Factors Contributing to Increased Cases of TB among HIV/AIDS Patients aged 18-45 Years in Entebbe General Hospital, Wakiso District. A Descriptive Cross-sectional Study.

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Abstract

Background:
The purpose of the study was to determine the factors contributing to increased cases of TB among HIV/AIDS patients aged 18-45 years in Entebbe general hospital, Wakiso district.

Methodology:
The study employed a descriptive cross-sectional design with a simple random technique as the sampling technique. Data was collected using a semi-structured questionnaire written in the English language from 50 respondents; later analyzed manually by use of tally sheets, entered in Microsoft excel computer program, and presented in frequency tables, and figures.

Results:
(80%) of the respondents who had ever heard about TB before the diagnosis of the disease, (46%) got to know that they had the disease after a month, (98%) agreed that they can be cured of TB, (50%) were smoking Tobacco and (38%) commonly fed on carbohydrates, (60%) where from town, (54%) could not recall whether they had ever had any history of contact with someone who had TB, (64%) reported that family/community members they socially neglect them, (62%) were not willing to disclose their illness to family/community members and (52%) had never got any form of assistance concerning TB medication from community members.

Conclusion :
Participants possessed personal perceptions about cure of TB infection, substance use, poor diet intake, location of respondent's home place, stigma from communities, inability to disclose the illness, inadequate support from family members, poor health-seeking behaviors, self-medication, long distances and long waiting time were the overall factors contributing to increased spread of TB infections among HIV/AIDS patient aged 18-45 years.

Recommendation:
Entebbe general hospital administration should continue to carry out community out-reaches focusing on specialized education programs that will intensively enlighten community members about the effects of discrimination and stigma towards patients and misconceptions about TB, self-medication, and timely access to medical assistance.

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1   Background of the study

In 2019, an estimated 10 million people fell ill with tuberculosis (TB) worldwide. 5.6 million men, 3.2 million women, and 1.2 million children. TB is present in all countries and age groups. But TB is curable and preventable. In 2019, the 30 high TB burden countries accounted for 87% of new TB

cases. Eight countries account for two-thirds of the total, with India leading the count, followed by Indonesia, China, the Philippines, Pakistan, Nigeria, Bangladesh, and South Africa (WHO, 2020).

Over the past three decades, the number of TB cases has raised especially in the resource-limited countries of sub-Saharan Africa. High mortalities were registered in 2016 among HIV/AIDS patients co-infected with TB in southeastern Asia accounting for 85% of the global TB burden (WHO, 2017). Globally, 940,000 lives are Lost every year due to HIV/AIDS, with 32% of deaths as a result of co-infection with TB (UNAIDS, 2019).

TB is a major public health problem in Nigeria with the country ranked 6th among the 30 high TB burden countries globally and first in Africa. Nigeria is also among the 14 countries that are in all the three WHO global high-burden country lists for TB, TB/HIV, and MDR-TB with an estimated 8 incident rate of 219 per 100,000 population and a mortality rate(excludes HIV+) of 64/100,0001. Nigeria is among the eight countries that accounted for two-thirds of the global TB burden, with the country accounting for 4% of the total global burden. The estimated burden of TB in Nigeria in 2019 (Federal Ministry of Health Nigeria, 2019).

Tanzania's tuberculosis roadmap overview revealed that among the 30 high TB burden countries, Tanzania is ranked 15th. In 2019, the estimated TB incidence for Tanzania was137, 000 cases; in the same year, only 81208 cases (59 percent) were diagnosed and notified to the NTLP. Among the cases notified, approximately32 percent werewomen52 percent were men and 15 percent were children (MoH Tanzania, 2020).

In 2019, the estimated incidence rate for TB was 200 per 100,000 population occurred in Uganda. In the same year, 65,897 TB cases were notified, 1% of new cases, and 12% of previously treated cases were MDR/RR-TB cases. However, there has been an increased rate of TB cases since 2015, whereby in 2015 the case notification rate was 118.7 per 100,000 populations than in 2017 -2018 with a case notification rate of 145 per 100,000 (MoH, 2020). The study mainly focused on factors contributing to increased cases of TB among HIV/AIDS patients aged 18-45 years.

Methodology
Study design
Study design refers to the methods used in selecting items to be observed for the given study (Kothari & Gaurav, 2014). Therefore, this study employed a descriptive cross-section design to generate possible ideas used to formulate a realistic and testable hypothesis on quantitative data. The design was preferred for this study because it considers issues for the instant economy, rapid data collection, and the ability to understand the population from part of it.

Study area
Entebbe general hospital is located in the central business district of the town of Entebbe, in Wakiso District, approximately 37 kilometers (23 mi), by road, southwest of Mulago National Referral Hospital, Entebbe General Hospital is a public hospital funded by the Uganda Ministry of Health. Originally built by the British colonialists in the 20th century as Entebbe Grade B Hospital, Between December 2013 and May 2016, the hospital was rebuilt and expanded from 100 to 200 beds for US$7 million (about UGX:23.2 billion), donated by the World Bank. The new facility has a private fee-for-service wing and a public, free-service wing. Other services include pediatrics, radiology, laboratory, maternity, immunization, general surgery, internal medicine, orthopedics, and operating rooms. The facility receives patients from Wakiso District, Mpigi District, Entebbe Town, and the neighboring islands in Lake Victoria.

Study population
This comprised of HIV/ AIDS patients with TB seeking medical services in ART clinic, Entebbe general hospital, Wakiso district present during the period of data collection.

Sample size determination
Kothari & Gaurav (2014), defined sample size determination as to the number of items to be selected from the universe to constitute a sample. The sample size was calculated using Burton's formula (1905).

S=2(QR) O: where

S=required sample size

Q=number of days the researcher spent while collecting data

R=maximum number of people per day

O= maximum time the interviewer spent on each participant.

