TUBERCULOSIS AND HIV/AIDS CO-INFECTION RELATED AWARENESS, ATTITUDE AND PRACTICES: A CASE STUDY IN TUNDURU DISTRICT

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By

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A Dissertation Submitted in Partial Fulfillment 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

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CERTIFICATION

The undersigned certifies that he has read and hereby recommends for acceptance by Muhimbili University of Health and Allied Scienc**es** a thesis / dissertation entitled: ***Tuberculosis and HIV/AIDS co-infection related awareness, attitude and practices: A case study in Tunduru District***, presented in partial fulfillment of the requirements for the degree of Master of Public Health of Muhimbili University of Health and Allied Sciences.

_____

Prof. K. S Mnyika MD, MSc, PhD

(Supervisor)

Date: _____

DECLARATION

AND

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I, **Alex Mathayo Kazula**, declare that this **dissertation/thesis** is my own original work and that it has not been presented and will not be presented to any other university for a similar or any other degree award.

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DEDICATION

I dedicate this work to my lovely wife Theresia D. Nanguka and son Andrew A. Kazula who endures my long absence. Your prayers, support and patience have eventually seen me through.

I also would like to dedicate this work to my parents who made me the person I am today.

ABSTRACT

Background: It is estimated that up to 50% of people who are living with HIV were also infected with TB. Tuberculosis is among the most important infectious diseases in Tanzania with a high mortality, especially among the HIV infected individuals. The number of tuberculosis cases has increased from 11,753 in 1983 to 62,092 in 2006; a five-fold increase due to HIV pandemic. It has been found that the community perception and awareness of TB and HIV/AIDS co-infection may influence early health seeking behavior and hence control of TB and HIV/AIDS in the community.

Objective: The main objective of this study is to explore community awareness, attitude and practice towards prevention of TB and HIV/AIDS co-infection in the general population of Tunduru District.

Methodology: A descriptive cross sectional study using quantitative techniques was conducted in Tunduru district council. Four divisions, eight wards and one village in each particularward were selected using multi stage cluster sampling techniques. Inclusion criteria was all people aged 18 years and above. A semi structured interviewer administered questionnaires were used as an instrument to assess information of TB and HIV awareness, attitude and practices.Data were analyzed by descriptive statistics. Adjusted odds ratios (aOR) and 95% confidence intervals (95% CI) of potential determinants of TB and HIV awareness, attitude and practices were estimated by multivariable logistic regression using SPSS version 16.0 software.

Results: Awareness of symptoms of TB in HIV patients was found to be higher for individuals who were employed. The findings also show that individuals above 25 years old, male, employed and able to read and write were reported to have positive attitude towards TB and HIV co-infection. Furthermore the findings revealed that individuals who were married were more likely to practice cough hygiene as preventive measure of TB. Finally study

established statistically significant association between HIV testing and gender, age, level of education and employment statusamong respondents.

Conclusion and Recommendation: The study findings revealed that those individuals who had never attended formal education, younger generation and unemployed had poor practices, awareness and negative attitude towards TB and HIV co-infection. This calls for innovative action to reach those with limited writing and reading skills through TB/HIV drama, verbal and pictorial messages as part of a comprehensive ACSM strategy. Furthermore, an effort to educate younger generation and unemployed is needed. I strongly recommended planning a program to bring desired change in awareness, attitude and practices based on socio-cultural context of the society.

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LIST OF ABBREVIATIONS/ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
ACSM	Advocacy Communication and Social Mobilization
BC	Before Christ
CDC	Centres for Disease Control
HIV	Human Immunodeficiency Virus
MoH&SW	Ministry of Health and Social Welfare
PLWHA	People living with HIV/AIDS
RMO	Regional Medical Officer
SPHSS	School of Public Health and Social Science
SS+	Sputum Smear Positive
TACAIDS	Tanzania Commission for AIDS
TB	Tuberculosis
UNAIDS	United Nation Programme for HIV/AIDS
WHO	World Health Organization

CHAPTER ONE

1.0: INTRODUCTION

1.1 Background

HIV means Human Immunodeficiency Virus. This is themicroorganism (virus) that causes AIDS(Acquired Immune DeficiencySyndrome) which refers to a conditionthat occurs when the host's body immunesystem has been weakened by the virus. It was estimated that 40 million people thought to be living with HIV worldwide.An overwhelming global HIV burden affects low- and middle income countries, where 95% of people living with HIV reside (WHO, 2001).According to the United Nations Secretary General, HIV is the greatest challenge of our generation (UNAIDS, 2006). It is a serious global threat particularly for people living in developing countries especially for women and adolescents (Olaitan *et al*., 2009).

