

**FACTORS AFFECTING IMPLEMENTATION OF ISONIAZID
PREVENTIVE THERAPY IN HIV/AIDS CLINICS IN
DAR ES SALAAM REGION, TANZANIA**

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**Master of Public Health Dissertation
Muhimbili University of Health and Allied Sciences
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PREVENTIVE THERAPY IN HIV/AIDS CLINICS IN
DAR ES SALAAM REGION, TANZANIA**

By

Amina Mohamed Ngombo

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

**Muhimbili University of Health and Allied Sciences
October, 2013**

CERTIFICATION

The undersigned certify that he has read and hereby recommend for acceptance by Muhimbili University of Health and Allied Sciences a dissertation entitled *Factors Affecting the Implementation of Isoniazid Preventive Therapy in HIV Care Clinics in Dar es Salaam Region, Tanzania*, in (Partial) fulfilment of the requirements for the degree of Master of Public Health of Muhimbili University of Health and Allied Sciences.

.....

Prof. Charles. M. Kihamia

(Supervisor)

Date:

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I, **Amina Mohamed Ngombo**, declare that this **dissertation** is my 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.

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DEDICATION

This dissertation is dedicated to my late Father Mr. Mohamed Ngombo, lovely mother Khadija Ngombo, my husband Mr. Madenge Henry, my son Hans and my daughters Belinda and Lisa.

ABSTRACT

Background:

Tanzania is still facing challenges of rapid and widespread of HIV infection and AIDS. Recent data based on household surveys estimate the sero-prevalence in adults aged between 15 -49 years in Tanzania to be 5.7 per cent. World Health Organization (WHO) and Joint United Nations Programme on HIV/AIDS recommend the use of Isoniazid Preventive Therapy (IPT) to people living with HIV and AIDS (PLHAs) as part of an essential care package.

Objective

The main objective of this study was to determine factors affecting implementation of IPT in HIV care and treatment clinics in Dar es Salaam.

Materials and Methods:

To determine factors affecting implementation of Isoniazid preventive therapy, a cross sectional descriptive study was undertaken in 119 purposively selected health care workers in three municipalities in Dar es Salaam. Six out of seven health care facilities providing IPT in Dar es Salaam were involved such as the Muhimbili National Hospital, Amana Hospital, Temeke Hospital, Ukonga dispensary, Pastoral Activities and Services for people living with AIDS in Dar es salaam Archdiocese (PASADA) and Shree Hindu Mandal Hospital. The study used self administering structured questionnaire to get information from the participants. The researcher tested the knowledge of IPT for health care workers by using a multiple choice question. Cross tabulation was done on duration of training and IPT Knowledge.

Results

About half (52%) of the health care workers in HIV care clinics were trained in IPT related knowledge. In general behaviour of health care workers towards implementation of IPT was positive as 96% showed positive behaviour. Financial, supplies, policy and leadership factors positively favoured implementation of IPT in HIV care clinics.

Conclusion

IPT implementation in HIV care and treatment clinics in Dar es Salaam is generally satisfactory but more efforts have to be made especially on training of health care workers and improve products such as INH and supplies such as HIV kits and tools for documentation.

ABBREVIATIONS

3I's	Intensified case finding, Isoniazid preventive therapy and Infection control
AIDS	Acquired Immune Deficiency Syndrome
ART	Ant Retroviral Therapy
CTC	Care and Treatment Clinic
GDF	Global Drug Facility
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
HCWs	Health Care Workers
HIV	Human Immune deficiency Virus
ICF	Intensified Case Finding
INH	Isoniazid
IPT	Isoniazid Preventive Therapy
LTBI	Latent Tuberculosis Infection
MDR TB	Multi Drug Resistance Tuberculosis
MHW	Ministry of Health and Social Welfare
MUHAS	Muhimbili University of Health and Allied Sciences
NACP	National AIDS Control Programme
NTLP	National TB and Leprosy Programme
PASADA	Pastoral Activities and Services for People with AIDS in Dar es Salaam Archdiocese
PLHIV	People living with HIV
POC	Point of Care
TB	Tuberculosis
TSQ	Tuberculosis Screening Tool
TST	Tuberculin Skin Test
UNAIDS	United Nations Programme on HIV/AIDS
WHO	World Health Organization
X-DR	Extensive Drug Resistance

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CHAPTER ONE

INTRODUCTION

1.1 Background Information

HIV/AIDS is the greatest risk factor for the development of active tuberculosis (TB). In Africa, the risk of reactivation of latent infection of TB is greatly increased as a result of the HIV/AIDS epidemic [1]. The risk of developing TB is between 20 and 37 times greater in people living with HIV/AIDS than among those who do not have HIV infection [2]. TB is responsible for more than a quarter of deaths among people living with HIV/AIDS, and in addition relatively more women than men were detected to have TB in countries with a prevalence of HIV infection of more than 1% [2].

The World Health Organization (WHO) has proposed a framework of TB/HIV collaborative activities with the goal of decreasing the burden of TB and HIV in population affected by both condition [1]. The policy addresses three objectives which all aim to reduce the occurrence of TB-HIV disease. One of the WHO objectives is to decrease the burden of TB among people living with HIV and AIDS. This objective has three main interventions popularly known as “Three I’s”. These are intensified TB case finding (ICF), Isoniazid Preventive Therapy (IPT) and TB infection control [1, 2].

In 1998, (WHO and Joint United Nations Programme on HIV/AIDS (UNAIDS) issued a statement that recognized the effectiveness of Isoniazid preventive therapy (IPT) among people living with HIV and AIDS (PLHAs) and recommended its use as part of an essential care package for these patients. They recommended the use of IPT for PLHAs in areas where the co-infection rate is greater than 5%. It was estimated by WHO that; 10-15% of PLHIV have active TB disease [3].

In 2008, WHO convened the Three I’s meeting, which called for a re-conceptualization of the existing WHO/UNAIDS Policy on IPT to reflect new scientific evidence and thinking about HIV and TB prevention, care and treatment, and expedite the implementation of this important intervention in tandem with intensified case finding [3].

New WHO guideline of 2011 is focusing on facilitating the implementation of Isoniazid preventive therapy (IPT) and intensified case finding (ICF). The guideline is also intended to highlight and strengthen the leadership role of National AIDS Programmes and HIV stakeholders to scale up the implementation of TB screening and provision of IPT among people living with HIV.

The need for IPT comes from the growing need to control TB especially at time when the TB epidemic is driven by high numbers of HIV patients who are TB co-infected or who are at risk of becoming TB co-infected. Once infected with micro bacteria tuberculosis, people with HIV infection are at much greater risk of developing TB disease. The annual risk of developing TB in PLHIV is about 10% each year and greater than 50% over the course of the PLHIV's lifetime [4]. In contrast, the risk of developing TB for someone who is HIV-negative is only 5% in the first 2 years of exposure, and 5 -10% over the course of a lifetime[5].

There is now strong evidence from several randomized controlled trials done in South Africa, Asia and Thailand about the efficacy of preventive therapy in the prevention of TB in persons infected with HIV. IPT reduces the risk of TB by 33% overall and by 64% when targeted to people living with HIV/AIDS who had a positive tuberculin skin test [1]. A retrospective study also showed that IPT significantly reduced the incidence of TB even among people living with HIV and receiving ART [5].

However, in 2009, of the estimated 33 million people living with HIV/AIDS globally, only 1.7 million (5%) were screened for TB, and about 85,000 (0.2%) were offered IPT, an intervention that can greatly reduce a person's risk of developing TB disease [2].

1.2 Statement of the Problem

The number of TB cases in Tanzania is rising primarily as a result of increase in prevalence of HIV [6]. The number of tuberculosis cases has steadily increased from 11,753 in 1983 to about 65,665 in the year 2004[7]. The majority of cases appear in young adult population groups aged 15 – 45 years, the same age group affected by HIV/AIDS. Dar es Salaam contributes about 24% of all TB cases in Tanzania. About 37% of TB

patients in Tanzania are co-infected with HIV accounting for 60-70% of the increase in the number of TB patients in the country [8].

A study done in Dar es Salaam found that the prevalence of TB among patients attending HIV care and treatment is about 15% [9]. IPT has been proven to provide protection against risk of developing TB among people living with HIV. WHO report shows that; there is low proportion of HIV clients taking IPT among those who are eligible for IPT; only about 1% were reported to be started on IPT [10].

From the literature it shows that; in 2009, the number of PLHIV/AIDS who were given IPT in Tanzania was only 153[10] compared with the number of HIV clients enrolled to CTC (454,681) [11] WHO recommends that 50% of PLHIV attending care and treatment clinics should be on IPT.

In addition, lack of experience, knowledge and clarity on the benefits of IPT and inadequate existing guidelines for health workers were cited as the factors that facilitate complete lack of IPT roll out in Tanzania.

The Ministry of Health and Social Welfare in Tanzania has adopted the WHO recommendations by integrating IPT as a part of standard of care in HIV care and treatment settings [4]. While intensified TB case finding (ICF) and TB infection control (IC) have been widely implemented in most HIV care and treatment; IPT is being implemented in a phased manner since 2011.

