

**QUALITY OF INTENSIFIED TUBERCULOSIS CASE FINDING IN PUBLIC AND
PRIVATE HIV/AIDS CARE AND TREATMENT CLINICS IN ILALA
MUNICIPALITY, DAR-ES-SALAAM, TANZANIA**

By

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

Muhimbili University of Health and Allied Science

October, 2010

CERTIFICATION

The undersigned certifies that he has read and hereby recommends for acceptance by Muhimbili University of Health and Allied Sciences a dissertation entitled **Quality of intensified Tuberculosis case finding in public and private HIV/AIDS care and treatment clinics in Ilala Municipality, Dar-es-salaam, Tanzania** in partial fulfillment of the requirements for the degree of Master of Public Health of the Muhimbili University of Health and Allied Sciences.



David P Urassa, MD. PhD

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Date

18/10/2010

DECLARATION AND COPYRIGHT

I **Irene Andrew Lema**, 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 

Date 18/10/2010

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DEDICATION

To my late Father Andrew, lovely mother Agatha, my husband Dr Rugola, my son Rugola-Peter and my daughter Precious-Agatha.

ABSTRACT

Background

Tuberculosis (TB) is the most common opportunistic infection and the number one cause of death in HIV/AIDS patients in developing countries. In Sub Saharan Africa four fold rise in TB cases related to HIV epidemic has been reported while in Tanzania a six fold rise of TB cases has been observed.. The World Health Organization formulated an interim policy in 2004 to guide member states in implementing collaborative TB/HIV activities that was also adopted by Tanzanian Government. Intensified TB case finding is among the three strategies to reduce burden of TB among People Living with HIV (PLHIV), however since its implementation 2007 in Tanzania there has been no information with regard to its quality and actual practice in HIV care and treatment clinics thus this study was carried out to fill this gap.

Methods

To assess the quality of intensified TB case finding among PLHIV attending public and private HIV/AIDS care and treatment clinics a cross sectional descriptive study was undertaken in 432 randomly selected PLHIV in Ilala Municipality, Dar es Salaam, Tanzania. The study used three tools, checklist to assess resources and interview health workers, an exit interview and case review guide to PLHIV and their files respectively to assess structure, process and outcome components of quality of intensified TB case finding as per Tanzanian National guideline.

Result

Overall it was found that intensified TB case finding was implemented in 43.5% of both public and private clinics the majority (64.4%) of PLHIV screened were from public clinics compared to those registered in private clinics (22.7%) and the difference was statistically significant (p value < 0.05). The prevalence of TB disease was 11.6%. The number of trained physicians (47.4%) and structural resources required for TB screening were inadequate in both clinics with exception of adult TB screening tools. Most Physicians (83%) reported to have different forms to feel which hinder their performance. Few (27.1%) PLHIV were aware of intensified TB case finding with varying experience and satisfaction of PLHIV between public and private clinics.

Conclusion

The overall quality of Intensified TB case finding in HIV/AIDS care and treatment clinics was poor and more pronounced in private clinics. More collaborative effort is recommended between National TB and Leprosy Programme and National AIDS Control Program to ensure at least 90% of staff in Care and Treatment clinics (CTC) receive TB/HIV training. Also TB screening tool needs to be integrated into CTC2 forms in order to alleviate the challenge of poor documentation.

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Dissemination of research findings

The following bodies will be provided with the copy of this study; Firstly, Muhimbili University of Health and Allied Sciences Postgraduate Director office, Dean School of Public Health office and Library and my supervisor, Dr. David Urassa, secondly District Medical officer office – Ilala Municipality and Ministry of Health and Social Welfare.

In addition, a workshop will be conducted to health care workers who attend PLHIV in Care and treatment clinics to provide feedback and jointly put the strategies to overcome the challenges in order to improve quality of health care delivered.

On the other hand, this study will be published in peer reviewed journals in order to inform the scientific community.

LIST OF ABBREVIATIONS

AFB	Acid Fast Bacilli
AIDS	Acquired Immunodeficiency Syndrome
CRF	Case Report Files
CTC	Care and Treatment Clinic
DOT	Direct Observed Therapy
HAART	Highly Active Anti Retroviral Therapy
HCW	Health Care Workers
HIV	Human Immunodeficiency Virus
HIV/AIDS	Human Immunodeficiency Virus / Acquired Immunodeficiency Syndrome
ICF	Intensified TB Case Finding
MoHSW	Ministry of Health and Social Welfare
MPH	Master of Public Health
MUHAS	Muhimbili University of Health and Allied Sciences
NACP	National AIDS Control Program
NTLP	National Tuberculosis and Leprosy Program
PI	Principal Investigator
PLHIV	People Living with HIV and AIDS
SPSS	Statistical Package for Social Sciences
TACAIDS	Tanzania Commission for AIDS
TB	Tuberculosis

TB/HIV	Tuberculosis/Human Immunodeficiency Virus
UNAIDS	United Nations Program on HIV/AIDS
USA	United States of America
WHO	World Health Organization

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DEFINITION OF TERMS

Quality of Health Care

There is no one way to define quality in healthcare. Of the many definitions perhaps this study defined it as the extent to which application of medical science and technology is expected to achieve the most favorable balance between risk and benefit. Also it is seen as the degree to which resources for health care or the services correspond to specified standard which are expected to lead to desired effect.

Intensified TB Case Finding

Intensified TB case finding (ICF) involves screening for symptoms and signs of TB in settings where HIV infected people are concentrated. In HIV Care and Treatment clinics ICF is defined as the routine screening for symptoms and signs of TB to all people living with HIV/AIDS

Quality of Intensified TB case finding

This refers to the routine screening of symptoms and signs of TB to all people attending care and treatment clinics and proper documentation of the information in the standardized symptomatic TB screening tool.

CHAPTER ONE

1.0 Introduction

1.1 Background information

HIV/AIDS is a pandemic disease that was reported first in USA among homosexual men in 1982 (Schneider et al., 2006). The disease was then reported in many regions of the world including Africa (UNAIDS, 2008b). In Tanzania the first three AIDS cases were reported in 1983 in Kagera. (MOHSW, 1989) Since then the HIV epidemic has spread rapidly to all districts and communities and has affected all sectors of the society. It is documented that in 1986 all regions of Tanzania mainland reported a case of AIDS. In 2005 a total of 13,285 AIDS cases were reported to the National AIDS control program from the 21 regions bringing the cumulative total of reported cases since the epidemic broke to 205,773 (MoHSW, 2009)

In many parts of the world HIV continues to affect millions of populations. In 2007, it was estimated that there are 33 million persons living with HIV/AIDS and 2 million died of AIDS. The distribution of the HIV epidemic and its effects is disproportional whereby Sub Saharan Africa bears a considerable burden of HIV. It is estimated that 67% of all people with HIV live in the sub continent and 75% of all HIV related deaths in the world occurred in sub Saharan Africa (UNAIDS, 2008b). The current prevalence of HIV/AIDS in Tanzania is 5.7 (TACAIDS, 2008) and about 1.4 million people are estimated to be living with HIV (UNAIDS, 2008a). In Dar es Salaam the prevalence of HIV/AIDS is 8.9 (MoHSW, 2009). HIV disease is often associated with opportunistic infections such as fever, respiratory infections, tuberculosis, weight loss, skin diseases, viral infections, oral thrush and lymphadenopathy.

Among these, tuberculosis (TB) is the commonest opportunistic infection and the number one cause of death in HIV patients in developing countries, and accounts for about 40% of all manifestation seen in HIV patients (Pape, 2004). About 25% to 65 % of patients with HIV/AIDS have tuberculosis of any organ and tuberculosis accounts for about 13% of all HIV related deaths world wide (Sharma et al., 2005). It is estimated that two thirds of the world population or nearly two billion people is infected with tuberculosis bacillus and 2 million people died every year (WHO, 2004a, WHO, 2008).

HIV is known to be the strongest risk factor for TB disease. In many countries TB cases have been increasing proportionally with rising HIV prevalence. In Sub Saharan Africa four fold rise in TB cases related to HIV epidemic has been reported while in Tanzania a six fold rise of TB cases from 11,843 in 1983 to 65,465 in 2004 was observed (MoHSW, 2008).

