

Evaluation factors contributing to the treatment default by tuberculosis patients at ART Clinic in Ishaka Adventist Hospital, Bushenyi District, Uganda.

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ABSTRACT

Tuberculosis (TB) is one of the biggest public health problem and now ranks alongside Human Immunodeficiency Virus (HIV) as the world's leading infectious cause of death. Globally, patient compliance with anti-TB therapy estimated as low as 40% in developing countries, remains the principle cause of treatment failure. The aim of this study was to establish the factors contributing to treatment default by Tuberculosis patients at ART clinic in Ishaka Adventist Hospital, Bushenyi District. A cross-sectional and descriptive study which employed both qualitative and quantitative approach of data collection were used. The study was conducted in ART clinic at Ishaka Adventist Hospital, Bushenyi District and it took a period of four weeks. A purposive sampling technique was used to select the study participants. Results showed that out of 38 study participants, majority 26 (68%) were of age 30 years and above. A large proportion 24 (63%) of the participants were unemployed compared to the least 14 (37%) who were employed. Majority 21 (55%) travel at a distance of 10km and above to get TB treatment. Out of 38 participants, majority 26 (68%) did not informed the family or friends when they were on TB treatment. Of 26 participants 16 (61.5%) had fear of being isolated and 2 (7.7%) were other reason of no support. A large proportion of participants rated the attitude of staff who attended to them at the health facility to be unfriendly with 21 (55%) while very few 6 (16%) were rude. The ministry should ensure availability of and access to resources for strengthening systems for delivery of quality tuberculosis treatment, prevention and control.

Keywords: treatment, default, tuberculosis, ART, Uganda

INTRODUCTION

Tuberculosis (TB) is one of the biggest public health problem and now ranks alongside Human Immunodeficiency Virus (HIV) as the world's leading infectious cause of death [1-19]. Tuberculosis is an infectious disease caused by Mycobacterium tuberculosis [20]. The disease primarily affects lungs and causes Pulmonary Tuberculosis (PTB) and also affect bones and joints, meninges, skin and other tissues of the body [21-37].

According to World Health Organization 2013 report, people who have PTB can infect others through droplets infection when they cough, sneeze or talk yet the prevalence of this TB among close contact of infectious patients can be about 2.5

times higher than that in the general population [38]. Besides well-known risk factors, the most vital unresolved challenge in TB control is the treatment completion and studies now found that Treatment default and resistance to anti-TB drugs emerged as a vital obstacle in the control of TB disease [39].

Globally, patient compliance with anti-TB therapy had an estimate of as low as 40% in developing countries which remains the major principle cause of treatment failure much as the World Health Organization recommended at least 90% cure rate of all diagnosed TB cases [40]. Despite the World Health Organization expected recommendation on cure rate,

Zumla and his colleagues found that the main barrier for achieving this desired TB treatment success rate is the high treatment default rate of 10% in the 2008 to 11.9% in 2010 [41].

As with most African countries especially South Africa, the directly observed therapy short-course (DOTS) strategy is the mainstay of TB control. The Plan entails an ambitious drive to diagnose and successfully treat at least 90% of all noticed TB cases however, excessive default rates constrain the successful treatment of these patients [42]. From 2003 to 2011, patient default rates among new smear-positive TB cases remained higher than the less than 5% national target, fluctuating between 6.1% and 11.2% [43].

In East African countries, The World Health Organization report showed that Uganda

had a TB default rate of 11% with a treatment success rate of 70% among smear positive patients and clinically diagnosed TB of 19% [44]. In 2010 to 2011, about 29% of TB patients registered at Infectious Diseases Institute clinic defaulted from treatment (data unpublished), for reasons not well known particularly in Western region which had bigger number of TB patients [45].

However, in Ishaka Adventist Hospital verbal report showed that the growth of this assumption has been halted by discovery of the phenomenon of treatment default. Despite this mystified situation this prompted investigation which focuses to find out the factors contributing to treatment default by Tuberculosis patients at ART clinic in Ishaka Adventist Hospital, Bushenyi District.

METHODOLOGY

Study Design and Rationale

A cross-sectional and descriptive study which employed both qualitative and quantitative approach of data collection were used for a period of four weeks. A cross-sectional study was considered because it collect data at a specify period of time in a defined population. The descriptive study was chosen because it describes the situation as they exist in their natural setting. Qualitative and quantitative designs were chosen because they helps in extracting the necessary information from respondents to study with ease.