5×10×1hr

=50

Therefore, the researcher used 50 respondents.
Study variables

A study variable refers to a person, place, thing, or phenomenon that a researcher is trying to measure in some way (Sudha, 2017).

Dependent variable

The dependent variable was Tuberculosis.

Independent variables

Independent variables were individual, community-related, and health facility-related factors contributing to increased cases among patients aged 18-45 years.

Sampling technique

Is a technique of selecting individual members or a subset of the population to make statistical inferences from them and estimate the characteristics of the whole population (Mubazi, 2016). A simple random technique was used to select the study participants from the source population. The rationale for choosing this technique avoided bias and its findings were generated for the study population since each respondent had an equal chance of being selected for the sample.

Selection criteria
Inclusion criteria

Inclusion criteria were composed of HIV patients aged 18-45 years with TB cases seeking medical services in the ART clinic of Entebbe general hospital eligible for the study after consenting.

Exclusion criteria

HIV patients diagnosed with TB, present during the period of data collection but not ready to be part of the study were excluded.

Data collection tools

These were various techniques that are used during data gathering (Basavanthappa, 2007).

Questionnaire

Data were collected by the use of semi-structured questionnaires written in English language and later translated into the local language (Luganda) containing both open and close-ended questions arranged according to specific objectives. The questionnaire was preferred over other data collection methods because data was collected in a short period and also it is suitable for a large population.

Interview

This refers to a face-to-face conversation between the researcher and the respondents to gather information (Mugenda, 2003). The researcher adapted questions as necessary to clarify doubt and ensure that the respondents properly understood the questions without repeating or rephrasing the questions.

Data collection procedure

An introduction letter to Entebbe general hospital was obtained from the Kampala School of Health Sciences and presented to the medical superintendent who granted the researcher permission to obtain data. When permission was granted, two research assistants were trained on the subject in question and the data collection procedures they used; before conducting the process, the researcher and the research assistants introduced themselves and explained the purpose of the study to the respondents. In addition, numbers were written on small pieces of paper, rolled up then mixed appropriately in the box, and given to respondents who fulfilled the inclusion criteria; they were requested to pick numbers from an enclosed box and those who picked odd numbers were requested to take part in the study until the sample size was achieved. The respondents were asked questions following the designed questionnaire to avoid being biased. After the interview, each respondent was thanked for participating in the study. The procedure was repeated each day until the sample size of 50 respondents was attained.

Pretesting the questionnaire

Basavanthappa (2007), defined pre-testing as a small-scale dress rehearsal that proceeds as if it was an actual study.

Pre-tests were carried out on 10 patients from Kajjansi Health Center IV, Wakiso district and the information gathered was used to rectify and update the data collection tool. The results from the pre-tested questionnaires were not considered in the main study.

2   Data analysis and presentation

Basavanthappa (2014), defined data analysis and presentation as a process used by researchers to reduce data into a story and interpret it to derive insights. Therefore, data were analyzed manually by use of tally sheets and entered in the excel computer program to generate tables, graphs, and pie charts for easy interpretation of study findings.

Quality control

Polit & Beck (2012), defined quality control as efforts and procedures that survey researchers put in place to ensure the quality and accuracy of data

being collected using methodologies chosen for a particular study. Therefore, the researcher observed and maintained the following criteria:

Two research assistants were trained and closely supervised on how to correctly administer the data collection instruments to enhance the validity of the data collected.

The questionnaires were screened for completeness and legibility.

Data were analyzed using frequencies; missing values and invalid entries were counter-checked with the responses on the questionnaires for accuracy and where necessary the respondents were contacted for clarification.

Standard operating procedures for COVID 19 such as wearing face masks, maintaining social distancing, and handwashing were strictly followed to curb the spread of the coronavirus.

Ethical considerations

According to Blaxter et al (2014), ethical considerations are sets of principles that guide research designs and practices.

An introductory letter was obtained from the Kampala School of Health Sciences department of research. Then the letter was taken to the respective place where the study was carried out which was Entebbe General Hospital where permission was given to conduct the study; respondents received an explanation of the study before enrolment and only those who were willing to participate were meant to be involved. Respondents were free to withdraw from the study at any time and strict confidentiality was observed. Initials and study numbers were used to identify the respondents instead of full names.

3 Study findings
4 Demographic data

(N=50)

From the table above, almost half of the respondents (44%) were within the age bracket of 39-45 years whereas the least (8%) were within the age bracket of 18-24 years.

Basing on the study findings related to gender, more than half of the respondents (60%) were males whereas the least (10%) were females.

In regards to education levels, most of the respondents (52%) had attained secondary level of education whereas the least (2%) had never gone to school.

The study further revealed that majority of the respondents (70%) were married whereas the least (6%) were widows.

5 INDIVIDUAL FACTORS CONTRIBUTING TO INCREASED CASES OF TB AMONG HIV/AIDS PATIENTS AGED 18-45 YEARS

(N=50)

From the figure above, majority of the respondents (80%) had ever heard about TB before the diagnosis of the disease whereas the least (20%) had never heard about TB before the diagnosis of the disease.

(N=50)

From the table above, most of the respondents (46%) reported months as the period when came to know that they were suffering from TB whereas the least (8%) came to know that they were suffering from TB within days.

From the figure above, more than half of the respondents (60%) knew smoking as the risk factor for TB whereas the least (4%) had they didn't know the risk factors for TB.

(N=50)

From the figure above, nearly all respondents (98%) agreed that they can be cured from TB whereas the least (2%) disagreed.

From the figure above, half of the respondents (50%) reported were using Tobacco whereas the least (10%) had never used any substance.

(N=50)

From the table above, most of the respondents (38%) reported carbohydrates as the type of food they commonly fed on whereas the least (10%) fed on proteins.