Due to this fact, the World Health Organization (WHO) formulated an interim policy in 2004 to guide member states in implementing collaborative TB/HIV activities. The policy has three objectives that include, to reduce the burden of TB in people living with HIV/AIDS, to reduce the burden of HIV in TB-infected patients and establishing the mechanism for collaboration between TB and HIV/AIDS programs.

In Tanzania review of implementation of collaborative TB/HIV activities took place in 2005 (MoHSW, 2008). These activities are carried out by the National TB and Leprosy program and the National AIDS Control Program. This study focused on the reduction of TB disease in

PLHIV specifically on the quality of intensified TB case finding which involve early screening of signs and symptoms of TB. Other strategies under this objective that include provision of isoniazid preventive therapy and TB infection Control are out of scope for this study.

The quality of intensified Tuberculosis case finding is an essential component in reducing spread of Tuberculosis among people living with HIV/AIDS. However the concept of quality of care is very controversial that shortly can be defined as the excellence in reference to improvements in health status (Gilson, 1992). Its also seen as a degree to which resources for health care or the services corresponds to specified standards that are generally accepted to lead to desired results (Roemer and Montoya-Aguilar, 1988). Provider initiated symptomatic TB screening and early treatment of cases is the standard measure in reducing burden of TB disease in PLHIV. The standard TB screening tools consists of TB symptoms and signs and the action to be taken.

1.2 Conceptual framework

TB screening indicates quality of care in HIV/AIDS care and treatment clinics. Several researchers suggest different methods of assessing quality of care in health settings, but this study adopted the method described about 30 years ago by Donabedian (1979) which suggested the use of three components Structure, Process and Outcomes (Donabedian, 1979). In this approach, the structure refers to the condition under which care is provided, which is human resource such as the number and qualifications of professionals. Secondly, material resources such as availability of screening tools, guidelines, drugs, space and organizational

characteristics such as referrals to TB/HIV clinics and supportive supervision. However anti TB drugs were not assessed in this study since they were not available at HIV care and treatment clinics.

The process means the activities that constitute medical care including investigations, diagnosis, treatment, privacy /confidentiality and health education provided to the clients. Outcomes refers to the changes seen in the individual following provision of good quality of care, for example number of those screened, diagnosed, treated for TB and satisfaction of patients with care received and its outcome.

Besides all these, other factors that may contribute on improving quality of care include empowering health care providers with knowledge, skills and resources such as supplies and equipment. These goes together with the standard practice of care which require use of screening tools at every visit in order to facilitate early detection and treatment of cases.

The figure below illustrates the modified Donabedian concept with its determinants that were used for the assessment:

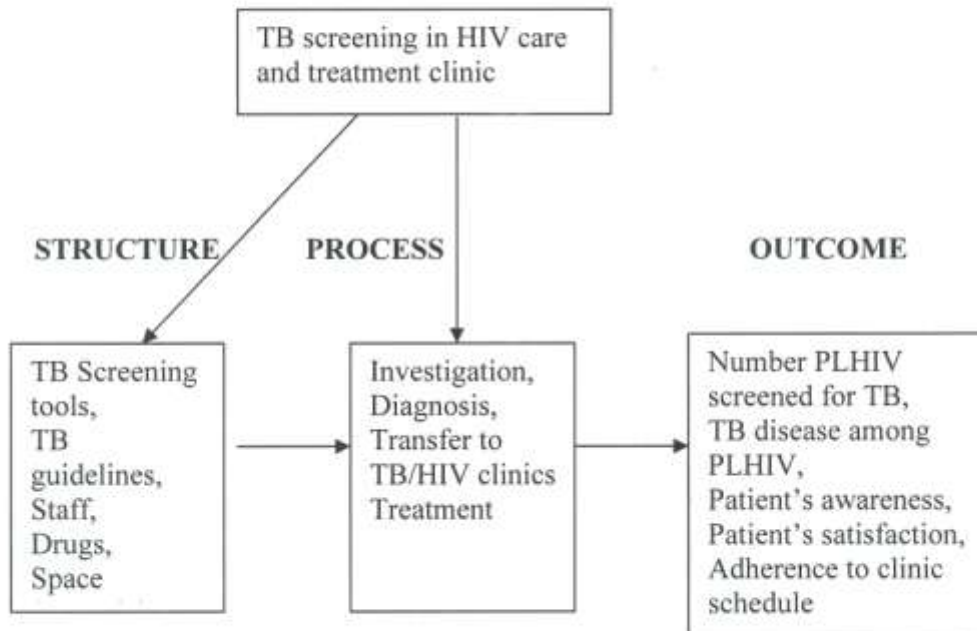


Figure 1: Conceptual framework

1.3 Statement of the problem.

Tuberculosis (TB) is the most common cause of morbidity and mortality among people living with HIV worldwide (WHO, 2004a). It is estimated that two thirds of the world population, or nearly two billion people, is infected with the tuberculosis bacillus (WHO, 2008) while about 33 million people were living with HIV (PLHIV) by the end of 2007 (UNAIDS, 2007). The prevalence of TB among PLHIV is considerable especially in sub Saharan Africa (Ngowi et al., 2008, Corbett et al., 2007). A study done in Dar es salaam found the prevalence of TB to be 15% in patients attending HIV care and treatment clinics (Mtei et al., 2005).

In this era of HIV, correct diagnosis and treatment of tuberculosis helps to reduce the burden of tuberculosis, provided that infectious cases are detected and treated successfully. However there is a number of challenges in achieving the goal of reducing the tuberculosis burden, such as difficulties in diagnosing tuberculosis in HIV infected patients due to unusual clinical picture and increase in smear negative acid fast bacilli (AFB negative), pulmonary tuberculosis disease and atypical findings on chest radiography (Lucas et al., 1994, Jones et al., 1993)

Given the burden of the TB/HIV co infection, policy and guidelines have been put in place by the MOHSW to ensure early detection and treatment by introducing TB screening tools in health facilities. The tool assesses sign and symptoms of tuberculosis and the action needed to be taken after diagnosis such as referral to TB/HIV clinic and provision of anti TB treatment. Thus, intensified TB case finding through TB screening to clients attending CTC is the cornerstone for reducing the burden of TB in PLHIV, besides provision of isoniazid preventive therapy and TB infection control. Intensified TB case finding in Tanzania was

introduced in 2007. Since its implementation, there has been a dearth of information with regard to its quality and actual practice in HIV care and treatment clinics thus this study was carried out to fill this gap.

1.4 Significance of the study.

The reduction of TB burden in HIV infected persons need to be addressed in order to contribute towards improving their quality of life. Thus, in areas with high epidemic of TB and HIV like Dar es Salaam, early detection of cases and treatment of TB disease is the most effective method in controlling the infection. These can be achieved by provider initiated TB screening in all PLHIV attending care and treatment clinics in every visit or any other out patient departments and referred to TB/HIV clinic for management.

In Tanzania, little has been done to explore the concept of quality of services in HIV care and treatment clinics in detecting Tuberculosis (TB) cases through provider initiated screening of signs and symptoms and prompt treatment of cases.

Therefore this study assessed the quality of intensified TB case finding in CTC. This was important to provide evidence based data necessary for improving services offered by the National AIDS Control Program. Moreover, the study contributes towards strengthening collaborative TB/HIV activities that are necessary for responding to the dual TB/HIV epidemic.

1.5 Research questions

- a) Are resources required for TB screening among PLHIV attending public and private HIV care and treatment clinics adequate?
- b) What is the proportion of people effectively screened for TB among those living with HIV/AIDS enrolled in public and private HIV care and treatment clinics?
- c) What is the percentage of PLHIV screened found to have active TB disease?
- d) What is level of awareness, experience and satisfaction of PLHIV with regard to TB screening in public and private HIV care and treatment clinics?