In sub-Saharan Africa, an estimated 22.5 million people were living with HIV/AIDS in 2009.In 2011 it was estimated that the prevalence of HIV/AIDS is 5 percent of Tanzanian adults age 15-49, prevalence is higher among women than among men (6 percent and 4 percent, respectively). HIV prevalence is higher in urban areas than in rural areas (7 percent versus 4 percent), and is higher in Mainland Tanzania (5 percent) thanin Zanzibar (1 percent) (UNAIDS, 2010;TACAIDS, 2013).

Tuberculosis (TB) on the other hand is an infection caused by bacteria called *Mycobacterium tuberculosis*. The organism has been present in the human population since antiquity. Fragments of the spinal column from Egyptian mummies from 2000 BC show definite pathological signs of tuberculosis decay. On March 24 1882 Robert Koch discovered that TB is caused by *Mycobacterium tuberculosis*(Lawal*et al.,* 2005).Approximately two billion people worldwide have an agent that cause tuberculosis. TB remains one of the leading causes of death from infectious disease. Each year, approximately 9 million persons around the world

become ill with TB, and nearly 2 million TB related deaths occur worldwide (CDC, 2010). About 95%of the cases of tuberculosis occur in developing countries while 75% of these affect 15 – 50 age groups(Eddleston *et al*.,2002).If left untreated, each person with active TB can infect on average between 10 to 15 other persons in a year. Likewise 2/3 persons who don't get treatment will die (WHO, 2010b).It has been found that Tanzania ranks 14th among the world's 22 countries with the largest TB burdens. Treatment success has slowly increased toward the WHO global target of 85 percent through improved quality of services and evaluation. Of the 130,606 new TB cases in 2004, 55,435 were sputum smear-positive (SS+). However, the detection rate for new SS+ TB cases remains low at 47 percent, well below the WHO global target of 70 percent (WHO, 2002).

Tuberculosis and HIV/AIDS co-infections on the other hand is a situation where an individual is suffering from both HIV/AIDS and tuberculosis infections at the same time (Eddleston *et al*., 2002).The dual epidemics of TB and HIV/AIDS remain significantly global public health problems. In 2011, there were an estimated 8.7 million new cases of TB (13% co-infected with HIV) and 1.4 million people died from TB, including almost one million deaths among HIV-negative individuals and 430 000 among people who were HIV-positive. TB is one of the top killers of women, with 300 000 deaths among HIV-negative women and 200 000 deaths among HIV-positive women in 2011(WHO, 2012).The risk of progressing from latent to active TB is estimated to be between 12 and 20 times greater in people living with HIV than among those without HIV infection. Up to 50% of people who are living with HIV were also infected with TB will developTB disease during their lifetimes, compared with 5%–10% of HIV-uninfectedpersons (WHO, 2012). Both TB and HIV have been declared global emergencies demanding global attention. The World Health Organization (WHO) declared TB to be a global emergency in 1993, and the United Nations (UN) declared HIV/AIDS to be a global emergency in 2001. UN member countries and other international organizations have committed themselves to address the TB and HIV/AIDS crises with urgency (WHO, 2002).

TB is a major cause of death for PLHIV worldwide, particularly in sub-Saharan Africa where 80% of HIV-positive TB cases live. It has been found that, fourfold rise in TB cases related to the HIV epidemic has been reported. Among ~9.27 million incident cases of tuberculosis (TB) in 2007, 2.88 million were in Africa, where 38% of persons with TB were co-infected with HIV (WHO, 2009). The reported number of TB cases in Tanzania has increased five-fold from 11,753 in 1983 to 62,092 in 2006, and the majority of the cases occurred in young adults (15-44 years), the same age group which is mostly affected by HIV/AIDS (MoH&SW, 2006). In Tanzania, the HIV prevalence among new smear-positive TB patients has also increased from 28% in 1991-1993 to 40% in 1994-1998 (Range*et al.*, 2001).

