air when people who have active MTB infection cough, sneeze, or otherwise transmit their saliva through the air [2]. One third of the world's population was thought to be infected with *M. tuberculosis* and new infections occur at a rate of about one per second [3, 4]. In 2007 there were an estimated 13.7 million chronic active cases, 9.3 million new cases, and 1.8 million deaths, mostly in developing countries and in addition, more people in the developed world contract tuberculosis because their immune systems were more likely to be compromised due to HIV/AIDS, higher exposure to immunosuppressive drugs, or substance abuse [5]. An estimated 80% of the population in many African countries test positive in tuberculin tests, and there was a further increase in the prevalence of TB patients [6]. 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 [7]. 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 [8]. Factors that contributed to high prevalence of TB patients included poverty, poor nutrition [9], the recent TB infection or a history of inadequately treated TB [4], smoking [10], relying on traditional herbs for

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treatment and failing to access formal health services, poor health care seeking behavior for TB screening services [11, 12], lack of knowledge about preventive measures [13], poor living and working conditions [14], places of work such as mines, prisons, immigration centers and nursing homes result to higher risk of TB infection due overcrowding, poor ventilation and unsanitary conditions, and immunosuppressive infections as seen in HIV/AIDS among many other factors [15, 16]. Studies have shown revealed that the majority of respondents did not have sufficient knowledge about the prevention of TB infection, causes and prevention [17, 18, 19]. The majority of respondents did not know that tuberculosis was a deadly disease which could be fatal [19]. Another study carried in Durban, South Africa, revealed that the majority of respondents had adequate knowledge about tuberculosis; causes, symptoms, prevention and its treatment [4, 17,20]. A study found out that most respondents interviewed had negative attitudes towards the prevention of TB infection and high cost of TB services such as sputum testing and X-ray which were out of the reach of the community members were also found out to be major factors contributing to negative attitudes by [12]. Low body weight is associated with risk of tuberculosis and a body mass index (BMI) below 18.5 increased the risk by 2 to 3 times while an increase lowered the risk [17] while some studies revealed that respondents had negative attitudes towards the prevention of TB infection [9]. Good practices include traveling or living in certain areas that had high rates of tuberculosis and drug resistant tuberculosis [21], taking medicine containing the anti-TB drug Isoniazid. According to the WHO 2010, people living with HIV were less able to fight TB Infection and were likely to develop active TB because of their weakened immune system which could be deadly and could spread to others. In some communities, up to 80% of people with TB tested positive for HIV [22]. In Uganda, research has shown that HIV is the biggest risk factor for the development of active TB among individuals infected with *M. tuberculosis*. TB remained a leading cause of morbidity and mortality in people living with HIV/AIDS [23].

METHODOLOGY

Study Design

This was a descriptive cross-sectional study based on quantitative data collection method from HIV/AIDS positive adult clients of 18 years and above. Questionnaire was administered by investigator through face-to-face interview.

Study setting

The study was conducted at Namokora H/C IV Kitgum District. The health unit was founded in 1959 and was the only biggest health care facility in the whole of the Chua constituency, 508 kilometers north of capital city of Uganda, Kampala and situated within east of Kitgum District. It is the referral unit for the following sub-counties Omiya Anyima, Oram and Akilok. It offers many health care services among them were general patients' management, maternity services, ART clinic, ANC, VCT, EMTCT, Post natal services, and Family planning services among others.

Study Population

The study included only HIV/AIDS positive clients of 18 years and above attending ART clinic at Namokora Health Center IV since the study only target adults who are HIV positive.

Sample Size

The sample size comprised of 50 respondents of HIV/AIDS positive clients of 18 years and above attending ART clinic at Namokora Health Center IV.

Sampling procedure

Due to the scarce nature of the respondents, the researcher utilized random sampling procedure to obtain the required sample size. This enabled the researcher to sample any potential respondent who met study criteria and was willing to voluntarily consent to participate in the study.

Inclusion criteria

The study included both male and female HIV/AIDS positive clients above 18 years attending ART clinic at Namokora-Lira health center H/C IV who were free and willing to voluntarily consent to participate in the study.

Exclusion criteria

People who are above 18 years and they were HIV negative. People below the age of 18 years and were either HIV positive or negative. HIV positive people who are 18 years and above but were not attending to ART clinic at Namokora H/C IV.

Variables

The independent variables for the study will include: knowledge, attitudes and practices on the prevention of tuberculosis among HIV/AIDS positive adult clients of 18 years and above attending art clinic. The dependent variables for the study will include: prevention of TB infection.

Research Instruments

Data was collected using an approved semi-structured interview guide which consisted of both open and closed ended questions. This tool was selected because the study involved mixed groups of respondents and therefore,

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some were literate, others illiterate and thus unable to read, write and understand English.