6 COMMUNITY RELATED FACTORS CONTRIBUTING TO INCREASED CASES OF TB AMONG HIV/AIDS PATIENTS AGED 18-45 YEARS

From the figure above, more than half of the respondents (56%) were self-employed whereas the least (14%) were employed.

Table 1. Shows the distribution of respondents according to demographic data.

Age	Frequency(f)	Percentage (%)
18-24 years	4	8
25-31 years	11	22
32-38 years	13	26
39-45 years	22	44
Total	**50**	**100**
Gender		
Female	20	40
Male	30	60
Total	**50**	**100**
Education level		
Never gone to school	1	2
Primary	6	12
Secondary	26	52
Tertiary/University	17	34
Total	**50**	**100**
Marital status		
Single	7	14
Married	35	70
Separated/ divorced	5	10
Widowed	3	6
Total	**50**	**100**

Primary source, 2022

Key

■ Yes

■ No
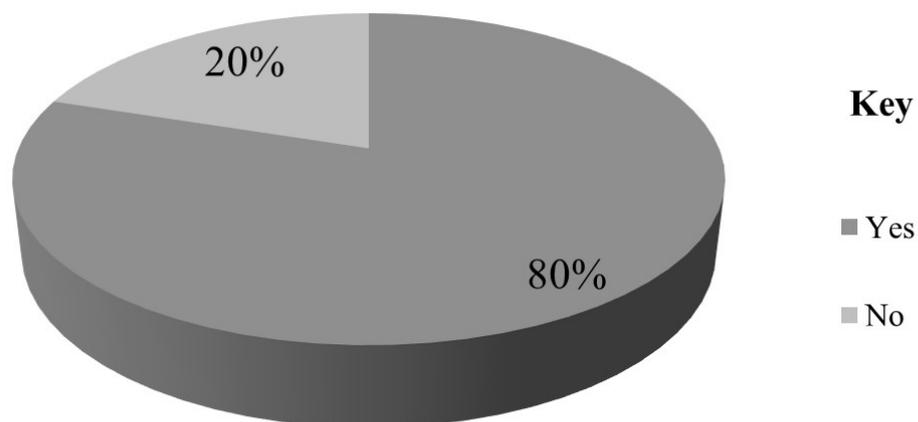
Chart 1. Shows the distribution of respondents according to whether or not they had ever heard about TB before the diagnosis of the disease

Table 2. Shows the distribution of respondents according to when they came to know that they were suffering from TB

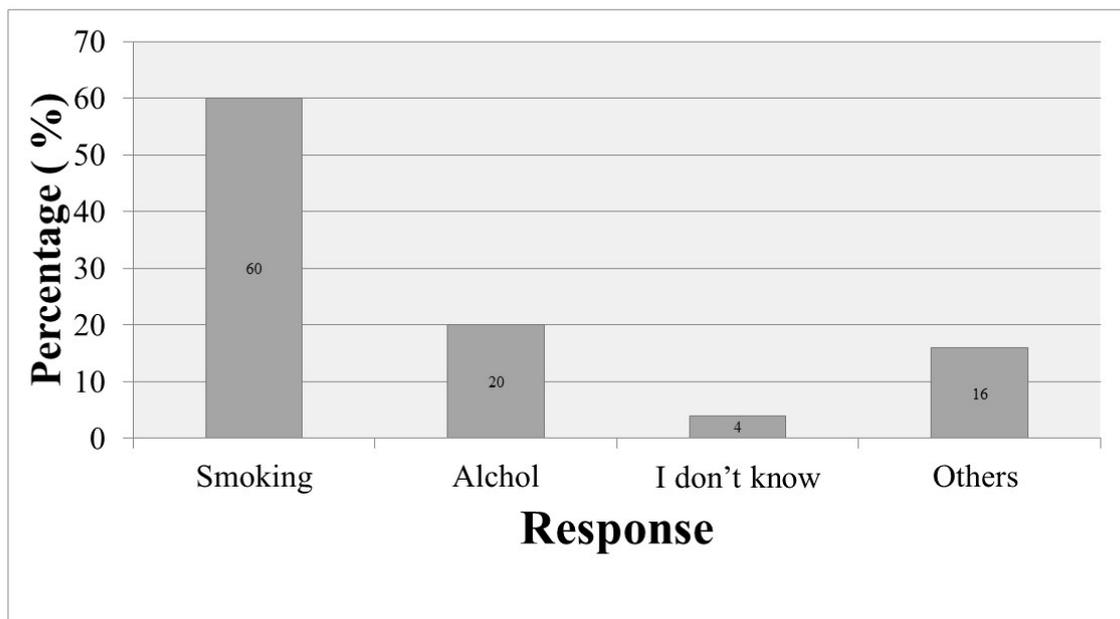| Response	Frequency (f)	Percentage (%)
Days	4	8
Weeks	11	22
Months	23	26
After ART initiation	12	24
Total	**50**	**100**

Primary source, 2022

Figure 1. Shows the distribution of respondents according to the risk factors for TB they knew

Table 3. Shows the distribution of respondents according to which types of food they commonly fed on

Response	Frequency (f)	Percentage (%)
Balanced diet	5	10
Proteins	11	22
Carbohydrates	19	38
Others	15	30
Total	**50**	**100**

