# ASSESSMENT OF ACCEPTABILITY OF DIRECTLY OBSERVED SHORT COURSE TREATMENT TO TUBERCULOSIS PATIENTS IN ILALA MUNICIPALITY.

By

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A Dissertation Submitted in Partial Fulfilment of the Requirements for the Degree of Master of Public Health of the Muhimbili University of Health and Allied Sciences

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## CERTIFICATION

The undersigned certifies that he has read and hereby recommends for acceptance by the Muhimbili University of Health and Allied Sciences a dissertation entitled **Assessment of acceptability of directly observed short course treatment to tuberculosis patients in health facilities of Ilala Municipality** In fulfillment of the requirements for the degree of Master of Public Health of the Muhimbili University of Health and Allied Sciences

Prof. Eustace P.Y. Muhondwa

(Supervisor)

Date: 2nd November 2009

## DECLARATION

## AND

## COPYRIGHT

I, **Arnold Mutajwaha Mukandara** declare that this dissertation is my own original work and that it has not been presented and will not be presented to any other University for a similar or any other degree award.

**Signature** _____

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## DEDICATION

I dedicate this work to my father the late Mr. Joseph Mukandara and to my mother Mrs. Anatoria Joseph Mukandara.

The dedication also includes my beloved wife Sophia Mukandara.

## ABSTRACT

The tuberculosis pandemic poses one of the greatest challenges to global public health. Globally TB in is still growing at one percent in a year due to rapid increase in Africa. About two billion people, equal to a third world's population, are infected with the mycobacterium tubercle bacilli. Nearly 5,000 infected TB patients die every day, according to WHO estimates. There were 64,200 notified cases in Tanzania mainland in the year 2005.

Intense control efforts are helping to decrease or stabilize the incidence in other regions. Introduction of DOTS in the developing countries has resulted in a dramatic reduction of TB despite the co- existence of TB and HIV that remains the main challenge to TB treatment and control.

A cross sectional study was conducted in, Ilala Municipality Dar es Salaam and involved five selected health facilities of Mnazi Mmoja Health Center, Amana Hospital, Vingunguti dispensary, Magereza dispensary and Buguruni Health Center. The objective of the study was to assess the acceptability of directly observed short course treatment among TB patients attending the above health facilities of Ilala Municipality.

The sample population involved 400 patients on DOT in TB clinics. A questionnaire consisting of both open and closed ended questions was administered.

Data were processed and analyzed using a computer software programme of Epi Info version 6. Data were analysed by examination of distribution of frequencies of respondents characteristics and variables followed by examination of the strength of association of dependent and independent variables using chi-squared test for contingency tables.

The results of this study revealed that most of the patients accepted the Directly Observed Short Course Strategy. This was indicated by their adherence to the requirement of ensuring regular attendance at the respective TB clinics despite the economic loss and travelling cost.

Results also indicated that most of the respondents did not know the cause or the mode of spread of TB. However most of the patients knew the recommended standard treatment duration of TB.

The study also revealed that TB drugs were always available at the clinics but patients needed support by providing them with water for taking their medication. The respondents also preferred receiving drugs every after one-week to swallow them at home under a recommended supervisor as an alternative strategy.

The study recommends that: -

MoH and NTLP:

- There is a need to improve awareness on the causes and mode of transmission of TB by reinforcing health education at TB clinics and entire the community. The results in the study revealed that the majority of the patients did not know the causes and mode of transmission of TB.
- Need to put more effort to ensure that the discrepancy between onset of signs and symptoms of TB and recognition of the disease is reduced. The results of the study showed that there was a discrepancy between when the disease started until TB was diagnosed.
- Need to create a means for supportive therapy by providing patients with water for taking their drugs at the TB clinics. The study found that the majority of patients was not provided with water for taking their dugs. Those who bought water could not always afford to do so.

Further studies should be conducted to compare the acceptability of DOTS in health facilities with CB-DOTS.

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## LIST OF ACRONYMS

| | |
|---|---|
| AIDS | Acquired Immuno Deficiency Syndrome |
| CB | Community Based |
| CDC | Communicable Disease Control |
| CHWs | Community Health Workers |
| DOTS | Directly Observed Treatment Short Course |
| DTLC | District Tuberculosis and Leprosy Coordinator |
| GDEP | Global Dots Expansion Plan |
| GIS | Geographical System Information |
| HIV | Human Immunodeficiency Virus |
| MDR | Multi Drug Resistance |
| MoH | Ministry of Health |
| MMOH | Municipal Medical Officer of Health |
| NTLP | National Tuberculosis and Leprosy Programme |
| PHIs | Primary Health Institutions |
| PI | Principal Investigator |
| PCT | Patient Centered Treatment |
| PHC | Primary Health Care |
| SAT | Self Administered Treatment |
| TB | Tuberculosis |
| THs | Traditional Healers |
| WHO | World Health Organization |

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# CHAPTER 1.0

## 1.1. Background

Tuberculosis is among the leading causes of death in the world. Six million people die every year due to HIV/AIDS, TB and malaria. Nearly two million of these deaths are due to TB. The disease is curable but it kills about 5000 people every day. It is reported that 98% of TB deaths are in the developing world, affecting mostly young adults in their most productive years. (WHO, 2005).

About two billion people, equal to a third of world's total population are infected with the TB bacilli. One in ten people infected with TB bacilli will become sick with active TB. The disease is a world wide pandemic; though the highest rates per capita are in Africa, which is a quarter of all TB cases.

Globally, TB incidence is still growing at 1% a year due to rapid increase in Africa. (W.H.O, 2004). Intense control efforts are helping to decrease or stabilize the incidence in other regions.

The estimated incidence of TB in high burden countries showed that India was top on the list having 1,825,000 cases, with a rate of 168/100,000 population followed by China: 1,325,000 cases, and rate of 101/100,000. In African countries Nigeria ranks number four with 374,000 cases and a rate of 290/100,000. This is followed by South

Africa with 339,000 cases and a rate of 718/100,000. Tanzania was ranked 14th with 131,000 cases and a rate of 347/100,000 population. (WHO, 2004).

This number of TB cases is still very high globally and locally despite all preventive and treatment measures, which have been taken by WHO. Some 8.8 million new tuberculosis cases occurred in 2003. Out of these 80% occurred in 22 countries. (W.H.O. 2004).

Tanzania is among the 22 high prevalence rate countries. The number of TB cases in Tanzania had increased from 63,048 TB cases in 2003 to 65,665 cases notified 2004 which was an increase of 1,617 (2.5%) of the 65,665 notified cases 59,769 (92.4%) were new cases and 4,896 (7.6%) where re-treatment TB cases.

In Tanzania total number of 64,200 TB cases were notified in 2005, which was 1,465 (2.2%) less compared to the year 2004 when 65,665 cases were notified. This was for the first time in over 10 years the total number of cases was less than the previous year.

The regions reporting the highest TB cases include Dar es Salaam, which is top in the list followed by Arusha, Mwanza, Mbeya, Iringa, Tanga and Morogoro in that order. In Dar es Salaam case report is very high. About 15,727 cases were reported in the year 2005 (population projected 37.9 million per 1,000 in 2002 national census) out of these 4,108 were from Ilala Municipality.

