

**FACTORS INFLUENCING UPTAKE OF ANTIRETROVIRAL
THERAPY AMONG TB/HIV CO-INFECTED PATIENTS ATTENDING
TB AND HIV CLINICS IN TEMEKE MUNICIPALITY
DAR ES SALAAM, TANZANIA.**

Allan Narcis Tarimo, MD

**Master of Public Health Dissertation
Muhimbili University of Health and Allied Science
October 2013**

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By

Allan Narcis Tarimo, MD

**A Dissertation Submitted in Partial Fulfillment of the Requirement for the Degree
of Master in 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 influencing uptake of Antiretroviral therapy among TB/HIV co-infected patients attending TB and HIV clinics in Temeke Municipal Dar es Salaam – Tanzania**” in fulfillment of the requirements for the degree of Masters of Public Health of Muhimbili University of Health and allied Sciences

Prof. K. S. Mnyika

Supervisor

Date

DECLARATION AND COPY RIGHT

I Allan Narcis Tarimo, 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.

Candidate’s signature.....

Date.....

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DEDICATION

I dedicate this dissertation to my beloved wife Eunice Mmando –Tarimo and my lovely son Jonathan Allan Tarimo for their courage and prayers during the entire period of the course.

ABSTRACT

Background: HIV/AIDS and Tuberculosis diseases are disturbing each other, while TB is the most common opportunistic infection among PLHIV meanwhile HIV/AIDS is the most risk factor for the progression from latent TB into active or recurrent TB. The two diseases have accounted for the increased morbidity and mortality in the community. The ARVs uptake among TB/HIV patients in the country is 35% as compared to WHO target of above 80%. The MOHSW in collaboration with stakeholders since 2007 have launched several strategies to mitigate this problem in the country however no substantial outcome has been achieved so far in terms of ARVs uptake among co-infected patients.

Objective: The study was aimed at describing individual factors that influence the ARVs uptake among patients with Tuberculosis and HIV/AIDS co -infections, particularly on characteristics such as socio- economic, Accessibility and availability of ARVs services and Patient's awareness and perceptions on ARVs for TB/HIV clinics in Temeke Municipality.

Material and methods: This cross sectional study was done in high burden TB and HIV area in Temeke, Three health facilities in Mbagala, Kigamboni and Temeke were purposely selected based on patients load and accessibility of ARVs Services. A sample size of 183 TB/HIV co-infected patients were enrolled in this study, data were collected through semi-structured questionnaires, while SPSS version 17 were deployed for data entry, cleaning and analysis.

Results: A total of 183 TB/HIV co-infected patients in which 50% were from Mbagala hospital were interviewed with the mean age of 40.5 years (ranging from 13 to 67 years). Out of these 165(90.2%) had reported to take ARV and TB medications concomitantly. There was no significant relationship between level of education and ARVs uptake [OR=0.4]. Majority 163 (98.8%) out of 165 patients were satisfied with health care services provided particularly flexibility at clinic (89.3%), availability of health care providers (91%). The study also found among 165 patients who took ARVs, 81.2% had good awareness on the importance of ARVs

and by regression analysis patients who had knowledge on ARVs were 4 times likely to adhere to ARVs than those who had no knowledge (OR=3.9, P=0.02), further study found 171(93.3%) out of 183 patients held a perceptions that integrating of TB and HIV services under one unit is of major importance, particular reducing waiting time(43%) and improve privacy(26%) .

On the general patient view on ARVs medications 106 (61%) out of 169 respondents understand that ARVs prolong life and reduce possibilities of acquiring opportunistic infections

Conclusion: Anti-retro viral uptake among TB/HIV co-infected patients is high and is extensively associated with high awareness and perceptions on ARV medication indeed also the provision of health care provided at the clinic. There is need for further search to explore more on how institution or management factors influence utilization of ARV services among TB/HIV co-infected.

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LIST OF ABBREVIATION

AIDS	Acquired Immune Deficiency Syndrome
ARV	Anti Retrovirals therapy
CPT	Cotrimoxazole preventive therapy
CTC	Care and Treatment Clinics
DSM	Dar es Salaam
EPT	Extra-pulmonary Tuberculosis
HCW	Health care workers
HIV	Human Immunodeficiency Virus
MOHSW	Ministry of Health and Social Welfare
MUHAS	Muhimbili University of Health and Allied Sciences
NACP	National AIDS Control Programme
NTLP	National Tuberculosis and Leprosy Programme
PI	Principle investigator
PLHIV	People Living with HIV/AIDS
RA	Research assistant
SPSS	Statistical Package for Social Science
TB	Tuberculosis
TB/HIV	Tuberculosis and HIV/AIDS co-infections
WHO	World Health Organization

CHAPTER ONE

1.0 Introduction

1.1 Background

HIV infection is spreading tuberculosis epidemic, and TB continues to be the most common cause of morbidity and mortality in HIV-positive populations. TB is often what brings the HIV-positive individual to medical attention, and individuals presenting with TB disease in high HIV prevalence settings are likely to be co-infected with HIV (MOHSW 2010). It is estimated that globally each year there are more than 8.1million all forms TB cases out of these 1.1(15%) are also co-infected with HIV/AIDS (WHO 2011), TB/HIV burden is highest among sub-Saharan countries accounting for 70% of all TB cases detected (SADC 2010).

Tanzania is among 22 countries in the world with high Tuberculosis (TB) burden, these countries accounted for 80% of the global TB cases (WHO 2010). TB is the commonest opportunistic infection among People Living with HIV/AIDS contributing to 30% of the deaths related to HIV/AIDS (MOHSW 2010).

In Tanzania the rate of TB/HIV co-infections among all 63,235 TB cases notified in 2011 stood at 38% furthermore out of 24,043 TB /HIV cases diagnosed in year 2011 only 31%(6,023) were initiated concomitantly ARVs and TB medications which is still low as compared with WHO target of 100%(NTLP 2011). The increased number of TB/HIV co-infected patients in Tanzania, where the co-epidemic has the greatest impact, as well as in other resource-limited areas has intensified the need to find solutions to diagnostic, treatment and management issues at the interface of both diseases (MOHSW 2007).

In 2007 the MOHSW developed TB/HIV policy guidelines from the WHO guidance with the primary goal of reducing the burden of Tuberculosis among PLHIV and as well as reducing the burden of HIV among TB patients, the objective II of the policy guidelines described the integration of TB and HIV control services under one roof approaches, that is providing

provision of ART and TB services for TB/HIV co-infected patients under one umbrella at both care and treatment centres(CTC) and TB clinics(TB/HIV policy 2007), This strategy was shown to be successful in terms of ARVs uptake among co-infected patients in three the piloted sites (NTLP 2007), Therefore full integration of TB/HIV services could be cornerstone in the management of these dual epidemics.

Knowledge experience in the diagnosis and management of TB and HIV as separate diseases is extensive and need sufficient resources put in place to combat these dual killer diseases. TB/HIV co-infections has created additional major challenges in health sector, this nonetheless offers the prospect of enhancing the management of both diseases through collaborative and integrative efforts. From a public health perspective, national TB control programmes (NTPs) and national AIDS control programmes (NACPs) need to develop mechanisms of collaboration which will promote control of these diseases in the community at large. The TB/HIV Working Group of the Stop TB Partnership has developed interim recommendations and policies (WHO 2010). Several demonstration interventions have been carried out to assess the feasibility of such collaborative and integrative efforts in urban and rural areas, and some programmes have begun to adopt the public health oriented strategies of TB care and control in newly developed HIV treatment programmes (MOHSW 2010).

With regard to the provision of HIV services at the TB/HIV clinics currently in the country about 95% of the TB patients are screened for HIV and more than 85 % of the HIV/TB patients are initiated Cotrimoxazole Preventive Therapy (CPT) so as to reduced morbidities associated with these two diseases (NTLP 2010).

The burden of these dual epidemics is highest in urban setting as compared to rural areas despite the urban having sufficient resources in terms of human and infrastructures to support delivery of ART services (NTLP 2011).