Primary source, 2022

2%

98%

Key

■ Yes
■ No
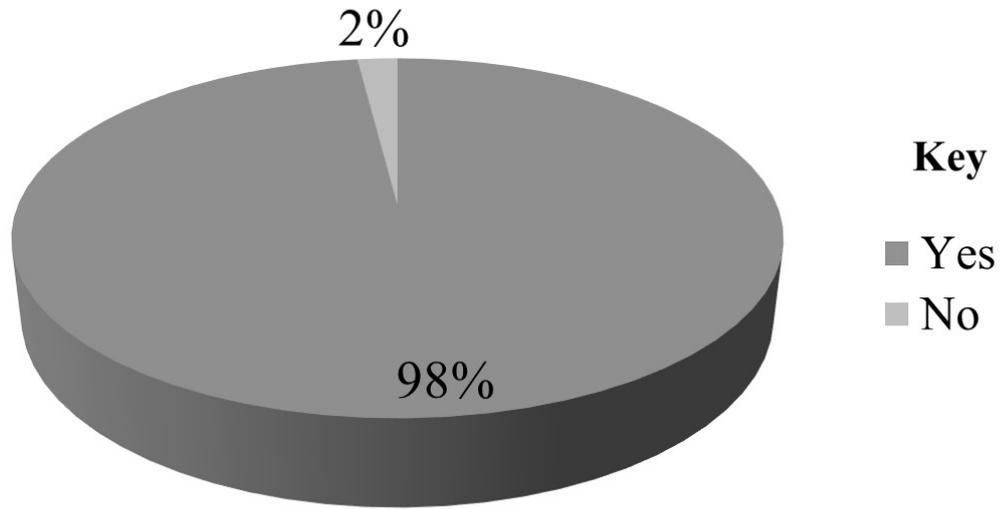
Chart 2. Shows the distribution of respondents according to whether or not they think one can be cured from TB
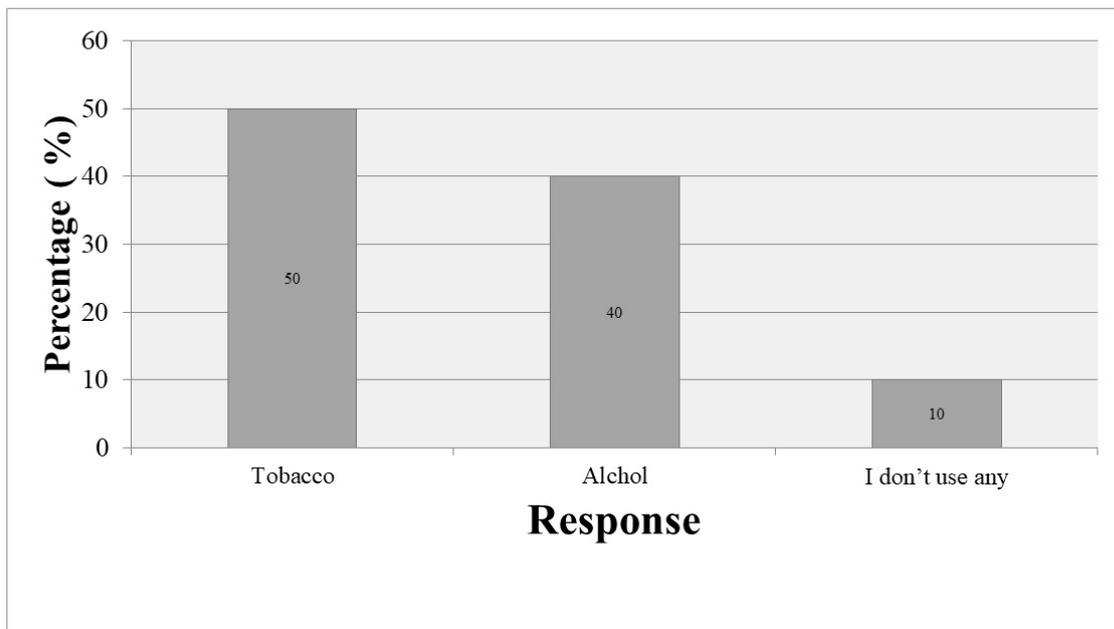
Figure 2. Shows the distribution of respondents according to whether or not they were using the following substances
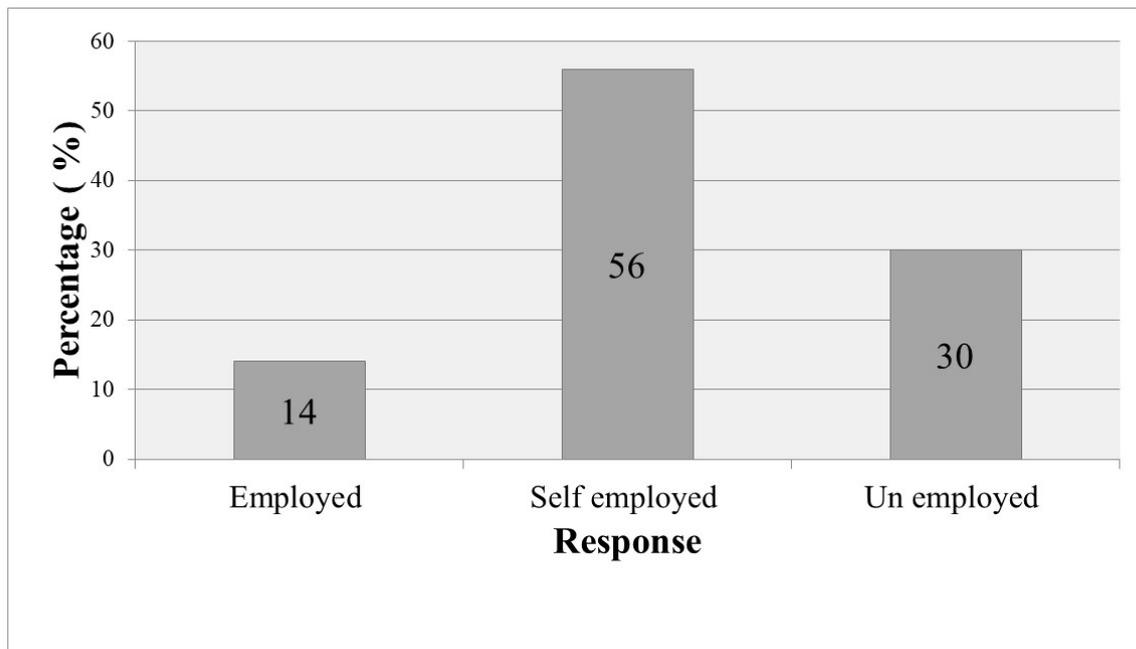
Figure 3. Shows the distribution of respondents according to occupation

Table 4. Shows the distribution of respondents according to the location of their homes

Response	Frequency (f)	Percentage (%)
Town	30	60
City	8	16
Village	12	24
Total	**50**	**100**

Primary source, 2022

From the table above, majority of the respondents (60%) the location of their homes where in town whereas the least (16%) where in cities.