Currently there are 20 facilities providing IPT among 1,100 facilities providing care and treatment in Tanzania.

As it has been shown above; the status of IPT in Tanzania has not been documented and no clear data showing the current IPT status implementation. Therefore, this research will look at current status of Isoniazid Preventive Therapy and the factors affecting its implementation in HIV care and treatment clinics (CTCs) in Dar-es-Salaam Region.

1.3 Rationale of the Study

The reduction of TB in HIV infected person's needs to be addressed in order to contribute towards improving their quality of life. Data from the National TB and Leprosy programme, shows that a quarter of TB patients in the country are diagnosed in Dar es Salaam, and the Tanzania HIV and Malaria Indicator Survey 2007/08 further reports that HIV prevalence is about 9.3%. Therefore in such areas with high TB and HIV prevalence, the provision of IPT to PLHIV is one of the effective methods in reducing TB disease.

In Tanzania, little has been done in provision of IPT to PLHIV, though WHO recommended on the use of IPT in all countries with high burden of HIV. This study is expected to document status of IPT implementation as well as facilitating factors with a possibility of applying the findings for improving utilization and quality of IPT in HIV care clinics. The study could however result in decreasing TB-related morbidity and mortality amongst PLHIV.

1.4 Research Questions

- (i) What is the proportion of Health care workers having knowledge on IPT in HIV care and treatment clinics in Tanzania?
- (ii) What are the workforces related factors affecting IPT services in Tanzania?
- (iii) What are the leadership and policy related factors affecting implementation of IPT services in Tanzania?

1.5 Objectives

1.5.1 Broad Objective

The main objective of this study is to determine factors affecting implementation of IPT in HIV care and treatment clinics (CTCs) in Dar es Salaam Region, Tanzania.

1.5.2 Specific Objectives

- (i) To **determine** knowledge of IPT among HCWs in CTCs HIV/AIDS clinics in Tanzania
- (ii) To **determine** workforce related factors affecting implementation of IPT services in Tanzania
- (iii) To determine leadership and policy related factors affecting implementation of IPT services in Tanzania

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter reviews the literature from books, journals, guidelines etc related to isoniazid preventive therapy in CTC clinics.

2.1 Implementation of Isoniazid Preventive Therapy

IPT has been recommended as part of the routine package of care for people living with HIV since 1998. HIV infection has resulted in marked increases in TB incidence in countries with dual epidemics. Hence, TB has become one of the most common opportunistic infections and the leading cause of death in HIV-infected people in Africa, Asia and Latin America [2].

IPT has been shown to reduce the incidence of TB in HIV-infected people with LTBI by 70–90%. A 2004 Cochrane Review found that IPT reduced the risk of TB by 33% overall and by 64% when targeted to people living with HIV who had a positive tuberculin skin test [11]. A retrospective study also showed that IPT significantly reduced the incidence of TB even among people living with HIV and receiving ant retroviral therapy ART [2, 3].

In Brazil, individuals in an HIV-infected cohort with access to medical care, including ant: retro viral drugs ARVs, had a 62% lower risk of developing TB and a 76% lower risk of dying if they received TB preventive therapy [12].

In 1998, WHO and UNAIDS (Joint United Nations Programme on HIV/AIDS) issued a statement that recognized the effectiveness of IPT among people living with HIV and recommended its use as part of an essential care package for these patients[10].

The progress of implementation of IPT between 2002 and 2009 showed that there was 19-fold increase over this period. Almost a quarter of a million PLHIV (242 847) were reported to have received IPT. The 85 000 PLHIV who received IPT in 2009 as reported to

WHO represent only 1.3% of the 6.6 million PLHIV who are estimated to know their HIV status. Very few countries reported the provision of IPT and even those that reported the activity mostly provide it for less than 1% of PLHIV [11].

2.1.1 IPT Training for HCWs

Healthcare workers need to have proper training and knowledge of IPT so as to have confidence in dealing with and avoid mismanagement of the patients. The training must be tailored to the context in which IPT is easily implemented. In many cases for the facility to be accredited to provide IPT services it should have adequate capacity for HIV counselling and sufficient trained health care staffs. Good training curriculum will provide knowledgeable IPT Staff.

The qualitative study of knowledge and practices among 1,300 Physicians done in San Francisco bay shows that; not all Physicians were knowledgeable about the minimum standards of care for HIV-Infected persons who are at risk of tuberculosis. The study further more found that; the Physicians' experience on treating HIV-infected persons is a better predictor of awareness, knowledge of, and compliance with recent guidelines for preventing tuberculosis among HIV-infected patients than is their specialty. Also it shows that, those Physicians with the least experience with HIV-infected patients are also the least familiar with current guidelines and standard of care for preventing TB infection and disease in the population [13].

TB/HIV study in Rio de Janeiro showed that 85% of the patients completed IPT compared to 81% before the training, and 84% of the patients started IPT during the study. The results strongly support the importance of training and education of health unit staff regarding IPT intervention [12].

2.2 Workforce Related Issue

Despite World Health Organisations (WHOs) strong endorsement of IPT as a means of reducing TB in PLHIV, considerable reluctance to implement this intervention persists [10]. Many clinicians worry that in settings with limited diagnostic capacity, active TB disease cannot be conclusively ruled out in HIV-infected patients, which could result in

patients with active TB inappropriately receiving Isoniazid monotherapy [13]. This could potentially result in INH drug resistance and an increased risk of multiple-drug resistant TB. Also they are concerned that eligible patients put on IPT will not adhere to IPT, as they are not sick with TB.

A qualitative study done in South Africa showed that; although all doctors had heard of IPT, several were either unaware of its efficacy in preventing TB or believed that the evidence was equivocal. Furthermore, doctors were less willing to prescribe IPT thus avoiding monotherapy, which leads to MDR TB. They believed that starting empirical courses of full treatment for TB was safer and offered greater benefit than prophylaxis [14].

2.2.1 Adherence

Preparation of the patient for IPT is very important since they are more likely to be asymptomatic and have no real motivation to be taking anything. HCWs are responsible to provide adherence counselling to the patients about IPT. Many countries have experienced significant loss to follow up of patients started on IPT; therefore access to adherence counsellors for patients who are to be started on IPT is critical.

Lack of provider- client communication is amongst the best predictor of non-adherence. HCWs should design and deliver tailored health education message on a forementioned risk factors for clients to promote better adherence [6]. It is possible that minor adverse effects, which did not pose a danger in the clinicians view, nevertheless resulted in discomfort and contributed to a patient's decision not to continue treatment and their completion rate was worse among those with side effects.

Randomised trial done in Addis Ababa shows that; there is an increase in non-adherence in situation where doctors appear insensitive to use medical jargon, view patients as complainer or do not provide clear message about the cause of illness or reason for treatment [6]. Furthermore, another study done in Tanzania shows that; knowledge gained from counselling, family approval and proximity to the clinic are among the factors contributing to the high rate of completion of IPT [9].

2.3 Factors Affecting Implementation of IPT

2.3.1 Leadership and Policy Related Issues

Implementation of IPT should be a priority for National AIDS control programs, not only in high HIV prevalent settings but also countries with concentrated or low level HIV epidemics. Countries need to develop detailed and clear operational guidelines for implementation of the IPT.

The development and implementation of a National IPT policy remains suboptimal in most of the countries. Inadequate intensified case finding, including inability to rule out active TB was one of the reasons cited most frequently for not developing and implementing IPT policy [15]. Furthermore it shows 21 out of 41 countries participated in a study 51% has developed a National policy but only 28% of these countries had implemented it on nationwide scale.

Countries need to have National policies with time bound targets necessary for scaling -up implementation of IPT. This facilitates implementation and also helps to mobilize political commitment and engagement from TB and HIV stakeholders [3]. Clear endorsement of IPT, a clear direction, and strong leadership from the highest political level in government coordinating the country's AIDS response (e.g. national AIDS control program) and the Ministry of Health are crucial to promote Nationwide scale -up of IPT along with other collaborative TB/HIV activities [16]. Awareness activities should be carried out amongst PLHIV to consider IPT as an evidence-based effective intervention, which should empower PLHIV to demand IPT during their encounter with HIV service providers.

2.3.2 Collaboration between TB and HIV Programs

The strong relationship between HIV and TB morbidity and mortality in high prevalence countries had stimulated debates and eventually influences policy about integration of TB and HIV services. But the integration of these programs faces challenges all the way from higher level to facility level.

A study done in Cameroon shows that; one of the reasons for non implementation of IPT in countries is that at program level, it is not clear as to who assume the responsibility for planning and implementing IPT activities, should it be the TB or HIV program? [17]. According to WHO; the implementation of IPT services is the responsibility of the National HIV program although INH drugs for IPT provided by NTP.