With regard to individual awareness and perceptions to these dual epidemics several mechanisms has been put in place by the MOSHW and collaborating partners as well as civil society organizations to raise community awareness on the importance of adhering to ARVs

and TB medications in parallel so as to reduce morbidity and mortality related to TB/HIV(NACP 2010)

Furthermore several factors might account for ART acceptance in HIV-positive TB patients in our country, but these are at present not well described. We speculate that the socio- economic characteristics of the patients, accessibility and availability of ARV services and patients level of awareness and perceptions on ARVs as well as decentralization of ART services in both urban and rural settings are likely to affect utilization ARV among TB/HIV co-infected individuals.

1.2 STATEMENT OF THE PROBLEM

HIV and TB are clearly linked: the HIV epidemic presents a massive challenge to the global control of TB, while TB is one of the leading causes of death in people living with HIV (WHO manual 2006).

According to WHO guidelines on management of TB/HIV co- infection on which the country has adopted in 2007, it is stipulated that every patient with TB and HIV co –infections should be initiated TB and HIV management services in parallel (TB/HIV policy 2007)

Study done in Malawi rural area on acceptance of ARVs among TB/HIV patients has shown low uptake of ARVs is associated with the increasing cost of transport as well as well centralization of ART services at the district hospital (Rony Z et al 2004), However this study is somehow opposite to the current situation in the country where there is decentralization of ART services and full integration of TB/HIV services at least to all levels of health care delivery point (MOHSW 2010). Further this survey will aim at describing whether the socio - economic levels affect ARVs uptake at individual level particularly in urban setting.

Moreover perception and level of awareness of TB/HIV patients on ARV medications can be also one of the key issue which influence ARV uptake(ARCD 2007), The perceived issues of pills burden taking into consideration they are also on TB medications can also influence TB/HIV patient decision in acceptance and utilization of ARVs medications, moreover the fear of overlapping side effects related to taking ARV and TB medications concomitantly have also accounted for extended magnitude of low uptake of ARVs among co-infected patients in south east asia (Mc illeron et al 2007).This study aims at describe to what extent does TB/HIV patients with such awareness and perceptions on ARV medication influence their uptake.

Despite these nationwide efforts including community sensitization campaigns on TB/HIV, training health care workers from all cadres and full integration of TB/HIV services to the grass root levels to scale up management of TB/HIV among co-infected patients yet there is

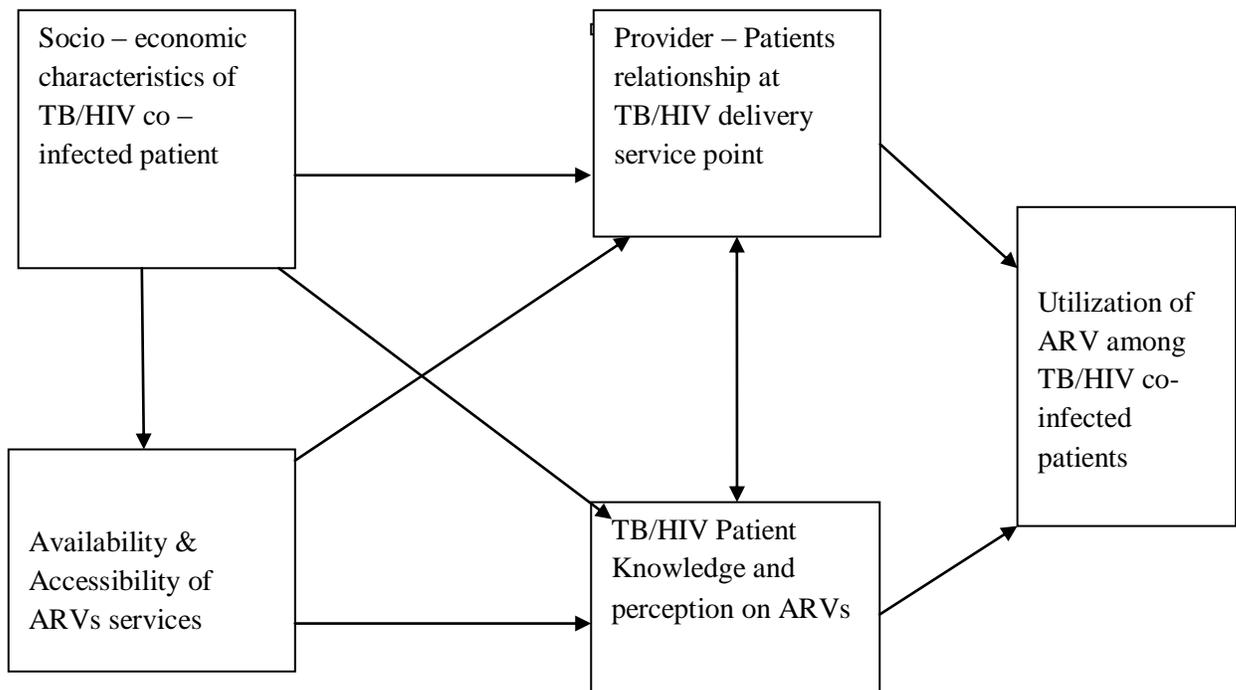
low uptake of ARV as compared to other HIV/AIDS package services available in the facilities like provision of PITC and CPT in which the country has already attained the WHO target (NTLP 2010).

This study aimed at exploring individual factors that influence uptake of ARV among TB/HIV co- infected patients in urban setting particularly in Temeke municipality where there is high burden of TB and TB/HIV co- infections.

1.3 THE CONCEPTUAL FRAMEWORK

The conceptual framework describing factors that influence the uptake of ARVs among TB/HIV co-infected patients, several factors such as socio-economic characteristics of the patients, Accessibility and availability of ARV services as well as Patient perception and awareness on ARVs medication will be studied to establish relationship with ARV uptake.

Figure 1: The conceptual framework on factors influence ARVs uptake among TB/HIV co- infected patients



Socio –economic characteristics: Describing sex, gender, level of education, level of income and marital status of the TB/HIV patients

Accessibility and Availability of ARV services: Describe the number of health facilities providing provision ARV services available in relation to distance, availability of ARV medicines and ARV service package including provision of health information and education

Patient perception and awareness: Reflect patients feeling and knowledge on ARVs medications particularly on efficacy and Side- effects related to ARV, integration of TB/HIV services and general views on ARV utilization.

1.4 RESEARCH QUESTIONS

1.4.1 Main Research Question

To what extent does individual characteristics influence ARVs uptake among TB/HIV patients in Temeke Municipal?

1.4.2 Specific Research Questions

1. What are the socio- economic characteristics of TB/HIV patient who take ARVs?
2. To what extent does accessibility of TB/HIV services affect ARVs uptake among TB/HIV patients?
3. How does patient's level of awareness and perception influence the uptake of ARVs among TB/HIV co-infected patients?

1.5 OBJECTIVES

1.5.1 Broad objective

To determine individual factors that influence Anti- retroviral Therapy (ARV) uptake among TB/HIV co-infected patients in Temeke municipality June 2013.

1.5.2 Specific Objectives

1. To describe patients socio-demographic characteristics that influence ARVs uptake among TB/HIV co-infected in Temeke.
2. To determine relationship between the provider and patient that influence ARVs uptake at the facility level in Temeke.
3. To assess patients perception and awareness that influence ARVs uptake among TB/HIV co-infected patients in Temeke.

1.6 RATIONALE

In Tanzania about 40% of all TB patients are co-infected with HIV meanwhile it is estimated that 2% of PLHIV have TB disease, In 2007 the country adopted the WHO policy guidelines on TB/HIV management, the guideline clearly specify that all TB/.HIV or HIV/TB patients should be initiated TB and HIV treatment in parallel irrespective of clinical or immunological status.

At all facility levels (from Primary to tertiary) Health care providers have been trained on TB/HIV management, the government in collaboration with partners and stakeholders has ensured availability of free ART services and in some clinics there is provision of free food supplementation to PLHIV, furthermore in line with TB/HIV guidelines, both TB and HIV management services are provided under one roof, whereby patients with dual infections can be attended at one clinic.