## 1.2. Tuberculosis and HIV/AIDS

Tuberculosis is the leading killer among HIV-infected people with weakened immune system; a quarter of a million TB deaths are HIV associated most of them being in Africa. TB is also a leading killer among young women. If proper measures are not taken within 20 years TB will kill a further 35 million people. (WHO, 2005).

People who are co-infected with both HIV and TB have up to 800 times greater risk of developing active TB disease and becoming infectious compared to people not infected with HIV. (CDC, 2005).

Tuberculosis is an HIV related opportunistic infection. The HIV/AIDS epidemic is reviving an old problem in well-resourced countries and greatly worsening an existing problem in resource poor countries. The important association between epidemics of HIV and TB include:- TB being harder to diagnose in HIV positive people and TB progresses faster in HIV infected people.

The emerged TB and HIV epidemic is presently over burdening the national health systems. The NTLP is seeking for a wider network of service providers and new approaches to prevention and treatment of TB in the country. (Hanson et al., 2000).

HIV is driving tuberculosis (TB) epidemic in sub-Saharan Africa which have encountered case number increase up to 10 times the levels of the mid-1980's. Out of

the nine million new reported TB cases annually, 750,000 are infected with HIV. Death is also more likely in a person who has TB and is living with HIV than in a TB patient without HIV. Some 250,000 people die each year from HIV associated with TB. (W.H.O., 2006).

Since the TB epidemic remains a major public health problem in Tanzania and is aggravated by HIV and AIDS there is a need to set strategies that will help reduce the problem. It is important that the strategies that Tanzania currently implements be assessed to determine how they can be made more affective in reducing morbidity and mortality due to TB.

### 1.3. Multi-drug Resistant TB

This is Anti-tuberculosis (TB) resistance, which is a major public health problem. The drug resistance arises due to the improper use of antibiotics in chemotherapy of drug susceptible TB patient. This improper use is a result of a number of actions, including administration of improper treatment regimens by health care workers, and failure to ensure that patient complete the whole course of treatment. Drug resistance arises in areas with poor control programmes.

Drug resistance is more common in people who have stayed with someone with drug resistant TB disease, do not take their medicine regularly, do not take all their prescribed

medicine, develop TB disease again after having taken TB medicine in the past, or come from areas where drug resistance is common.

Multi-drug resistant TB (MDR-TB) is present in almost all 109 countries recently surveyed by WHO and partners. About 425,000 new MDR-TB cases occur every year with the highest rates in former Soviet Union and China, where up to 14% of all new cases are not responding to standard treatment.

### 1.4. Tuberculosis control

Prior to DOTS strategy the standard regimen lasted for 12 months. This began with an initial phase of treatment by admission for two months followed by intermittent regimen until completion of course of treatment. This regimen was not successful. In 1995 the DOTS strategy was introduced.(W.H.O,1995).

The DOTS strategy is an inter-institutional arrangement between WHO and many partners involved in expanding the coverage of treatment for TB. This was developed in March 2002 in Amsterdam. The Amsterdam Declaration to stop TB called for increased political commitment and financial resources to reach the targets for global TB control by 2005. All National Tuberculosis Managers of the 22 high burden countries, technical partners, and the global TB network of WHO agreed to develop a Global DOTS Expansion Plan (GDEP).

The DOTS was launched in 1995. It consists of 5 pillars, which are: government commitment of TB control, diagnosis through bacteriology and effective laboratory network, standardized short-course chemotherapy with full patient support, uninterrupted supply of quality assured drugs as well as recording and reporting to measure programme outcomes. This therapy cures TB in 95 % of cases and a six months supply of DOTS costs are 10$ per person in some parts. The patients takes his or her pills in the presence of someone who can supervise the therapy, hence its designation as DOTS. i.e. Directly Observed Treatment Short course Strategy.

It is reported that 182 countries have adopted the DOTS strategy. More than 22 million TB patients have been treated under DOTS since its launch. A quarter of the world's population however still has no access to DOTS (WHO, 2006).

This strategy is being promoted by WHO because it is feasible in high burden setting. However 290 to 500 million US Dollars are required annually for additional training, equipment, infrastructure in order to implement and maintain DOTS in all low and middle income countries. As a result DOTS expansion has lagged considerably behind WHO targets.

Among the 22 countries with the highest TB prevalence six showed increase in DOTS implementation, seven showed little progress and nine did not implement DOTS. Tuberculosis remains an important public health problem in many areas of the world

where DOTS has not been implemented. Because treatment outcome were better in countries where DOTS has been used this strategy needs to be expanded rapidly and new tools to facilitate its implementation need to be developed. ( CDC 1998).

Multi-drug resistant tuberculosis is a constraints that threatens the success of DOTS. It is important that measures be taken in order to alleviate the situation. This includes ensuring that patients complete their treatment regimen by attending regularly to DOTS clinics. If patients cannot afford to so supervision for home based DOTS has to be provided.

Where DOTS has been applied HIV is said to be the main reason for failure to meet TB control targets. In order to control TB in HIV setting the DOTS strategy should be integrated in TB/HIV activities. This also applies to Tanzania.

In March 2006 WHO launched new stop TB strategy to fight global TB epidemic. The new stop TB strategy addresses the current challenges facing countries in responding to TB. It also emphasizes how to continue scaling up TB control activities while addressing the spread of TB and HIV co-infection and multi-drug resistant TB (MDR-TB).

- The new strategy for strengthening the DOTS strategy has six components :
- Pursuing high quality DOTS expansion and enhancement. This means making high quality services widely available and accessible to all those who need them, including the poorest and most vulnerable. It requires expansion of the DOTS strategy to the remote areas.
- Addressing the double challenges of the interaction of TB with HIV/AIDS, and MDR-TB. Addressing these and other challenges require much greater action and input than DOTS implementation and is essential to achieving the targets set for 2015, including the United Nations Millennium Development Goals relating to TB.
- Contributing to the strengthening of health systems. National TB Control Programmes must contribute to the overall strategies for financing, planning, management, information and supply systems with innovative service delivery scale-up.
- Engaging all care providers. TB patients seek care from a wide array of public, private, corporate and voluntary health care providers. To be able to reach all patients and ensure that they receive high quality care, all types of health care providers have to be engaged.
- Empowering communities and people with TB. Community care projects have shown how people and communities can undertake some essential TB control tasks. Communities and people with TB should develop networks which can

mobilize civil societies, ensure political support and long term sustainability for TB control programmes.

- Enabling and promoting research. While current tools can control TB, improved practices and elimination will depend on new diagnostics, drugs and vaccines.

In Tanzania the National TB and Leprosy (NTLP) seeks to reduce the mortality and recurrence of TB by using DOTS. As a measure to improve DOTS strategy, a patients centre (PCT) has been introduced in Tanzania. This new approach aims at improving TB treatment by giving patients an option to choose where they should be supervised for TB treatment. This can be at the health facility (current DOTS practice) or at home. Those who opt to be supervised at home have to choose a person who can observe their daily treatment at home.

It was worthy conducting a study to determine the factors that influence the success and failure of the DOTS strategy in its expanded form.