Data Collection Procedure

The researcher administered interview guides to respondents at the ART clinic and other safe, comfortable and accessible place within the health facility. This improved efficiency and confidentiality during data collection. The researcher sampled 10 respondents for two days and 12 for a day for a total of the 32 respondents in 3 days.

Data management

Data management included editing before leaving the area of study to ensure that there are no mistakes or areas left blank, and any found mistake was corrected before leaving the area of study.

Data analysis and presentation

The collected data was first be analyzed manually by the use of papers and pens and tallying, after the researcher presented them in tables, graphs and pie charts generated by Microsoft Excel.

Pilot Study

The interview guide was pre-tested among 4 HIV/AIDS positive clients above 18 years attending the ART clinic at Omiya Anyima Health Centre III to enable the researcher to assess its clarity, accuracy and reliability and make the necessary adjustments.

Ethical Considerations

A letter of introduction was obtained from Kampala International University Western Campus Faculty of Allied Health introducing the researcher to the in-charge of Namokora H/C IV and seeking permission to carry out the study. After permission was granted, the in-charge introduced the researcher to the in-charge of the ART clinic who in turn introduced the researcher to the respondents. Respondents were assured of maximum confidentiality and signatures instead of names were used to identify the respondents. The study only commenced after the participants consented to participate in the study.

Limitation of the study

The study limitation was financial facilitation for gathering information from the internet and libraries and printing costs. The researcher encountered time constraints in the course of the study, balancing the research study and other demanding course works. The researcher faced difficulty in obtaining information from some uncooperative respondents due to the sensitive nature of the study.

Dissemination of results

The results will be forwarded to Kampala International University Western Campus School of Allied health, a copy submitted to Allied health council and MOH, another copy given to the coordinator of Allied health sciences and the researcher also retained a copy.

RESULTS

Fig 1: Distribution of respondents by age n =50



Results showed 22(44%) were in the age of 36+ years.

Figure 2: Distribution of respondents by gender n = 50



The majority of respondents 31(62%) were male.

Table 1: Distribution of respondents by tribe n = 50

Tribe	Frequency	Percentage (%)
Langi	09	18
Ateso	05	10
Acholi	36	72
Total	50	100

Most respondents 36 (72%) were Acholi.

Table 2: Distribution of respondents' marital status n = 50

Marital status	Frequency	Percentage (%)
Single	14	28
Married	25	50
Divorced	11	22
Total	50	100

Most of the respondents 25 (50%) were married.

Figure 3: Distribution of respondents by level of education n = 50

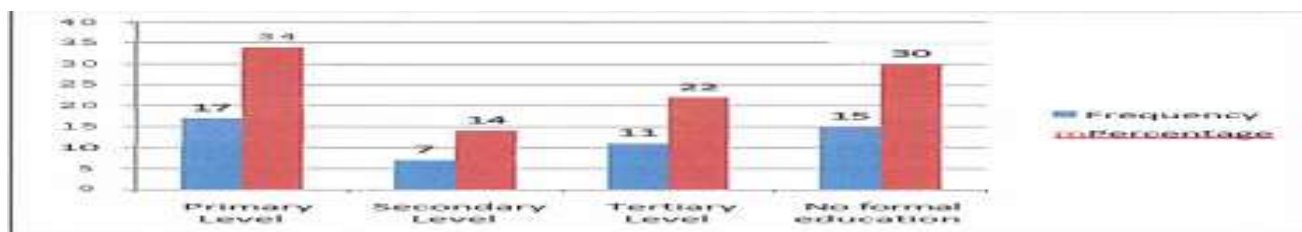
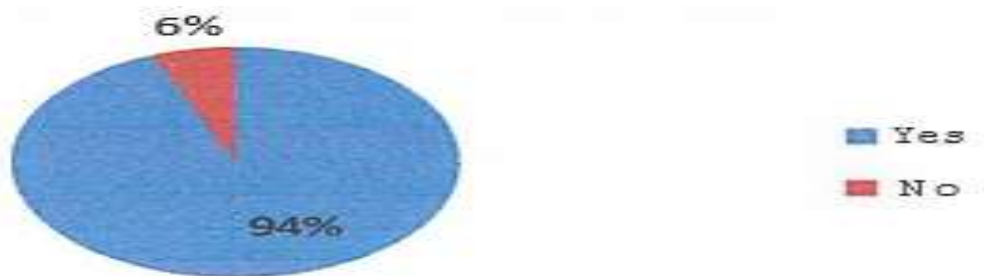


Table 3: Distribution of respondents by occupation n = 50

Occupation	Frequency	Percentage (%)
Professional	11	22
Peasant fanner	22	44
Self-employed	06	12
Housewife	11	22
Total	50	100

Figure 4: Distribution of respondent on whether they have children

n = 32



The majority of respondents 47(94%) had children.