This study aimed at assessing the potential factors which have influenced uptake of ARVs among TB/HIV particularly in urban setting like Temeke municipal, Furthermore the study results – evidence based will be used to advocate to the key stakeholder including decision makers to improve management of the TB/HIV co – infections in the country and hence reduction of morbidity and mortality associated with these dual epidemics.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Overview of ARVs uptake among TB/HIV patients

The uptake of ARVs among TB/HIV patients in most low income settings has continued to be major challenge in achieving universal target of 100% coverage in TB/HIV co-infected patients. Despite several efforts made by the WHO and country specific ministries of Health to increase the HIV provide initiated Counseling and testing (PITC) among TB patients to above 90% in most Sub- Saharan Africa as well as integration of TB and HIV services under one clinic the burden of TB/HIV is still high and accounting for the loss of productivity and economic income at large (WHO 2010).

In Tanzania ARV uptake among TB/HIV co- infected patients remained between 30-35% for the past five years despite introduction of TB/HIV collaborative services and integration of TB and HIV services under one umbrella (MOHSW 2010).

In a rural low -income country a retrospective cross- sectional study associated low ARVs uptake among TB/HIV patients with rising cost of transportation to the centralized hospital proving ART, of the 742 TB/HIV patients offered ART only 13.6% started ART (Rony Z et al 2004), however this study is in contrarily to the situation in Tanzania rural areas where the ARVs uptake among co-infected patients is relative higher (MOHSW-NTLP 2010), further the study suggested decentralization of TB/HIV services at the health centers in rural setting can improve the ARVs uptake(Kerschberger B et.al 2009). This strategy is now implemented in Tanzania.

2.2 Perception and awareness on ARVs medication

Patient level of awareness and perceptions on ARV medication is crucial factor that would most likely to influence uptake of ARV among TB/HIV co –infected patients. Study done in Ghana showed Clients had good knowledge about ART and PMTCT and educational

background of HIV positive women did not have significant influence on their knowledge of ART and PMTCT (BMC women health 2013) this implies that general knowledge of the patient play a role in decision making towards ARV utilization.

Awareness on ARV services among community members is still low and can serve as obstacle in acceptance and utilization of ARV medications, a search done in Tanzania rural setting showed that More than one-third of men and women in the study reported that they had never heard of ART. Among those who had heard of ART, 24% were east informed about ART, and concluded that lack of ART knowledge is broad, and there is a strong association between ART knowledge and individual education level (Agnarson M et al. 2013)

In addition to that a compendium report on ARV community knowledge, awareness, accessibility and policy environment in three low income countries showed Overall, people's knowledge about eligibility to use ARV including those currently on ARV was limited, Significant proportion of ARV users shared the view that ARV can be used in prevention of infection with HIV and AIDS, further various barriers to use of and access to ARV including facility based, policy, awareness and transport related, as well as nutritional, were cited in almost all the three countries(ARCD 2013), This study will critical look to what extend are awareness and perceptions affect ARV uptake among TB/HIV co-infected patients attending clinics in urban setting.

2.3 Accessibility and availability of ARV services

The ARV uptake have been associated with availability and accessibility of HIV/AIDS care and treatment packages at the point of health care delivery, some search in Cameroon has shown that Provider Initiated counseling and Testing is higher about 95% of all TB patients are tested for HIV and accepted the results, furthermore more than 50% of the eligible TB/HIV patients were initiated ART services as compared to 13.6% in Malawi study(Nwarbe`be` N et al 2007), This retrospective cohort study using TB registers from four selected hospitals based on accessibility, patients load and patient diversities explored on influence of decentralizing TB/HIV services versus ARVs , CPT uptake in urban setting,

however this was limited to hospitals which were purposely identified and the result obtained may not be the true picture of the entire population, This study merely will be similar to the Cameroon however random sampling technique will deploy to minimize bias

2.3.1 Integration of TB and HIV services

Another factor influencing ARVs uptake among TB/HIV patients is the integration of TB and HIV services under one roof, a super- market approach. This intervention involve unification of TB and HIV services under one clinic where by a TB/HIV patient receive all services at the same time under one unit, several studies have been done to establish the association between ARVs uptake among TB/HIV co-infected patients and integration of TB and HIV services, one in low income country have shown integration of HIV and TB services resulted in improved TB treatment outcomes and earlier prioritized ARV initiation in large urban clinic(Hermans S M 2012). Further study done in a middle income country showed that despite integration of TB and HIV services under one clinic , there is substantial delays in initiation of ARVs among eligible TB/HIV patients(58.6%) and one-fifth(20%) of the eligible patients did not start ARV at all, thus full integration of TB and HIV services under one roof clinic is not a necessary factor to increase ARVs uptake(Nglazi M D et al 2010), This phenomenon is relative similar to Tanzania where there is significant delay in initiation of ARVs not only among TB patients but also HIV positive individuals(MOHSW –NACP 2010). However the previous study was conducted in middle income country where the socio- economic and health systems are more advanced as compared to Tanzania.

In trying to reduce this problem some scientific search and recommendations have been put in place to scale up ARVs uptake among TB/HIV patients such as; (i) hospitalization of HIV/TB patients during intensive TB treatment (ii) decentralize ART to health centers after hospital based initiation of ART (iii) Integrate TB and ARVs care into one clinics at facility level (Zachariah R,et al 2004), these published options are already in place in Tanzania and further studies have analyzed each factor in –depth but still ARVs uptake among TB/HIV patients is low and no promising future is to be seen, In Tanzania alone none of the study has been done

to explore the factors influencing ARVs uptake at organizational, community or individual levels.

Last but not least the integration of TB and HIV services arguably have some operational challenges which need collective interventions to mitigate, challenges like diagnostic and therapeutic are likely to be observed in the facilities with limited human and infrastructure resources capacities which may further hinder accessibility and utilization of TB /HIV services among co-infected patients, moreover this gap can also influences patients perception and attitude towards ARVs services at that particular facility (Troius S et. al. 2005)

Timing of ART uptake is also a major issue of concern, currently guidelines by the WHO requires all TB/HIV initiated ARVs and TB medicines concomitantly (WHO 2010), however the situation is quite in dilemma to most of the health care providers who still relies on the CD4 cut-off point before initiation ARVs in co-infected patients others wait until the patients completed 2 months intensive course of TB medications before initiation, The change in policy guidelines has shown improvement in ARVs uptake in Malawi from 32% before to 39% after review of the policy (Lettow V et al 2011), this figure is almost similar to uptake in Tanzania but the country has assumed plateau -shaped in the past three years.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Study site

The study was conducted in Temeke Municipal in Dar es Salaam city. The area was chosen because it has higher prevalence of Tuberculosis disease (435/100,000 populations) and HIV infection (6.8% prevalence among population) and TB/HIV burden (50% of all TB patients are co-infected with HIV)

The municipal has an area of 6565 sq. km with a population of 1,101,209 inhabitants according to 2002 census projection. Administratively the municipal is divided into 3 divisions and 30 wards.

Health system is organized into 3 hospitals, 19 diagnostics health facilities and 39 treatment centers providing TB and HIV services.

Majority of the population are poor living below poverty line according to municipal demographic statistics

3.2 Study design

This cross-sectional study was designed using semi-structured questionnaires. The purpose of this study was to describe patient's factors that influence ARVs uptake among TB/HIV co-infected patients. It was conducted in 3 purposively selected health facilities in Temeke Municipality.

Three hospitals in Temeke municipality were selected based on the following criteria;

1. Patients load at the TB/HIV clinic
2. Accessibility

3. Integration of TB/HIV services under one roof
4. Health facility human resource capacity

3.2.1 Study population

The study enrolled adult 18 years and above TB/HIV co –infected patients attending at Temeke, Kigamboni and Mbagala clinics for more than two weeks.

3.2.2. Inclusion criteria

1. All adult TB/HIV patients enrolled at the TB/HIV clinics for more than two weeks

3.3 Sampling and Sample size

3.3.1 Sample selection

All enrolled TB/HIV patients attending TB/HIV clinics in Temeke, Mbagala and Kigamboni were eligible to participate based on the daily attendance.

Simple random sampling was applied where by all TB/HIV attending to the clinics during study duration had equal chance to participate, their files were sorted and patients were provided with serial numbers, the number were put into the box. Research assistant pick numbers randomly and selected patients were consented before enrolled to the study.