## 1.5. Statement of the research problem

Tanzania, like other countries burdened with TB is trying out the health facility based and home based DOTS strategies in the drive to contain TB, which compounded by MDR-TB and the HIV/AIDS epidemic. It was imperative that this combined strategy be assed for its effectiveness. Evaluation studies have been conducted elsewhere but not in this country. Systematic evaluation of Tanzania's intervention against TB was beyond the scope of the proposed study. The study however, sought to assess the acceptability

of the DOTS strategy to TB patients. It tried to assess the extent of patients' adherence to the DOTS regimen and the factors associate with it.

### 1.6. Rationale of the study

Adherence to the DOTS regimen is the corner stone of the effectiveness of the strategy. This has to do with the response of TB patients. Understanding the factors, which militate against the optimal level of adherence from the perspectives of the TB patients, will go along way in helping the TB control programme to improve the effectiveness of the DOTS strategy. This study took a holistic approach that allowed it to explore for factors operating within the health care delivery system and those relating to patients as individuals and to their support networks in their families and communities. It is hoped that the NTLP and the Ministry of Health in general would be in position to consider addressing directly the factors operating within the health care delivery system, and to undertake advocacy measures to influence the relevant organs within the community to create a supportive environment that facilitates adherence with the DOTS regimen by TB patients.

# CHAPTER 2.0

## 2.1. Literature Review

A study which was conducted in India (Macq et al., 2003), explored the concept of DOTS for TB patients. A uniform to customized approach measured DOTS versus self-administered treatment (SAT). Quantitative method was used by distributing questionnaires to DOTS TB patients. It was found complicated by different case holding rates and cure outcomes in different context where DOTS was in place. The increasing range of DOTS application in different settings, including the choice of provider, place, target population and the extent to which DOTS is a part of wider approach was found not to be sufficiently taken into account in its implementation. The study also found that the concrete reality of DOTS is an important determinant of the overall success or failure of the programme, and had implications in terms of equity and accessibility of care during treatment. The study exploring the approach of DOT and (SAT) has not been done elsewhere. Using this type of approach can be done in our set up to explore the concept of DOTS versus SAT. There was a need to conduct a research.

Another study was also conducted India. (Banerjee et al., 2004). It assessed the acceptability of Traditional Healers (THs) as DOT providers in TB control. It involved in depth –interviews with 120 traditional Healers, 37 exit interviews and 4 focus group discussions with TB patients. Interviews with non-governmental organizations and 38

public health staff were conducted. The study provided the opportunity to identify DOT providers who are acceptable to patients. It also aimed at evaluating the acceptability of THs to health workers and assessing ways of achieving collaboration of THs in DOT TB programme. Of the 120 THs interviewed 15 claimed to be TB specialists, 72 healers were aware of TB. Some THs attended more than 20 patients per months. Although most patients came from nearby villages i.e. within 5 kilometres, some came from more than 20 kms away. Inhabitants of about 86% of the hamlets could only access THs within 2 kms where as only 3 % had close access to PHC. The study indicated that THs were accessible and acceptable to the population to act as DOT providers. It showed that THs also felt that they had a role to play in TB care by performing the role of DOTS provider. This study noted that there was a scope to improve health education activities in the community. Can THs serving as DOTS providers be accepted in our country. The study evaluating acceptability of THs as DOTS providers has not been done in our set up and use of THs was as a way to improve DOTS strategy has not been assessed here.

Another study was conducted in India. (Balasubramanian et al., 2004). It examined gender differences in tuberculosis among adults aged more than 14 years with respect to infection and disease prevalence, health service access, care seeking behaviour, diagnostic delay, convenience of direct observed treatment (DOT), stigma and treatment adherence. Data was collected in a community survey among self-referred outpatients seeking governmental primary health institutions (PHIs), and tuberculosis notified under

DOTS. Community survey were compared with those patients notified under PHIs. It was found that 66% of males and 55% of female had TB infection. The prevalence of smear positive tuberculosis was 568 and 87/100,000 respectively among males and females. Fewer males than females attended PHIs (68 men for every 100 women). Significantly more females than males felt inhibited discussing the illness with the family and needed to accompanied for DOT. Males were found to have twice the risk of treatment default than females. The study concluded that despite facing greater stigma and inconvenience, women were more likely than men to access health services, be notified under DOTS and adhere to treatment. Men and elderly patients needed to additional support to diagnostic and DOT services. This approach comparing gender disparities in tuberculosis was to be investigated further in order to strengthen health services.

One study was conducted in India (Arora et al., 2002). It studied the profile of the geriatric TB patients under DOTS. It was done because there was an increase in life expectancy and the resultant elderly population, which increase the number of TB patients including those in geriatric age. A retrospective study of 7439 patients enrolled under DOTS was carried out in tertiary referral institute. Profile was analyzed in terms of gender, two groups of the young and elderly aged patients were compared, and the treatment outcome of both groups analyzed. It was found that cure rates were significantly lower in the elderly in comparison to the younger. The number of patients was excluding themselves from DOTS as well as the failure and default rates were

higher in geriatric as compared to patients of young age. This study concluded that TB patients of geriatric age has a lower reported prevalence among families; poor cure rates and higher exclusion as well as default rates. The possible reasons for an increased default rates were found to be: lack of transport facility, inability to visit service providers regularly, and geriatric problems being inadequately addressed in the TB programme. This type of study has been conducted elsewhere but not in our country. This type of study was worthy being conducted in our set up to address geriatric issues

A study was conducted in Nepal (Bam et al., 2006), identified the factors affecting patient adherence to DOTS in urban settings. The methods used were structured questionnaire of a random sample of 234 new smear positive TB patients enrolled on treatment. Analysis of social demographic psychological factors, availability and accessibility of DOTS services was done. Sub analysis of non-adherent (missed more than 7 consecutive treatment days) versus adherent patients was also done. This study found that the reasons for no- adherence to DOT to be insufficient knowledge about the need to take daily treatment especially after patients felt better. The factors that were found to be associated with increased adherence to DOT were young age, knowledge of TB and availability of daily health education. The study concluded that daily health education delivered at DOTS centers was strongly associated with improved adherence. This type of study has suggested that exploring health education as a factor for increasing adherence to DOT is needed in our country.

Another study was conducted in Hong Kong. (Chang et al.,2004), identified the risk factors for defaulting fro anti-TB treatment under directly observed treatment. Directly observed treatment was done in Government chest clinics. The methodology used was recruiting defaulters from a cohort of TB patients registered. Three controls per case, matched for age and sex, were selected randomly from cohort. Patients factors, initial TB characteristics and treatment related variables were collected by review of medical records. This study found that on matching 102 defaulters and 306 controls, a logistic risk model of default that considered patient factors, initial disease characteristics and treatment related factors, identified seven risk factors. These included: current smoking, past TB with default, poor initial adherence, fair initial adherence, unknown initial adherence, treatment side effects and subsequent hospitalization. The study concluded that treatment default could be predicted fairly accurately by considering such factors.