Table 4: Ever heard of tuberculosis

Responses	Frequency	Percentage (%)
Yes	50	100
No	0	0
Total	50	100

All of the respondents 50 (100%) had ever heard of tuberculosis.

Table 5: Source of information about tuberculosis

Source	Frequency	Percentage (%)
Health workers	24	48
Friends and family	9	18
Mass	17	34
Total	50	100

Most respondents 24(48%) obtained information about tuberculosis from health workers.

Table 6: Cause of TB according to respondents

n= 50

Causes	Frequency	Percentage (%)
Byvirus	31	62
By <i>Mycobacterium hominis</i>	8	16
By <i>Plasmodium ovale</i>	11	22
By <i>Mycobacterium bovis</i>	0	0
Total	50	100

Figure 5: Signs and symptoms of TB infection n= 50

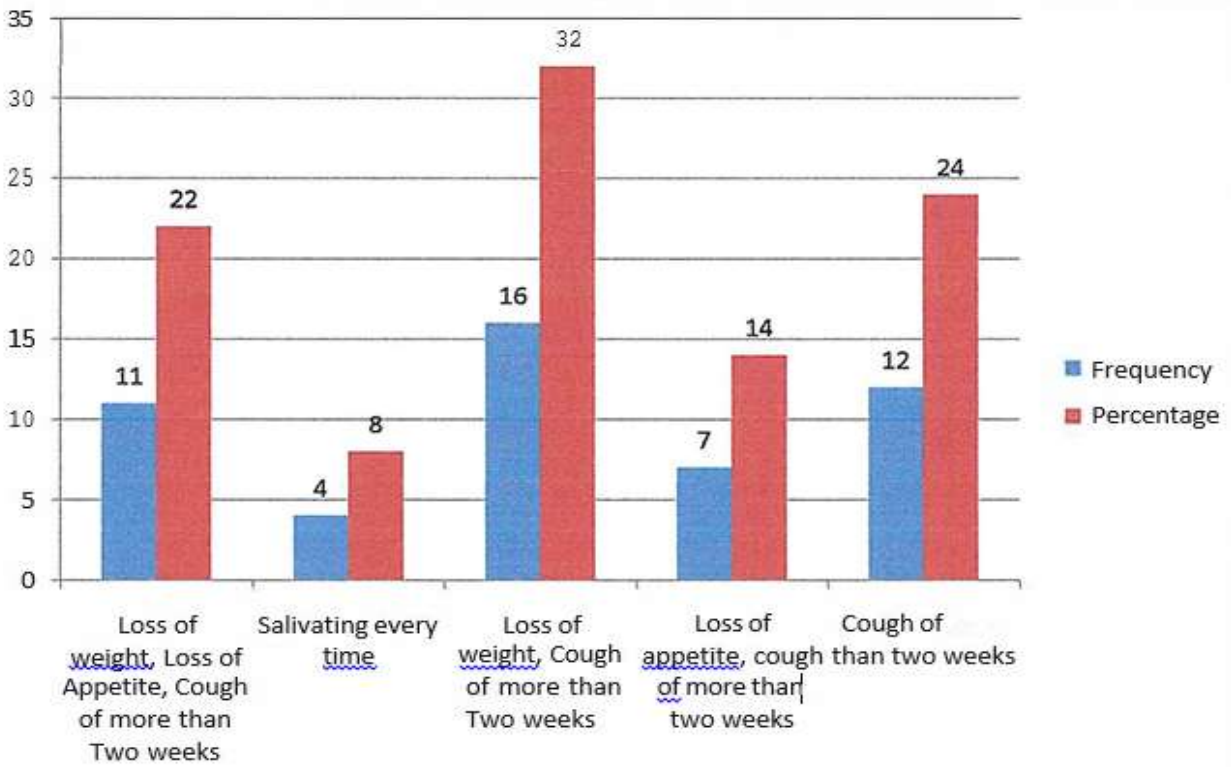


Figure 6: Awareness of ways through which someone got TB infection n=50

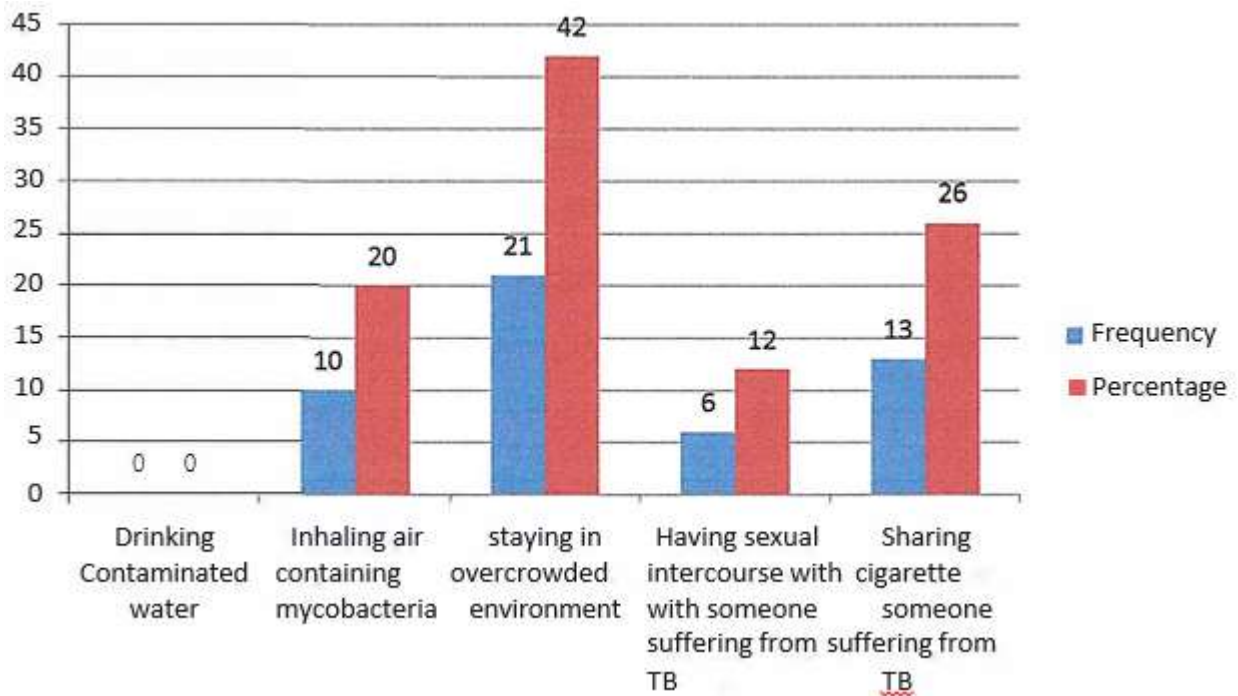


Figure 7: Awareness of places where people got TB screening and testing services

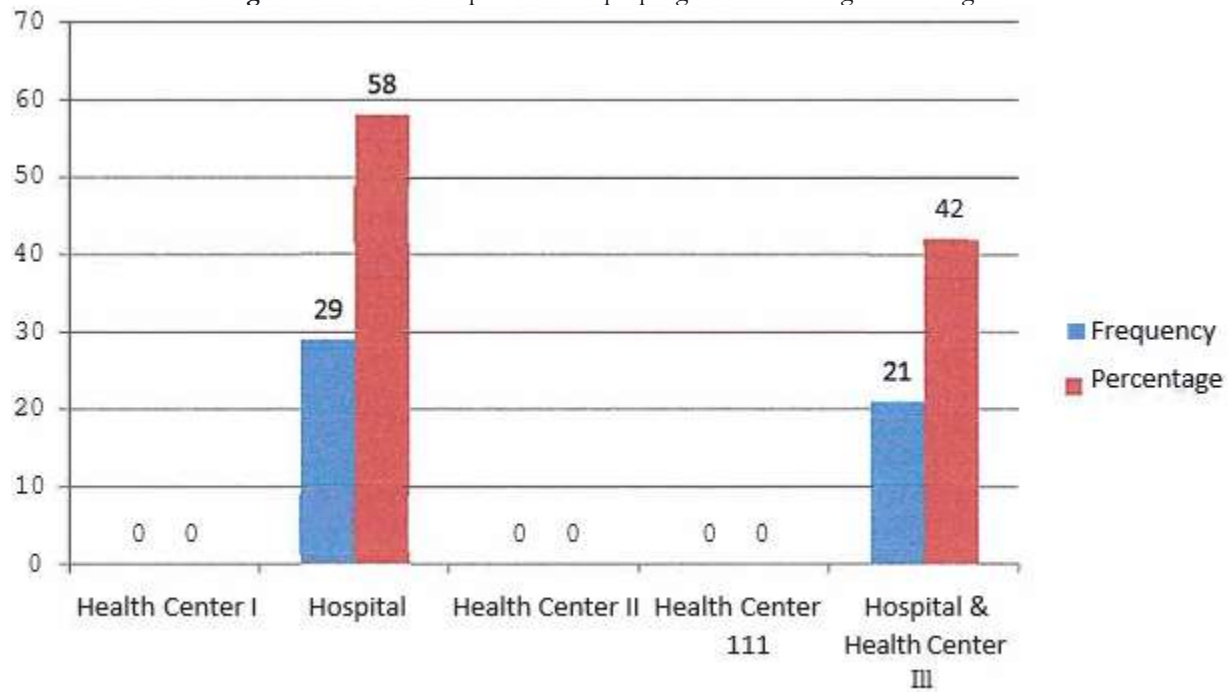


Table 7: Whether the respondents had ever used TB screening and testing services n=50