Another study done in South Africa found that; Inadequate HIV/TB service integration was an operational barrier mentioned by all clinic staff [14]. Although South Africa now has a large number of individuals accessing ART, it is only in recent years that there has been emphasis on TB/HIV service integration. As well as being historically separated from HIV services, TB care has often proved a secondary priority. Considerable political will and financial commitment will be required if improved service collaboration is to be achieved in line with WHO targets.

2.3.3 TB screening Tool

WHO has revised its guidelines on IPT and recommends the use of a simplified screening algorithm that relies on the absence of all four clinical symptoms (current cough, night sweats, fever and weight loss) to identify those PLHIV who have less likelihood of active TB disease and hence as eligible for IPT [10]. Chest radiography is no longer required as a mandatory investigation before starting IPT. This simplified symptom-based algorithm should be used for all adults living with HIV, including pregnant women, people who are receiving ART, and those who successful completed TB treatment. Each country, based on revised WHO guidelines and existing National programs, should develop clear, simple and non-restrictive operational guidelines. Tanzania adopted WHO recommendation and developed TB screening questionnaire (TSQ), which is used to exclude TB in PLHIV.

2.3.4 Presence of Simple Effective TB Diagnosis

IPT should only be used in settings where it is possible to exclude active tuberculosis cases and ensure appropriate monitoring and follow up. The priority for TB control program is detection and cure of infectious TB cases. Most of the countries use simple diagnostic approach to diagnose TB. Limited access to diagnostic services and the poor performance of current tests result in a failure to detect millions of tuberculosis cases each year.

An accurate test that could be used at the point of care to allow faster initiation of treatment would decrease death rates and could reduce disease transmission [18].

Early diagnosis and rapid initiation of treatment remains a key strategy to control both HIV and TB. However, HIV and TB control programs have had completely contrasting successes especially with the development and deployment of point of care (POC) diagnostics [19]. Furthermore a study done in Canada shows that; Low cost, point-of-care (POC) tests have completely transformed the management of several major infectious disease (e.g. malaria and HIV) especially in resource limited settings where healthcare infrastructure is weak, and access to quality and timely medical care is a challenge. These tests offer rapid results at the point of care, allowing for rapid initiation of appropriate therapy, and/or establishment of linkages to care [20].

Another study done in South Africa shows that; the requirement to rule out active TB prior to commencing IPT was perceived as a critical barrier by the majority of clinic staff. This is particularly critical barrier in South Africa, which has one of the highest caseloads of HIV/TB co-infection worldwide. In the longer term, this highlights the need for point-of-care tests for active TB [14]. In the shorter term, clearer guidelines are needed on how to exclude active TB prior to IPT.

2.3.5 Products and Supply

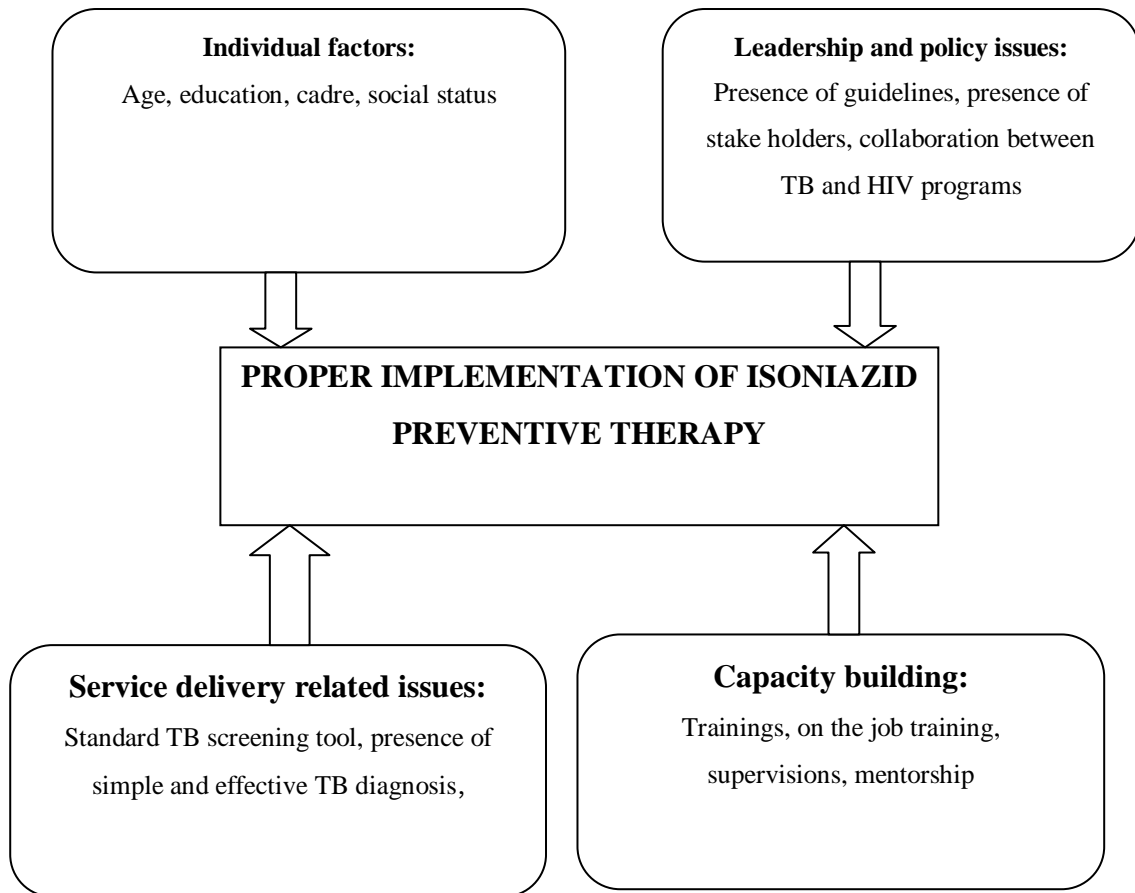
In Tanzania, procurement of TB commodities is done through the support from the government and other development partners such as; (WHO), the Global Drug Facility, (GDF), the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM). On the other hand, the Global Fund procures ancillary medications for side effects management in patients taking second line drugs, loose Isoniazid tablets for INH prophylaxis among PLHIV and laboratory commodities related to MDR TB diagnosis and monitoring of patients on MDR-TB treatment [21]. One of the challenges facing drug management in most facilities is inadequate record keeping and reporting resulting in poor estimations of drug use and may at times create unnecessary shortages. To counteract this problem, internal redistribution of drugs and supplies from facility -to -facility, district-to-district and region-to-region is sometimes done.

Tanzania has adopted the WHO recommendations on implementation of IPT [13]. The Ministry of Health and Social Welfare policy statement for IPT states that;

- (i) Health facilities with sufficient capacity will be accredited to offer IPT in strict compliance with national and International guidelines.
- (ii) INH will be provided to eligible patients free of charge in accredited health facilities
- (iii) The MOHSW will develop a procurement and logistical management plan for sustainable provision and supply of INH at service delivery points
- (iv) The MOHSW will be the accrediting body and will regularly monitor and evaluate the use of IPT in the country

2.4 Research Gap

As it has been shown above; the status of IPT in Tanzania has not been documented and there is no clear data showing the current IPT status implementation. Therefore, this research will look at current status of Isoniazid Preventive Therapy and the factors that facilitate its implementation in CTCs in Dar-es-Salaam Region

Figure 1: Conceptual Frame Work

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter presents the area of the study and research methodology. It also explains the research design and provides sampling frame and sampling techniques. It also describes the data collection methods and the data analysis techniques used.

3.2 Study Area

The study was conducted in Dar es Salaam region; one of the 21 regions on Tanzania mainland. It is the second (the first being Iringa) region with highest prevalence of HIV at 9.3 % [1]. The region was selected due to its high HIV prevalence and congested urban conditions favourable for the transmission of TB.

3.3 Study Design

A descriptive cross sectional study design was deployed, seeking to provide a snapshot of factors related to IPT implementation in HIV CTCs in Dar es Salaam.

3.3.1 Study Population

The study population was the entire population of health care workers working in the HIV CTCs providing IPT in Dar es Salaam Region. Dar es Salaam has a total number of 7 facilities providing IPT. The population of the study comprises of nurses (62), Clinicians (30), administrators (07), and Others who were 20 in number. All population of respondents were 119.

3.3.2 Data Collection Methods

3.3.2.1 Questionnaires

Data were collected by using structured questionnaire with close ended questions, which were written in English then translated to Swahili for easy understanding to all respondents. Questions were asked on social demographic characteristics whereby age, sex, designation were gathered from respondents. Information on knowledge of HCWs

implementing IPT was collected as well as workforce related factors to implementation of IPT. Then information on factors affecting implementation of IPT was collected using scales developed by other researchers in the field of IPT related research [10].

3.4 Data Processing and Analysis

All data were quantitative in nature; were checked for consistency and missing information. Responses to both close and open-ended questions were cleaned and analysed using SPSS program. Results were presented in a form of tables, and figures in a form of frequencies, percentages and inferential statistics such as Pearson's Chi-square and Pearson's correlation coefficient

3.4.1 Variables

In this study, dependent variable is Implementation of Isoniazid Preventive Therapy (IPT). Independent variables: Factors affecting implementation of IPT services in Tanzania- Knowledge of HCWs, behaviour of HCWs towards IPT, leadership and policy issues, service delivery related issues.