1.6 Objectives

1.6.1 Broad objective

To assess quality of intensified TB case finding among PLHIV attending public and private HIV/AIDS care and treatment clinics in Ilala Municipality, in Dar es Salaam 2010

1.6.2 Specific objectives

1. To assess adequacy of resources required for intensified TB case finding among PLHIV attending public and private HIV care and treatment clinics in Ilala Municipality 2010

2. To determine the proportion of PLHIV screened by intensified TB case finding among people living with HIV/AIDS enrolled in public and private HIV care and treatment clinics in Ilala municipality, 2010
3. To determine the prevalence of active TB among PLHIV in the past one year in public and private HIV care and treatment clinics in Ilala Municipality, 2010
4. To assess patients' awareness, experience and satisfaction on intensified TB case finding in public and private HIV care and treatment clinics in Ilala Municipality 2010

CHAPTER TWO

2.0 Literature review

2.1 Quality of health care

Quality of health care is a subject of debate and controversy. It is considered by some as intangible and indefinable while others acknowledges that it is measurable in certain aspects (Roemer and Montoya-Aguilar, 1988). However various authorities have attempted to define quality of health care in varying abstract terms that all focus on a certain expected or accepted standard of healthcare. (Last, 2001), has defined, quality of health care as a level of performance or accomplishment that characterizes the health care provided. On the other hand, Quality of health care is seen as the degree to which resources for health care or the services correspond to specified standard which are expected to lead to desired effect (Roemer and Montoya-Aguilar, 1988). It has also been defined as the extent to which application of medical science and technology is expected to achieve the most favorable balance between risk and benefit (Donabedian, 2003). The institute of medicine defines quality of care as a degree to which health services for individuals and population increase the likelihood of desired outcomes and are consistent with current professional knowledge (Hongoro et al., 2005).

2.2 Assessment of quality of health care

The difficulties in defining the quality of health care have resulted in difficulties in measuring it. Usually measurement or assessment of quality of health care depends on how it is defined and the context in which it is applied (Hongoro et al., 2005)). Beside these difficulties, a method to assess quality of health care has been described 30 years ago (Donabedian, 1979)

which advocate on the approach of three components, namely structure, process and outcome. The first component structure refers to the state in which care is provided that includes material resources such as facilities and equipment, human resources such as number, variety and qualification of the health providers and organizational characteristics such as organization of medical and nursing personnel, type of supervision and performance review. The process denotes the set of organized activity that constitute health care such as diagnosis, treatment, rehabilitation, prevention and health education that are usually carried out by medical personnel but also by patients and family. The outcome denotes changes in individuals and populations attributable to the care they received which include changes in health status, changes in behavior and knowledge acquired by patients and family members together with patients and family member satisfaction. This model of assessing quality of health care has received wide acceptance (Hongoro et al., 2005, Roemer and Montoya-Aguilar, 1988) and it is recommended that it should be used in combination to ensure good provision of health care since each has its own advantage and disadvantage when used alone (Donabedian, 1979). Due to challenges of data scarcity and reliability in developing countries, most quality assessment studies focus mainly on structural and process aspects (Hongoro et al., 2005). Two studies conducted in South Africa (Sinanovic and Kumaranayake, 2006) and Ethiopia (Mesfin et al., 2009) did focus on all the three components and the latter attempted to show the relationship of structure and process to the outcomes that is usually difficult to discern due to confounding (Mant, 2001, Roemer and Montoya-Aguilar, 1988). The three components can be measured by the same or different major two methods that include categorization of care into qualitative divisions such as excellent, good, fair and quantitative method. The quantitative method can further be subdivided into weighted scores or

comparison against a recommended standard (Hongoro et al., 2005, Mesfin et al., 2009, Sinanovic and Kumaranayake, 2006).

2.3 Intensified TB case finding

The conventional strategy under direct observed therapy for TB diagnosis has failed to control TB in countries with high HIV prevalence (Kranzer et al., 2010). Therefore in attempts to reduce the burden of TB in people with HIV, WHO formulated an interim policy that have three strategies commonly known as Three I's strategy:- Intensified Case Finding, Isoniazid Preventive Therapy and TB infection control (WHO, 2004a). Intensified Case finding is central to this strategy and has been found to be useful (Kranzer et al., 2010, Corbett et al., 2010, Mugisha et al., 2006) despite its varying sensitivity and specificity (Reid and Shah, 2009). It is defined as a provider initiated routine screening for TB in People Living with HIV, people with high risk of TB and those living in congregate settings like prisons and mines (Kranzer et al., 2010). It aims at identifying individuals with TB so that they can be treated and thus prevent TB transmission and eventually mortality.

Globally, there are 1.3 million new cases of HIV associated TB each year resulting into 500,000 deaths. About 79% of TB/HIV cases are in Sub Saharan Africa (Kranzer et al., 2010). In Tanzania the prevalence of TB in PLHIV is estimated at 8-15% (Sode et al., 2009, Ngowi et al., 2008, Mtei et al., 2005, Kranzer et al., 2010) that is higher than that of neighbouring country Uganda which is estimated at 5% (Mugisha et al., 2006).

Globally, the implementation of intensified case finding has been very low (Kranzer et al., 2010, Reid and Shah, 2009). In 2007, intensified case finding was offered to 0.6 million PLHIV which is 2.2% of 33 million PLHIV. This is a slight increase from 0.2 million PLHIV who were screened in 2005, representing 0.61%. Limiting intensified case finding to PLHIV who attend care and treatment clinics, the statistics are still not satisfactory. In 2007, among 3.5 million PLHIV who attended care and treatment clinics, only 27% were screened for TB which is far below the global plan of screening at least 72% individuals (WHO, 2009). The plan set targets that provide benchmark against which the progress of collaborative TB/HIV activities in practice can be assessed. In Tanzania, intensified case finding in few selected regions that are supported by donor agencies is satisfactory. A study done by International Center for AIDS care and Treatment Programs showed that 92% of PLHIV were screened for TB (Sode et al., 2009). Most studies on intensified case finding have focused on its utility (Kranzer et al., 2010, Shah et al., 2009, Mugisha et al., 2006, Corbett et al., 2010). A few quality assessment studies in Africa have been conducted in general population focusing the overall quality of TB care and thus there is little quality assessment of intensified case finding, the gap this study intended to fill. It is envisaged that the assessment has identified weak points necessary for improvement so that the objective of decreasing the burden of TB in PLHIV is realized and eventually resulting into improvement of quality of life.

2.4 Quality of intensified TB case finding as part of HIV care

Detection of TB and its subsequent treatment in PLHIV is crucial in reducing the burden of TB in PLHIV, an important aspect of the quality of HIV care. Intensified TB case finding has high sensitivity when used to define TB suspects among patients who presents them selves in

health care facility and it is the key component for WHO DOTS strategies for combating TB. Active symptoms screening for TB is the most important aspect of early identification of TB cases which is essential for individual patient's managements and TB infection control in general (Corbett et al., 2010). The standards for quality of HIV care are in place. These standards clearly stipulate what is expected of HIV care and treatment sites (WHO, 2004b). They consist of three major categories, among which, one is the functions related to health care delivery that includes a standard

of care givers to assess health care users for opportunistic infections including TB on a regular basis. This is in line with the Tanzania National Policy guidelines for collaborative TB/HIV activities which policy statement states that "all PLHIV will receive screening for TB symptoms and signs at all sites providing HIV/AIDS services" (MoHSW, 2008). TB symptom screening, an intrinsic entity of intensified case finding is part of HIV care. Current evidence shows that very little have been done in assessing quality of HIV care especially in intensified TB case finding in PLHIV. Despite the fact that TB screening is clearly stipulated in the Standards of Quality of HIV care (WHO, 2004b) and International Standards for Tuberculosis care (Hopewell et al., 2006), little has been done to assess its quality. Few studies conducted to date have attempted to describe the overall quality of TB care in the general population in Africa using different assessment criteria from the conceptual level to the method and variables levels (Hongoro et al., 2005, Sinanovic and Kumaranayake, 2006, Mesfin et al., 2009). These studies have not addressed the specific quality of TB screening.

CHAPTER THREE

3.0 Research methodology

3.1 Study design

This was a descriptive cross sectional study that assessed the quality of intensified TB case finding in public and private HIV/AIDS care and treatment clinics in Ilala Municipal Dar es Salaam 2010.