Study Setting

The study was conducted in ART clinic at Ishaka Adventist Hospital (IAH) which is located in Bushenyi District, in western Uganda.

Study Population

The study targeted patients diagnosed with Tuberculosis attending treatment at ART clinic and General Outpatient department (GOPD) in Ishaka Adventist Hospital, Bushenyi District. These populations were selected because of the reasonable access to information.

Sample Size Determination

A sample size of respondents were calculated using Kish and Leslie (1965), formula which state that;

$$n = \left(\frac{Z^2 p q}{d^2} \right)$$

Where; n =Desired sample size,

Z = Standard deviation at desired degree of accuracy was 1.96 at confidence level of 95%.

p = Proportion of patients diagnosed with Tuberculosis attending treatment at ART clinic and General Outpatient department in Ishaka Adventist Hospital, Bushenyi District. Estimates of p to be 50% = 0.5, Implying, $p = 0.5$

q = Standardize, $1.0 - p = 0.5$

d = Degree of error would be accepted at 5%, $d = 0.05$

$$n = \left(\frac{1.96^2 \times 0.5 \times 0.5}{0.05^2} \right)$$

$$n = 384$$

According to Kish and Leslie's formula (1965), the sample size would be 384

Patients diagnosed with Tuberculosis attending treatment at ART clinic and General Outpatient department in Ishaka Adventist Hospital, Bushenyi District. But the sample population to be accessible was less than 10,000.

N =Total number of patients diagnosed with Tuberculosis attending treatment at ART clinic and General Outpatient

department in Ishaka Adventist Hospital, Bushenyi District were 42 in year 2017 (IAH GOPD, 2017).

$$nf = \left(\frac{n}{1 + \frac{n}{N}} \right); \quad nf = \left(\frac{384}{1 + \frac{384}{42}} \right); \quad nf = 38 \text{ respondents}$$

Where; nf was sample size for N , population of Patients diagnosed with Tuberculosis attending treatment at ART clinic and General Outpatient department in Ishaka Adventist Hospital, Bushenyi District.

Therefore, the sample size, $n = 38$ respondents (Patients diagnosed with Tuberculosis attending treatment at ART clinic and General Outpatient department in Ishaka Adventist Hospital, Bushenyi District).

Sampling Procedure

The researcher considered a purposive sampling technique to select the study participants. This technique was chosen because of its suitability in studying situation where subjects with the required characteristics happen to be in relatively small numbers.

Eligibility Criteria

Inclusion Criteria

The study considered only Patients diagnosed with Tuberculosis attending treatment at ART clinic and General outpatient department in Ishaka Adventist Hospital, Bushenyi District who could consent voluntarily to take part in the study during the time of interview.

Exclusion Criteria

The study did not consider any Patients diagnosed with Tuberculosis attending treatment at ART clinic and General outpatient department in Ishaka Adventist Hospital, Bushenyi District who could not consent voluntarily to take part in the study during the time of interview.

Research Instruments

The questionnaire was made up of both close and open-ended questions written in English. The close ended questions were used to enable the respondents choose

from available options while the open-ended questions to allow them express their own ideas in their own words.

The use of the questionnaire was considered because it enabled the researcher ensure privacy and confidentiality as the respondents were filling them independently.

Data Collection Procedures

The self-administered questionnaires were used to conduct face to face interviews with one respondent at a time to ensure privacy. Data collection took a period of four weeks. Data would be collected in morning from 9:00 am till mid-day. Each study respondent were requested to fill the questionnaire in English with the help of Researcher for those who did not understand English language. The respondent would be thank for the cooperation and participation in the study.

Data Analysis and Presentation

The researcher would first tallied the results manually then entered the information into the computer using using Microsoft excel/word 2013 and computer software program Statistical Package for Social Sciences (SPSS version 16.0). The data analyzed were presented in the form of tables, pie charts, graphs and frequency distribution tables which formed the basis for discussion and conclusion.

Ethical Considerations

Following the ethical approval of this study, a letter of introduction was obtained from Kampala International University-Western Campus, School of Nursing sciences research committee. The letter was taken to the administration of Ishaka Adventist Hospital and the in charge ART clinic for permission to carry out the study. The purpose of the study were explained to the respondents for better understanding of the study. Verbal and written consents were sought from respondents by explaining and reading the purpose of study. Client's rights, privacy and confidentiality were respected and the information handle were confidential.