Responses	Frequency	Percentage (%)
Yes	15	30
No	35	70
Total	50	100

Figure 8: Group of people in the community more exposed to the risk of TB n = 50

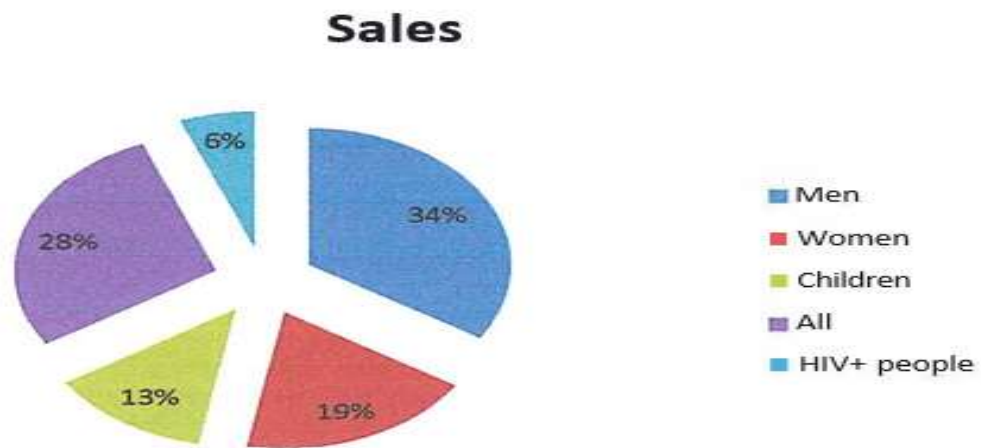


Table 8: Ever heard of drug used to prevent TB infection among HIV positive people n= 50