Another study was conducted in Burkina Faso. (Sanou et al.,2004). It assessed the adherence to TB treatment, and the barriers faced by patients and communities. The study explored patients and community members, perception and problems associated with accessing formal tuberculosis treatment. It also identified patients, and community members perceptions and problems associated with adhering to formal TB treatment. The study found that the health center was the last resort for patients with symptoms indicative of TB. When on treatment, patients faced a number of barriers in adhering to care. These barriers related to centralized nature of direct observation and the problems faced while at the treatment unit. The study concluded that patients experience three

sets of linked barriers to successfully treating TB: Attending the health center initially, attending the health center repeatedly and experiences while at the health center. The barriers were found further to be complicated by geography, poverty and gender. The study noted a challenge, which was beyond documenting barriers from patients perspectives to addressing them in resource poor contexts. The barriers and problems associated with accessing formal TB treatment and problems associated with adhering to formal TB treatment are worthy being investigated in our setting. Operational research was needed.

Another study was conducted in Gambia. (Hill et al., 2005). It explored the risk factors for defaulting from TB treatment. The objective was to identify patient characteristics associated with rates of defaulting from treatment, specifically knowledge and cost factors amenable to intervention. It was a prospective cohort study of TB cases aged at least 16 years of age, they were interviewed using a semi structured questionnaire and were followed up for attendance at three-weekly directly observed treatment. This study found that out of 301 patients, 76 (25.2%) defaulted from treatment. The defaulting rate was found higher among those who said the were uncertain that the treatment would work. The defaulting rate was also high among those who incurred significant time or money costs traveling to receive treatment The factors had different effects with respect to time: uncertainty over treatment success was found important in the first 90 days of treatment, while increased costs of traveling was found important after 90 days The study in Gambia concluded that risk groups for defaulting c an be

recognized at the start of treatment and are at the higher risk at different times. It concluded that home based-self administration of medications after three months of DOT should be evaluated. Knowledge and costs as factors hindering adherence to DOT needed further exploration especially in our poor country.

A different study was conducted in South Africa rural. (Lara et al.,1999). It aimed at quantifying the access to TB treatment through community based programme. TB supervision points were plotted and qualified access - using GIS to measure the distance form each household in the district to DOTS clinic, CHW and volunteer supervisors. It was found that while TB caseload tripled, the number of community supervision points used increased from 37 in 1991 to 147 in 1996. Adding clinics and CHWs to DOTS clinics, as treatment points reduced to mean distance from 29.6kms to 4.2 and to 1.9 kms respectively. Adding volunteers further decreased the distance to 800 km effectively. This quantifies the impact of community based TB treatment on access to treatment. The accessibility of TB treatment through community based TB programme. This type of study quantifying the access to TB treatment through community based TB progamme has not been investigated in our set up, therefore operational research was required.

A study conducted in Uganda, Kiboga district. (Adatu et al., 2003), measured effectiveness comparing TB case finding and treatment outcomes before and after introduction of CB-DOTS in 1998. Acceptability was measured by administering

knowledge, attitudes and beliefs questionnaire to community members, health care workers and TB patients before and after intervention. Focusing on offering patients the option of treatment supervision in the community, as part of routine TB control programmed operation, to measure the acceptability of community based TB care or using DOTS strategy with active participation of local community in providing the treatment. This revealed success from 56% to 74%. It also showed that community based DOTS increases access to care, reduces costs of TB DOTS patients, as well as enabling patients to receive TB treatment under supervision in the community provides highly acceptable additional option to conventional TB care. Who could be the preferred supervisor for DOTS at home and under which circumstances? Is a question which needs to be measured in specific situation.

Another study was done in urban settings in Tanzania. (Wandwalo et al., 2006). It assessed the acceptability of community based DOT and health facility DOT of tuberculosis (TB). The study was done using both quantitative and qualitative methodologies. Focus group discussions were carried out with TB patients and treatment supporters, health supporters and community members. Quantitative study was also carried out among TB patients and treatment supporters. It found that majority of the patients were satisfied with DOT options they received. Males were found more satisfied with community based than females. The majority was willing to supervise another TB patient. The quantitative study demonstrated that CB-DOT was preferred because it demonstrated to be convenient, reduced costs, saved time of the patients and

reduced workload in the health facilities. The main challenge of CB DOT was found to be ensuring effective supervision and monitoring of patients and treatment supporters in the community. This study indicated that both DOT options were acceptable. It identified challenges and opportunities for effective implementation of CB DOT interventions that are relevant, sensitive and acceptable to the population. CB DOT was found to be viable option, can complement and strengthen the existing health facility based DOT especially in countries like Tanzania where health system is overwhelmed with increasing number of TB and HIV/AIDS patient. Both DOTS options were found to be acceptable. The acceptability of DOT in both settings remained unclear further operational research was needed.

It has been reported (MoH, NTLP, 2005), that one of the measures to improve DOT is the Patient Centered Approach (P.C.T.) which has been introduced in Tanzania since 2005. This new approach aims at empowering TB treatment by giving patients the option to choose where they should be supervised for TB treatment. This can either be at the health facility (current approach) or at home. Those who opt to be supervised at home have to choose a person themselves for their daily observed treatment at home. This is being piloted in three districts representing both rural and urban settings. Can supervision of TB patients at home improve DOTS? If so who will be the preferred supervisor and under which circumstances will this approach are issues to be investigated further.

The study which is the subject of this report assessed the acceptability of DOTS strategy to TB patients. From the literature reviewed, it was clear that DOT is acceptable preferably in community settings if supervision is properly implemented. This supervision can be done by CHWs, THs, and other supporters who are trained on DOTS. For countries like India, Pakstan, South Africa, Uganda and Tanzania where outreach personnel or staff are minimal, community participation can play an important role in improving DOT TB programme. Patients, health workers, traditional healers support this, and other supporters support this.

## 2.2. Broad objective

To assess the acceptability of directly observed treatment short course strategy to tuberculosis patients in health facilities of Ilala Municipality.

## 2.3. Specific objectives

1. Assess the extent of patient's adherence to DOTS regimen.
2. Determine the attitudes of tuberculosis patients towards DOTS.
3. Determine access to health facilities * by tuberculosis patients on DOTS.

### Definition of terms

For the purpose of this proposal "access" will be measured in terms of:-

1. Distance: How far the patient travels from home up to the health facility for DOT service.

2. Cost: The amount of money a patient spends for traveling, purchasing supplementary drugs and water.
3. Means of transport: The type of transport used to travel from household to the health facility for DOT.
4. Escort: A person who accompanies a patient to the health facility for treatment and back home.
5. Duration: Is the time spent for traveling to the health facility and waiting time for service.

# CHAPTER 3.0

## 3.1. Methodology

## 3.2. Study area

The study was conducted in Ilala Municipality in Dar es Salaam region. The study was conducted in Ilala Municipality due to the fact that this district has a big number of TB patients being treated using DOTS as stated by NTLP( 2005). It is also part of Dar es Salaam a region with highest number of TB patients among the regions of Tanzania. Ilala was selected purposively for this study in order to capture enough patients on DOTS that can represent other urban settings in Tanzania.