3.4.2 Pre-Testing

Before the actual data collection process, data collection tools were pre-tested at Tumbi Hospital in Pwani region to assess the comprehension to determine logical flow of questions and suitability prior to full implementation. Pre- testing results indicated that the questionnaire did not answer the question related to factors affecting implementation of IPT in Dar es Salam clinics properly. As a result, the researcher had to reformulate the questionnaire to achieve objective two (2) of this research.

3.4.3 Reliability Test

The researcher sought to know internal consistency of items. The researcher picked 10 items (from the questionnaire) related to leadership factors affecting IPT implementation and tested them for reliability using SPSS. Cronbach's Alpha was used as a computation measure. A Cronbach's Alpha coefficient of 0.847 was computed. This implied very good reliability since a reliability of 0.7 is considered good while a reliability of 0.8 is

considered very good. This implied that, the variables used in this research are trying to measure the same construct or concept and that their correlations are very good.

3.5 Limitation of the study

Limitation of this study arises mainly from the relatively small number of participants and CTC clinics included. This limitation and the purposive sampling strategy used means that we cannot assume that the results can be generalized. However, the results provide valuable insights into factors facilitating implementation of IPT and highlight the value of further research in this area.

3.6 Ethical Consideration

Ethical clearance for the study was obtained from the Directorate of Post Graduate studies of Muhimbili University of Health and Allied Science (MUHAS). Permission to conduct the study was sought from the Regional Medical Officer, District Medical Officers and the officers in charge of the facilities before conducting the study. Thereafter study participants were briefed on the study objectives within the selected HIV care and treatment clinics and then informed consent was obtained from them and requested to sign after **agreeing** to participate in the study. Moreover, to ensure quality data collection, professional relationship such as confidentiality with participants was maintained. Participants were free to give out their views, ideas and even to withdraw from the study at any time.

CHAPTER FOUR

RESULTS

4.1 Demographic Characteristics of Respondents

Table 1 shows the demographic characteristics of the study participants. Sex, age, designation and number of participants trained, were analyzed and calculated into frequency and percentage to give simple interpretation.

The study involved, 86 (72.27%) females and 33 (27.73%) males. Demographic characteristics of respondents involved age groups, sex and designations. The study found that out of 119 interviewed respondents only 62 were trained. Percentage of trained respondents across demographic characteristics is reflected in table 1 below:

Table 1: Demographic characteristics of the study participants and training on IPT

Category	Group	Frequency	Percentage	Participants trained	Percentage (%)
Sex	Males	33	27.7	62	53.8
	Females	86	72.3		
Age	25-34	21	17.64	18	29.03
	35-44	43	36.13	25	40.32
	45-55+	50	41.03	18	29.03
	Not stated	5	5.20	1	0.02
Designation	Nurses	62	52.10	55	63.0
	Clinicians	30	25.21	21	33.9
	Administration and others	27	22.69	2	0.1

4.2 Association between duration of training and knowledge of IPT

The researcher tested the knowledge of IPT workers by using a multiple choice question. Among the alternatives, the correct answer was 2 years being protective effect of IPT. Out of 119 only 50 respondents scored correctly. Cross tabulation done on duration of training and IPT Knowledge. Finding revealed that, training had significant effect IPT knowledge where duration of training determined retention of IPT knowledge: The more the training

duration the more the knowledge retention. Still out of 74 respondents with IPT knowledge, 50 respondents were trained as shown in table 2 below:

Table 2: Association between duration of training and knowledge of IPT

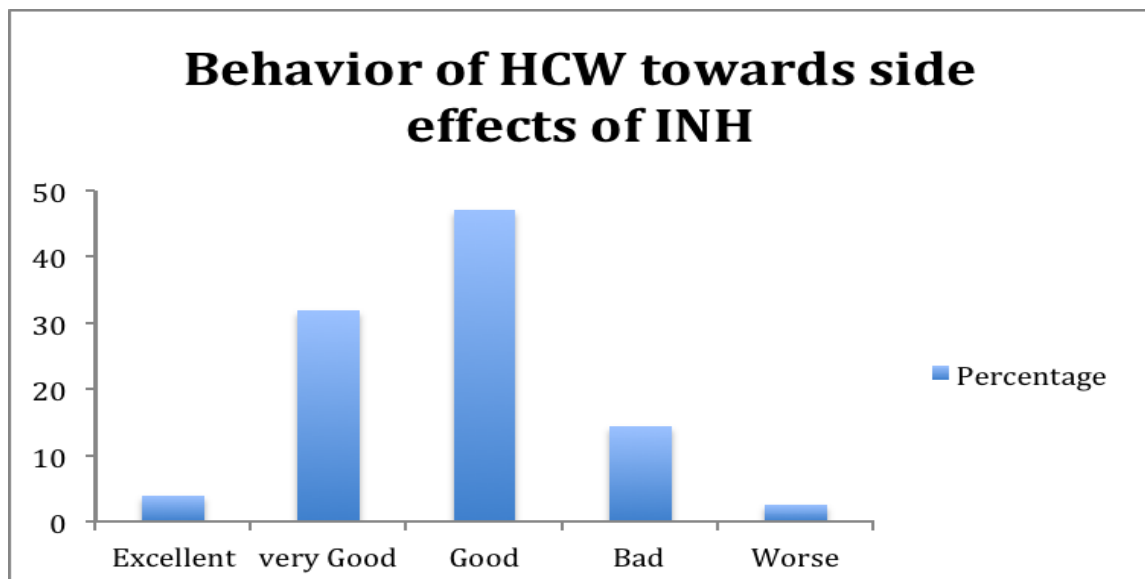
		Duration				Total
		2-3 days	4-5 days	above 5 days	not trained	
knowledge	less than 2 years	12	0	0	0	12
	two years	11	14	25	24	74
	more than 2 years	0	0	0	9	9
	no response	0	0	0	24	24
Total		23	14	25	57	119

4.3 Workforce related factors affecting Implementation of IPT Services in Tanzania

4.3.1 Behaviour of HCW towards side effects of INH

The findings reveal that many participants show positive behavior towards side effects of INH, where 47.1% of participants were rated to have good behaviour, 31.9% were rated to have very good, 4 were rated excellent, 14.5% were rated bad and 2.5% rated worse as reflected in Figure 2.

Figure 2: Behavior of HCW towards side effects of INH



4.3.2 Association between Provider Behaviour toward Clients and Adherence of IPT by Clients

Association between provider behavior towards clients and adherence of IPT by clients was analyzed using a Pearson chi-square. Using 5% significance level, $X^2 = 110.8$, $p < 0.001$ were found. Thus there is a significant statistical evidence to conclude that; clients who rated provider's behaviors as great extent were nearly 5 times more likely to adhere to IPT than those who rated their behaviors as small extent as shown the table below.

Table 3: Association between provider behaviour and adherence of IPT by clients

	Rate	IPT Adherence		
		High	Low	Total
Provider perception towards clients and perception on IPT	Great extent	87	6	93
	Small extent	18	8	26
Total		105	14	119

4.3.3 Proportion of HCWs providing IPT counseling and knowledge of HIV among clients

A total of 64 (53.7%) respondents were found to be providing IPT counseling. Findings revealed that, the HIV knowledge among clients is independent from HCWs providing IPT counseling i.e. $X^2=1.659$; $p=0.948$. This necessitates increase of IPT counselors from the present 80. Findings are summarized in the table 4 below:

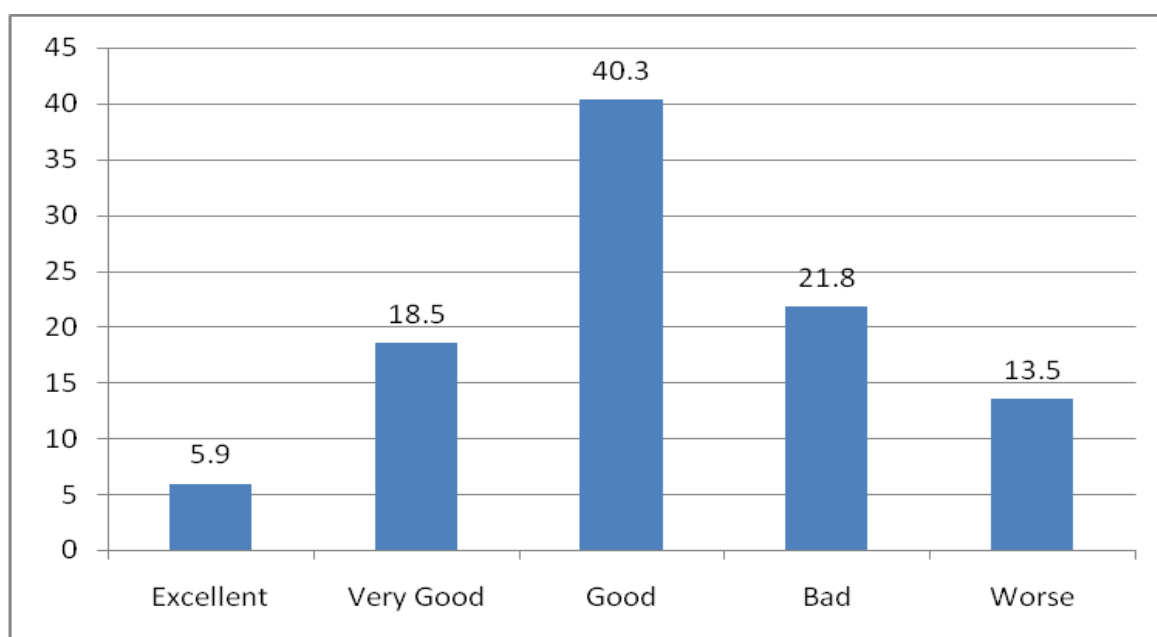
Table 4: Proportion of HCWs providing IPT counselors and knowledge of HIV among clients