Responses	Frequency	Percentage (%)
Yes	13	26
No	37	74
Total	50	100

Figure 9: Whether respondents knew anything on treatment of TB

n = 50

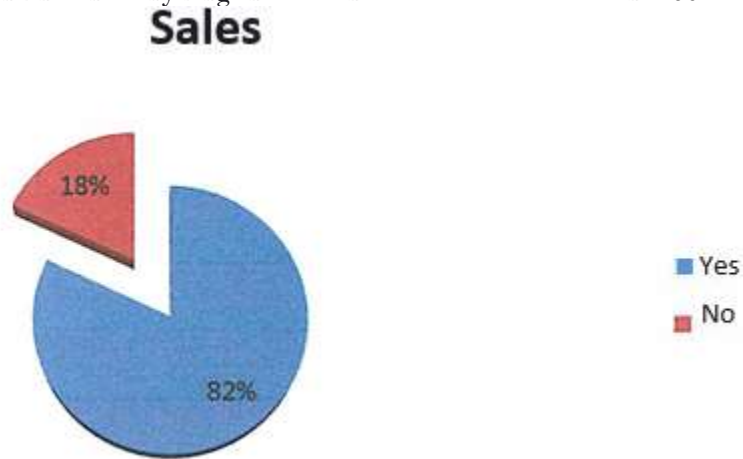


Figure 10: Knowledge of respondents on dangers of TB infection n = 50

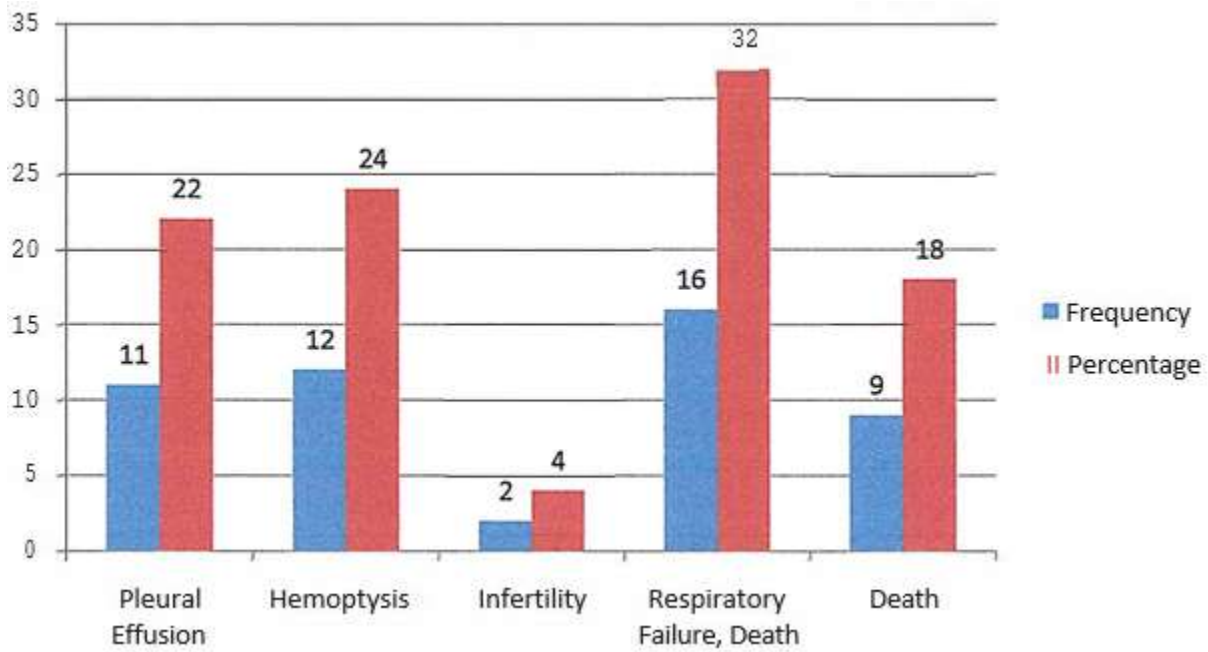


Table 9: Screening and testing of TB has very many health benefits n=50

Respondent	Agree	Disagree
Number	33	17
Percentage	66%	34%

Figure 11: Whether all community members were exposed to tuberculosis infection n = 50

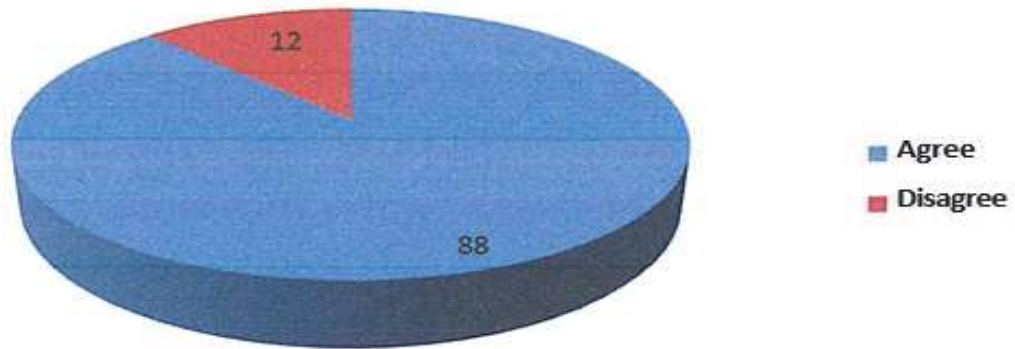


Figure 12: Whether TB is a very dangerous disease n=50

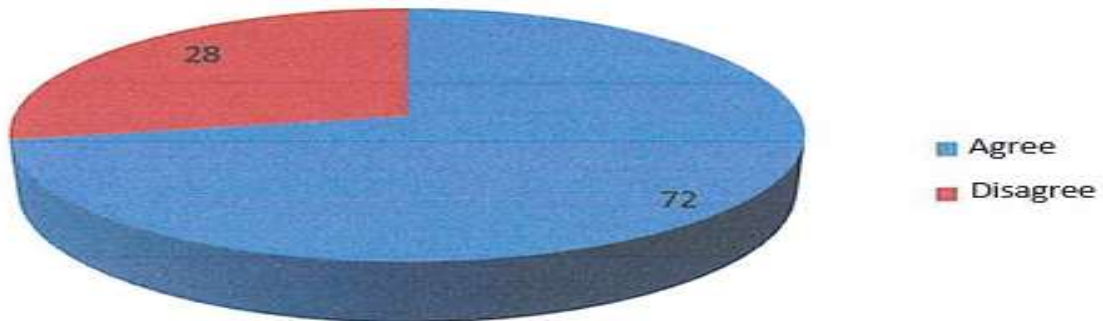


Table 10: Whether TB screening and testing was acceptable for all community members n= 50

Responses	Frequency	Percentage (%)
Agree	7	14
Disagree	11	22
Strongly agree	23	46
Strongly disagree	9	18
Total	50	100