From the figure above, most of the respondents (54%) reported that they don't recall whether they had ever had any history of contact with someone who had TB whereas the least (12%) had never had any history of contact with someone who had TB.

(N=50)

From the table above, more than half of the respondents (64%) reported that family/community members they socially neglect them whereas the least (6%) reported that family/community members they are socially impressive.

(N=50)

From the figure above, most of the respondents (62%) were not willing to disclose their illness to family/community members whereas the least (38%) were willing to disclose their illness to the family/community members.

(N=50)

From the table above, most of the respondents (52%) had never got any form of assistance concerning TB medication from community members whereas the least (48%) had ever got any form of assistance concerning TB medication from community members.

HEALTH FACILITY RELATED FACTORS CONTRIBUTING TO INCREASED CASES OF TB AMONG HIV/AIDS PATIENTS AGED 18-45 YEARS

(N=50)

From the figure above, most of the respondents (58%) they had never gone for TB screening before whereas the least (42%) had ever gone for TB screening before.
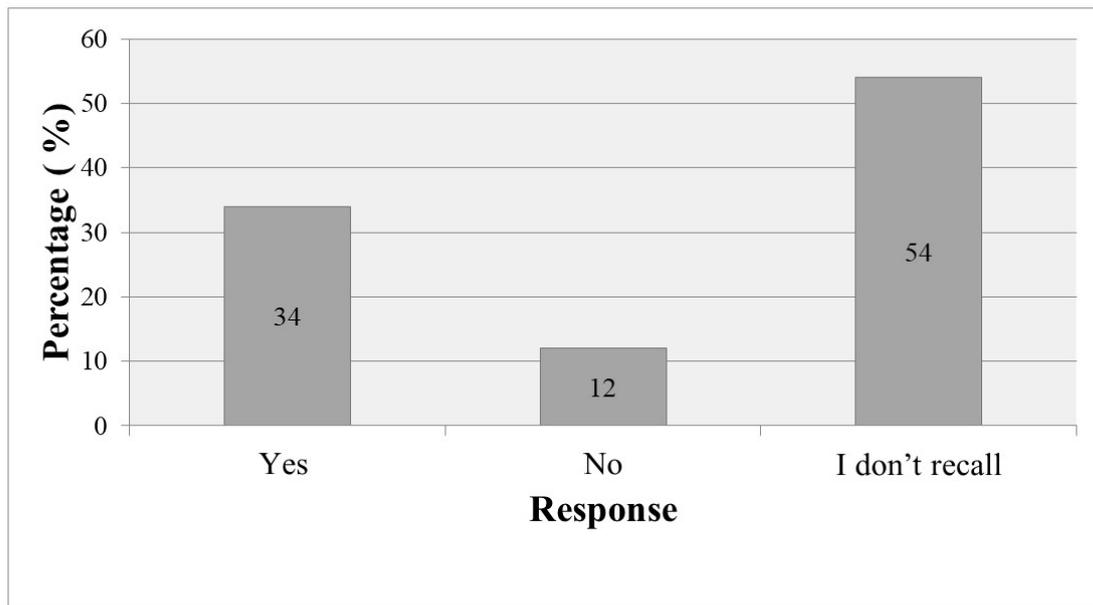
(N=21)

Figure 4. Shows the distribution of respondents according to whether or not they had ever had any history of contact with someone who had TB

Table 5. Shows the distribution of respondents according to the perception of family/ community members towards TB patients

Response	Frequency (f)	Percentage (%)
Most people behave differently	9	18
Family members avoid me	6	12
They are socially impressive	3	6
Socially they neglect me	32	64
Total	**50**	**100**

Primary source, 2022

Table 6. Shows the distribution of respondents according to whether or not they had ever got any form of assistance concerning TB medication from community members