Ilala Municipality has 7 health facilities providing services for DOTS, these are: Mnazi Mmoja Health Centre, Amana Municipal Hospital, Vingunguti, Chanika, Magereza, Dispensaries, Tabata and Buguruni Health Facilities. The study was carried out in five of the seven health facilities these are: Mnazi Mmoja Health Centre, Amana Hospital, Vingunguti, Magereza Dispensary and Buguruni Health Center. The five facilities were selected randomly by balloting out of the 7 health facilities. Covering other two facilities was found not to be very necessary.. The TB programme is organized at national level, regional level and district level.

### 3.3. Study design

This was a descriptive cross-sectional study was done over a period of six weeks.

### 3.4. Study population

The study population comprised of patients diagnosed to have TB and were on DOTS treatment for at least 2 weeks of the 2 months intensive treatment. (This is a period during which patients have to attend daily to TB clinics for DOT). Those on monthly intermittent regime were also included.

### 3.5. Sampling procedure

A total of 400 patients selected were from the five health facilities implementing DOTS, using systematic sampling method. The list of all patients from selected DOTS clinics on register were obtained from TB co-coordinators. From the list, a required sample was selected at regular intervals. Every second patient from the list was interviewed. The selection took into account two strata i.e. those on intensive treatment and those on monthly intermittent regimen.

### 3.6. Sample size determination

The proportion of patients who were on intermittent DOT regime and either did not adhere to treatment was assumed to be 50%. This proportion was therefore adopted for sample size calculation. A confidence interval of 45% to 55% and margin of error of 5% was also adopted giving a sample size as follows:-

$$n = \frac{4p(100-p)}{d^2}$$

$$= \frac{4 * 50 * 50}{5^2} = 400$$

The minimum sample size was 400 patients

n = Minimum sample size

d = Margin of error .This is a measure of precision.

p = Proportion (in percentage) of patients non-adherent to TB treatment.

### 3.7. Data collection procedure

Data was collected using a structured questionnaire. The researchers on interviewing patients was filled the questionnaire. The questionnaire consisted of both open and closed ended questions. The questionnaire was initially formulated in English and later translated from English to Kiswahili. Pre-testing of the research tool was done at Magomeni Health Centre. After pre-testing the necessary amendments were made to get the final version ready for data collection. The principal investigator was the main data collector and he was assisted by two research assistants. The research assistants were recruited among newly graduated Clinical Officers.

Before data collection, research assistants were trained on purpose of the study and how to fill the questionnaire properly. The Principal Investigator was responsible for supervision of the data collection exercise to make sure that the right and correct data were collected.

The patients attending DOT daily during intensive treatment were requested to provide informed consent. They were interviewed in privacy and confidentiality was maintained. The interview was conducted before the participants received treatment. For those patients on monthly intermittent regime a especial day was arranged for interview with assistance from the health providers providing DOT.

### 3.8. Ethical considerations

Muhimbili University College of the Health Sciences Research and Publication Directorate provided a letter to authorities to allow the conduct of the study. Permission to conduct the study was requested from Ilala Municipal Medical Officer of Health and the In-Charges of the respective Health Facilities. Finally permission was granted. Consent was requested from all the participants who were recruited into the study. During filling the questionnaire, confidentiality and privacy was maintained.

# CHAPTER 4.0

# RESULTS

## 4.1. Socio-demographic characteristics of the patients

This chapter provides the results of the study, which were obtained by administering questionnaires to 400 TB patients. All respondents were patients receiving DOT services for TB in the five selected health facilities in Ilala municipality.

The selected health facilities in which the patients were receiving TB treatment were Amana Hospital, Buguruni Health Center, Magereza Dispensary, Mnazi Mmoja Health Center and Vingunguti Dispensary as table 1 shows.

**Table 1: Distribution of respondents by name of health facility**

| Name of Health Facility | No | % |
|---|---|---|
| Amana Hospital | 76 | 19.0 |
| Buguruni Dispensary | 90 | 22.5 |
| Magereza Dispensary | 86 | 21.5 |
| Mnazi Mmoja Dispensary | 72 | 18.0 |
| Vingunguti Dispensary | 76 | 19.0 |
| **Total** | **400** | **100.0** |

Among the 400 respondents 246(61.7%) were males and 154 ( 38.3%) were females. The distribution of respondents by age group showed that majority of the patients 68.5% were aged between 21- 40 years. This is a productive age group and most of them are married. The age groups with the smallest number of patients were 15-20 6.3% followed by those of more than 50 years 9.8%.

An examination of the age differences between males and females shows that in the age groups which had the large majority of respondents, namely 31-40 and 21-30, the proportion of females was higher in the young age group 21-30 (39.6%) which males had a high proportion in the older age group31-40 (36.0%). Males were also prominent in the subsequent older age group as table 2 shows.

**Table 2: The sex and age distribution of the respondents**

| Age group( years) | Male No (%) | Female No (%) | Total No (%) |
|---|---|---|---|
| 11-20 | 7 ( 3.0 %) | 18 ( 11.6 %) | 25 ( 6.3) |
| 21-30 | 75 (30.5 %) | 61 ( 3 9. 6 % ) | 136 (34.0) |
| 31-40 | 88 (36.0) % | 50 ( 32.5 %) | 138 (34.5) |
| 41-50 | 43 (17.5 %) | 19 (12.3 %) | 62 (15.5) |
| > 50 | 33 (13.0%) | 6 (4.0 %) | 39 (9.8) |
| **Total** | **246 (67.8)** | **154 (38.3)** | **400 1000.0** |

**Chi square =25.05 df =4 p value 0.00004915**

Most respondents (75.8%) had primary education. Respondents with secondary education constituted only 16.5 percent, while 7.8 were those without any formal education.

The levels of education of respondents were analyzed by gender. Those with Primary education were (75.6%) for males and (76.0%) for females. As for secondary education the proportion of males was 18.7% compared to for among 13.0 % females. Those with no formal education males had a lower proportion 5.7% compared to females who had 11.0% as table 3 shows.

**Table 3: Association between level of education of the respondents and sex**

| **Level of education** | **Male** | **Female** | **Total** |
|---|---|---|---|
| | **No (%)** | **No (%)** | **No (% )** |
| Primary Education | 186 ( 75.6 %) | 117 ( 76.0%) | 303(75.8%) |
| Secondary Education and above | 46 ( 18.7 %) | 20 (13.0 %) | 66(16.5%) |
| No Formal education | 14 (5.7 %) | 17 ( 11.0%) | 31(7.8%) |
| **Total** | **246 100.0** | **154 100.0** | **400 100.1** |

**Chi square =6.31 df = 4, p value = 0.18**

Among the patients, Muslims constituted 243 (60.7%) of the respondents while Christians were 148 (37.0%). About 2% belonged to Hindu religion.

Among the patients interviewed about their marital status married couples were the majority (55.5%). Unmarried persons were the second largest group (34.0%) while divorced individuals were 6.5%, widows/widowers 3.0% and those cohabiting were 1.0%.

**Table 4: Distribution of respondents by marital status**

| **Marital Status** | **No.** | **%** |
|---|---|---|
| Married | 252 | 55.5 |
| Unmarried | 135 | 34.0 |
| Divorced | 26 | 6.5 |
| Widow/widower | 14 | 3.5 |
| Cohabiting | 3 | 1.0 |
| **Total** | **400** | **100.0** |

Among the TB patients interviewed, about their occupation the majority (42%) were involved in petty business, followed by the others category (40.3%) of which 53.1%were females and 32.0% males. About 6% of patients were not economically active. Table 4.