RESULTS

Table 1: Show demographic information of the study participants

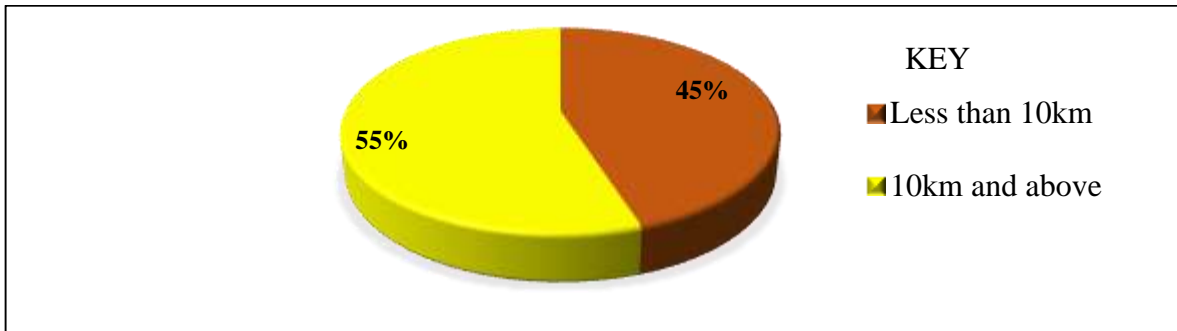
Description	Variables	Frequency (n)	Percentage / (%)
Age range	Less than 30 years	12	32
	30 years and above	26	68
	Total	38	100
Sex	Male	24	63
	Female	14	37
	Total	38	100
Tribe	Banyankole	24	63
	Bakiga	12	32
	Others include Batooro	2	5
	Total	38	100
Marital status	Single	10	26
	Married	14	37
	Widow/widower	8	21
	Others; separated, divorced	6	16
	Total	38	100
Education level	Never gone to school	16	42
	Primary	17	45
	Secondary	3	8
	University	2	5
	Total	38	100
Employment status	Unemployed	24	63
	Employed	14	37
	Total	38	100

Source: field data

On table 1 above results show that out of 38 participants, majority 26 (68%) were of age 30 years and above compared too few 12 (32%) who were of age less than 30 years. A large proportion 24 (63%) of the participants were male compared to few 14 (37%) who were female. On the same table 1 above, majority 24 (63%) of the participants were Banyankole tribe while minority 2 (5%) were other tribe who were Batooro. Findings show that the highest

proportion 14 (37%) of the participants were Married compared to lowest 6 (16%) who were of other marital status like separated, divorced. Majority 17 (45%) of the participants had attained Primary education while the minority 2 (5%) had attained University. A large proportion 24 (63%) of the participants were unemployed compared to the least 14 (37%) who were employed.

Patients Related Factors That Contribute To Treatment Default By Tuberculosis Patients



Source: field data

Figure 1: A pie chart showing distance participant travel to get TB treatment (n=38)

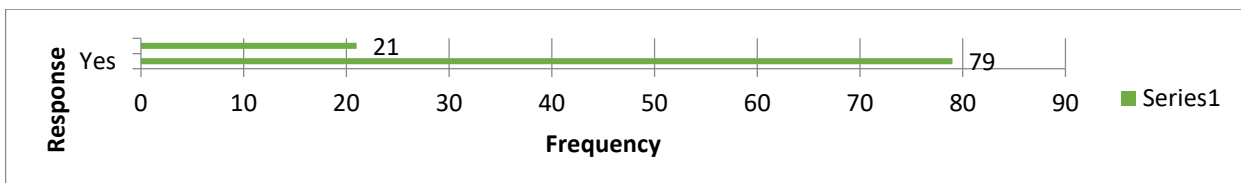
The figure 1 show that out of 38 participants, majority 21 (55%) travel at a distance of 10km and above to get TB treatment while minority 17 (45%) travel less than 10km.

Table 2: Showing when participant was diagnosed with tuberculosis

Description	Response	Frequency (n)	Percentage (%)
When Participants were diagnosed with Tuberculosis	Less than 6 months ago	14	37
	6-12 months ago	22	58
	Above 1 year ago	2	5
Total		38	100

Source: field data

Table 2 above reveals of 38 participants, majority 22 (58%) were diagnosed with Tuberculosis in 6-12 months ago meanwhile minority 2 (5%) were diagnosed above 1 year ago.