3.3.2 Sample size

Sample size (n) was calculated by using the formula;

$$n = \frac{z^2 p(100-p)}{e^2}$$

$$e^2$$

Whereas;

z = level of confidence (1.96 for 95% confidence level)

p = expected proportion of ARVs uptake among TB/HIV patients (40%)

e = margin of error, in this study level of precision is set at 7%

$$n = \frac{1.96^2 \times 40 \times (100 - 40)}{7^2}$$

$$n = 188$$

The sample size for the study was expected to be 188

However 183 participants were obtained from the following sites; 90 patients were from Mbagala hospital, 60 from Temeke hospital and Kigamboni contributed 43 patients. The difference of sampled patients was due to proportion size of the populations, Mbagala had large catchment area and highest number of patients as compared to other sites

3.4 Data collection methods

Data were collected using interviewed administered questionnaires consisting of closed and opened ended questions which will be prepared in English before translated into Swahili; questionnaires consisted of socio- demographic and patient clinical information, patient's Adherence tendency on ARVs medication, Provider- patient relationship at the facility and patient awareness and perception on ARVs medications. Data collection process started on 14th June and ended on 5th July 2013.

3.4.1. Study variables

Dependent Variable

1. ARVs uptake
2. TB/HIV patients

Independent variables

1. Socio – demographic characteristics; Sex, age, level of education and marital status, ~ level of income,
2. Accessibility and availability of ARVs
3. Awareness and perception towards ARVs medications

3.5 Pre-testing of the questionnaires

Pre test of questionnaires was conducted in Amana hospital in Ilala municipal where by 10 TB/HIV patients were randomly selected to participate using developed Swahili questionnaire. This process helped to rectify ambiguous questions, checking consistency, coherence and validity of the questions according to target audience and study design, and as part of orienting research assistants, some of the questions were rephrased to accommodate the audience.

3.6 Data management

Two R.A's were responsible for daily data collection under the supervision of the principal Investigator. All filled questionnaires were checked for completeness, inconsistencies on daily basis.

Data were coded, entered analyzed using Statistical Package for Social Sciences (SPSS/PC+) software version 17, descriptive analysis such as frequency tables and bar charts and was used to describe socio- demographic variables such as sex, marital status, level of education

and level of income. In bivariate analysis the dependent and independent variables proportions were cross tabulated and examined using Chi - square tests, where $p < 0.05$ the difference were considered to be not significant. Furthermore logistic regressions were applied to minimize confounders. Data from open ended question (last question) were reviewed to identify consistencies and differences, then were coded and quantified according to the responses.

3.7 Ethical consideration

This study was reviewed by and approved by Muhimbili University of Health and Allied Sciences Research Ethical Review Committee. Permission to conduct the study was also requested from Temeke Municipal authority

Before the interview, written informed consent was obtained from the participants after exploring the aim of the study in Swahili language. The study encouraged voluntary and confidentiality of information was assured to participants before and after data collection.

The participants were informed about their rights of participation including not answering some questions.

CHAPTER FOUR

4.0 RESULTS

A total of 183 TB/HIV co-infected patients attending three selected clinics in Temeke municipality were interviewed; of which 90(49.1%) were from Mbagala hospital.

4.1 Socio-economic characteristics of the study participants in Temeke Municipality Dar es Salaam, Tanzania

Out of 183 respondents, 102(55.7%) were males. The mean age of the respondents were 40.5years and median age of 40 years ranging from 13 to 67 years, of 183 respondents,70(38.2%) were married living together with their spouses, with the regard to level of education, a total of 123(67.2%) patients have attained primary school as compared to 30(16.4%) reported to have no formal education.

In terms of level of income a total of 94 (51.2%) out of 183 patients reported to have a daily income of more than 10,000 Tshs , while 15 (8.2%) mentioned to had no any source of daily income . Table 1 shows the socio-economic characteristics of the respondents

Table 1: Social economic characteristics of participants (n=183) in Temeke Municipal, Dar es Salaam, Tanzania

VARIABLE	NUMBER (N)	PERCENT (%)
SEX		
Male	102	55.7
Female	81	44.3
AGE GROUPS (YEARS)		
<= 25	16	13.2
26-35	48	26.2
36-45	56	30.6
46-55	46	25.1
> 55	17	9.3
MARITAL STATUS		
Married	70	38.3
Single	45	24.6
Widowed	13	7.1
Separated	48	26.2
Cohabiting	7	3.8
LEVEL OF EDUCATION		
No formal education	30	16.4
Primary education	123	67.2
Secondary education	30	16.4
LEVEL OF INCOME		
None	15	8.2
Less than 1000	9	4.9
Between 1000-5000	24	13.1
Between 6000-10000	41	22.4
Above 10000	94	51.2
OCCUPATION		
Petty Trader	71	38.8
Civil Servant	3	1.6
Private Servant	49	26.8
Fishermen	12	6.6
Not Working	48	26.2

4.1.2 Socio-economic factors affecting uptake of ARVs among TB/HIV co-infected patients in Temeke municipality

Majority of males and females, 88.2% and 92.6% respectively were adhering to ARVs medications, while 117(95.1%) out of 123 respondents who had primary school education were adhered well to ARVs medications. By marital status the study found that majority of married and singles patients took ARVs drugs 88.3% and 91.6% respectively

The level income of the TB/HIV patients were seem not to affect uptake of ARVs as 89.4% of the respondents who had income of more than 10,000Tshs and 90.4% who had less than 10,000 Tshs daily income reported to be taking ARVs drugs. See table 2

TABLE 2: Socio-economic factors affecting ARV uptake among TB/HIV patients in Temeke Municipal, Dar es Salaam, Tanzania

VARIABLE	CURRENTLY ON ARV MEDICATION		CHI-SQUIRE	P-VALUE
	YES (%)	NO (%)		
SEX				
Male	90(88.2)	12(11.8)	0.97	0.33
Female	75(92.6)	6(7.3)		
EDUCATION LEVEL				
Primary Education	117(95.4)	6(4.6)	17.16	0.00
Secondary Education	21(70)	9(30)		
No formal education	27(90)	3(10)		
MARITAL STATUS				
Married	68(88.3)	9(11.7)	0.514	0.47
Not married	97(91.6)	9(8.4)		
INCOME				
<= 10000	80(89.9)	9(10.1)	0.02	0.9
> 10000	85(90.4)	9(9.4)		

By logistic regression analysis the like hood that patient with low level of education (primary school and below) to adhere to ARV medication is 0.8(80%) more than patient with high level of education (secondary school and above) (OR=0.2, P= 0.003)

4.2 Mentioned patient satisfaction on ARV services delivery at the clinics in Temeke Municipality

On the aspect of patients level of ARVs service satisfaction, 125(89.3%) out of 140 TB/HIV patients were impressed by the flexibility of service provided particularly during unscheduled visits, the results also showed that patients acknowledged availability of health care services at the clinic, 91% of the 140 respondents mentioned they are always attended by health care providers while pay visit to the clinics,

Of particular importance 119(91.5%) out of 139 respondents revealed that health information and education on ARVs medications are routine provided at the clinics, furthermore TB/HIV patients were also satisfied with the time spent at the clinics, 89% of the 135 respondents mentioned to spent less than one hour. See table 4 below

TABLE 3: Factors influencing clients' satisfaction on ARV service delivery at the clinics in Temeke Municipal Dar es Salaam, Tanzania

VARIABLE	SATISFIED WITH ARVs SERVICES		CHI-SQUIRE	P-VALUE
	YES (%)	NO (%)		
SERVICE DELIVERY FLEXIBILITY				
Yes	125(89.3)	15(10.7)	3.37	0.07
No	19(76)	6(24)		
SERVICE PROVIDER AVAILABILITY				
Always Available	125(91.2)	11(8.8)	30.78	0.00
Not Always Available	9(47.4)	10(52.6)		
HEALTH EDUCATION PROVIDED				
Yes	119(91.5)	11(8.5)	10.04	0.002
No	25(71.4)	10(28.6)		
WAITING TIME				
<= one hour	121(89.6)	14(10.4)	3.71	0.05
> one hour	23(76.7)	7(23.3)		

Further regression analysis study showed patients are 16.5 times more likely to be satisfied with ARVs services provided at the clinics if service providers are always available at the service units compared to when they are occasionally or not available at all ($P < 0.0001$).