3.2 Study area

The study was conducted in public and private HIV care and treatment clinics in Ilala Municipality, Dar es Salaam region. Dar es Salaam is among the two leading regions with high HIV prevalence (8.9) after Iringa which has HIV prevalence of 14.7 (TACAIDS, 2008). On the other hand, it is the leading region that contributes 25% of notified TB cases in the country (MoHSW and NTL, 2008). The Ilala municipality is among the three municipalities, which make Dar es Salaam city, the other being Kinondoni and Temeke. According to 2002 National population census, the municipality has a total of 783,687 of which 395,480 (50.46%) were males. According to NACP annual report 2009 the total number of patients enrolled in Ilala Municipality is 28,660 (35 %) of all enrolled in Dar es Salaam region. Thus, the study was done in this municipality due to the relative high number of HIV care and treatment clinics as compared to other municipalities.

3.3 Study population

Study involved people living with HIV (PLHIV) registered in HIV care and treatment clinics three months prior to survey. Ilala municipality has 10 public and 9 private, HIV care and treatment clinics that account for 40.42 % of all clinics in Dar es Salaam region supported by Muhimbili University, Dar es Salaam City Council and Harvard School of Public Health HIV/AIDS care and treatment program (MDH). However due to limited resources, a sample of health facilities was obtained in guidance from WHO recommendations in assessing health services in essential obstetric care which suggests that 30% of the facilities available/ eligible should be included in the study (UNICEF/WHO/UNFPA, 1997). In this study 30% of both public and private facilities were enrolled.

Therefore 30% of 10 public clinics = 3; 30% of 9 private clinics = 2.7 ≈ 3

Inclusion criteria

PLHIV registered in the study clinics three month before the time of the visit by researchers and one physician who attended PLHIV regularly.

Exclusion criteria

Participants who were very sick and not able to give consent, PLHIV and Guardians/ parents who visited the clinic for the first time

3.4.1 Sample size

The sample size was calculated using the formula

$$N = z^2 p (100-p) / e^2$$

Where N = Expected minimum sample size

Z = Confidence interval which correspond to 1.96 (at 95%CI)

P = Proportion of TB disease in PLHIV in Dar es Salaam 15% (Mtei et al 2005)

E = Margin of error (5%)

Thus $N = 1.96^2 15 (100-15) / 5^2$

$$= 195.9 \approx 196$$

Assuming 10% were likely not to respond we added 20 to get the final minimum sample size.

$$= 196 + 20$$

$$= 216$$

Therefore the minimum sample was 216 in each public and private clinic to make a total of 432

3.4.2 Sampling method

Multistage sampling technique was applied to find the study participants where by the stratified sampling method was used to classify the clinics into two strata public and private HIV care and treatment clinics in Ilala municipality. These clinics were listed separately starting with the higher level facility i.e. hospital to dispensary. Then simple random sampling method was used to select three sites Amana, IDC and Tabata for public clinics and the other three Agakhan, Regency and Buguruni Anglican for private clinics.

The minimum number of PLHIV interviewed from Amana, IDC and Tabata clinics were obtained by using proportionate sampling method as per daily attendance. A day before data collection we visited the clinics and asked the average number of clients seen in each clinic per day and calculated the proportion of the clients to be enrolled in the study from each clinic in a sample of 216 for all public clinics.

Given that:

Amana care and treatment clinic sees an average of 200 clients per day

IDC care and treatment clinic sees an average of 150 clients per day

Tabata care and treatment clinic sees an average of 60 clients per day

We therefore interviewed:

104 PLHIV at Amana

80 PLHIV at IDC

32 PLHIV at Tabata

In private facilities, Agakhan, Regency and Buguruni Anglican the same procedure was adopted except for the modification of proportionate sampling method as per weekly attendance.

Given that:

Agakhan clinic sees an average of 125 PLHIV per week

Regency clinic sees an average of 110 PLHIV per week

Buguruni Anglican clinic sees an average of 90 PLHIV per week

We therefore interviewed:

83 PLHIV at Agakhan

73 PLHIV at Regency

60 PLHIV at Buguruni Anglican

Then, in each clinic we used simple random method to select PLHIV who registered three month before the day of interview to enroll in the study.

3.5 Selection and training of research assistants

Three research assistants with counseling and research experience were selected by principal investigator a week before commencement of data collection. They were trained for a day. The training focused on the objective of the study and how to fill the questionnaires correctly and reviewing the case report files. They were also introduced to research ethics and other relevant information. The main task of this team was to perform exit interview to PLHIV and reviewing their files.

3.6 Pre testing of the data collection tool

Prior to the commencement of the study pre testing of all tools was done by principal investigator and research assistants. Pre testing was done in Buguruni health center and Tumaini hospital which represented public and private clinic respectively. This was done to check whether the tool could collect the intended information and if there was any misconception which needed to be resolved before the onset of the main study.

3.7 Data collection tools and procedure

PLHIV enrolled in care and treatment centers usually attend the clinics on a monthly basis for refill of their medications. The interviewer waited for the selected participants to exit the physician room before administering the questionnaire.. Data collection was conducted for two weeks. Three different tools were used to collect information. That was done through filling of checklist and physician interview which assessed mainly the structural aspect, exit interview to PLHIV registered three month prior to the day of survey in the study clinic which assessed process and outcome aspects, and lastly review of PLHIV case report files (CRF) which assessed the process. These tools were developed in English, then translated to Kiswahili language and later on translated back to English by two linguistic independent people.

The checklist was filled using the interview and observation methods. One physician from each clinic was interviewed on availability of resources such as staff, TB screening tools, TB guidelines, X ray machine and laboratory services. Few open ended questions were asked to explore reasons which influenced effective practice of intensified TB case finding in the clinic. In addition, the researcher counterchecked all the resources mentioned for confirmation.

Exit interview to PLHIV in the day of survey were done to collect information regarding their awareness, experience and satisfaction with the service they received on their regular visit.

Case report files (CRF) of all PLHIV interviewed were reviewed to ensure representativeness of the information and routine actual practice of physician on intensified TB case finding. We

were able to identify if the TB screening was done on enrollment day only or even follow up visits. Also we managed to identify the diagnostic methods used and action taken after screening.

The principal investigator and three research assistants were involved in data collection.

3.8 Quality control of data collection

At the end of each interview the filled questionnaires were collected from the interviewers and assessed by the investigator. Feedback of problems of filling the questionnaires was reported to the principal investigator for further improvement before the next interview. Interviewers were given note books to write their daily views and observations from the study. Meetings between the research assistants and principal investigator were held regularly to discuss challenges encountered during interviews.

3.9 Variables

The full lists of variables (factors) according to the Donabedian model are depicted in Table 1. These were collected for descriptive statistics. However, we limited the analysis to the following variables that are relevant for informing collaborative TB/HIV activities:

Dependent variable

Proportion of PLHIV screened for TB

Patients' satisfaction on service provision

Independent variables

Social Demographic characteristics

Availability of screening tools

Availability of trained staff

Availability of TB/HIV clinic

Availability of TB diagnostic services

Number of supportive supervisions done

Patient's awareness on TB symptoms

Patients experience on TB/HIV co infection

Table 1: Study variables and data collection methods for assessing quality of TB screening in six HIV care and treatment clinic in Ilala Municipal, Dar es Salaam.

Factor	Method of data collection
Structure factor	
1. Presence of trained staff	Checklist tool
2. National TB guideline	Onsite observation of the resources
3. TB screening tools	and physician interview
4. Availability of TB/HIV clinic	
5. Quarterly supportive supervision	
Process factor	
1. PLHIV counseling on TB screening	Exit interview patients
2. PLHIV screened for TB symptoms	
3. Availability of diagnostic services	
Outcome factor	
1. PLHIV awareness on TB screening	Exit interview patients
2. PLHIV experience on TB screening	Case review files
3. PLHIV satisfaction on TB screening	
4. PLHIV screened for TB	
5. PLHIV confirmed to have TB	
6. PLHIV treated for TB	

3.10 Data Management

The questionnaire was coded prior to data entry. Each care and treatment clinic was given a code number. Amana was number one, IDC number two, Tabata number three, Agakhan number four, Regency number five and Buguruni Anglican number six. The coded data were entered into the computer using Epi data version 3.1 on daily basis. To reduce errors during the data entry two files were entered separately one for exit interview and the second one for chart review then frequencies of similar information were runned for variables such as age, gender, marital status in order to see if they were similar.. Frequencies for patients IDs were runned and compared before merging the files to ensure that all the information in exit interview and chart review belong to the respective participant. The approved data files were than converted to SPSS format for analysis.