knowledge of HIV status of clients	Proportion of HCW providing IPT counseling		Total	
	No	Yes		
Bad	3	10	13	$X^2=1.659$ $p=0.948$
Good	14	48	62	
very good	5	27	32	
Excellent	3	9	12	
Total	25	64	119	

4.3.4 Linkage in Referral System

Figure 4 below shows the linkage in referral system as perceived by HCWs. Majority of respondents (40.3%) perceived referral systems working as good, 5.9% said excellent, 18.5% said very good, 21.8% said bad and 13.4% perceives referral in system as worse.

Figure 4: Linkage in Referral System



4.4 Leadership and Policy related factors affecting IPT implementation

Tanzania has developed a good leadership and policies with regard to TB and HIV care. It is said that in providing HIV care services one should also consider TB treatment as a major means of managing HIV. In rating TB as a core component in HIV care services 84% of participants agreed TB is most important by rating it good or excellent. Other participants 16% disagreed by rating it bad.

The perceptions of HCWS on leadership by HIV programs, findings revealed that; 99 (83.2%) out of 119 study participants said leadership by AID programs on implementation of IPT in Tanzania is good, 20 (16.8%) participants said it is bad .

Findings revealed that most of Program Managers have good perception and are ready to provide HIV and IPT care in Tanzania in which 86(72.3%) out of 119 responded excellent

or good and 33(27.7%) responded as bad. 55(46.2%) of the participants rated that there is a good presence of stakeholders such as donors, and 64 (53.8) % said that presence of stakeholders on IPT is bad.

Also the links and collaboration between TB and HIV programs were rated as good by 106 (89.1%) participants and minority of 13 (10.9%) participants rated as bad.

Findings revealed that leadership and policy on control of INH and anti-TB drugs by National TB and Leprosy program is unsatisfaction as 32 (26.9%) of participants rated as good control, and 87(73.1)% rated as bad. 76 (63.9)% of participants perceived restrictive policies for INH as good and 36.1% of participants rated it as bad. The findings are summarized in table 5 below

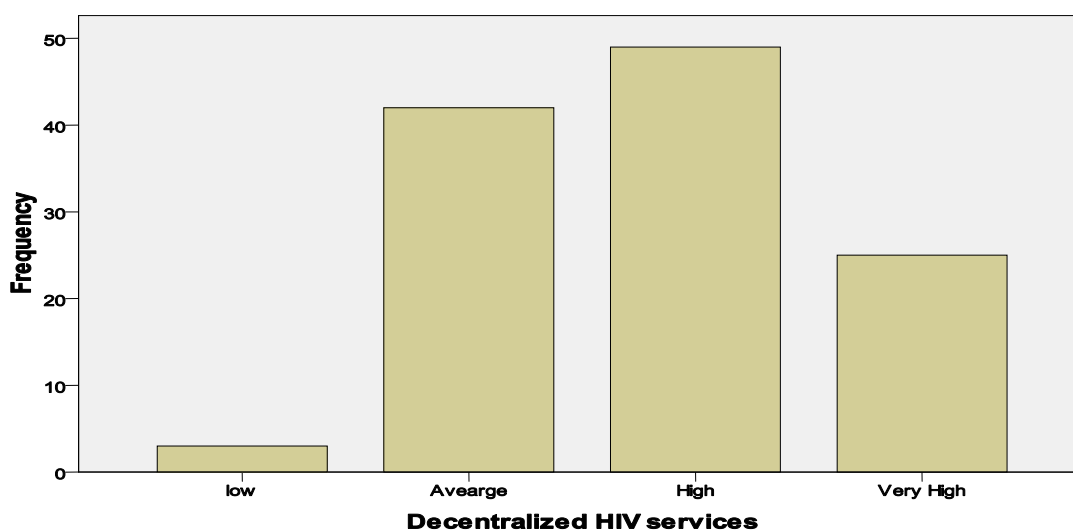
Table 5: Leadership and policy issues on IPT Implementation

	Bad or poor		Good or excellent	
	Number	%	Number	%
TB as a core component in HIV care	19	16.0	100	84.0
Leadership by AIDS program	20	16.8	99	83.2
Perception and readiness of program managers on HIV/AIDs and IPT	33	27.7	86	72.3
Presence of HIV stakeholders	64	53.8	55	46.2
Link and collaboration between TB and HIV programs	13	10.9	106	89.1
Control of INH	87	73.1	32	26.9
Restrictive National policy on INH	43	36.1	76	63.9

4.5 Service Delivery Related Issue on IPT implementation

4.5.1 Decentralization of HIV Services

Findings reveal that, study participants were satisfied with decentralization of HIV services in which majority 116 of participants rated between average and very high decentralization of HIV related services while only 3 participants rated low decentralization as reflected in figure 5.

Figure 5: Decentralized HIV Services

4.5.2 Availability of Standard TB screening, TB Diagnostics and Laboratory services

Table 6 show the degree of availability of standard TB screening algorithm and operating procedures. Majority indicate that TB screening tools are available and operating procedures are good in which 103 (86.6%) of participants indicated as good, those who said low were only 16(13.4 %).

Findings also revealed that, majority 98 (82.4%) of study participants have rated as good presence of simple, effective and point of care TB diagnosis, and the rest of 21 (17.6%) have rated as low .

103 (86.6%) of study participants said laboratory services and supplies related to implementation of IPT were good, and minority 16 (13.4%) of participants said they were poor as shown in table 6 below.

Table 6: Service delivery related issues

	Bad or poor		Good or excellent	
	Number	%	Number	%
Standard TB screening algorithm	16	13.4	103	86.6
Presence of simple, effective TB diagnostics	21	17.6	98	82.4
Availability of laboratory services	16	13.4	103	86.6

4.5.2 Cross tabulation between TB & HIV Supply management & Presence of INH & HIV Test Kits

Effectiveness of TB and HIV supplies management determine the presence of INH and HIV test kits in HIV clinics. Findings show that majority 43 of participants rated that effectiveness of TB and HIV supply management is very good, those who agreed with presence of INH and HIV test kits are good were 14, and those who said very good were 23 and rest who said excellent were 11. These findings are reflected in the table 7 below

Table 7: Cross tabulation of Effectiveness of TB and HIV Supply Management * Presence of INH (e.g., INH, 300 mg) and HIV test kits Cross Tabulation

		Presence of INH (e.g., INH, 300 mg) and HIV test kits					Total
		Very poor	Poor	Good	Very good	Excellent	
Effectiveness of TB and HIV supply Management	Poor	5	6	0	3	0	14
	Good	0	13	25	5	0	43
	Very good	0	10	14	23	11	58
	Excellent	0	0	0	4	0	4
Total		5	29	39	35	11	119

4.6 Finance Related Issues on IPT Implementation

4.6.1 Competing Priorities for IPT and HIV Clinics

The finding reveals that majority 66 (55.5%) of participants agreed that there were competing priorities while the remaining 53 (44.5%) participants disagreed. This shows inefficient competitive allocation of resources.

Findings also revealed that, 72 (60.5%) of participants agreed that IPT implementation is cost effective in their operations while 47 (39.5%) of participants said to have not been cost effective. Statistics on these facts are reflected in table 8 below:

Table 8: Competing Priorities for Resource Allocation

Competing Priorities for Resource Allocation	Frequency	P (%)	Perceptions on cost effectiveness of IPT implementation in HIV clinic	Frequency	P (%)
Agree	66	55.5	Agree	72	60.5
Disagree	53	44.5	Disagree	47	39.5
Total	119	100.0	Total	119	100.0

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.0 Introduction

This chapter discusses findings related to this study. Discussion is based on the formulated study objectives and divided into sections to cover each objective. A total number of 123 respondents were targeted for this research but only 119 (96.7%) were recruited by the researcher and were able to answer the questions correctly. The discussion therefore is based on the findings received from the 119 respondents.