Response	Frequency (f)	Percentage (%)
Yes	24	48
No	26	52
Total	**50**	**100**

Primary source, 2022
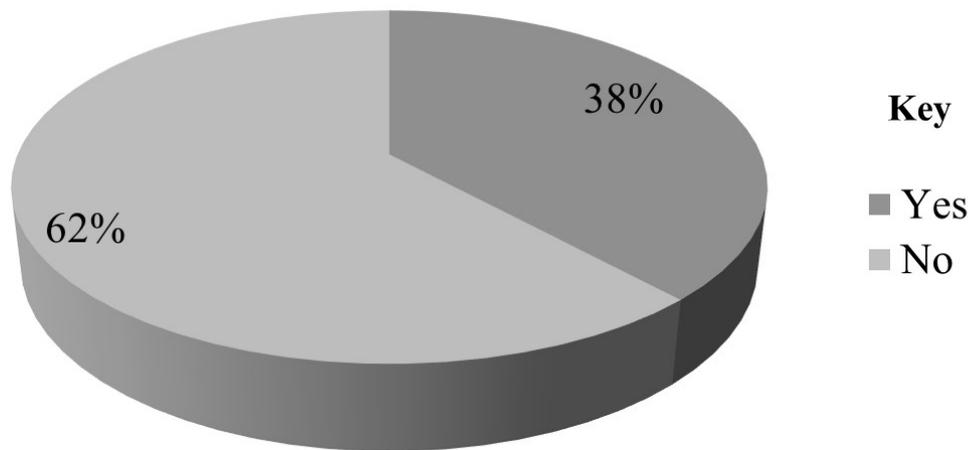
Chart 3. Shows the distribution of respondents according to whether or not they would disclose their illness to family/ community members
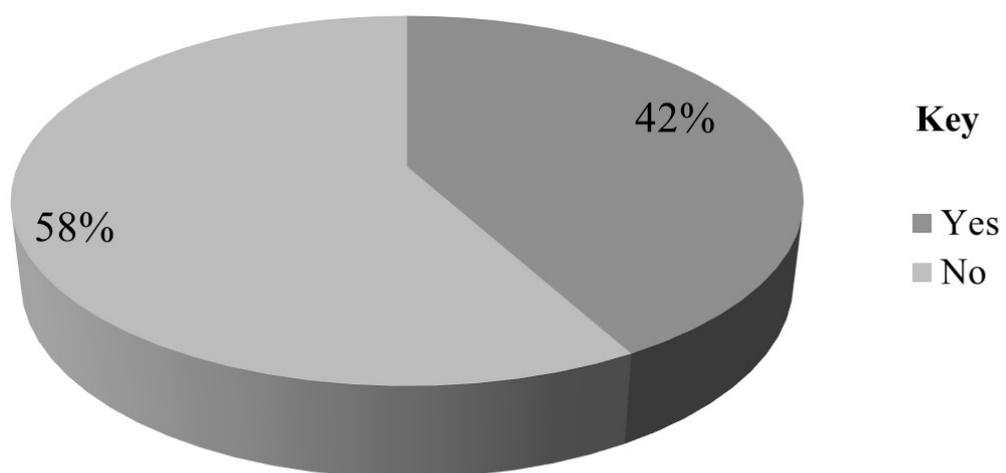

Chart 4. Shows the distribution of respondents according to whether or not they had ever gone for TB screening before

Table 7. Shows the distribution of respondents who had ever gone for TB screening according to whether or not they received adequate counseling services from health workers

Response	Frequency (f)	Percentage (%)
Yes	15	71
No	6	29
Total	**21**	**100**

Primary source, 2022

From the table above, majority of the respondents (79%) who had ever gone for TB screening reported that they received adequate counseling services from health workers whereas the minority (29%) they did not receive adequate counseling services from health workers.

(N=50)

From the table above, half of the respondents (50%) reported that after onset signs of TB they self-medicated themselves whereas the least (4%) reported that after onset signs of TB they went for prayers.

(N=50)

From the figure above, most of the respondents (54%) the distance from their homes to the health facility were > 10 kilometers whereas the least (46%) noted < 10 kilometers.

(N=50)

From the table above, more than half of the respondents (60%) reported >30 minutes as the time they take to access health care services in ART clinic whereas the least (40%) reported <30 minutes.

From the figure above, most of the respondents (38%) reported that health professionals had good attitude towards patients whereas the least (14%) reported that health professionals had had poor attitude towards patients.

7   DISCUSSION, RECOMMENDATIONS AND CONCLUSION

8   Discussion:

Individual factors contributing to increased cases of TB among HIV/AIDS patients aged 18-45 years

Given the study findings, the majority of the respondents (80%) had never heard about TB before the diagnosis of the disease. This indicates that a considerable number of respondents were aware of the study setting. The study results were in line with Wahila et al, (2013), where almost all the respondents (97.7%) had heard about TB before diagnosis.

However, most of the respondents (46%) reported months as the period when they came to know that they were suffering from TB. This implies that study participants took along to know that they had the infection even though they ever were cognizant of TB infection. The study results differ from Gunda et al (2018), where 88% of respondents' TB occurred within the first six months.

The study further showed that nearly all respondents (98%) agreed that they can be cured of TB. This could be probably a result of the fact that a significant number of participants might have witnessed or heard of colleagues who got cured and therefore they became reluctant to prevent themselves. Findings were in agreement with Wudalem et al (2021), where (95.3%) of patients considered TB a curable disease.

Remarkably, half of the respondents (50%) reported Tobacco as the substance they use. This implies that due to smoking, study participants increased their chances of being at risk of having TB infection. This was in disagreement with a study that was done by Aweke et al (2016), where results revealed that (96.8%) of TB/HIV co-infected patients, were non-smokers.

However, most of the respondents (38%) commonly fed on carbohydrates. Therefore, this denotes that poor diet intake and substance use lowered their immunity levels. The study results differ from a study that was done by Farhia (2014), where (66.4%) of respondents routinely had meals containing a balanced diet.

Community-related factors contributing to increased cases of TB among HIV/AIDS patients aged 18-45 years