Source: field data

Figure 2: A bar graph showing whether person with TB get cure on treatment (n=38)

Figure 2 show, of 38 participants most 30 (79%) said person with TB get cure on treatment (Yes) while 8 (21%) said person with TB do not (No).

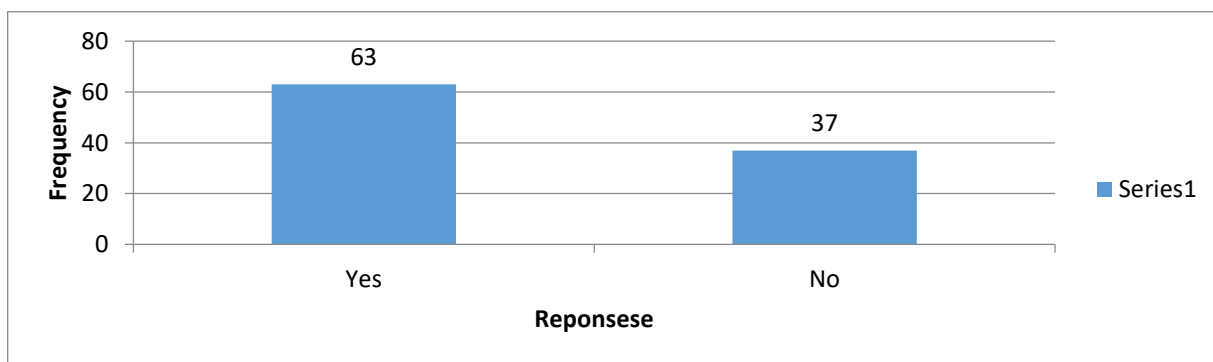
Table 3: Showing duration a person diagnosed with TB take his/her take treatment till completion and reasons why less than 6 months

Description	Variable	Frequency (n)	Percentage (%)
Duration a person diagnosed with TB take his/her treatment till completion	Less than 6 months	16	42.1
	6 months or more	4	10.5
	Till health worker stop you	18	47.4
	Total	38	100.0
Reason why participant say TB treatment completion is less than 6 months	Feeling being cure	5	31
	Treatment duration too long	2	13
	Lack of overall time	9	56
	Total	16	100

Source: field data

Table 3 show, of 38 participants most 18 (47.4%) said a person diagnosed with TB take his/her treatment till health worker stop you while few 4 (10.5%) said 6 months or more till completion. Of 16 participants who said a person diagnosed with TB take

his/her treatment till completion in less than 6 months, most 9 (56%) their reason was that lack of overall time to take treatment while very few 2 (13%) said treatment duration is too long.



Source: field data

Figure 3: A graph showing whether TB patient need to have treatment supporter (n=38)

Figure 3 above, out of 38 participants majority 24 (63%) need TB patients to have

treatment supporter (Yes) while minority 14 (37%) do not need (No).

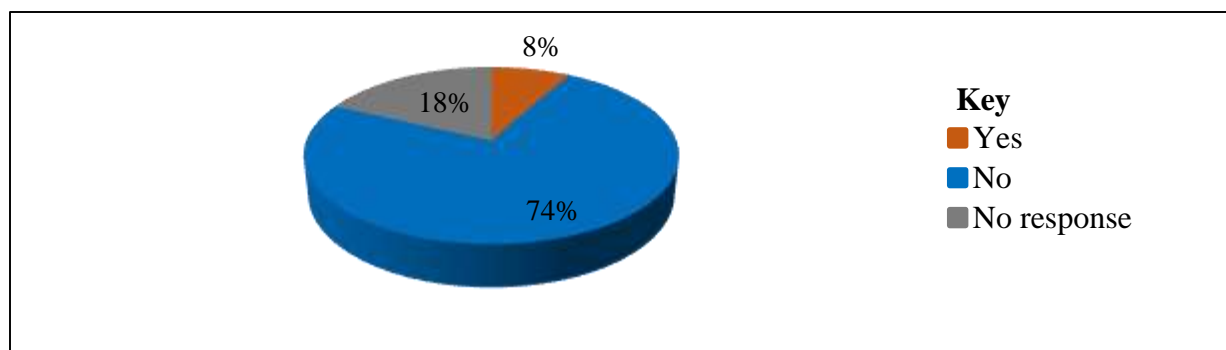
Table 4: Showing whether participant informed the family or friends when they were on TB treatment and reasons why they did not