**Table 5: Distribution of respondents by occupation and sex**

| Occupation | Male No (%) | Female No (%) | Total No (%) | |
|---|---|---|---|---|
| Peasant | 14 (5.7%) | 7 (4.5%) | **21** | **5.3** |
| Student | 6 (2.4 %) | 12 (7.8%) | **18** | **4.5** |
| Petty business | 126 (51.2 %) | 42 (27.3%) | **168** | **42.0** |
| Cattle keeper | 8 (3.3%) | 2 (1.3%) | **10** | **2.5** |
| Not economically active | 13 ( 5.3% ) | 9 (5.8%) | **22** | **5.5** |
| Others* | 79 (32.1%) | 82 (53.2%) | **161** | **40.3** |
| **Total** | **246** | **154** | **400** | **100.0** |

**Chi square = 31.19**

*Economic activities in the "others" category are casual laborers, artisans, bus conductors, bus drivers, taxi drivers, carpenters, hair dressers, tailors, shoe shiners cobras and barbers etc.

## 4.2. Patients experience with TB and TB treatment

An attempt was made to investigate the delay in seeking TB treatment. This was done by asking the patients how long they had been sick before they realized that they were suffering from TB, followed by a question about how long they had been on TB treatment.

Respondents were also asked when the disease they were suffering from started. Over half of the patients (54.0%) reported that the condition started a month or less ago while 22.0 % reported that the condition started between one and two months ago. The rest of the patients (24.0 %) said they were sick for periods ranging from three to nine months ago table 5.

**Table 6: Distribution of respondents on the basis of when the disease they were suffering from started**

| TB started in months | No | % |
|---|---|---|
| A month or less | 216 | 54.0 |
| One month to two months | 88 | 22.0 |
| Three months and above | 96 | 24.0 |
| **Total** | **400** | **100** |

Patients asked when they recognized that the disease they were suffering from was TB. (17.8 %) of the respondents indicated that it was between two and four weeks ago, 36.3% reported that they were suffering from TB from six to eight weeks ago, 32.5% reported that they suffered from TB since twelve to sixteen weeks ago, while 13.5 % of the patients who they were suffering from TB since twenty to thirty weeks ago. table 6

**Table 7: Duration since recognizing disease to be TB**

| Recognized TB( in weeks) | No | % |
|---|---|---|
| 0 - 4 | 71 | 17.8 |
| 5 - 8 | 145 | 36.3 |
| 9 - 16 | 130 | 32.5 |
| 17 - 30 | 5 4 | 13.5 |
| **Total** | **400** | **100.0** |

Patients also were asked about how long they had been on TB treatment at the time of the study. Patients reported a duration ranging from one week to more than six months. Table 7. The majority of the patients (65.3%) had been on treatment for one to four months.

**Table 8: Distribution of respondents according to the duration of being on TB Treatment**

| Duration of being on treatment in months | No | % |
|---|---|---|
| Quarter a month to Three quarters | 76 | 19.0 |
| One month to Four months | 261 | 65.3 |
| Five months to Six months | 50 | 12.5 |
| More than six months | 13 | 3.2 |
| **Total** | **400** | **100** |

### 4.3. Patients knowledge of TB

Patients were asked about the causes of TB. The majority of the patients (94.3%) did not know the causes of TB. Those who knew the causes were seven (4.5%) however two of them knew partially (1.3%).

Among patients who did not know the causes (94.3%) were males and (94.2%) were females. Those who knew the causes (4.5%) were males and (4.5%) were females. While the rest of the patients (1.2%) males and (0.8%) females were partially correct as table 8 shows.

**Table 9: Association between the knowledge of patients on the causes of TB by gender**

| Causes of TB | Male | Female | Total |
|---|---|---|---|
| Don't know causes | 232 (94.3%) | 145 (94.2%) | 377 |
| Know causes | 11 (4.5%) | 7 (4.5%) | 18 |
| Know partly | 3 (1.2%) | 2 (1.3%) | 5 |
| **Total** | **246** | **154** | **400** |

The respondents knowledge of TB causes was analyzed to determine its association with levels of education. All patients with no formal education did not know the causes of TB. The proportion discussed by levels of education, with patients having college education with the lowest proportion of those who did not know the cause of TB. The trend is in reverse order for those who know the cause with more among those with no formal education had the highest proportion. Table 9 below presents this comparison

**Table 10: Association between knowledge of TB causes by Education**

| TB causes | Primary Education | Secondary Education | College | No formal Education | Total |
|---|---|---|---|---|---|
| Don't know causes | 294 (96.1%) | 49 (80.3%) | 3 ( 60.0%) | 28 (100%) | 374 |
| Know the causes | 7 (2.3%) | 9 (14.7%) | 2 (40.0%) | 0 (0.0%) | 18 |
| Know partially* | 5 (1.6%) | 3 (5.0%) | 0 (0.0%) | 0 (0.0%) | 8 |
| **Total** | **303** | **61** | **5** | **28** | **400** |

*The respondents who were classified as having partial knowledge on how TB spreads said the causes could be overcrowding, alcohol, cigarette smoking, or else smoke and dust therefore they were partly right and partly wrong.

Respondents were asked if they knew how is TB spread. The majority of the respondents (71.0%) said they did not know how TB spreads while 29.0% said they knew how TB it is spread including the following:-

- overcrowding
- inhalation
- sharing of utensils
- getting infected by TB patients
- sharing cigarettes

Asked about how long they expect to be on TB treatment, 71.0% said they will be on treatment for six months which is the recommended standard treatment duration. (Table 10).

Knowledge about the duration of TB treatment was analyzed by their level of education. Those who gave the correct duration of six months were:-

- 71.6% for those with secondary education and above
- 70% for those with primary education and
- 67.9% for those with no formal education

**Table 11: Association between knowledge on duration of TB treatment by level of education**

| Duration of TB treatment | Above Secondary education | Primary education | No formal education | Total |
|---|---|---|---|---|
| 6 months | 51 (76.1%) | 214 (70.0%) | 19 (67.9%) | 284 |
| Others | 16 (23.9%) | 91(29.8%) | 9 (32.1%) | 116 |
| **Total** | **67** | **305** | **28** | **400** |

Respondents were asked on what would occur if they did not complete treatment and 197 (49.3%) said if the patient did not complete the treatment the disease would relapse, while 145 (36.2 %) said that the patients would die, and 12 (3.0%) said TB would worsen, and another 46 (11.5%) said that patients would get other opportunistic infections.

### 4.4. Availability of health workers and accessibility to TB clinics

Respondents were asked if health workers were always available at the health facility when they came for treatment. Of the 400 respondents 91.7% responded that health workers were always available at the health facility when they came for treatment while 8.3 % responded that they were available but were coming late.

Respondents were asked about the time spent waiting while for **a** service at the health facility. The time spent waiting for **a** service ranged from less than 20 minutes to more than one hour table 11.