3.11 Data analysis plan.

Prior to the analysis continuous variables such age and level of education were categorized. Data analysis was done in accordance with the objectives.

Firstly, the descriptive data was presented in frequency tables and categorical data were analysed by chi-squared test and fisher's exact test for cells with less than five observations. The level of significance was set at $p \leq 0.05$ and 95% confidence interval was used throughout to test for associations between public and private clinics.

Secondly, reliability of satisfaction score for TB screening at every visit, at enrollments, privacy, counseling and physical examination services was computed and found to be acceptable by Cronbach's Alpha value of 0.74 for performing one-way analysis of variance (ANOVA) which used to compare means of satisfaction score of the study participants in public and private clinics .

3.12 Ethical consideration

Ethical approval for conducting research was obtained from Muhimbili University of Health and Allied Sciences Research and Publication committee. Then permission to carry out the study was requested from Ilala District medical officer's office and directors of each study facility.

The participants were informed of the study objectives, its justification and expected benefits. Informed written consent for participating in the study was obtained from the participants before being interviewed. First, participants read informed consent form and those who did not know how to read, research assistants read for them. The consent form consists of the objectives, confidentiality assurance of the information they provide, procedure of the whole study, benefits, risks and the contact details in case of any queries. In addition the participants were informed on the right to agree or disagree to participate in the study. The parents and guardians were also asked to provide informed consent for their children less than 18 years

CHAPTER FOUR

4.0 Results

4.1 Demographic profile of the respondents

A total of 432 respondents were involved in this study in which 216 from each public and private clinics. Out of these 150 (69.4%) and 124 (57.4%) were female in public and private clinics respectively. Most of respondents were in the 35-44 years of age category (34.7%, 35.2%) public and private respectively. The mean age of respondents was 37.8 years and standard deviation of 11.9 years. The oldest respondent was 70 years old and the youngest, 2 years old. Respondents from private clinics were older than those at the public clinics (mean 38.7 years for private versus 36.8 years for public clinics) There was statistically significant difference in gender of the study participants between public and private clinics (p value, 0.01) of which male were more in private than public clinics (Table 2)

More married respondents attended private than public clinics 60.6%, 48.6% respectively and the difference was statistical significant (p value <0.05).

Table 2: Demographic profile of the respondents

Demographic Factor	Public clinics n=216		Private clinics n=216		p value
	n	(%)	n	(%)	
Gender					
Male	66	(30.6)	92	(42.6)	0.009
Female	150	(69.4)	124	(57.4)	
Age group					
<15	11	(5.1)	12	(5.6)	0.193
15-24	11	(5.1)	9	(4.2)	
25-34	65	(30.1)	53	(24.5)	
35-44	75	(34.7)	76	(35.2)	
<45	54	(25.0)	66	(30.6)	
Marital Status					
Married*	105	(48.6)	131	(60.0)	0.044
Single	65	(30.1)	45	(20.8)	
Divorced/ Widowed	46	(21.3)	40	(18.5)	

*Married includes cohabiting

4.2 Socio-economic characteristics of respondents

Table 3 shows most of respondents in public clinics had primary school education (69%) while in private clinics most had secondary school education (42.1%) thus there was a statistically significant difference between the level of education of the study participants in the two clinics (p value , 0.001).

A large proportion of respondents both in public and private clinics were self employed 42.6 % and 38.4% respectively. The difference between the employment status of the study participants in these two clinics was statistically different (p value 0.001).

Table 3: Socio-economic characteristics of respondents

Characteristics	Public Clinics n=216		Private Clinics n=216		p value
	n	(%)	n	(%)	
Education level					
No formal education*	19	(8.8)	4	(1.9)	0.000
Primary education	149	(69)	87	(40.3)	
Secondary/ Higher education	48	(22.2)	125	(57.8)	
Employment Status					
Farmer /Peasant/Cattle	6	(2.8)	11	(5.1)	0.000
Government employee	8	(3.7)	32	(14.8)	
Employee in private sector	33	(15.3)	47	(21.8)	
Self employee	92	(42.6)	83	(38.4)	
Unemployed**	77	(35.6)	43	(19.4)	

NB * No formal education includes children

** Unemployed include children/students

4.3 Structure resources on TB screening

Table 4 shows that about half of the physicians in care and treatments clinics were trained on TB/HIV (47.4%). There were fewer physicians (36.4%) in public clinics than those in private clinics (62.5%) trained on TB/HIV, however the difference was not statistically significant (p value>0.05).

Table 4: Proportion of trained physician on TB/HIV in the public and private clinics

Clinics	N	Trained physician on TB/HIV				P value
		Yes		No		
		n	(%)	n	(%)	
Public clinics	11	4	(36.4)	7	(63.6)	0.370
Private clinics	8	5	(62.5)	3	(37.5)	
Total	19	9	(47.4)	10	(52.6)	

NB: Standard criteria 100% physicians trained

Table 5 shows the distribution of resources availability for TB screening services in public and private clinics. Among the essential resources for TB screening only adult screening tool was available in all public and private clinics. Except for radiological services where fewer clinics in public than private had this resource, more or equal number of public had other resources than private..

Table 5: Distribution of resources availability for TB screening in public and private clinics

Structural factors	Public clinics n=3	Private clinics n = 3
Number of clinics with TB guideline	2	1
Number of clinics with child TB screening tools	3	2
Number of clinics with adult TB screening tools	3	3
Number of clinics with Laboratory services	2	2
Number of clinics with Radiological services	1	2
Number of clinics with TB/HIV clinic	2	1
*Clinics received supportive supervision	2	2

NB:*Clinics with at least two or more supervision yearly

Physician interview -six physician were interviewed, one from each clinic.

Information from physicians reveals that, all public clinics fill the case report forms which incorporate standardized TB screening questionnaire and CTC 2 card which is the National monitoring tool for HIV disease in PLHIV attending CTC. The former forms are from HIV partner program which supports CTC in Dar es Salaam region. However, physicians in private clinics reported to have three different forms to fill, first CTC 2 card, standardized TB screening questionnaire and hospital case report file of the patients. Five physicians out of six

(83%) reported to have too much paper work that added to the already high work load resulting into poor performance and quality of care provided. Despite of this difference all clinics reported to receive the standardized TB screening tools from the Municipal TB/HIV coordinator and HIV program but there was irregular supply of forms.

In addition both physicians from public and private clinics reported to have enough space to conduct intensified TB case finding.

4.4 Reported symptomatic screening at enrollment and at every visit

More participants reported symptomatic TB screening at enrolment than at subsequent every day visits both in public and private clinics. Proportional of symptomatic screening was higher in public than private both at enrolment (96.3% versus 79.6%) and at every visit (62.5% versus 32.9%) and this difference was statistically significant (p value <0.05) Table 6.

Table 6: Percentage of participant reported symptomatic screening at enrolment and at every visit among PLHIV enrolled in public and private care and treatment clinics

Clinics	Symptomatic TB screening								P value
	N	At Enrollment		At Every visit		n (%)	n (%)	n (%)	
		n (%)	n (%)	n (%)	n (%)				
Public clinics	216	208 (96.3)	8 (3.7)	135 (62.5)	81 (37.5)				0.000
Private clinics	216	172 (79.6)	44 (20.4)	71 (32.9)	145 (67.1)				0.000

4.5 Intensified TB case finding

Table 7 shows that majority of PLHIV (90.5%) were screened by intensified TB case finding at enrolment more in public (95.4%) than private clinics (85.6%). This difference was statistically significant (p value, 0.001).