The study also showed that the majority of the respondents (60%) in the location of their homes were in town. This denotes that residents
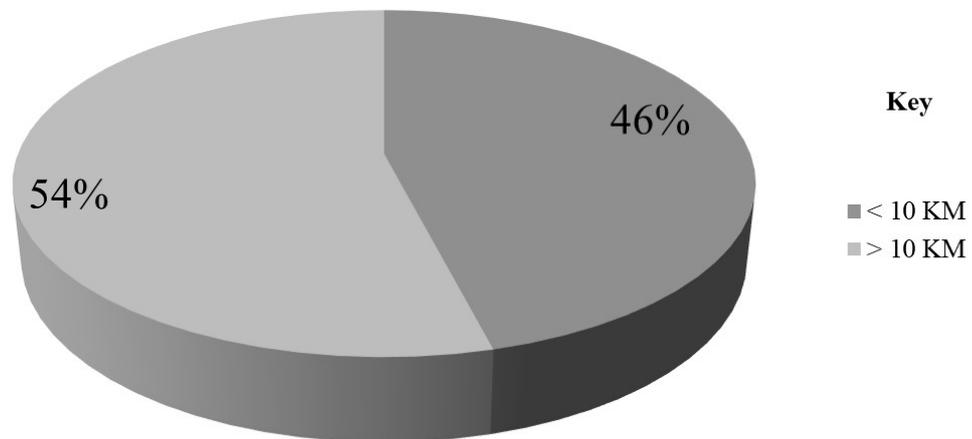
Chart 5. Shows the distribution of respondents according to the distance from their homes to the health facility
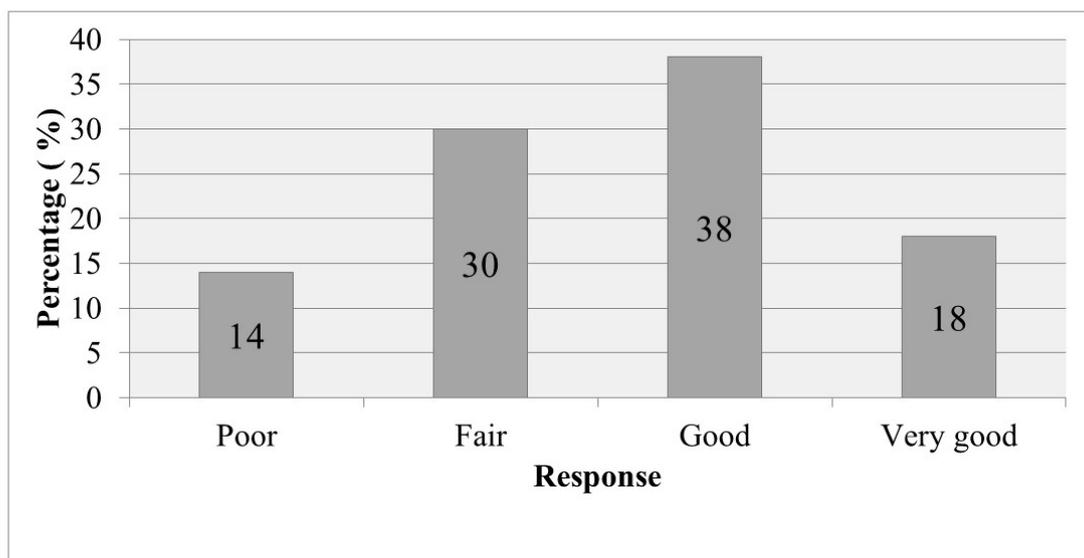

Figure 5. Shows the distribution of respondents according to how they perceive the attitude of health professionals towards patients

Table 8. Shows the distribution of respondents according to where they had to seek for help first after onset signs of TB

Response	Frequency (f)	Percentage (%)
Health facility	18	36
Traditional healers	5	10
Self-medication	25	50
Prayers	2	4
Total	**50**	**100**

Primary source, 2022

Table 9. Shows the distribution of respondents according how long does it take for them to access health care services in ART clinic

Response	Frequency (f)	Percentage (%)
<30 minutes	20	40
> 30 minutes	30	60
Total	**50**	**100**

Primary source, 2022

within town-based areas mostly live in congested places which gives a clear overview of the increased spread of TB infection. The study results were consistent with Awake et al (2016), where results showed that the majority of TB/HIV patients 130(82.8%) were urban residents.

However, most of the respondents (54%) reported that they don't recall whether they had ever had any history of contact with someone who had TB, and therefore since they lived in congested areas chances of getting the infection were high even though they never minded about the safeness of not being at risk. This is in disagreement with Talha et al (2014), where results showed that history of contact with tuberculosis cases was significant between tuberculosis and controller groups 33.3% of tuberculosis cases had a history of contact with the smear-positive case.

To add to that, more than half of the respondents (64%) reported that family/community members socially neglect them and this could be attributed to the fact that at times the disease is most likely to impose an impact on an infected person with other people. The study results were inconsistent with a study that was conducted by Saria et al (2014), where results showed that the self-perception of being a TB patient was 95.4% got family support.

The study revealed that most of the respondents (62%) were not willing to disclose their illness to family/community members. Therefore, this paved way to persistent illness since they were afraid of being stigmatized.

Current results were in disagreement with Addisu et al (2018), where findings indicated that 249 (91.9%) of respondents disclosed their illness to their relatives and informed them about the issue of TB medication.

Most of the respondents (52%) had never got any form of assistance concerning TB medication from community members. This is could be a result of the fact that they were afraid to disclose their illness to community members as noted earlier. The study results were in agreement with Kassahun et al (2019), where (49%) of participants reported that they never had any form of assistance from friends and relatives to seek medication.

Health facility-related factors contributing to increased cases of TB among HIV/AIDS patients aged 18-45 years

To study results, most of the respondents (58%) had never gone for TB screening before. Therefore, indicates participants had poor health-seeking behaviors. This is in agreement with Ahmed et al (2016), where results indicated that 68% of the respondents had never gone for TB screening before.

It was also noted that half of the respondents (50%) reported that after the onset of signs of TB they self-medicated themselves. This signifies that study participants were delayed to seek medical assistance. The study results were in line with those

of Halsema et al (2020), where (56.8%) of the respondents after the onset of symptoms resorted to self-medication.

For most of the respondents (54%) the distance from their homes to the health facility was> 10 kilometers. With such long distances, patients were unable to seek medical assistance since some of them were busy at work and others were unemployed; they could not afford to meet the costs and at times they had to resort to self-medication hence leading to persistent illness of TB infection. The study results were in line with Maria et al (2015), where results showed that more than half (60%) said they lacked easy access to the health facility closest to an average of 2.5 km to reach a facility.

The study revealed that more than half of the respondents (60%) reported >30 minutes as the time they take to access health care services in ART clinics. Consequently, long waiting times due to access to medical services had a direct impact on the increased spread of TB to their fellows. The study results were in agreement with Maria et al, (2015), where findings showed that (76%) of respondents reported delays of less than 30 minutes to receive health care during each visit to the health center.