If a patient is provided with adequate information on ARVs at the clinic, the likelihood of being satisfied is 5.5 times higher than a client not provided with adequate information regarding ARVs. See table 5 below

Table 4: Logistic regression analysis of factors affecting clients' satisfaction on service delivery at the clinic in Temeke Municipal Dar es Salaam, Tanzania

VARIABLE	OR	95% CONFIDENCE INTERVAL		P-VALUE
		Lower Limit	Upper Limit	
Service Providers Availability	16.5	4.974	54.621	0.000
Health Education Provided	5.5	1.788	16.942	0.003

4.3 Mentioned patient awareness and perception on ARVs medication affecting their uptake in Temeke Municipality.

With regard to patient awareness and perception on ARV medications, 134(81.2%) out of 165 patients who took ARVs medication had a knowledge that ARV has a health advantage while 44.4% of those 18 patients who were not on ARVs had similar perception.

On assessing awareness to whom is at most health risk between individual taking co-medications (TB and HIV drugs concomitantly) versus who is on single medication, 117(71%) out of 165 patients took ARVs medications understand taking single drug is more risk and can associate with negative health effects while 83% among those who not took ARVs did not understand who is at more risk

Furthermore among those who were not on ARVs medications, 8 (40%) out of 18 patients were undecided to when they will start ARVs medication while 30% mentioned they will start ARVs after completing TB treatment

On patient perception on integration of TB and HIV services under one unit, Majority of the patients 171(93.3%) out of 183 interviewed mentioned that there is an advantage of integrating TB and HIV services under one clinic where by all services are available from one point. Of the 180 respondents, 79(43.2%) held a perception that integrating TB/HIV services had help in reducing waiting time at clinics while twenty- six percent reported that it has improved the privacy and hence reduced stigma related to TB/HIV diseases.

Table 5: Mentioned awareness and perception of the TB/HIV patients affecting ARV uptake

VARIABLE	CURRENTLY ON ARV MEDICATION		CHI-SQUIRE	P-VALUE
	YES (%)	NO (%)		
ADVANTAGES OF ARVs				
Knowledgeable	134(81.2)	8(44.4)	12.62	0.00
Not knowledgeable	31(18.8)	10(55.6)		
AWARENESS ON WHO IS AT RISK BETWEEN TWO PATIENTS, ONE TAKING BOTH DRUGS OR ONE ON SINGLE DRUG				
*Knows who is at risk	117(71)	3(16.7)	21.15	0.00
Don't know who is at risk	48(29)	15(83.3)		

*Knows the risk is a respondent who understand taking single medication alone is dangerous to the health

On logistic regression analysis patients who know the advantages of ARV medication were 4 times more likely to adhere to ARVs uptake than those who don't know the advantages of ARVs medication (OR=3.9, P=0.02).

The chances of ARVs uptake increases 9 times if a patient with TB/HIV co-infections is aware that taking single medication is a risk as compared to clients who are not aware of that (OR= 8.9, P=0.001)

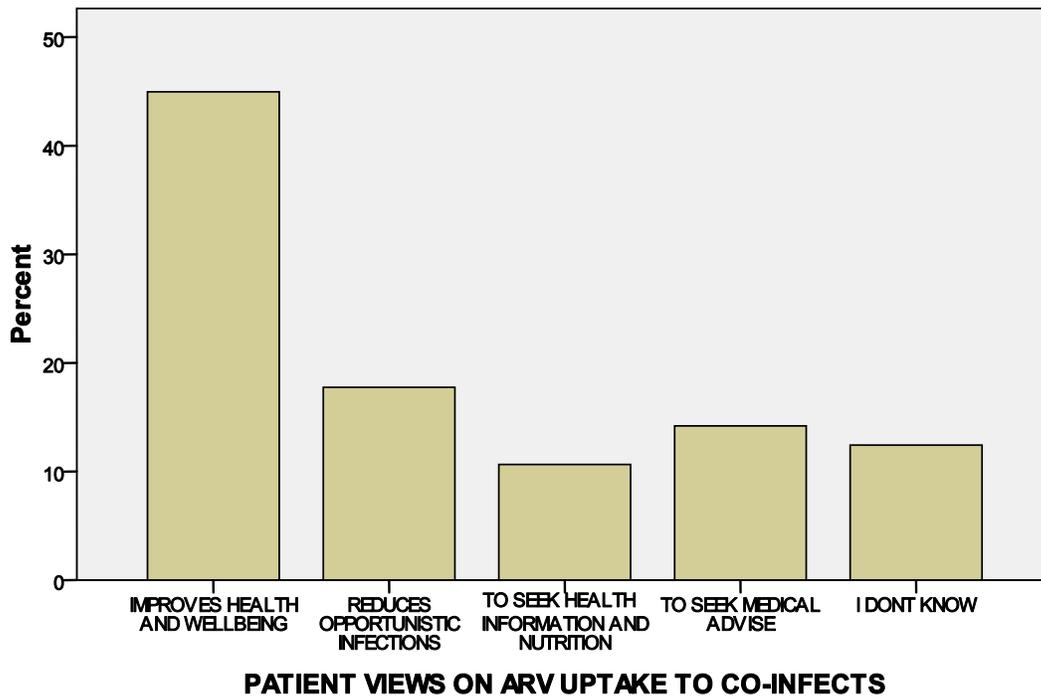
Table 6: Regression analysis of awareness factors affecting ARV uptake among TB/HIV patients

VARIABLE	OR	95% CONFIDENCE INTERVAL		P-Value
		Lower Limit	Upper Limit	
Knowledge on advantages of ARV medication	3.9	1.306	12.093	0.02
Knowledge on who is at risk	8.9	2.387	33.73	0.001

4.4 Perceived patients general knowledge and views on the use of ARVs medication

On measuring general knowledge of the TB/HIV patients, a total of 76(45.0%) out of 169 respondents mentioned ARVs improve health and well being of the patient , furthermore 30(16.4%) reported that ARVs help to reduce opportunistic infections which are commonly in immune compromised patients while eleven percent did not have any view with regard to role of ARVs.

Figure 3: Describe patient’s general views on ARVs medication in Temeke Municipality Dar es Salaam, Tanzania



CHAPTER FIVE

5.0 DISCUSSION

5.1 Socio – economic influence on ARVs uptake among TB/HIV co-infected

This study found that ARVs uptake among TB /HIV co-infected patients is high accounted for more than ninety percent among responded TB/HIV patients, this implies that ARVs uptake is substantial influenced by several factors including socio- economic, patient level of awareness and perception towards ARV medication and accessibility and availability of ARV health care package at the clinics.

The results showed that patient with lower level of education were more likely to adhere to ARV medications(80%) as compared to those with higher education[OR=0.2, P=0.003] these findings can be linked probably with the education and information on ARV provided at the clinics, further the study found that there is no relationship between level of income of the patient and ARVs uptake(P= 0.9) as compared to other study done in Malawi which found low income earners are associated with poor uptake ARVs medication among TB/HIV co-infected patients (Rony Z et al.2004) particularly due to increased costs of transport. Furthermore this study finding can be explained by decentralization of ARVs services and provision of free of charges for ARV which has help to reduce costs similarly study done in South Africa (Kerschberger B et.al 2009)

Furthermore the findings showed that marital status of the TB/HIV patient has no relationship with ARVs uptake (P=0.47), this can be explained by the increased community awareness and knowledge on HIV and TB diseases in both groups as also described in a compendium report for ARV community ,Knowledge and awareness in three Africans low income countries(ARCD 2007)

5.2 Accessibility and availability of ARV services

The findings showed that TB/HIV patient adherence to ARVs medication was highly influenced by the provision of health care package for ARV available at the clinics

5.2.1 Patients level of satisfaction to ARV services

The study found that majority (98%) of the TB/HIV patients are satisfied with health service provided at the clinics, particularly patient were impressed by the flexibility at the clinic that accommodate even unscheduled visits this is likely to be a strong factor associated with ARVs uptake among co-infected patients attending in these clinics. Of particular importance by data disaggregation patients from Kigamboni were 100% impressed probably due to relative low workload at the clinic

In additional to that decentralizing TB and HIV services to the periphery clinics also had increased the likelihood of acceptance and utilization of ARVs services among co-infected patients these findings are consistent with the study done in Cameroon (Nwarbebe NB et al.2007) that showed availability, accessibility and decentralization of ARV services at the point of health care delivery influenced ARV uptake among TB/HIV co-infected patients.