Table 7: Distribution of PLHV Screened by intensified TB case finding at enrolment among public and private care and treatment clinics

Clinics	N	Intensified TB case finding at enrolment				P value
		Yes		No		
		n	%	n	%	
Public	216	206	(95.4)	10	(4.6)	0.001
Private	216	185	(85.6)	31	(14.4)	
Total	432	391	(90.5)	41	(9.5)	

Table 8 shows that fewer (43.5%) PLHIV underwent intensified TB case finding at every visit. However, the majority (64.4%) of PLHIV screened were from public clinics compared to those registered in private clinics (22.7%) and the difference was statistically significant (p value < 0.05).

Table 8: Distribution of PLHIV Screened by intensified TB case finding at every visit among public and private care and treatment clinics

Clinics	N	Intensified TB case finding at every visit				P value
		Yes		No		
		n	%	n	%	
Public	216	139	(64.4)	77	(35.6)	0.000
Private	216	49	(22.7)	167	(77.3)	
Total	432	188	(43.5)	244	(56.5)	

NB: *TB screened against standard means the PLHIV who screened by intensified TB case finding at every visit and proper documentation done

4.6 TB Confirmed

Table 9 shows overall prevalence of TB disease in the study participants was 11.6%. The prevalence was higher (13%) in private clinics than that of public clinics (10.2%) but the difference was not statistically significant ($p>0.05$).

Table 9: Percentage of PLHIV with confirmed TB disease in the past one year in public and private care and treatment clinics

Facilities	N	Confirmed TB disease in past one year				P value
		Yes		No		
		n	(%)	n	(%)	
Public clinics	216	22	(10.2)	194	(89.8)	0.367
Private clinics	216	28	(13)	188	(87)	
Total	432	50	(11.6)	382	(88.4)	

Figure 2 below shows that public clinics performed TB screening more (64.4%) than private clinics. However, the proportion of patients confirmed TB and patients receiving treatments were almost similar in both clinics.

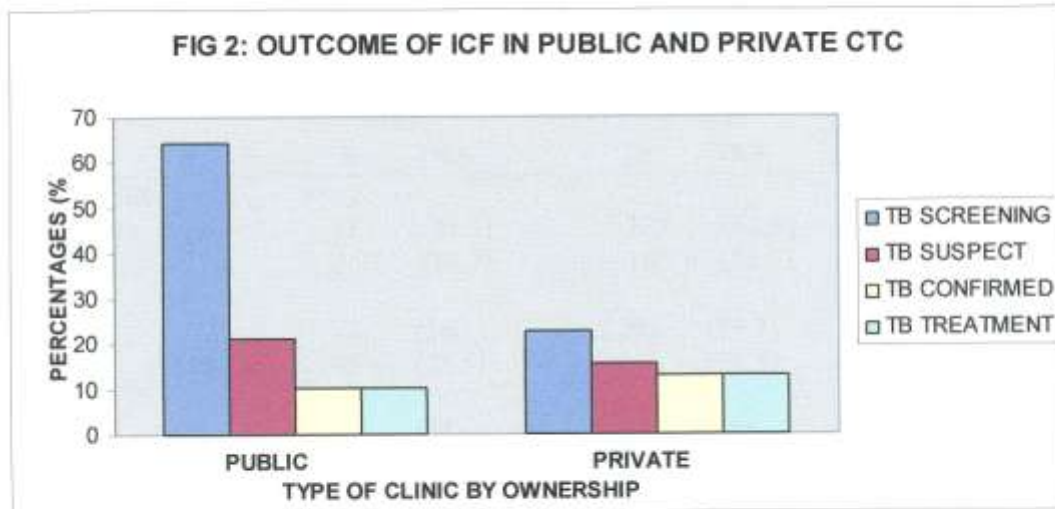


Figure 2: Intensified TB case finding and its outcomes in public and private care and treatment clinics.

4.7 Awareness of TB symptoms

Table 10 shows fewer (27.1%) PLHIV were aware of symptomatic TB screening. Public participants were more (37.5%) aware of symptomatic TB screening at every visit than private participants (16.7%). This difference was statistically significant (p value <0.05). Beside this, there was no statistically significant different in sex, age and marital status among PLHIV on awareness of symptomatic TB screening, hence (p value >0.05)

Table 10: Awareness of PLHIV on TB screening services by type of facility and demographic characteristics

Clinics	N	Awareness on symptomatic TB screening				P value
		Yes N=117		No N =315		
		n	(%)	n	(%)	
Type of facility						
Public clinics	216	81	(37.5)	135	(62.5)	0.000
Private clinics	216	36	(16.7)	180	(83.3)	
Sex						
Female	274	72	(26.3)	202	(73.7)	0.620
Male	158	45	(28.5)	113	(71.5)	
Age Group						
Young	100	22	(22)	78	(78)	0.192
Older	332	95	(28.6)	237	(71.8)	
Marital Status						
Never in union	110	23	(20.9)	87	(79.1)	0.091
Ever in union	332	94	(29.2)	228	(70.8)	
Total	432	117	(27.1)	315	(72.9)	

4.8 Patients Experience on TB screening services

Table 11 shows that the patients attending private clinic had better experience on TB screening services than those who attended public clinics in several parameters particularly on communication with health care workers, counseling and physical examination and for these difference was statistically significant (p value<0.05).

Table 11: PLHIV experience on TB screening among public and private clinics

Experience	Public Facility N=216		Private Facility N=216		P value
	n	(%)	n	(%)	
Communication with HCW	155	71.8	182	84.3	0.02
TB screening at every visit	164	75.9	173	80.1	0.296
Reception	206	95.4	210	97.2	0.308
Counseling	169	78.2	202	93.5	0.000
Physical examination	181	83.8	208	96.3	0.000

4.9 Satisfaction of participants

Figure 3 below shows that majority of participants from private clinics rated higher at level of satisfaction with TB screening services at every visit in their clinics

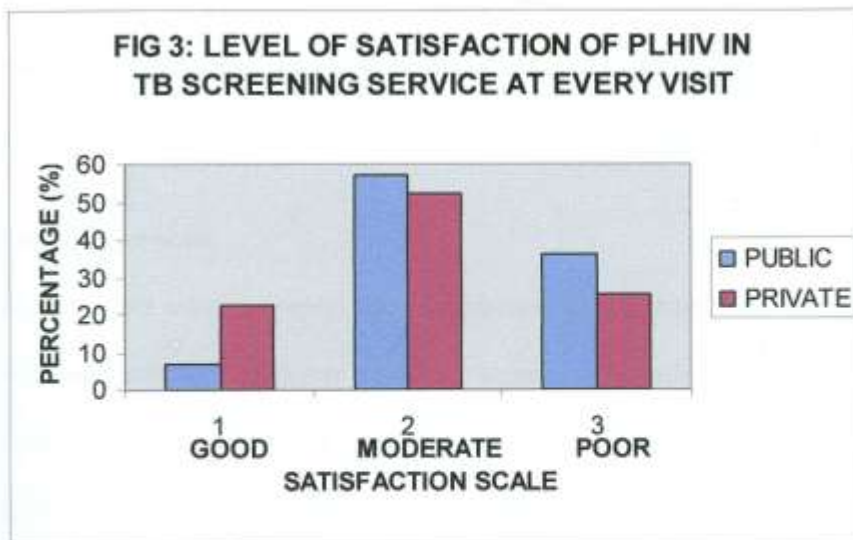


Figure 3: Satisfaction score in TB screening at every visit between public and private clinics

Figure 4 below shows that majority of participants from private clinics rated higher at level of satisfaction with counseling services in their clinics than those from public clinics.