Table 11: Distribution of respondents who smoked n= 50

Responses	Frequency	Percentage (%)
Yes	19	38
No	31	62
Total	50	100

Table 12: Distribution of respondents who had ever been screened for TB infection n= 50

Number	Frequency	Percentage (%)
Yes	15	30
No	35	70
Total	50	100

Table 13: Number of people residing in their household n =50

Respondents	Frequency	Percentage
1 – 5 people	14	28%
6 – 10 people	25	50
11 people and above	11	22

DISCUSSION

This finding showed 22 (44%) were in the age range of 36+ years, which implied that HIV affected more people in that age bracket [24]. The majority of respondents 31 (62%) were male while the least 19 (38%) were female [25]. This showed that men had good health seeking behaviors than women who feared stigma and were not willing to attend to the researcher during data collection [26]. This finding was in line with the study carried out by Dale et al., which revealed that respondents had negative attitudes towards the use of tuberculosis services [27]. This was attributed to various factors including stigma attached to the disease as well as the long distances and related transportation costs to health centers which creates a significant burden on patients, while 'special food' expenditures added to their financial constraints [28]. Most respondents 36 (72%) were Acholi, followed by 9 (18%) who were Langi while the least 5 (10%) were Ateso. This was expected as the study setting is predominantly inhabited by Ugandans of these tribal backgrounds. More of the respondents 25 (50%) were married, which implied HIV/AIDS were more common among married couples that they would count on and rely on support from their partners and ensure adequate use of TB screening and testing services. This study revealed that 17 (34%) had attained primary level education and up to 15 (30%) didn't have any formal education at all. It implied

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that since most respondents had attained a low level or no formal education, it could potentially affect their knowledge and awareness of the dangers of TB infection as well as the importance of regular screening and testing for TB [29]. More of the respondents 22 (44%) were peasant farmers, which implied that most respondents were of low socio economic status and this could negatively affect their access to and utilization of TB screening and testing services in the community [30]. The majority of respondents 47 (94%) had children which implied that since respondents had children, they would also be exposed to the risk of TB if screening and treatment services were not well utilized by infected household members [31]. All of the respondents 50 (100%) had ever heard of tuberculosis which implied that respondents possessed adequate general knowledge about TB infection. This study was contrary to Odusanya and Babafemi [9] who mentioned that among the respondents sampled; the least 34% had adequate knowledge and awareness about the tuberculosis services provided in the community [9]. Furthermore, these few also had general knowledge about tuberculosis such as the symptoms and causes. Most respondents 24 (48%) obtained information about tuberculosis from health workers, followed by 17 (34%) who obtained information from mass media while the least 9 (18%) who obtained information from friends and family. This showed that respondents had various sources of information about TB infection.

Results showed that 31 (62%) respondents reported that TB was caused by a virus especially the one which caused HIV/AIDS, followed by 11 (22%) who mentioned that TB was caused by plasmodium ovale, 8 (16%) said mycobacterium hominis while 0 (0%) mentioned mycobacterium bovis as caused TB. This showed that most respondents lacked information about the particular causes of TB as they mentioned that TB was caused by a virus especially that which caused HIV/AIDS yet it was caused by bacteria (MTB). This finding was contrary to a study which showed that the majority of respondents interviewed had inadequate knowledge about the tuberculosis services provided and also had knowledge about TB, its causes, symptoms, treatment and prevention [18]. All 50 (100%) of the respondents were aware of the signs and symptoms of TB infection which demonstrated a high level of knowledge about TB. This study was in agreement with Golden and Vikram, [32]. Findings showed that 16 (32%) respondents mentioned loss of weight and cough of more than two weeks as signs and symptoms of TB, followed by 12 (24%) reported loss of weight, loss of appetite and cough of more than two weeks, 11 (22%) mentioned cough of more than two weeks only, 7 (14%) said loss of appetite and cough of more than two weeks while none 4 (8%) mentioned salivating every time as one of the signs and symptoms of TB. This demonstrated that respondents possessed sufficient knowledge about TB. This study was in line with Engelbrecht *et al* report [18]. 10 (20%) respondents said inhaling air containing mycobacteria, 21 (42%) mentioned staying in overcrowded environment, 6 (12%) said having sexual intercourse with someone suffering from TB and 13 (26%) sharing cigarettes with someone suffering from TB while none 0 (0%) mentioned drinking contaminated water as one of the ways. Most respondents 29 (58%) knew the places where they could get TB screening services meanwhile 21 (42%) said in both hospitals and health centers. It implied that since respondents were aware of where to get TB screening services, they would ensure effective use of these services when needed. This study was in contrast with Ahsan *et al*, [17]. Most respondents 35 (70%) had never used TB screening services which demonstrated very poor utilization of screening and testing services among the sampled population. The majority of respondents 37 (74%) did not know anything about drugs used in the prevention of TB among HIV positive people. This is in line with a report from WHO which said that out of all people living with HIV/AIDS, only 85000 (0.2%) received Isoniazid for TB prevention in 2009 and this could affect health seeking [22]. Most respondents 41 (82%) knew about the general treatment of TB once someone had. Most respondents 17 (34%) reported that men were most at risk of TB infection in the community, followed by 14 (28%) who said everybody was exposed to the risk, 9.5 (19%) said women were most at risk, 6.5(13%) said children were most at risk of TB infection while the least 3 (6%) reported that HIV positive people were the ones exposed to the most risk. This indicated that most respondents knew that TB could attack anyone in the community whether a child, a woman or a man but didn't know that HIV positive people were the people exposed to the greater risk of TB infection [33]. This was contrary to the report according to the WHO [22]. Majority of the respondents 16 (32%) mentioned respiratory failure and death as dangers of TB infection, followed by 12 (24%) said hemoptysis, 11 (22%) said pleural effusion, 9 (18%) mentioned death only while none 2 (4%) mentioned infertility in men as one of the dangers of TB infection. This showed that most respondents were aware of the potential dangers TB caused to all community members though the awareness differed from one respondent to another. Majority of the respondents 33 (66%) agreed that screening and testing of TB has very many health benefits which demonstrated very positive attitudes towards screening and testing. This study was contrary to Dale *et al*, [27]. The majority of respondents 44 (88%) reported that all community members were exposed to TB infection which demonstrated that perhaps most community members were aware of the potential dangers/risks posed by TB infection to the entire community. The majority of respondents 23 (71.875%) agreed that TB is a very dangerous disease which demonstrated that respondents were well aware of the dangers posed by TB infection and this finding was opposed by Konstantinos [19]. Most respondents 23 (46%) strongly agreed that TB screening and testing was acceptable for all community