Of particular importance was a finding that availability of health care providers at the clinics all the time patients paid visits could also explained high percentage of ARVs uptake at these particular clinics.

With regard to health information and education related to ARV medications to TB/HIV patients, Majority (89.3%) of the patients who were on ARV medication were satisfied with the routine education sessions conducted at the clinics specifically they were impressed with topics covering care and support, prevention of HIV new –infections, nutrition as well as counseling on living positive among PLHIV, this finding describe level of knowledge imparted to TB/HIV patients attending clinics that have influence good uptake observed.

5.2.2 Integration of TB and HIV services under on clinic

WHO and MOHSW recommend integration of TB and HIV services for co-infected patients under one clinic (WHO; 2010). This study found that more than ninety percent of the TB/HIV patients understand and preferred these services under one -roof, this could an explanation for the increased ARVs uptake in these clinics, this finding is consistent with the study done in Uganda which showed integration of HIV and TB services resulted into improved TB treatment outcomes and earlier prioritized ARV initiation in large urban clinic (Hermans S M et al 2012), in other part this finding is against the study done in middle income country which showed that integrating TB/HIV services under one – roof is not a necessary factor to increase ARVs uptake (Nglazi M D et al 2010).

Furthermore the study found that integrating TB and HIV services under – one roof for TB/HIV co- infected patients had help to reduce patient waiting time at the clinic (43.9%) and improved privacy (26.7%), these findings explain the reason for increased ARVs uptake in Temeke municipal as other clinics which does not have these TB/HIV collaborative services have continued to experiencing stigma and prolong stays at clinics as well as high attrition rate (MOHSW –NTLP 2010).

Of importance waiting time at the clinic was a major factor contributing to increase ARVs uptake, the results found that majority (90%) of patients who are on ARV spent less than one – hour at the clinics on date of appointments, further statistical analysis showed that there is significant association between ARVs uptake and integration of TB/HIV services under one – clinic ($P=0.001$). These findings can be a true picture of the characteristics urban- situated patients where majority are time conscious thus accounting for their preferential to this integrative services.

5.3 Patient awareness and perception on ARV medications

Findings showed that patient level of awareness and perception on ARV medications among TB/HIV is high, 81.4% of the patients who took ARVs had a knowledge that ARVs has significant health benefits, this findings are consistently with the study done in rural Ghana where by most of the clients had good knowledge on ART and PMTCT regardless of their educational background (BMC health journal 2007), further by data disaggregation results showed that 46% had a knowledge that ARVs prolong life while 35.4% perceived ARV reduce episodes of recurrent opportunistic infections. This level of knowledge among TB/HIV patients could be sufficient enough to justify study findings and is comparable to the study done in South west Ethiopia which showed ARVs is high due to increased patient level of knowledge (Kabede A et al 2010)

On other part among those opted not to take ARVs, 40% were in dilemma, undecided to when they will start ARVs medications, while 27.8% preferred to start ARVs soon upon completion of TB medication these findings clearly indicated there are some patients who have low knowledge or information on ARVs medications which affects their uptake as similarly found in study done in low income country on related factors hindering accessibility and utilization of ARVs services (Tsiouris JS et. al. 2005).

Majority(71%) of the TB/HIV patients held a perception that patient taking a single medication (TB medication alone) can have more negative health consequences including recurrent TB and other opportunistic infections as compared to the one taking dual medications, this results could account for well observed adherence on ARV medication among TB/HIV co-infected patients.

On the patient general views with regard to ARVs use among TB/HIV co- infected, results showed that more than eighty – five percent were aware that ARVs improves quality of life and reduce chance of recurrent opportunistic infections while other perceived health information and educations on ARVs plus seeking medical advice from clinicians are important issues which influence uptake of ARVs. These high levels of awareness and

perception among TB/HIV patients on ARV medication are the hallmark of these study findings.

5.4 Study limitation

This study has several limitations, despite the fact the study have sufficient representation of TB/HIV population from three purposively selected health facilities in Temeke municipality, it is speculated that some TB/HIV patients who were not enrolled at these clinics (from periphery clinics) might have different characteristics that could have accounted differently, caution must taken in extrapolating the findings of the study in other place of the country.

Secondly, the study did not explore issues of stigma and discrimination in relation to ARVs uptake among TB/HIV co- infected patients, this could have different responses that could have give different findings, however the level of knowledge and perception of the patients was sufficient enough to mitigate this issue.

Lastly, the sample size of 183 participants was relative small as compared to other studies; however this is true picture of the characteristics of the TB/HIV patients in Temeke as the study taken into consideration representation of patients from all three big health facilities in the municipality.

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATIONS

6.1 CONCLUSION

The ARV uptake among TB/HIV co-infected patients in Temeke municipality is remarkable, the study extensively highlighted that patient level of awareness and perceptions towards ARVs and provision of health care package for ARV particularly commitment of the health care providers and constant availability of ARV drugs were the key factors that influenced uptake, furthermore educational background and gender of TB/HIV co-infected patients have none association with acceptance and utilization of ARV

Lastly the study suggests there is need for further search to explore on how different levels of stigma affect utilization of ARV among TB, HIV and TB/HIV co-infected patients at the institution and community level.

6.2 RECOMMENDATIONS

6.2.1 Management

The increased ARVs is shown to be associate with the integration of TB and HIV services under one roof , This calls for MOHSW and collaborative partners to scale – up nationwide these TB and HIV service under one umbrella.

6.2.2 Research

There is need for further studies to explore more on how stigma influences utilization of ARVs at facility and individual levels.

6.2.3 Community

Community sensitization and awareness campaigns on early initiation of ARV among TB/HIV co-infected and HIV patients need special emphases from all key stakeholders.

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APPENDIXES

Appendix 1: Informed Consent (English version)

**MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
SCHOOL OF PUBLIC HEALTH AND SOCIAL SCIENCES**



DIRECTORATE OF RESEARCH AND PUBLICATIONS

INFORMED CONSENT

ID - NO _____

Greetings,

My name is From the School of Public Health and Social Sciences at Muhimbili University of Health and allied Sciences

Purpose of the study

Low uptake of ARVs among TB/HIV co- infected patients is associated with increased morbidity and mortality, this study aim at exploring patient’s factors that influence ARVs uptake by studying socio- economic characteristics, Adherence and knowledge and perception of the TB/HIV patients.

Study Procedures

Provided you are agree to participate, you will be asked questions regarding uptake of ARVs at your own view, the importance and the consequences of taking ARVs furthermore the role of provider at the clinic that influence you on adherence

Risks and discomfort

There are no risks encountered while participating in this study

Benefit

There are a number of benefits you will acquire through participating in this study such as enriching your knowledge on ARVs medication understanding the importance of ARVs and clearing misconceptions associated with ARVs through asking questions

Incentives

There will be no incentives provided at this study

Confidentiality

The information you will provide will be strictly kept confidential and will be used only for study purposes furthermore no name will be written on the forms

Rights and Withdraw alternatives

Participation in this study is voluntary, you have a right to withdraw although we do not encourage because your views are of importance

Who to contact

This study proposal has been approved by the Muhimbili University of Health and Allied Sciences Research Ethical Review Committee. In case you wish to find out more about this study, please contact;

Dr. Allan N. Tarimo(+ 255 767666000) Ministry of Health and Social Welfare – Headquarters

Prof. K. S. Mnyika(+2552150302-6) Muhimbili University of Health and Allied Sciences

Consent for the study participation

I have read the above information, or it has been read to me, to the best of my knowledge, I understand the purpose of this study, I consent voluntarily to participate in this study and understand that I have the right to withdraw

Participant name

Signature /thumb print

.....