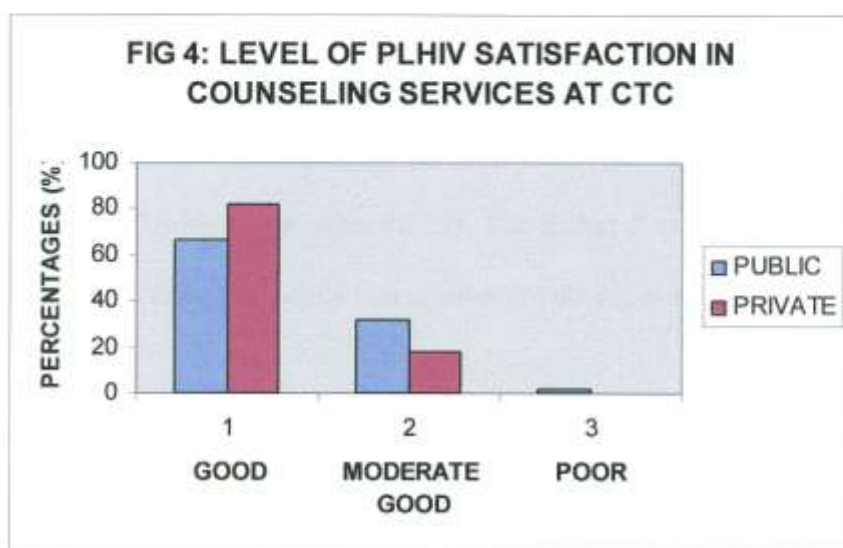


Figure 4: Satisfaction score in counseling services between public and private clinics
Reliability score by Cronbach's Alpha method

Before performing comparison of means by using one way analysis of variance, we checked the reliability of the satisfaction scale. The overall Cronbach's Alpha value was 0.775 signifying that the satisfaction scale was acceptable to perform ANOVA test.

Satisfaction scale

PLHIV were asked to report their satisfaction on a Likert scale of whether they were, Very satisfied, satisfied, moderate satisfied, somewhat satisfied and not satisfied in six selected services provided by health care workers during intensified TB Case finding. Thereafter the scale was formulated from 6-30 score and the mean was calculated were the lower score indicating more satisfied.

4.10 Comparison of satisfaction means score by ownership of the clinics and demographic characteristics

Table 12 shows that participants in private clinics were more satisfied with TB screening services in general than participants in public clinics. This is because participants from private clinics had lower mean satisfaction score than public clinics. This mean difference was statistically significant (p value <0.05). The higher F ratio shows that there was significant difference between the satisfaction mean score among public and private clinics.

Overall, male participants were more satisfied with intensified TB case finding than female participants indicated by lower mean satisfaction score in male participants than female participants. This mean difference was statistically significant (p value <0.05). The large F ratio shows that there was significant differences between the satisfaction mean score among male and female participants.

On the other hand, there was no difference in satisfaction on intensified TB case finding by marital status and age of study participants.

In addition, the study participants with good adherence to clinic schedule had better satisfaction on intensified TB case finding than those with bad adherence, though the difference was not statistically significant.

Table 12: Satisfaction score on intensified TB case finding by type of clinics and demographic characteristic

Factors	N	Mean*	STD Deviation	F ratio	P value
Type of clinic					
Public	216	16.0185	2.60405	73.759	0.000
Private	216	13.7778	2.81469		
Sex					
Female	274	15.1569	2.78684	5.905	0.016
Male	158	14.4494	3.12489		
**Age group					
Young age	100	15.3100	2.73287	2.578	0.109
Older age	332	14.7741	2.98134		
Marital status					
Married	236	14.6780	3.04261	1.472	0.231
Never married	110	15.1727	2.81170		
Divorced/Widowed	86	15.1512	2.74619		
Adherence Clinic					
Good adherence	318	14.8176	2.95680	0.909	0.341
Bad adherence	114	15.1228	2.85998		
Total	432	14.8981	2.93136		

*All scale range from 6 to 30. A low score indicate higher satisfaction.

** Young age - less than 30 years

Older age –more than 30 years

CHAPTER FIVE

5.1 Discussion

In the current study we found that intensified TB case finding was low (43.5%), less in private clinics (22.7%) than in public clinics (64.4%) and the overall prevalence of TB disease was 11.6%. The number of trained physicians and structure resources required for TB screening were inadequate in both clinics with exception of adult TB screening tools. Few PLHIV were aware of intensified TB case finding with varying experience and satisfaction of PLHIV between public and private clinics.

Intensified TB case finding

Our finding of low intensified TB case finding among PLHIV is in line with the global statistic of 27% (WHO, 2009) but differs with a study conducted in Tanzania (Sode et al., 2009). The latter study found about 92% of PLHIV in care and treatment clinics were screened for TB at enrollment in public clinics while our study assessed the quality of intensified TB case finding at every visit in public and private clinics.

Limiting our analysis at enrollment, we found that TB screening was high (90.5%) similar to the Tanzania study (Sode et al., 2009). Again, public clinics screened more PLHIV (95.4%) than private clinics (85.6%). This finding may give a wrong impression that intensified TB case finding is well implemented which is not the case when subsequent follow up visits are taken into account as shown above. On the other hand, it implies that physicians focus more TB screening at enrollment than follow up visits which is against the recommended standard

practice. This was also reported by PLHIV that TB screening at every visit was done less than at enrollment. Since a PLHIV is at risk of acquiring TB infection at any time and ruling out TB at enrollment may not exclude this risk, then there is a high possibility that a considerable number of TB cases are missed especially during the follow up visits.

The relatively higher TB screening in public clinics possibly reflect that it started earlier in public than in private clinics which is a common implementation practice in most health related intervention from MoHSW. This challenge is currently being addressed by public – private partnership to ensure equity in the private health sector. Moreover, physicians' interview show that intensified TB screening tool is integrated in case report files in public clinics especially those funded by donors. This is not the case in private clinics whereby physicians fill separately the intensified TB screening tool in addition to case report files and CTC 2 card. Thus it may be perceived as an additional paperwork hence compromising the quality of intensified case finding. More research is warranted in this regard so that evidence based answers to the difference can be produced in order to tailor made the interventions.

Prevalence of TB disease

The overall prevalence of TB disease of 11.6% among PLHIV in public and private clinics is similar to that found by other studies (Ngowi et al., 2008, Mtei et al., 2005, Sode et al., 2009, Kranzer et al., 2010). Due to the fact that implementation of intensified TB case finding is low (WHO, 2009), this prevalence could be an underestimate of the true burden. Nevertheless, TB

cases in both clinics received anti TB treatment signifying effectiveness of NTLP program in TB management.

Regarding staff training, not all CTC physicians were trained indicating poor structural quality of care in intensified TB case finding. Despite this, there was unexpected finding that the proportion of private physicians trained on TB/HIV was higher than that of public physicians. This can be explained due to the fact that, there was high number of physicians in public care and treatment clinics as compared to private clinics. And probably it could be due to high turn over of physicians who work in public care and treatment clinics (Harries et al., 2005). Another study is suggested in order to document in details the level of TB/HIV training of health care workers in public and private facilities.

Resources for TB screening services

In general the resources for TB screening services were inadequate with exception of TB screening tools for adults which was found in both public and private clinics. The studied resources included TB guidelines, TB screening tools for children, laboratory services, radiological services, TB/HIV services and supportive supervision. Although TB screening tool is the basic resource, however the above mentioned resources are equally important in realizing intensified TB case finding. Thus their inadequacy compromised the quality of intensified TB case finding. There is a need for NACP and NTLP to address this gap guided by public-private partnership with more emphasis on equity in distribution of resources.

Patient's awareness and satisfaction on TB screening

Fewer PLHIV in private clinics than public clinics were aware of intensified TB case finding. Nevertheless, they had better experience and more satisfied with intensified TB case finding than their public counterparts. This may reflect the efficiency of health education in public clinics and expected satisfaction with the overall services delivered in private clinics and not specifically intensified TB case finding. Evidence shows that consumers of health care are unable to assess the technical quality of services (Mills A et al., 2002) and are more likely to point out expectations rather than actual experiences (Urassa, 2004). Other studies have also found that patients are more satisfied with private health services than public (Mfinanga et al., 2008, Nketiah-Amponsah and Hiemenz, 2009) although there are no specific studies that focus on intensified TB case finding. Generally, male participants were more satisfied with intensified TB screening services than female participants. Since we found that PLHIV with good adherence of clinic schedule had better satisfaction on intensified TB case finding services, probably the former being the result of the latter then it calls for more intervention efforts in female participants.