**Table 12: Distribution of respondents on time spent while waiting for DOT service at the health facility**

| Waiting time at the health facility | No | % |
|---|---|---|
| < 20 minutes | 108 | 27.1 |
| 20 - 30 minutes | 134 | 33.7 |
| 31-59 minutes | 115 | 28.9 |
| ≥ 60 minutes | 41 | 10.3 |
| **Total** | **398** | **100** |

Patients were asked about how far they traveled from home to the health facility. Fifty nine percent said they traveled a distance of less than 5 kilometers, suggesting that they were within the catchments area recommended by WHO. There were a few patients who traveled a distance of more than 10 kilometers as table 12 shows.

**Table 13: Distribution of respondents according to distance travelled from home to the health facility**

| Distance traveled (in kms) | No | % |
|---|---|---|
| < 5kms | 237 | 59.2 |
| 5 - 10 kms | 141 | 35.3 |
| > 10 kms | 22 | 5.5 |
| **Total** | **400** | **100** |

Respondents were asked how they came to the health facility for DOT services. Majority of the patients (55.7%) said they came on foot to TB clinic. Other means of transport used were as shown in table 13.

**Table 14: Distribution of respondents according to the means of transport from home to the health facility for DOT**

| Means of Transport | No | % |
|---|---|---|
| Walking | 223 | 55.8 |
| By bicycle * | 10 | 2.5 |
| By bus (daladala) | 159 | 39.8 |
| Other means | 8 | 2.0 |
| **Total** | **400** | **100.0** |

*Those who came by bicycle did not hire but they were having bicycles at home.

Costs which patients who did not walk incurred in order to get to the health facility for their medication, ranged from less than Tanzanian shillings 400 to over 500. The majority (64.0%) of patients paid 400 or 500 shillings. Table 14 shows these costs.

**Table 15: Distribution of respondents according to their daily traveling costs to the health facility for DOT services**

| Traveling costs in Tshs. | No | % |
|---|---|---|
| < 400 | 16 | 9.6 |
| 400 | 48 | 28.7 |
| 500 | 59 | 35.3 |
| > 500 | 44 | 26.4 |
| **Total** | **167** | **100** |

## 4.5. Adherence to the DOT regimen.

The main objective of the study was to determine the acceptability of DOTS as indicated by the extent of adherence by TB patients to the DOTS regimen and the factors associated with it. In this section the relevant findings are presented.

Patients were asked about the regularity of their attendance at the TB clinic. The respondents who said they could attend regularly for DOT for TB were 88.9%. While those who could attend irregularly for treatment were 11.0% due to various reasons including lack of fare for transport, being unhealthy or social problems.

Respondents were tested on the influence of traveling costs and the regularity for TB treatment. The majority of the patients who attended regularly 98.5% paid 400 Tshs. The second large group 76.3 % paid 500 TShs. (56.8% . Those who attended irregularly majority paid 500 Tshs. as table 15 shows.

**Table16: Association between regular attendance and travel costs**

| **Regularity of attendance** | **<400** | **400** | **500** | **>500** | **Total** |
|---|---|---|---|---|---|
| Regular | 13 (81.2%) | 46 (95.8%) | 45 (76.3%) | 40 (90.9%) | 144 |
| Irregular | 3 (18.8%) | 2 (4.2%) | 14 (23.7%) | 4 (9.1%) | 23 |
| **Total** | **16** | **48** | **59** | **44** | **167** |

**Chi square=9.80 df= 3p value=0.02**

Respondents were asked whether their occupation influenced failure to turn up for TB treatment. The majority who were involved in petty business (44.0%) never failed while (34.0%) failed. The largest group was in the others category (43.0%) of those who never failed.

They were asked about irregularity of attendance to TB clinics was influenced by occupation. Of those who were attending regularly, the majority were among the others 89.4%. Those whose occupation was affecting the regularity of attendance to TB clinics were the ones involved in petty business (13.6%) and those not economically active (71.8%) see table 16.

**Table 17: Association between occupations by regularity of attendance to TB treatment**

| Regularity of attendance | Peasant No (%) | Student No(%) | Petty business No(%) | Not economically active No(%) | Others No(%) | Total No. |
|---|---|---|---|---|---|---|
| Regular | 18 (85.7%) | 16 (88.9%) | 146 (86.4%) | 9 (28.1%) | 143 (89.4%) | 332 |
| Irregular | 3 (14.3%) | 2 (11.1%) | 23 (13.6%) | 23 (71.8%) | 17 (10.6%) | 68 |
| **Total** | **21** | **18** | **169** | **32** | **160** | **400** |

The respondents were asked on the income lost on account of coming to the health facility daily for treatment. Approximately 70 % of the patients mentioned their income was lost, while 18.3% said their income was not lost because they had no job instead they were being taken care by their family members. The rest (12.0%) said they could not take care of their families as table 17 shows.

**Table 18: Distribution of respondents on loss of income due to Coming daily to the health facility for DOT.**

| Income | No | % |
|---|---|---|
| Lost income | 279 | 69.8 |
| Not lost income | 73 | 18.3 |
| Could not take care of their families | 48 | 12.0 |
| **Total** | **400** | **100** |

The respondents were asked whether attending DOT daily to the health facility was appropriate. The majority of the respondents (62.8%) responded that attending DOT daily to the health facility was not appropriate while 37.3% said that attending DOT daily to the health facility was appropriate.

Patients are supposed to swallow drugs in front of the health worker as recommended by the WHO. The respondents were asked on the availability of water for swallowing drugs at the DOT clinic. The majority of the respondents (77.9%) mentioned that they were buying water for swallowing drugs at the clinic at an average cost of 200 Tshs. while 22.1% mentioned that were using boiled water from home.

Respondents were asked if they encountered side effects during TB treatment. Of all the respondents 40.4% said they encountered side effects due to TB drugs, while 59.6% said they did not experience any side effects. Among those who experienced side effects, the majority said they experienced pain and swelling of the lower limbs and joints. Other side effects the patients had experienced were: peripheral neuropathy and numbness, generalized itching, general body malaise, dizziness, headache, gastro-intestinal upset – nausea and vomiting as well as heart palpitations.

The respondents were asked to mention any alternative means that could be used for providing treatment that would be more convenient than the daily attendance at the TB clinic. About 37% preferred to receive DOTS services at home, while another 36.6% mentioned they preferred to receive TB drugs every after one week, 17.8% after four weeks, 7.0% after three weeks, while (3.8%) preferred to receive treatment every after two weeks (table 18).

**Table 19: Distribution of respondents on the alternative means that could be used for providing treatment without causing any inconvenience**

| Alternative Means | No | % |
|---|---|---|
| Home based TB DOTS | 13 | 5.2 |
| Receive drugs every one week | 134 | 53.4 |
| Receive drugs every two weeks | 15 | 6.0 |
| Take drugs at home | 71 | 28.2 |
| Receive drugs every four weeks | 18 | 7.2 |
| **Total** | **251** | **100** |

Respondents were given an opportunity to ask about the problems they were facing during TB treatment that required an explanation. Two thirds of the respondents did not have any questions concerning TB treatment while 8.0% of the patients asked about contraindications and norms to be observed during TB treatment. Patients who asked whether treatment duration could be shortened were 6.0%, while those who asked about side effects that occur due to TB drugs were 4.7%. Those who asked if TB could relapse after completion of treatment and if there was resistance to the drugs were 4.7% while patients who wanted to know if there was a relationship between TB and HIV/AIDS

were 2.8%. The rest 5.1% asked questions on sex and the effect on fertility spread of TB during treatment and about the recommended food during treatment as table 19 shows.