Description	Response	Frequency (n)	Percentage (%)
Whether participant informed family or friends when on TB treatment	Yes	12	32
	No	26	68
	Total	38	100
Reason why participant did not inform the family or friends when were on TB treatment	Fear of being isolated	16	61.5
	No one to trust	8	30.8
	Other; no support	2	7.7
	Total	26	100.0

Source: field data

On table 4 above, of 38 participants majority 26 (68%) did not informed their family or friends when they were on TB treatment while minority 12 (32%) informed their family or friends. On the

same table 4, out 26 participants who did not informed family or friends when they were on TB treatment, 16 (61.5%) had fear of being isolated and 2 (7.7%) were other reason of no support.



Source: field data

Figure 4: A pie chart showing whether participant completed TB treatment (n=38).

The figure 4 above findings indicates that, out of 38 participants, majority 28 (74%)

did not complete TB treatment meanwhile very few 3 (8%) completed TB treatment.

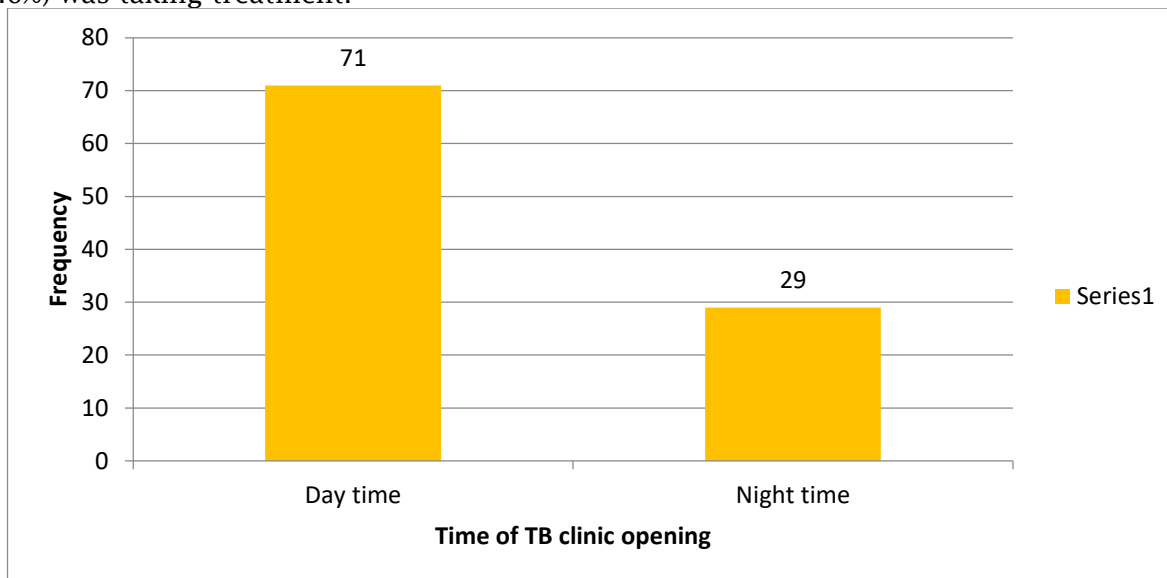
Table 5: Showing reason why participant stop taking TB treatment

Description	Response	Frequency (n)	Percentage (%)
Reason why participant stop taking TB treatment	Side effects	3	10.7
	Feeling well	16	57.1
	Too many tablets	8	28.6
	Currently taking drug	1	3.6
Total		28	100.0

Source: field data

On the table 5 above results indicates that, out of 28 participants who stop taking TB

treatment, majority 16 (57.1%) that they were feeling well meanwhile minority 1 (3.6%) was taking treatment.



Source: field data

Figure 5: A graph showing the most convenient time for TB clinic opening (n=38).

Figure 5 above, out of 38 participants a large proportion 27 (71%) most convenient

time for TB clinic to open during day time while few 11 (29%) prefer night time.