5.1 HCWs Knowledge on IPT

Findings of this study reveal that IPT training for HCWs in HIV clinics is inadequate. Out of 119 (100%), 62 (52.1 %) of respondents are reported to be trained in IPT and their training time is reported to be ranging between 1-5 days. Among them only 11.8% trained for more than 5days. The findings contradict the study done in Brazil [12] which reveals that IPT related training is practically oriented and takes a considerable length of time. The findings further noted that IPT and TST for patients in clinics started with training of HCW at each clinic and progressed at 44 weeks. The study has efficiency in terms of completion of IPT services, by looking at the time before HCW were trained and after they were trained in which: efficiency incompleteness before training was by 81% after completion of training was 85%. In this study majority of participants (59.7%) trained for 2 days, this is more of orientation rather than training. Finding revealed that, training had significant effect on IPT knowledge where duration of training determined retention of IPT knowledge: The more the training duration the more the knowledge retention. For health care workers to provide comprehensive IPT services to the patients, training of two days was not enough. Most of HCWs provide IPT services through experience.

IPT Policy Guideline of Tanzania stipulates that a good training time is up to one week. The policy further clarified that short training time may have insufficient knowledge implication which may be a concern for efficiency in IPT care. This study therefore had been looking at efficiency of IPT related issues differently. It has for example judged the

efficiency of HCW to establish their knowledge in IPT care related issues. For example participants who were HCW in CTC clinics were asked to examine the duration of protective effect of one IPT cycle. Out of the 119 interviewed respondents, only 62.2% answered this question correctly. This gives the implication that, there was an average depth of knowledge related to IPT among HCW in HIV clinics. It provokes concern for more efforts to train HCW. However this study was comparable with the study done in San Francisco bay, whereby 65.1% of the physicians reported routinely providing information about IPT to their patients with HIV infection.

5.2 Work Force Related Factors in Implementation of IPT

The fear and development of drug side effect on TB treatment is one of reasons commonly cited among health care workers for limited scaling up of IPT effectiveness. Studies have shown that, there is no increased risk of INH mono-resistance following IPT [10, 27]. These studies are consistent with the findings of this study which found that, 47.1% of respondents had good perception toward side effect of INH and generating drug resistance.

Lack of tools for screening TB is explained as one of the reasons leading to development of TB drug resistance among HIV patients. Most resource constrained countries are using smear microscopy to diagnose TB among people living with HIV/AIDS. Most PLHIV have either smear negative pulmonary TB or extra pulmonary TB which are difficult to diagnose by these technologies [10]. This makes clinicians to start IPT without ruling out TB which can increase chances of TB drug resistance. Moreover another study was done in South Africa which reveals that HCWs believed that isoniazid monotherapy would induce drug resistance, particularly in the South African context of high prevalence of multi-drug resistance (MDR) and extensive drug-resistance (X-DR) TB [14]. In comparison however, this particular study contradict with above findings that showed TB screening algorithm and operating procedures are very satisfying as majority(86%) of respondents were satisfied with technologies and procedures for screening TB.

Adherence of IPT by clients has been cited as an important issue covered in IPT literature. However, some studies examined the effects of adherence on individual outcome and measured adherence in different ways. This particular study reveals that, there are

promising degrees of client adherence to IPT and that, adherence to IPT counseling is explained by provider behaviour. Moreover, the study reveals the existence of significant relationship between provider behavior towards clients and adherence on IPT by clients.

Preparation of the patient for IPT is very important since they are more likely to be asymptomatic and have no real motivation to be taking anything. Patients need to have clear knowledge of HIV in order to adhere to IPT. HCWs are responsible to provide counselling to the patients about HIV. However, though HIV knowledge of patients seems good, there is a need to increase number of counselors as the findings revealed that HIV knowledge among patients is dependent on HCWs providing IPT counseling ($p=0.948$)

This is comparable to the study done in San Francisco bay which shows that; only 65.1 % of physicians reported routinely providing information to their HIV infected clients about IPT.

5.4 Leadership and policy related issues

Implementation of policy and policy issues among countries has been cited to have a very large gap. Studies have shown that number of countries supporting IPT implementation has increased from 8-102 between 2002 and 2009 but only 41 countries have been reported to be actually implementing IPT policy by 2010 [3, 10]. Tanzania is one among the 41 countries implementing IPT policies. This reflects commitment of the government in safeguarding health status of people living with HIV/AIDS. Comparatively, very few countries by 2010 were providing IPT from East Asia and Western Pacific regions [11]. With commitment of government efforts, leadership by HIV programs has been perceived to be good in Tanzania. Majority of study participants (97.3%) were satisfied with the move. Decentralization of IPT services is very important for people with HIV/AIDS to access IPT services. However the study done in South Africa [14] has demonstrated that, policy and health worker related issues, like lack of knowledge, experience and clarity on benefits and existing guidelines were considered barriers to the implementation of IPT. In this study however, participants were satisfied with decentralization of HIV services where 116(83.2%) out 119 respondents rated between average and very high.

WHO (2005) regards collaboration between TB and HIV clinics as monitoring and evaluation tool. Most resource constrained countries are reported not to have established monitoring systems to monitor IPT as part of collaborative effort with TB/HIV activities. Poor collaboration efforts between HIV and TB in resource constrained countries is explained by the study done in South Africa is contributed by lack of political commitment and consensus [10]. This study however, has not looked at the extent to which HIV and TB programs are monitored but have put the degree of relationship between TB and HIV centers into scrutiny. Findings have revealed that, there is good collaboration between TB and HIV clinics, in which 81 (68%) of respondents agree that, there is good collaboration between TB and HIV clinics.

5.3 Service delivery related Issues

Effectiveness of TB and HIV supplies management determine the presence of laboratory services, INH and HIV test kits. The findings reveal that majority of the participants (86.6%) were satisfied with the availability of laboratory services and supplies and 71.4% were satisfied with the supply of INH and HIV test kits.

Good working environment, technologies and procedure for diagnosing TB were also supported by 82.4% of respondents who were satisfied at this rate when they were asked to rate “perceiveness of the presence of simple, effective and point of care TB diagnosis in HIV care clinics”.

However researcher excluded from the interview some technology not practiced in implementation of IPT in Tanzania, one of them is tuberculin skin test (TST) which requires well trained and experienced staff to interpret results in addition to repeated visits of patients. Technologies related to TB screening available in Tanzania therefore, are mostly basic.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.0 Introduction

This study used cross sectional design as one of its methodology, which was relatively inexpensive and takes up little time to conduct and as results enable the researcher to obtain a snapshot of the outcome and the characteristics associated with it at a specific point in time. Also the type of analysis used included frequency tables, chi-square and Cronbach's Alpha which may have influenced the results in such a way that it enable the research to obtain reliable data which had a high internal consistency.

6.1 Conclusions

It can be conclude that,

- (i) Most of workers working in IPT facilities in Tanzania are females and comprised nurses.
- (ii) That the knowledge of IPT related among HCW working in IPT clinics in Tanzania is not enough Just 52.1% of the HCWs are trained and the duration for training is very short.
- (iii) Work attitude of HCWs in CTC clinics such as behaviour towards clients counselling and behaviour towards TB drug resistance is very good. It can thus be generalized that, CTC clinics customers are satisfied with behaviour of HCWs.
- (iv) There is a positive medium correlation between quality of training related to IPT and IPT knowledge among HCWs.
- (v) That cooperation and communication among TB and HIV mangers is very good. This contributes to smooth referral systems and activities related to IPT care.
- (vi) That the government of Tanzania highly regards TB as a core component of HIV care.
- (vii) That program mangers on HIV and TB are responsive and have positive attitude towards their work.
- (viii) That HIV/AIDS and TB programs in Tanzania have a very good donor back up.

- (ix) That control and restrictive policies and guidelines are not very satisfactory for IPT related clinics in Tanzania. This has implication for low efficiency among IPT projects in Tanzania.

6.2 Recommendations

This study recommends that:

6.2.1 Recommendation Related to IPT Implementation

- (i) The Ministry of Health and Social Welfare should train all workers providing services in HIV clinics. Duration of training should be increased. This may increase efficiency in IPT related clinics and safeguard health of IPT clients.
- (ii) Control and restrictive policies on IPT have to be improved in Tanzania. This may ensure efficiency and smooth running of the programs as required. Lack of monitoring and evaluation of IPT implementation may lead to loss of resources in this project.
- (iii) The government should redouble its efforts to ensure delivery of IPT as an important part of TB care for PLHIV, making it priority in HIV care programs, in the absence of other options to save lives of PLHIV from TB deaths.
- (iv) Mobilize PLHIV, community groups and grass roots organizations to demand IPT as part of the package of services from service providers from CTC clinics
- (v) The Ministry of Health and Social Welfare should decentralise IPT services by opening more centres in Dar es Salaam and up country. 5.7% of Tanzania population is affected by HIV/AIDs and available IPT services are only in 20 health facilities. Expansion may make more Tanzanians benefit from the service.