**Table 20: Distribution of respondents on the questions asked Concerning TB Treatment that required explanation**

| Asked questions | No | % |
|---|---|---|
| No questions asked | 275 | 68.7 |
| Asked about contraindications and norms | 32 | 8.0 |
| Asked for shortening duration of treatment | 24 | 6.0 |
| Asked about side effects of the drug | 19 | 4.7 |
| Asked about relapse of TB after treatment | 19 | 4.7 |
| Asked about relationship about TB and HIV/AIDS | 11 | 2.8 |
| Asked questions on sex and effect on fertility | 12 | 3.0 |
| Asked about spread of TB during treatment | 5 | 1.3 |
| Asked about recommended food during TB treatment | 3 | 0.8 |
| **Total** | **400** | **100** |

# CHAPTER 5.0

## 5.1. DISCUSSION

The results indicated that most of the respondents were adhering to the requirement about regular attendance at the TB clinic. This is an important issue in the DOTS regimen despite the obstacles of economic loss and traveling costs.

The study has also revealed that most of the respondents did not know the causes of TB this could be probably due to the fact that the level of education of the respondents is poor and health education on TB is not adequate in DOT clinics. The NTLP in the MoH need to take this scenario a means to establish proper training to the health worker providing DOT services.

The results indicated that most of the patients did not know the mode of spread of TB. Those who knew the contributory factors to TB spread were very few. The knowledge of TB cause was extremely poor compared to knowledge of mode of spread of TB. There is a need to strengthen health education in TB clinics and in the community.

The study shows that most of the patients who had TB were in, sexually, economically productive age group. In this group, there could be a co-existence between TB and HIV since TB is an opportunistic infection of HIV/AIDS. In this category there was a higher proportion of males than females.

The study revealed that most of the patients on DOT for TB were involved in petty business and the majority claimed that their income was lost on account of coming daily to TB clinics for treatment. This implies the need for the government, NTLP to consider an alternative approach of community based DOT to allow patients continue with their income and productivity. This has also been raised by other studies (Adatu et al., 1998-1999).

The study shows that the majority of the patients were receiving their DOT services within traveling distance of less than 5 kilometers the catchment area recommended by WHO for getting health services not more than five kilometers away fro the household.

The results also reveals that majority of the patients were walking to the DOT clinic because they were close to the facility but sometimes they lacked fare for transport and occasionally they were encouraged by health workers to do exercise by walking when their health status had improved. Furthermore the second large group was traveling by public transport (bus) to TB clinics and the transport costs of the majority was between 400 and 500 Tshs the public transport rate at the time of the study. The traveling costs was not affordable to most of the patients who claimed that their income was low and was lost on account of traveling daily to TB clinics for DOT services.

The results also revealed that despite this inconvenience which regular attendance at TB clinic affects the majority of the patients accepted it, this corresponds with the findings of other studies other studies done in our country and elsewhere (Adatu et al., 2003 ).

The study indicates that regular attendance at TB clinics involved economic costs and yet even those who were not economically active were willing to bear the costs. This indicates that the burden of daily attendance to TB clinics is borne by many people in the family and not just the patient.

The results show that although the TB drugs were always available at the TB clinics. Water for swallowing drugs was not provided at the clinics, patients were buying at the clinic at the average cost of 200 Tshs. and some of them carried water from home. TB clinics could be more supportive by providing the water which patients need in order to take their medication.

The results also show that TB drugs gave patients some side effects. The side effects did not appear to impede adherence with the medication regimen. This implies high level of motivation by patients and the TB program need to reinforce it by providing health education concerning side effects and provide medication for controlling the side effects due to the drugs.

The results further revealed that health workers were always available at the TB clinic. Some patients still preferred alternative approaches to TB treatment which could be more convenient than the daily attendance at the TB clinics. This alternative was receiving drugs every after one week to swallow them at home under the recommended supervisor.

The findings of this study are in line with the findings of other studies conducted in other countries. In India the studies conducted found that community based DOTS was also most preferred, the supervisors acceptable to the patients included traditional healers, and community health workers. Studies done in Uganda showed similar experiences like this study. Both studies showed that community based DOTS was most preferred. Another study conducted in Tanzania also had similar experiences like this one. It found that community based DOTS was preferred because it was found to be convenient, reduced the costs, saved time of the patients and reduced workload in the health facilities.

The results further revealed that despite very few patients asked questions concerning TB treatment that required explanation when invited to do so. Most of the respondents did not ask any questions even though their level of education on TB treatment is poor. This could be due to the attitude of the health workers towards patients of not encouraging them to ask questions or asking questions or express their concerns. Other reasons could be lack of information on TB treatment. However those who asked

questions wanted to know more about contraindications and norms during TB treatment and the issue of shortening the duration of TB treatment.

# CHAPTER 6.0

# CONCLUSIONS AND RECOMMENDATIONS

## 6.1. CONCLUSIONS

From this study it was found that:

- Patients were adhering to DOT for TB regardless of the economic and traveling cost incurred. This is a good indicator that they accepted the DOT strategy.
- The majority of the patients did not know the causes of TB even though some knew how TB spreads and the standard treatment duration recommended by WHO.
- The following were the commonly reported side effects experienced by the patients: peripheral neuropathy, painful swelling of the lower limbs and joints as well as gastro intestinal upset.
- Findings of the study revealed that despite adhering to DOT, majority of the patients preferred receiving their drugs weekly to swallow them at home under a recommended supervisor.
- The study revealed that drugs were always available but supportive treatment by providing water for swallowing drugs was needed by patients.
- High proportion of respondents who were traveling by bus paid between 400-500 Tanzanian shillings daily to TB clinic which was not affordable by most of the patients who were poor.
- Majority of the patients who asked questions on TB treatment required some explanations, for example they wanted to know if there were contraindications and norms during TB treatment and whether there was a possibility of shortening the TB treatment duration.

## 6.2. RECOMMENDATIONS

- MoH needs to put a deliberate effort to ensure that the discrepancy between onset of signs and symptoms of TB and the recognition of TB is reduced.
- MoH and NTLP needs to improve the awareness on the causes of TB, spread of TB by health education at TB clinics and the community.
- MoH should assist patients to raise their income by reinforcing community based TB DOTS and reducing the frequency of their attendance to TB clinics for services.
- MoH and NTLP should create a supportive environment for therapy by providing water for swallowing drugs and providing drugs to combat side effects experienced by TB patients.
- MoH should increase the capacity by training more health workers who provide DOT so as to reduce the waiting time spent at TB clinics.
- **Further research:** The findings of this study points out possible areas for further research.
    - Combined drugs and shortening treatment duration.
    - Acceptability of CB-DOTS using CB health workers.
    - Co-existence of TB/HIV/AIDS.

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