.....

Date

Place

Appendix 2: Informed Consent (Swahili Version)

**FOMU YA RIDHAA KUSHIRIKI KATIKA UTAFITI
CHUO KIKUU CHA TIBA NA SAYANSI YA AFYA MUHIMBILI**



KURUGENZI YA TAFITI NA UCHAPISHAJI

FOMU YA RIDHAA

Namba ya Utambulisho _____

Habari! Naitwakutoka Chuo Kikuu cha Tiba na Sayansi ya Afya Muhimbili nashughulika na utafiti huu wenye lengo kuchunguza vigezo vinavyochochea umezaji wa dawa za ARVs kwa wagonjwa wenye maambukizi mseto ya Kifua Kikuu na Ukimwi katika manispaa ya Temeke

Dhumuni la Utafiti

Kiwango kidogo cha umezaji dawa za kupunguza makali ya HIV/AIDS kwa wagonjwa wenye magonjwa mseto ya Kifua Kikuu na Ukimwi kimepelekea kuongezeka kwa athari nyingi ikiwemo Kifo kwa wagonjwa hawa, Utafiti huu una lengo la kubaini ni tabia zipi za wagonjwa zinazopelekea kiwango hichi kuwa kidogo kwa kuangalia ufuasi wao wa dawa, uelewa na tafsiri ya mgonjwa kuhusu dawa za kupunguza makali na pia kuangalia uhusiano kati ya mtoa huduma na mgonjwa katika Kliniki zinazotoa huduma hizi.

Pia katika kutimiza matakwa ya Shahada ya Uzamili ya sdera ya Afya na usimamizi ya Chuo kikuu cha Afya na Sayansi ya Tiba Muhimbili

Kushiriki Utafiti

Pindi utakapokubali kushiriki , utaulizwa maswali kuhusu umezaji wa dawa za kupunguza makali za ARVs, faida na athari zake na namna mtoa huduma anavyochangia kukufanya umeze dawa hizi

Hatari

Hatutegemei kuwepo kwa athari zozote kwa wewe kushiriki utafiti huu

Faida

Kushiriki kwako zoezi hili kutakuwezesha kuuliza maswali yoyote yahasuyo umezaji wa dawa za ARVs na pia kuondoa mitazamo hasi uliokuwa nayo kuhusu matumizi ya dawa hizi.

Zawadi

Hutapewa zawadi yoyite kwa kushiriki utafiti huu

Kujitoa

Kushiriki katika utafiti huu ni hiari yako, unaweza kuhamua kutojibu baadhi ya maswali, unaruhusiwa kujitoa muda wowote ingawa hatutarajii hivyo kwa kuwa maoni yako ni muhimu sana katika utafiti huu.

Kwa mawasiliano zaidi

Utafiti huu umepitishwa na Kamati ya maadili ya Utafiti ya Chuo Kikuu cha Afya na Tiba cha Muhimbili S.L.P 65001. Ukitaka kufahamu zaidi kuhusu utafiti huu tafadhali wasaliana na Dkt. Allan N. Tarimo(+255 767 666000) Wizara ya Afya na Ustawi wa Jamii – Makao Makuu Prof. K.S Mnyika((+2552150302-6) Chuo kikuu cha Afya na sayansi ya Tiba – Muhimbili

Ridhaa ya Kukubali kushiriki

Nimesoma au nimesomewa maelezo hapo juu , kwa uelewa wangu nimeelewa madhumuni ya utafiti huu , nakubali kushiriki kwa hiari yangu katika utafiti.

Jina la Mshiriki

.....

Sahihi /Dole Gumba

.....

Appendix 3: Questionnaire (English Version)

Please circle the appropriate response

Questionnaire on factors influencing Anti-retroviral uptake among TB/HIV co- infected patients attending TB/HIV clinics in Temeke municipality

Questionnaire code _____ Name of R.A _____

Date of Interview _____

Name of health Facility _____

PART ONE: SOCIO-DEMOGRAPHIC INFORMATION AND CLINICAL INFORMATION

1. Patients serial no.....

2. Age: () in years

3. Sex

(a) Male (b) Female

4. Marital status

(a)Married (d) Single (c) Widow (d) separated (e) cohabit

5. What is level of education did you attain?

(a)None (b) Primary school (c) Secondary school (d) Adult education (e) higher education

6. What is you occupation?

(a)Petty trader (b) Peasant (c) civil servant (d) self employed

(e) Fishermen (e) Jobless (f) other (specify).....

7. How much T.shs do you earn per day?

(a) 100 - 1000 (b) 2000 – 5,000 (c) 6000 – 10,000 (d) 11,000 - onward (e) none

8. When did you diagnosed from Tuberculosis disease?

(a) one weeks ago (B) two months ago (c) three months ago (d) four –six months ago

9. For how long where you on TB medications?

(a) Less than two weeks (B) (c) one month (d) two months

(e) three months (f) more than four months (g) not on medication (stopped)

10. When did you tested positive for HIV?

(a) less than one month (b) less than three months (c) less than six months

(d) More than one year (e) I don't know

11. When did you diagnosed from TB and HIV/AIDS diseases?

(a) Less than two weeks (B) two – three weeks ago (c) one – two months ago

(d) More than three months (e) other (specify).....

12. Are currently on both TB and HIV medications?

(a) Yes (b) No, only on TB medication (c) None of them

13. If no why?

(a) Not important for now (b) fear of side effects (c) not yet decided (d) other specify.....

14. Who did you share this clinical information with?

(a) Spouse (b) close friend (c) Close relative (d) None (e) other specify.....

15. Are you currently taking ARVs?

(a) Yes (b) No if no go to Part four

16. Where do you take ARVs?

(a) At home (b) At Facility (c) at Work (d) Other (specify).....

17. Are ARVs regular available at the facility?

(a) Yes (b) No, often shortage (c) other specify

PART TWO: PATIENT- PROVIDER RELATIONSHIP AT THE CLINIC

18. Are you satisfied with the ARVs services provided at the clinic?

(a) Yes (b) No if no go to part four

19. If Yes, to what extent?

(a) Large (b) Moderate (c) Small (d) none

20. Are Health care providers available daily and timely at the clinic?

(a) Very often (b) occasional (c) very rare (d) Not available (e) other specify.....

21. Does health care providers provide you with adequate information and education with regard to ARVs treatment?

(a)Very often (b) Occasional (c) Not all (d) other specify.....

22. How long does it take to get ARVs services at the clinic?

(a) Less than 15mins (b) Half an hour (c) one hour (d) More than one hour

23. Is it possible for you to get ARVs services during unscheduled visits?

- (a) Very possible (b) possible with difficulties (c) Not possible at all

24. Have you ever experienced use of abusive language from the provider's while attending the clinic?

- (a) Very often (b) Occasional (c) very rare (d) Never

PART THREE: PATIENT KNOWLEDGE AND PERCEPTION ON ARV MEDICATION

25. Why did you decided not to take ARVs?

- (a) Has potential side effects (b) taking two medicines at once is dangerous
- (c) I will take later after complete TB treatment (d) Not Yet decided (e) other specify.....

26. Do you know the advantage of taking ARVs to your health?

- (a) Yes (b) No..... if No go to Q.28

27. If yes what are the advantage of ARVs

- (a) Quick recovery from illness (b) reduced frequency sickness (c) you can work normal
- (d) Prolong life (e) other specify

28. What are the health disadvantages of taking ARVs?

- (a) Increased side effects (b) pill burden can harm you (c) severe exhaustion from medications
- (d) Other specify.....

29. Who is at more risk patient who takes ARVs and anti-TB or who take TB medication only?

- (a) Taking single medication (b) Taking two medications (c) both at the same risk
- (d) None at is at risk (e) I don't know

30. Do you think integrating TB and HIV services under one clinic have a benefit to the patient?

- (a) Yes (b) No go to Q.31

31. If yes what are those benefits?

- (a) Reduced time spent at the clinic (b) services are reliable (c) more privacy is observed (d) other specify

32. If No what are the disadvantage of integration?

- (a) congested clinic (b) increased stigma (c) frequent shortage of drugs (d) other specify.....