Conclusion

Given the overall findings that were obtained from the study, the following conclusions were made by the researcher:

The study discovered that; participants delayed to seek for medical services after the onset of symptoms as (46%) came to know that they were suffering from TB for months, personal perception about the cure of TB infection (98%) agreed that they can be cured of TB, substance use as (50%) were Tobacco smokers and poor diet intake as (38%) commonly fed on carbohydrates were the individual factors contributing to increased spread of TB infections among HIV/AIDS patients.

From study findings it was established that; the location of respondent's home place (60%) was from town, stigma from communities (64%) reported that family/community members socially neglect them, inability to disclose the illness (62%) were not willing to disclose their illness to family/community members and inadequate support from family members as (52%) had never got any form of assistance concerning TB medication from community members were the main community-related factors contributing to increased spread of

TB infections among HIV/AIDS patients aged 18-45 years.

The study revealed that; poor health-seeking behaviors as (58%) had never gone for TB screening before, self-medication as (50%) reported that after onset signs of TB they self-medicated themselves, long distances (54%) noted that the distance from their homes to the health facility was> 10 kilometers, long waiting time as (60%) reported >30 minutes as the time they take to access health care services in ART clinic were the overall health facility-related factors contributing to increased spread of TB infections among HIV/AIDS patient aged 18-45 years.

Conclusively, it was discovered that participants possessed personal perceptions about the cure of TB infection, substance use, poor diet intake, location of respondent's home place, stigma from communities, inability to disclose the illness, inadequate support from family members, poor health-seeking behaviors, self-medication, long distances and long waiting time were the overall factors contributing to increased spread of TB infections among HIV/AIDS patient aged 18-45 years.

9   Limitations of the study and their possible solutions

The researcher faced financial constraints during the study in gathering information from the internet, Libraries, drafting questionnaires, printing, and typing. This was solved by borrowing some money from friends and my family relatives.

There were tight school programs that interfered with the exercise and this was solved by budgeting the little available time and using it effectively.

There was a need to translate some questions into the local language (Luganda) since the questionnaire was designed in the English language and some respondents got difficulties comprehending questions in English. The researcher solved this, by the use of the two research assistants who were very fluent in the local language (Luganda) to translate the questionnaires.

Recommendations:

Ministry of health and non-governmental organizations should set and implement new strategies that will help the general public aware of how serious the consequences of TB infection and be helped to understand that TB is both curable and

preventable to improve on health seeking behaviors of the people.

Entebbe general hospital administration should continue to carry out community out-reaches focusing on specialized education programs that will intensively enlighten community members on the effects of discrimination and stigma towards patients and misconceptions about TB, self-medication, and timely access to medical assistance.

Healthcare services should be conveniently placed distance-wise with adequate access to medicine by the government of Uganda through the Ministry of health since most of the patients had to travel long distances to seek treatment.

The researcher recommends further studies on TB from different study areas since TB is considered a threat to ART-receiving patients in Uganda so as facilitate periodic surveillance and monitoring practices for TB-HIV co-infection.

10   ACKNOWLEDGEMENT:

11   KEY TERMS

Adherence :   It's the degree to which a patient correctly flows medical advice on drug compliance and self-care

Case : These are particular incidences of a disease in population or Individuals in particular.

Counseling : This is the advice given to a TB patient regarding HIV testing, adherence to TB and HIV treatment, and the benefits of using a condom.

Discrimination : This is where individuals or institutions un justly deprive

Others of their rights resulting in stigma.

Factors : These are elements contributing to particular result of situation.

Incident rate : Refers to the number of new cases of a condition observed within a given period of time.

Prevalence : This is the total number of new and old cases of the disease in a given period of time in a particular location.

Pulmonary TB : This refers to the TB that affects the respiratory system given period of time in a particular location.

Stigma : This refers to prejudice directed at people living with

TB which can result into being rejected, avoided, discriminated against or even physically hurt.

Tuberculosis : Is a chronic infectious disease caused by Mycobacterium tuberculosis.

12   Defination of key terms

Adherence : It's the degree to which a patient correctly flows medical advice on drug compliance and self-care

Case : These are particular incidences of a disease in population or Individuals in particular.

Counseling : This is the advice given to a TB patient regarding HIV testing, adherence to TB and HIV treatment, and the benefits of using a condom.

Discrimination : This is where individuals or institutions un justly deprive others of their rights resulting in stigma.

Factors : These are elements contributing to particular result of situation.

Incident rate : Refers to the number of new cases of a condition observed within a given period of time.

Prevalence : This is the total number of new and old cases of the disease in a given period of time in a particular location.

Pulmonary TB : This refers to the TB that affects the respiratory system given period of time in a particular location.

Stigma : This refers to prejudice directed at people living with

TB which can result into being rejected, avoided, discriminated against or even physically hurt.

Tuberculosis : Is a chronic infectious disease caused by Mycobacterium tuberculosis.

13   LIST OF ABBREVIATIONS

AIDS :   Acquired Immune Deficiency Syndrome

ART : Anti -Retroviral Therapy

ATT :   Anti-TB Therapy

BMI :   Body Mass Index

CDC :   Centre for Disease Control

CD4 :   Cluster of Differentiation 4

HAART :   Highly Active Anti-Retroviral Therapy

Hgb :   Haemoglobin

HIV :   Human Immunodeficiency Virus

HMIS :   Health Management Information System

KSHS :   Kampala School of Health Sciences

MDR :   Multi- Drug Resistance

MoH :   Ministry of Health

MRDR :   Modified Relative Dose Response

NGO :   Non-Governmental Organization

NNS :   Normal Saline Solution

NTL :   National Tuberculosis Laboratory

TDF :   Tenofovir Disproxil Fumarate

RR-TB :   Rifampicin Resistant Tuberculosis

UNAIDS :   United Nations Program for HIV/AIDS

USAID :   United States Agency for International Development

WHO :   World Health Organization

14   Publisher details

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