6.2.2 Recommendations for Further Studies

The main objective of the study was determining factors affecting implementation of IPT in HIV care and treatment clinics (CTCs) in Dar es Salaam Region, Tanzania. However, the study has not been able to gather time series information to provide a comparative study between the current situation and the previous time on IPT related issues. Scholars are therefore advised to make studies on IPT related issues.

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APPENDICES

Appendix A: Questionnaire (English Version)

The following questionnaire is on “**Evaluation of Factors Affecting Implementation of ISONIAZID PREVENTIVE THERAPY in HIV/AIDS Care Clinics in Dar es Salaam**”. Kindly take some few minutes and respond to the questionnaire. The data to be obtained is for academic purposes only. Confidentiality of respondent’s information is highly guaranteed. The researcher acknowledges your cooperation with Prior thanks!

4.1 DEMOGRAPHIC INFORMATION OF RESPONDENTS

Kindly put a (√) against a letter that best matches your response

1. What is your Age group?
 - (i) 20-24
 - (ii) 25-29
 - (iii) 30-34
 - (iv) 35-39
 - (v) 40-44
 - (vi) 45-50
 - (vii) 50 and above

2. What is your sex category?
 - (i) Male
 - (ii) Female

3. What is your designation?
 - (i) Clinicians
 - (ii) Nurses
 - (iii) Administrator
 - (iv) Others

SECTION B: Examination of IPT related knowledge of health care workers

4. Have you been trained in IPT related knowledge?
- (i) Yes
 - (ii) No
5. If yes what has been the duration of your IPT training?
- (i) Two days
 - (ii) 4 days
6. What is the duration of protective effect of one cycle of IPT? days and above
- (i) Less than 2 years
 - (ii) Two years
 - (iii) More than 2 years

PART C: Work force related factors affecting implementation of IPT in Tanzania**QUESTION SEVEN**

Rate the extent to which you think the following health workforce related issues affect implementation of IPT in HIV clinics. In your answer use likert scale (1) to (5) where (1) is worse (2) bad (3) good (4) very good and (5) Excellent

S/N	ITEM	1	2	3	4	5
1	Provider behavior toward clients and perception on IPT					
2	Quality of training and supervision capacity					
3	Quality of knowledge of HIV status of clients					
4	Behavior towards toxicity of INH and generating drug resistance					
5	Quality of Referral and communication system					

PART D: QUESTION 8: Other factors affecting implementation of IPT in Tanzania**(i) Policy related factors**

Rate the extent to which you think the following leadership and policy related issues affect implementation of IPT in HIV clinics. In your answer use likert scale (1) to (5) where (1) is worse (2) bad (3) good (4) very good and (5) Excellent

S/N		1	2	3	4	5
1	Regard of TB as a core component in HIV care and treatment services					
2	Leadership by AIDS programs					
3	Presence of HIV/AIDS stakeholders such a donors on IPT					
4	Redlines and perception of Program managers on HIV/AIDS and IPT care					
5	Perceived fears of resistance to INH					
6	Links and Collaboration between TB and AIDS programs					
7	Control of INH as anti-TB drug by National TB Control Programs					
8	Presence of restrictive national policies INH					

(ii) QUESTION NINE: Service Delivery Related Factors

Rate the extent to which you think the following service delivery related issues prevail in implementation of IPT in HIV clinics. In your answer use likert scale (1) to (5) where (1) Very low (2) low (3) average (4) high and (5) Very high

S/N	ITEM	1	2	3	4	5
1	Presence of simple, effective, and point-of-care TB diagnostics					
2	Decentralized HIV services					
3	Effectives of Administration of tuberculin skin test					
4	Adherence by clients					
5	Availability of standard TB screening algorithm and operating procedures					

(iii) QUESTION TEN: Product and Supplies related factors

Rate the quality of the following product and supplies related issues in implementation of IPT in HIV clinics. In your answer use likert scale (1) to (5) where (1) Very poor (2) poor (3) good (4) very good (5) Excellent

S/N	ITEM	1	2	3	4	5
1	Availability of laboratory services and supplies					
2	Effectiveness of TB and HIV supply Management					
3	Availability of PPD for skin test and cold chain needs					
4	Presence of INH (e.g., INH,300 mg) and HIV test kits					

(iii) QUESTION 11: Information systems and Finance related issues

In the following health information system and finance related issues of implementation of IPT, say whether you agree or disagree with assumptions made where (1) represents agree and (2) disagree

S/N	ITEM	1	2
1	Lack of monitoring and evaluation system		
2	Competing priorities for resource allocation		
3	Quest for cost-effectiveness		
4	Lack of standardized Indicators		

Appendix B: Questionnaire (Swahili Version)

Dodoso hili limeandaliwa na Mwanafunzi wa chuo cha afya Muhimbili. Ushiriki wako katika utafiti huu ni wa hiari na maelezo utakayoyatoa ni siri baina yako na mtafiti. Usiandike jina lako ili kuweka usiri. Kama kuna swali lolote hujisikii vizuri kujibu kuwa huru kuliacha. Asante kwa kukubali kushiriki.

SEHEMU A: TAARIFA BINAFSI ZA MSHIRIKI WA UTAFITI

Weka alama ya vyema kwenye helufi ya jibu lako

1. Je umri wako ni kundi lipi kati ya haya yafuatayo?
 - (i) 20-24
 - (ii) 25-29
 - (iii) 30-34
 - (iv) 40-44
 - (v) 45-50
 - (vi) 50 na zaidi

2. Jinsia:
 - (i) Me
 - (ii) Ke

3. Wewe ni Mfanyakazi wa afya katika kada gani?
 - (i) Daktari,
 - (ii) Tabibu,
 - (iii) Muuguzi,
 - (iv) Utawala,
 - (v) Mengineyo

**SEHEMU B: USAILI WA WAFANYAKAZI WA AFYA JUU YA UELEWA
KUHUSU IPT**

4. Je umewahi kuhudhuria mafunzo ya IPT?
 - (i) Ndio
 - (ii) Hapana

5. Mafunzo yalikua ni ya siku ngapi?
 - (i) Siku 2
 - (ii) Siku 4
 - (iii) Zaidi ya siku 5

6. Ni lini ulihudhuria mafunzo hayo?
 - (i) si zaidi ya miezi 6
 - (ii) Kati miezi 6 – Mwaka1 uliopita
 - (iii) Ni zaidi ya mwaka mmoja

7. IPT hukinga kwa muda gani IPT?
 - (i) Chini ya miaka miwili
 - (ii) Miaka miwili
 - (iii) Zaidi ya miaka miwili

SEHEMU C: SWALI LA SABA**MASUALA YA WAFANYAKAZI YANAYOCHANGIA UTOLEWAJI WA HUDUMA YA IPT**

Mwenendo na Mtazamo wa watoa huduma ya afya kuhusu IPT kwenye kliniki za huduma ya VVU na UKIMWI. (1) Mbaya sana, (2) mbaya, (3) nzuri kidogo, (4) nzuri , (5) nzuri sana

S/N	KIFUNGU	1	2	3	4	5
1	Hulka na mtazamo wa watoa huduma ya afya kuhusu IPT kwa wagonjwa					
2	Ubora wa mafunzo na usimamiza					
3	Ubora wa uweledi kuhusu hali ya maambukizi ya HIV kwa wateja					
4	Hofu ya madhara ya INH na usugu wa dawa					
5	Ubora wa rufaa na mawasiliano					

**SEHEMU D: SWALI LA NANE: MAMBO YANAYOCHANGIA UTOAJI WA
DAWA YA IPT**

Mtazamo wa watoa huduma ya afya kuhusu maswala ya uongozi na sera katika utoaji wa huduma ya IPT kwenye kliniki za huduma ya VVU na UKIMWI. (1) mbaya sana, (2) mbaya , (3) nzuri kidogo, (4) nzuri ,(5) nzuri sana

S/N		1	2	3	4	5
1	Kutambua kuwa kifua kikuu ni moja ya vipumbele katika kliniki zinazotoa huduma ya VVU na UKIMWI					
2	Uongozi katika mpango wa UKIMWi					
3	Kuwepo kwa wadau wa UKIMWI katika utekelezaji wa huduma ya IPT					
4	Utayari na mtizamo wa viongozi wa mpango wa UKIMWi kuhusu huduma ya IPT					
5	Hali ya hofu kuhusu usugu wa INH					
6	Mahusiano baina ya NTLP na NACP					
7	Usimamizi wa dawa za kifua kikuu					
8	Sera madhubuti ya udhibiti wa dawa ya INH					

SWALI LA TISA: MASUALA YAHUSUYO HUDUMA

Mtazamo wa watoa huduma ya afya kuhusu upatikanaji wa huduma zinazochangia utekelezaji wa mpango wa IPT. (1) chini sana, (2) chini, (3) wastani, (4) juu (5) juu sana

S/N	ITEM	1	2	3	4	5
1	Uwepo wa teknolojia rahisi na bora ya ugunduzi wa kifua kikuu					
2	Uwepo wa huduma ya VVU na UKIMWI					
3	Ufuasi wa dawa kwa wateja					
4	Uwepo wa vitendea kazi kurahisisha uibuaji wa wagonjwa.kama TSQ					