33. What are you view with regard to ARVs medication?

Thank you for your participation.

Appendix 4: Questionnaire (Swahili Version)

Dodoso : Vigezo vinavyochochea umezaji wa dawa za kupunguza makali (ARVs) kwa wagonjwa wenye magonjwa mseto ya Kifua Kikuu na Ukimw Manispaa ya Temeke

Namba ya Dodoso _____ Jina la anayejaza dodoso _____

Tarehe ya Mahojiano _____

Jina la Kituo _____

SEHEMU YA KWANZA: TAARIFA ZA UTAMBULISHO NA UGONJWA

1. Namba ya Mgonjwa

2. Umri () Andika Miaka

3. Jinsia

(a) Kiume (b) KiKe

4. Hali ya Ndoa

(a) Nimeoa/Nimeloewa (b) Sijaoa / Sijaolewa (c) Mjane

(d) tumetangana (e) Tunahishi Kinyumba

5. Kiwango chako cha elimu?

(a) Shule ya msingi (b) Elimu ya Sekondari (c) Elimu ya watu wazima

(d) Elimu ya Juu (e) sijasoma

6. Unafanya shughuli gani?

(a) Biashara ndogondogo (b) Mkulima (c) Mtumishi wa umma (d) Nimejiari

(e) Mvuvi (f) Sina kazi (f) Mengineyo elezea.....

7. Kipato chako kwa siku ni Kiasi gani ?

- (a) 100 – 1000 (b) 2000 – 5000 (c) 6000 – 10,000 (d) 11,000 na zaidi

8. Lini Uligundulika na Kifua Kikuu

- (a) Wiki moja iliyopita (b) Mwezi mmoja uliopita (c) Miezi miwili iliyopita
(d) Miezi mitatu iliyopita (e) zaidi ya miezi mine ilyopita

9. Ni kwa muda gani upo katika matibabu ya Kifua Kikuu?

- (a) Wiki moja iliyopita (b) Mwezi mmoja uliopita (c) Miezi miwili iliyopita
(d) Miezi mitatu iliyopita (e) zaidi ya miezi mine ilyopita

10. Ni lini Ulipima na kugundua unamaambukizi ya VVU?

- (a) Mwezi Mmoja uliopita (b) Miezi mitatu iliyopita (c) Miezi sita iliyopita
(d) Zaidi ya Mwaka Mmoja (e) Sikumbuki

11. Ni lini uligundulika na maambukizi mseto ya Ukimwi na Kifua KiKuu?

- (a) Wiki Mbili zilizopita (B) Mwezi mmoja uliopita (c) Miezi miwili iliyopita
(d) Zaidi ya Miezi mitatu (e) Mengineyo, elezea.....

12. Kwa sasa unatumia dawa zote za Kifua Kikuu na Ukimwi?

- (a) Ndio (b) Hapana , Natumia za Kifua Kikuu pekee (c) Situmii dawa zozote

13. Kama Hapana, Kwanini hutumii?

- (a) sioni umuhimu kwa sasa (b) zina madhara mengi (c) Bado sijahamua (d) Mengineyo
eleza.....

14. Nani ulimshirikisha taarifa za ugonjwa wako?

- (a) Mwenzangu (b) Rafiki yangu wa Karibu (c) Ndugu yangu wa Karibu
(d) Hakuna (e) Mengineyo elezea.....

15. Unatumia dawa za ARVs?

- (a) Ndio (b) Hapana Kama hapana nenda sehemu ya nne

16. Dawa hizi unamezea wapi?

- (a) Nyumbani (b) Kliniki (c) Kazini (d) Mengineyo, elezea.....

17. Dawa hizi zinapatikana kwa uhakika katika kliniki hii?

- (a) Ndio (b) Hapana (c) mengineyo elezea

**SEHEMU YA PILI: UHUSIANO KATI YA MGONJWA NA MTOA HUDUMA
KATIKA KLINIKI**

18. Unaridhishwa na utoaji wa huduma za ARVs katika kliniki hii?

- (a) Ndio (b) Hapana , Kama Hapa nenda sehemu ya nne.....

19. Kama ndio, Ni kwa Kiwango gani unaridhishwa na huduma hizi?

- (a) Kiwango Kikubwa (b) Kiwango cha kati (c) Kiwango cha chini

20. Watoa huduma katika Kiliniki hii wanapatikana Kila wakati unapofika ?

- (a) Mara kwa mara (b) Mara chache (c) Mara chache sana (d) hawapatikani kabisa
(e)Mengineyo elezea.....

21. Watoa huduma wanawapatia taarifa na elimu kuhusu utumiaji wa dawa za ARVs?

(a) Mara nyingi (b) Mara chache (c) hatupatiwi kabisa (d) Mengineyo,
elezea.....

22. Inachukua muda gani kwa wewe kupata huduma za hizi pindi unapofika kliniki hii?

(a) Chini ya robo saa (b) Nusu saa (c) Saa nzima (d) Zaidi ya saa moja

23. Je inawezekana kwa wewe kupatiwa huduma hizi katika tarehe usiopangiwa?

(a) Inawezekana kabisa (b) Inawezekana japo kwa ugumu (c) Haiwezekani kabisa

24. Je umewahi kusikia lugha za dharau au matusi kutoka kwa watoa huduma katika kliniki hii ?

(a) Mara kwa mara (b) Mara chache (c) kwa Nadra sana (d) sijawahi kusikia

SEHEMU YA TATU: UELEWA NA UFAHAMU WA MGONJWA KUHUSU DAWA ZA ARVs

25. Kwanini uliamua kutotumia dawa hizi za ARVs Kwa pamoja na za Kifua Kikuu?

(a) Zina Athari kubwa kwa afya (b) Kutumia dawa za aina mbili kwa wakati mmoja ni hatari

(c) Nitatumia baada ya kumaliza hizi za Kifua Kikuu (d) Bado sijahamua (e) Mengineyo
elezea.....

26. Je unafahamu faida zozote za kutumia dawa za ARVs?

(a) Ndio (b) Hapana..... Kama Hapana nenda swali la.28

27. Kama ndio nini faida ya Kutumia dawa hizi?

(a) Zinakuweshia kupona kwa haraka (b) Inapunguza kuugua mara kwa mara

(c) zinakuwezesha kufanya shughuli zako za kila siku (d) Zinarefusha maisha (e) mengineyo elezea

28. Je unafahamu athari zozote za kiafya zinazotoka na kutumia ARVs na dawa za TB ?

- (a) Kuongezeka kwa maudhi/athari zitokanazo na dawa
- (b) Dawa nyingi kwa pamoja zinaweza kudhuru mwili wako
- (c) zinachosha sana na kushindwa kufanya kazi
- (d) mengineyo eleza.....

29. Kwa Mtazamo wako ni mgonjwa gani yupo katika hatari zaidi ya kiafya kati ya anayemeza dawa zote mbili kwa pamoja au amezaye za Kifua Kikuu tu?

- (a) Anayemeza za Kifua Kikuu tu (b) Anayemeza zote mbili kwa pamoja
- (c) Wote wako katika hatari (d) hamna aliyekatika hatari (e) Sifahamu

30. Je Unadhani kuunganisha huduma hizi za ARVs and TB kwa pamoja kuna faida yoyote?

- (a) Ndio (b) Hapana..... Kama hapana nenda swali la 31

31. Ni faida zipi zinapatikana kwa kuunganisha huduma hizi?

- (a) Inapunguza muda wa kukaa kliniki (b) Huduma zimekuwa za uhakika zaidi
- (c) Usiri kati ya mgonjwa na mtoa huduma umeongezeka (d) Mengineyo eleza

32. Je nini athari za kuunganisha huduma hizi?

- (a) Imeongeza msongamano katika kliniki (b) Unyanyapaa umeongezeka
- (c) Dawa hazipataikani mara kwa mara (d) Mengineyo elezea.....

33. Kwa Kifupi nini Mtazamo wako kuhusu matumizi ya dawa za ARVs kwa wagonjwa wenye maambukizi mseto?