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members in order to avoid the dangers of TB like damage to the lungs and death, which demonstrated that respondents were aware of the importance of TB screening services. Negative practices leading to high prevalence of TB patients included smoking pipes for cultural reasons or smoking more than 20 cigarettes a day which increases the risk of TB by two to four times. Majority of the respondents 22 (68.75%) did not smoke which implied that TB infection in this could not be attributed to smoking alone but to other factors. This study was in contrast to Kiwuwa, *et al.*, [10] who mentioned that most respondents had poor practices towards the prevention of TB infection [10]. The majority of respondents 31 (62%) had never been screened for TB infection which demonstrated poor practices towards the use of screening services. This study was in line with Thomas *et al.*, [12] whose study reported failing to access formal health services as well as poor health care seeking behavior for TB screening services as a factor contributing to prevalence of TB [12, 24]. Most respondents 25 (50%) had a total of 6 - 10 people residing in their household, followed by 14 (28%) had 1-5 people residing in their household, while 11 (22%) respondents had 11 people and above residing in their household which demonstrated that most respondents had over crowded households and this highly predisposed to the risk of TB infection. This study was in line with a Engelbrech *et al.*, [81] report that most respondents had poor practices towards the prevention of TB infection due to the fact that most households often had extended family members, it often led to overcrowding and this provided a strong link to TB infection [18].

CONCLUSION

Most respondents had varying levels of knowledge about the prevention of TB infection and had ever heard of tuberculosis as well as the signs and symptoms of TB infection including cough of more than two weeks, loss of weight and appetite. Furthermore, most respondents were aware of the ways through which someone got TB infection and reported that it was through sharing cigarettes with someone suffering from TB, staying in overcrowded environment among others while most knew the places where they could get TB screening services. However, most respondents wrongly believed that men were most at risk of TB infection in the community, some had never used TB screening services, did not know anything about treatment of TB and had never been sensitized about the dangers of TB infection. Respondents had positive attitudes towards the prevention of TB infection and most agreed that screening and testing of TB has very many health benefits and also agreed that TB is a very dangerous disease while most strongly agreed that TB screening and testing is acceptable for all community members in order to avoid the dangers of TB like damage to the lungs and death. Most respondents had poor practices towards the prevention of TB infection and most had never been screened for TB infection yet most had a total of 6-10 people residing in their household which caused overcrowding and highly predisposed to TB infection. However, most respondents did not smoke which implied that in this case, TB infection could not be attributed to practices such as smoking but to other factors.

Recommendations

The Ministry of Health and NGOs should ensure that there are adequate sensitization programs on the dangers of TB as well as the causes, routes of transmission of TB as well as how it could be avoided benefits and importance of TB screening and testing services to improve uptake and utilization of the services, ensure proper allocation of resources such as human and financial resources for effective prevention and management of TB.

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