Table 6: Showing others health related factors variables

Description	Variables	Frequency (n)	Percentage (%)
Duration of time spend waiting for TB treatment at TB clinic	Less than 1 hour	12	31.6
	1-2 hours	22	57.9
	3 hours or more	4	10.5
	Total	38	100.0
Whether anti-TB drugs always available at the clinic	Always available	26	68
	Sometimes not available	12	32
	Total	38	100
How participants rated the attitude of staff who attend to them at the health facility	Friendly	11	29
	Rude	6	16
	Unfriendly	21	55
	Total	38	100
Whether participants receive counseling on anti-TB treatment from the health workers	Yes	10	26
	No	20	53
	Sometime	8	21
	Total	38	100
Whether health worker give chance to patients ask about TB treatment	Yes	10	26
	No	28	74
	Total	38	100
Whether it cost participant to get TB treatment from health facility	Free	10	26.3
	Less than 2000USH	10	26.3
	More than 2000USH	18	47.4
	Total	38	100.0

Source: field data

Table 6 above showed of 38 participants, majority 22 (57.9%) spend 1-2 hours waiting for TB treatment from TB clinic while minority 4 (10.5%) spend 3 hours or more. Out of 38 participants, most 26 (68%) said anti-TB drugs are always available at the clinic meanwhile only 12 (32%) said sometimes not available. A large proportion of participants rated the attitude of staff who attend to them at the health facility to be unfriendly with 21 (55%) while very few 6 (16%) said were rude.

A large proportion 20 (53%) of the participants did not receive counseling on

anti-TB treatment from the health workers while few 8 (21%) said sometimes.

Majority 28 (74%) said health worker do not give chance to patients to ask about TB treatment while minority 10 (26%) health workers give chance to patients to ask. Table 6 above further revealed that majority 18 (47.4%) said that it cost participants to get TB treatment from health facility at more than 2000 USH meanwhile minority 10 (26.3%) said it's free and 10 (26.3%) also said it cost less than 2000USH.

DISCUSSION

The study participants were patients diagnosed with Tuberculosis and the finding showed that majority 26 (68%) were of age 30 years and above compared

very few 12 (32%) who were of age less than 30 years. These implied that most of the participants were in middle age.

The study findings further indicated that majority 24 (63%) of the participants were Banyankole tribe while minority 2 (5%) were other tribe who were Batooro. This is because the study was carried out in Ankole sub region in western part of Uganda which is occupied mostly by Banyankole despite of other tribes. On the other hand the highest proportion 14 (37%) of the participants were Married compared to lowest 6 (16%) who were of other marital status, separated or divorced.

Nearly half, 17 (45%) of the participants had attained Primary education while the minority 2 (5%) had attained University. These result implied that most of the participants had at least attained some form of education though low education could affect participants' level of understanding on certain things like treatment default by tuberculosis patients. A large proportion 24 (63%) of the participants were unemployed compared to the least 14 (37%) who were employed. This implied that employment status is among the key determinant for the financial support to the access of TB services in terms of transport, accessing some investigations such as x-ray.

Individual patient related factors associated with default by Tuberculosis patients found out that the above average of 38 participants, a majority 21 (55%) travel at a distance of 10km and above to get TB treatment meanwhile few 17 (45%) travel at a distance less than 10km. These findings were in line with Elbireer *et al.* [45], who found that Individual patient characteristics associated with defaulting were living at a distance of 10 km or more from the Infectious Diseases Institute clinic with 39.4%.

Furthermore, study finding revealed that majority 22 (58%) were diagnosed with Tuberculosis in 6-12 months ago meanwhile minority 2 (5%) were diagnosed above 1 year ago. These result showed that many patients were diagnose with Tuberculosis at the early stage therefore the findings are in disagreement with Smart [46], stated that patients lack

knowledge of TB symptoms or failure to recognize them results in delays in seeking healthcare.

According to the study findings indicated that above average with 30 (79%) participants said person with TB get cure on treatment (Yes) while 8 (21%) said person with TB do not (No). These finding implied that most of the patients had knowledge on TB treatment. It disagree with Smart [46], report that patients lack of knowledge of TB symptoms or failure to recognize them results in delays in seeking healthcare. Nearly half of the participants 18 (47.4%) said a person diagnosed with TB take his/her treatment till health worker stop you while few 4 (10.5%) said 6 months or more till completion.

In addition, out of 16 participants who said a person diagnosed with TB take his/her treatment till completion in less than 6 months, 9 (56%) of them said the reason were that lack of overall time to take treatment while very few 2 (13%) said treatment duration is too long, these result coincided with Slama [46], findings that the main reason for defaulting anti-TB was the feeling of being cured (9%), followed by the duration of treatment being too long (9%) and the lack of overall time (24.1%)

The study result further showed that out of 38 participants, a majority 24 (63%) need TB patient to have treatment supporter (Yes) while few 14 (37%) did not need (No). Similarly Kudakwashe [47] in Namibia report showed that most, 46 (94%), of the patients had treatment supporter while they were taking treatment and 3 (6%) did not have one, only 22 (48%) of the respondents who had treatment supporter were compliant, while 24 (52%) were non-compliant. These result implied that having a treatment supporter does not associate with any significant difference between compliant and non-compliant groups, neither not having a treatment supporter.