SWALI LA KUMI: VIFAA

Mtazamo wa watoa huduma ya afya kuhusu uwepo wa mfumo mzuri wa utoaji na usambazaji wa vifaa katika kliniki za huduma ya VVU na UKIMWI. (1) uko chini sana, (2) chini, (3) unaridhisha, (4) mzuri, (5) mzuri sana

S/N	ITEM	1	2	3	4	5
1	Uwepo na usambazaji wa vifaa vya maabara					
2	Mfumo wa ugawaji na usambazaji wa vifaa					
3	Uwepo wa dawa ya INH na vitendanishi vya VVU					

SWALI LA KUMI NA MOJA: MASUALA YA UWEZESHWAJI**(1) nakubali, (2) sikubali**

S/N	ITEM	1	2
1	Mapungufu katika usimamizi na ufuatiliaji		
2	Changamoto ya kipaumbele kwenye kuweka rasilimali		
3	Utoaji wa huduma ya IPT una faida kwa wagonjwa na serikali		
4	Kutokuwepo na viashiria maalum		

Appendix C: Informed Consent Form (English Version)**Health Care Worker Consent Form**

Hello, my name is On behalf of Muhimbili University of Health and Allied Sciences (MUHAS), we are doing research on the status of IPT implementation in Tanzania including factors that facilitate the implementation of IPT interventions at accredited HIV care clinics in health facilities in Dar es Salaam region.

The aim of the Study

The aim of this study is to describe the status of IPT implementation in Tanzania including factors that facilitate the implementation of IPT. Also this study will help to alleviate detrimental effects of missing IPT among PLHIV. At the end of this study, the findings will contribute to the existing knowledge enable suggestions for proper intervention measures for promoting utilization of IPT to PLHIV which in turn will reduce the morbidity and mortality associated with TB among PLHIV.

Procedure

I would like you to participate in this study. If you choose to participate in this study, you will be provided with the questionnaire with the questions about your personal background, what activities do you do in implementing IPT, what you know about TB, TB/HIV, IPT, if you have receive any training on IPT, your attitudes on IPT intervention, your opinion about IPT intervention, data on IPT will be collected from the registers and reports. It will take about 20 minutes to finish filling the questionnaire.

Confidentiality

All the information obtained from you will be kept private, only study staff will be able to see any information you give us. The information will be used for the purpose of the research study only and not for any other reason. Your name or anything else that might identify you will not appear in any reports, instead number will be used.

Right to refuse or withdraw

It is your choice to be in this study, you can skip any question you do not want to answer. You are free to drop out from the study whenever you feel like, the drop out will not affect you in any case. However, we would like you to participate in this study because your views are very important.

Benefit

Your participation in this study will provide useful information for us and other stakeholders.

Risks

We do not expect any harm to you as a result of participation in this study although some questions will be personal like about your social status.

Whom to Contact

In case of any inquiry please contact the principal investigator, Ms. Amina M. Ngombo. MUHAS, P. O. BOX 65001, Dar es Salaam, mobile number 0715-760450 or Prof. C. Kihamia, MUHAS, P. O. BOX 65001, Dar es Salaam.

If you ever have questions about your rights as a participant, you may call Prof. Mohamed Aboud, Chairman (research and Publications Committee, MUHAS. P.O. Box 65001, Dar es Salaam-Tanzania, Tel +2552150302-6)

I have read the contents of this form and understand. My questions have been answered. I agree to participate in this study.

Signature of participant.....

Date.....

Signature of researcher/research assistant

Appendix D: Informed Consent Form (Kiswahili Version)**Fomu ya Idhini ya Mhudumu wa Afya**

Habari, mimi naitwa..... kwa niaba ya Chuo Kikuu cha Afya na Sayansi ya Tiba cha Muhimbili tunafanya utafiti kuangalia hali halisi ya utoaji wa huduma ya kinga ya kifua kikuu kwa watu wanaoishi na virusi vya Ukimwi na pia ni mambo gani yanayoweza utoaji sahihi wa huduma hizi kwa watu wanaoishi na virusi vya ukimwi.

Lengo la Utafiti

Utafiti huu unalenga kuangalia hali halisi ya utoaji huduma ya kinga ya kifua kikuu kwa watu wanaoishi na VVU na kuainisha mambo yanayopelekea utoaji sahihi wa huduma hizo. Taarifa hii itasaidia kuongeza ufahamu kwa wahudumu wa afya utakaoweza kubuni mikakati itakayoweza utoaji wa huduma hii kwa watu wanaoishi na VVU na pia itasaidia katika kuongeza kasi ya kuimarisha vituo vingine ili viweze kutoa huduma hii. mwishowe vifo kutokana na kifua kikuu kwa watu wanaoishi na VVU vitapungua.

Utaratibu

Tungependelea kushiriki kwako katika utafiti huu. Kama utachagua kushiriki, utapewa dodoso ambalo lina mfululizo wa maswali kuhusu historia yako, jinsi unavyotoa huduma ya kinga ya kifua kikuu kwa watu wenye VVV, kile unachojua kuhusu kifua kikuu, mahusiano ya kifua kikuu na ukimwi, kinga ya kifua kikuu, mtazamo wako kuhusu kinga ya kifua kikuu kwa wenye VVU, mafunzo uliyopata, maoni yako kuhusu huduma hii.

Usiri

Majibu yote utakayotoa yatakuwa siri na hayataonyeshwa kwa wengine zaidi ya wafanyakazi wa utafiti huu tu. Taarifa utakazotoa zitatumika kwa lengo la utafiti tu na sio sababu nyingine yeyote. Jina lako au kitu chochote cha kukutambulisha hakitaonekana kwenye ripoti badala yake tutatumia namba.

Haki ya kujitoa au vinginevyo

Ushiriki katika utafiti huu ni wa hiari. Unaweza kusitisha mahojiano wakati wowote endapo utaona ni vyema kufanya hivyo na hakutakuwa na athari zozote na hutapoteza stahili zako zozote. Hata hivyo, kama utashiriki utatusaidia sana katika utafiti huu kwani taarifa utakazotoa zitasaidia sana katika kupanga mikakati ya kupunguza vifo vitokanavyo na kifua kikuu kwa watu wanaoishi na VVU.

Faida

Kama utakubali kushiriki katika utafiti huu, tunategemea kwamba taarifa tutakazozipata kutoka kwako zitakuwa na maana kwetu na kwa wadau wengine katika huduma za kliniki ya tiba na matunzo kwa watu wanaoishi na VVU.

Madhara

Hatutegemei ya kwamba utapata madhara yoyote kwa kushiriki kwako katika utafiti huu japo baadhi ya maswali utakayoulizwa ni ya binafsi zaidi, kama yale yanayohusu taarifa zako binafsi.

Watu wa kuwasiliana nao

Kama una maswali katika utafiti huu unaweza kuwasiliana na mtafiti mkuu, Amina M. Ngombo kutoka Chuo Kikuu cha Tiba na Sayansi Muhimbili, S.L.P. 65001, Dar es Salaam. Simu namba 0715-760450 au Prof. C. Kihamia wa Chuo Kikuu cha Tiba na Sayansi Muhimbili, S.L.P. 65001, Dar es Salaam.

Kama utakua na swali kuhusu haki yako ya ushiriki, unaweza kupiga kwa Prof. Mohamed Aboud, Mwenyekiti wa kamati ya utafiti na machapisho, MUHAS. S.L.P 65001, Dar es Salaam-Tanzania, Tel +2552150302-6)

Mimi.....nimesoma fomu hii ya idhini na nimeielewa. Maswali yangu yamejibiwa. Nakubali kushiriki katika utafiti huu.

Saini ya mshiriki.....

Tarehe.....

Saini ya mtafiti/ mtafiti msaidizi

Appendix E: Letter of Approval of Ethical Clearance**MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
DIRECTORATE OF POSTGRADUATE STUDIES**

P.O. Box 65001
DAR-ES-SALAAM
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Ref. No. MU/PGS/SAEC/Vol. VI/

17th October, 2012

Amina Mohamed Ngombo
Master of Public Health-Executive Tract
MUHAS.

RE: APPROVAL OF ETHICAL CLEARANCE FOR A STUDY TITLED "ISONIAZID PREVENTIVE THERAPY AND THE FACTORS THAT FACILITATE IMPLEMENTATION AT HIV CARE CLINICS IN DAR ES SALAAM"

Reference is made to the above heading.

I am pleased to inform you that, the Chairman has on behalf of the Senate approved ethical clearance for the above-mentioned study.

Thus ethical clearance is granted and you may proceed with the planned study.

Prof. O. Ngassapa
DIRECTOR, POSTGRADUATE STUDIES

/emm

- c.c. Vice Chancellor, MUHAS
- c.c. Deputy Vice Chancellor – ARC, MUHAS
- c.c. Dean, School of Public Health and Social Sciences - MUHAS