5.2 Limitation of the study.

Due to time limitation this study could not assess PLHIV who were on anti TB treatment since they were transferred to TB/HIV clinics for TB/HIV services. We also could not conduct the observations for process factors such as TB screening to assess its quality in real time and instead we assessed it by using a proxy of review of case report files and exit interviews. However this did not affect achieving the specific objectives and the study conclusion. In the data analysis we excluded factors affecting TB screening in care and treatment clinics because it was out of the scope of this study and thus we suggest a further study.

CHAPTER SIX

6.0 Conclusion and Recommendation

6.1 Conclusion

The overall quality of Intensified TB case finding in HIV/AIDS care and treatment clinics was poor and more pronounced in private clinics. Structural factors were generally inadequate and process and outcome factors varied between the public and private clinics. Public clinics were relatively better in PLHIV awareness on TB screening and intensified case finding while private clinics were better in PLHIV experience and satisfaction. Despite the low quality of intensified TB case finding, the few confirmed TB cases were all treated indicating the effectiveness of the TB program.

6.2 Recommendations

1. Overall quality of intensified TB case finding at CTC is moderate therefore more collaborative effort is needed between NTLP and NACP to ensure at least 90% of staff in Care and Treatment clinics receive TB/HIV training which will empower health care workers to carry out TB screening at every visit and hence improve quality of care in PLHIV. Moreover, availability of other factors such as TB guidelines, TB screening tools for children, radiological services and supportive supervision should be ensured.
2. There is a need to integrate the standardized TB screening tool in National CTC 2 cards in order to alleviate the challenge of perceived additional paperwork.
3. Private clinics need to provide effective health education that may empower PLHIV in preventing themselves from opportunistic infections including TB.
4. A national representative study should be conducted to evaluate the magnitude of the problem in other regions and explore reasons that will help NACP and NTLP to improve their collaboration in TB/HIV intervention.

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APPENDIX

Appendix 1 TB Screening tool

MINISTRY OF HEALTH AND SOCIAL WELFARE
COLLABORATIVE TB/ HIV ACTIVITIES

TB SCREENING QUESTIONNAIRE FOR ABOVE AGE 6 YEARS AND
ADULT HIV/AIDS PATIENTS



Patient's name: CTC Reg. Number:
..... Date of birth: Sex:
Male Female

Physical Address: Area leader/ neighbor:
..... Contact telephone (if
available).....

Date /visit	1		2		3		4		5		6		7		
Tick appropriate response	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	
Cough for ≥ 2 weeks?															
Coughing up bloodstained sputum (haemoptysis)?															
Fevers for ≥ 2 weeks?															
Noticeable weight loss for new patients or a 3 kgs weight loss in a month (subsequent visit)?															
Excessive sweating at night for ≥ 2 weeks?															

If 'YES' to one or more questions enter the code "TB Susp" in the TB status column of the CTC 2 form and complete the respective column in the table below:

Date							
Do sputum smear for AFB and enter results (<i>pos / neg</i>)							
If sputum negative, do chest X-ray and enter result (<i>suggestive or not suggestive</i>)							
Outcome of assessment (TB or No TB)							

If 'No' to all questions: Do not initiate TB investigations and repeat screening at the subsequent visit. Enter the code "NO" in the TB status column of the CTC 2

TB screening tool- Children

Chart for the Diagnosis of TB in Children



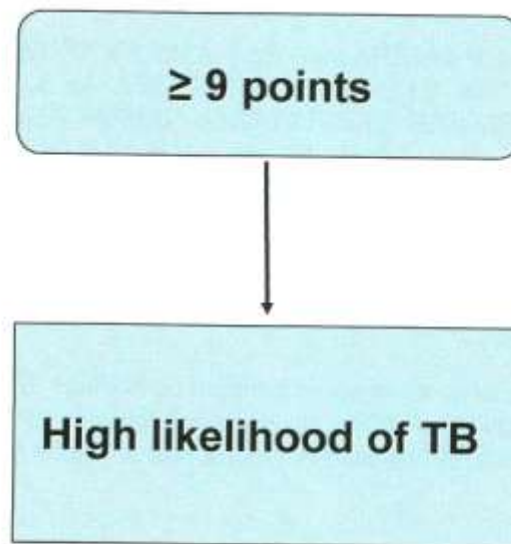
SCORE IF SIGN OR SYMPTOM IS PRESENT						
	0	1	2	3	4	Score
GENERAL FEATURES						
Duration of illness	Less than 2 weeks	2-4 weeks		More than 4 weeks		
Failure to thrive or weight loss	Weight gain		No weight gain		Weight loss	
TB contact	None	Reported not proven		Proven Smear+ /EP	Proven Smear+	
Tuberculin test				Positive		
Mainutrition				Not improved after 4 weeks		
Chronic infant disease				Not improved after 4 weeks		
Duration of illness		Recurrent		No response to antibiotics		

Chart for the Diagnosis of TB in Children (2)



	0	1	2	3	4	Score
LOCAL FEATURES						
Chest x-ray				TB suggestive feature like infiltration, cavity or hilar lymphnodes		
Lymphnodes				Cervical, sub-mandibular		
Swelling of bone or joint				Suggestive feature on X-ray		
Ascitis			Without abdominal mass	With abdominal mass		
Meningitis				Chronic C.N.S. signs		
Angle deformity of the spine					X-ray feature	
TOTAL SCORE						

Interpretation of Paediatric Score Chart



Appendix 2: Informed consent form (English Version)

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

DIRECTORATE OF RESEARCH AND PUBLICATIONS, MUHAS CONSENT FORM.

Respondents ID NO ----/----/----

Greetings, My name is Dr IRENE ANDREW LEMA, I am from MUHAS and working on this research project with the objective of ASSESSING QUALITY OF INTENSIFIED TUBERCULOSIS CASE FINDING IN PUBLIC AND PRIVATE HIV/AIDS CARE AND TREATMENT CLINICS IN ILALA, DAR-ES-SALAAM, 2010

Purpose of the study

The purpose of this study is to assess quality of intensified TB case finding in CTC in Ilala municipal, Dar es Salaam.

What participation involves.

If you agree to participate in this study you will be required to answer a series of question that have been prepared for the study in through interview in order to obtain the intended information regarding quality of intensified TB case finding in Care and Treatment Clinic.

Confidentiality

All information collected from you will be kept confidential and used only for this study. We will be compiling a report, which will contain responses from individuals attending care and treatment clinic at this site without any reference to individuals. The form will not bear your name but we will use only the identification number

Risks

We do not expect any harm to happen to you because of participating in this study

Right to with draw and alternatives

Participating in the study is exclusively voluntary. You have a choice to participate in the study and if you have already agree to do so you still have chance to quit at any time you feel do so. Refusal to participate or withdraw from the study will not involve penalty or loss of any benefit.

Benefits

If you agree to participate in this study, we hope that the information we gather from this study will be beneficial to you and other PLHIV attending CTC in Tanzania. In addition it will improve quality of service in care and treatment clinic hence result in improving quality of life of PLHIV in these clinics.

In case of injury

We do not anticipate that any harm will occur to you or your family as result of participation in this study. There will be no additional compensations to you or your family.

Who to contact

If you ever have any questions about this study you may ask those now or later. In case you wish to find out more or ask any question later you may contact any of the following

1. The principal investigator Dr Irene Andrew Lema, from Muhimbili University of Health and Allied Sciences, PO BOX 65001, Dar es Salaam.
2. Dr Joyce Masalu, Acting Chairman of Research and Publication Committee P.O Box 65001, Dar es Salaam. Tel 21503002-6.

This Proposal has been reviewed and approved by the Muhimbili University of Health And Allied Sciences ethical committee, which is a committee whose task is to make sure that research participants are protected from harm.

Signature:

Do you agree?

Participant agrees Participant does not agree.....

I _____ have read the contents in this form.

My questions have been answered. I agree to participate in this study.

Signature of Participants _____

Signature of Research Assistant _____

Date of signed consent _____