According the findings to find out whether participants informed their family or friends when started on TB treatment, a majority 26 (68%) did not inform the family

or friends when they were on TB treatment while minority 12 (32%) informed the family or friends. This finding did not support Ndimande [47], who reported that compliance to TB treatment should be improved by promoting TB treatment literacy among those with the disease, their families and communities, through empowering the healthcare provider with knowledge of TB [47,48, 49, 50].

Out of 26 participants' reason why participants did not inform their family or friends when they were on TB treatment, 16 (61.5%) said they had fear of being isolated and 2 (7.7%) were other reason of no support. This disagreed with Elbireer *et al.* [45], result that having a family member to remind patient to take their medicine and disclosure status to family members about having TB during TB treatment were not associated with defaulting.

Nevertheless, majority 28 (74%) did not complete TB treatment meanwhile minority 3 (8%) completed TB treatment. In this finding failure to adhere to principles of TB control causes the development of almost all the Drug Resistance-TB (DR-TB), and poor or non-compliance to TB treatment is the main predisposing factor for an individual to develop DR-TB. It correlates to Lalloo [48], study results. The results revealed that out of 28 participants who stop taking TB treatment their reasons why they stopped taking TB treatment were feeling well with 16 (57.1%) meanwhile only 1 (3.6%) was taking treatment. The finding was in line with the results by Slama [46].

According to the study findings above, out of 38 participants a large proportion 27 (71%) revealed that most convenient time for TB clinic should open during day time while few 11 (29%) prefer night time. Many patients may develop stigmatization amongst misinformed communities.

According to the majority 22 (57.9%) spend 1-2 hours waiting for TB treatment from TB clinic while minority 4 (10.5%) spend 3

hours or more. These findings correlate with Ronald *et al.* [39], result that 7 (16.7%) of the respondents spend less than 1 hour for monthly refill of TB treatment and 13 (31.0%) spend 3 hours and above.

More than average of the study participants with 26 (68%) said anti-TB drugs are always available at the clinic meanwhile only 12 (32%) said sometimes not available. Similarly the study was in line with Ronald and his colleagues that 9 (21.4%) as uncaring despite 100% of the interviewed respondents agreed that TB drugs were always available on their scheduled visits [39]. A large proportion of participants rated the attitude of staff who attend to them at the health facility that they were unfriendly with 21 (55%) compared to very few 6 (16%) who said they were rude. The findings disagreed with Ronald *et al.* (2016), results found 12 (28.6%) of the respondents viewed health care workers as friendly during treatment, 7 (16.7%) as empathetic, 14 (33.3%) as rude. The results further disagreed with Kudakwashe [47]), who found out that more than 50% of those who ranked the attitude as friendly to very friendly were non-compliant.

Nevertheless, of 38 participants result showed that a large proportion 20 (53%) of the participant did not receive counseling on anti-TB treatment from the health workers while very few 8 (21%) said sometimes they receive counseling. The results coincided with Ronald *et al.* (2016), report indicated that 7 (16.7%) of the respondents were only counseled during first visit for treatment, 17 (40.5%) were counseled on each visit, 13 (31%) were counseled once a while and 5 (11.9%) were never counseled. This could be the reasons why majority 28 (74%) of the study participants said health worker do not give chance to patients to ask about TB treatment while minority 10 (26%) health workers give chance to patients to ask.

CONCLUSION

Almost all the study participants had attained Primary education as their current

qualification, majority were age of 30 and above of whom most were male who were

also unemployed; unemployment affect TB treatment and control by the TB patients. The participants travel at a distance of 10km and above to get TB treatment, they did not inform their family or friends when they were on TB treatment because of fear of being isolated and the participants stopped taking TB treatment because they were feeling well.

Most participants revealed that attitude of staff who attend to TB patients at the health facility were unfriendly, TB patients do not receive counseling on anti-TB treatment from the health workers as well as the cost to get TB treatment from health facility for x-ray services and transports.

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