TB is the most common treatable HIV-related disease and a leading killer of people living with HIV/AIDS (PLWHA). As a consequence, a close synergy between TB and HIV/AIDS control programme is vital requirement (Hargreaves*et al.*, 2003).It has been found that the community perception and knowledge may influence early health seeking behavior and hence control of TB in the community (Munro*et al.*, 2007). This is because TB is a contagious and stigmatizing disease that may elicit fear and avoidance rather than sympathy. This results in patient isolation during treatment by the community and sometimes the family in view of the risk of infection (Jaramillo *et al.*, 1998; Nair*et al.*,1997). Also there is community perception that TB and HIV are the same disease, this might influence treatment seeking behaviour and adherence to treatment (Alwood*et al.*, 1994; Alport *et al.*, 1997).Numerous studies have proved that lack of knowledge is likely to prevent appropriate positive healthcare seeking behaviors (WHO, 2009). Like other chronic illness, appropriate knowledge towards Tuberculosis (TB) and HIV/AIDS was significantly associated with positive healthcare seeking action (Hoa *et al.*, 2003). Community awareness on TB/ HIV co-infection was found to be very crucial in prevention of TB and HIV/AIDS co-infection (Deridew A *et al.*, 2010).Knowledge and perception towards TB and HIV is associated with global burden of TB and HIV because if the general population doesn't think that TB is curable in HIV patients, they will not seek care if they are HIV positive (or will not encourage their HIV positive friends to seek treatment), accepting the perceived fatality of the condition (Okello *et al.*, 2007). As a result many people will be infected with tuberculosis.

With regards to knowledge of the relationship between Tuberculosis and HIV infection, several studies have been conducted. In a study conducted in Ilorin Nigeria, it was found that less than half of the respondents (41.7%) knew that TB increases the progression of HIV/AIDS, likewise 42.0% of the respondents reported that HIV/AIDS increases the progression ofTB while 46.2% of the respondents reported that there is reciprocal interaction between HIV/AIDS and TB. Moreover,22.2% of participants noted that it is not easy to detect HIV/AIDS and TB co-infections and 38.5% of respondents reported that HIV/AIDS and TB co-infections are not curable while 48.6% of respondents reported thatTB and HIV co-infection is treatable(Olaitan*et al*., 2011). In some other studies conducted in Uganda it was found that community knowledge on TB/HIV co-infection was low as 22% of the participants believed that TB was synonymous with having HIV/AIDS and it was a common perception that all TB patients are HIV positive (Buregyeya *et al*., 2011). Furthermore, the study conducted in Simanjiro, Tanzania found that most participants believe that HIV and TB were the same disease; others indicated that TB and HIV were caused by eating infected food (Haasnoot *et al.,* 2010). This may detrimentally affect TB treatment if HIV negative individuals believe they cannot get TB and so don't seek care. Having a level of Secondary education or higher education and living in a permanent house with concrete walls were both significantly related to higher TB/HIV co-infection knowledge (Mangesho*et al*., 2007; Haasnoot *et al*., 2010). There is a strong misperception about treatment of co-infected patients; 28% of people did not know that TB can be cured in HIV patients (Moller *et al.,* 2007; Jane*et al*., 2010).In several studies it has been found that people have a general idea of what TB is and know that it is treatable. Gaps in knowledge, however, surround transmission prevention, and the relationship between HIV/AIDS and TB was large (Haasnoot *et al*., 2010).

It has been documented that researches that acknowledges social, economic, cultural and geographical contexts are necessary to the impact of traditional beliefs and perceptions on TB and HIV/AIDS co-infection and wellness on adherence(Olaitan *et al*., 2011). Such researches are still very few (Vermeire *et al*., 2001). Achieving a high level of TB and HIV/AIDS co-

infection awareness is crucial for the success of prevention and treatment efforts in high risk populations and represents a key challenge for public health initiatives (Mangesho*et al.*, 2007).

1.2 Statement of problem

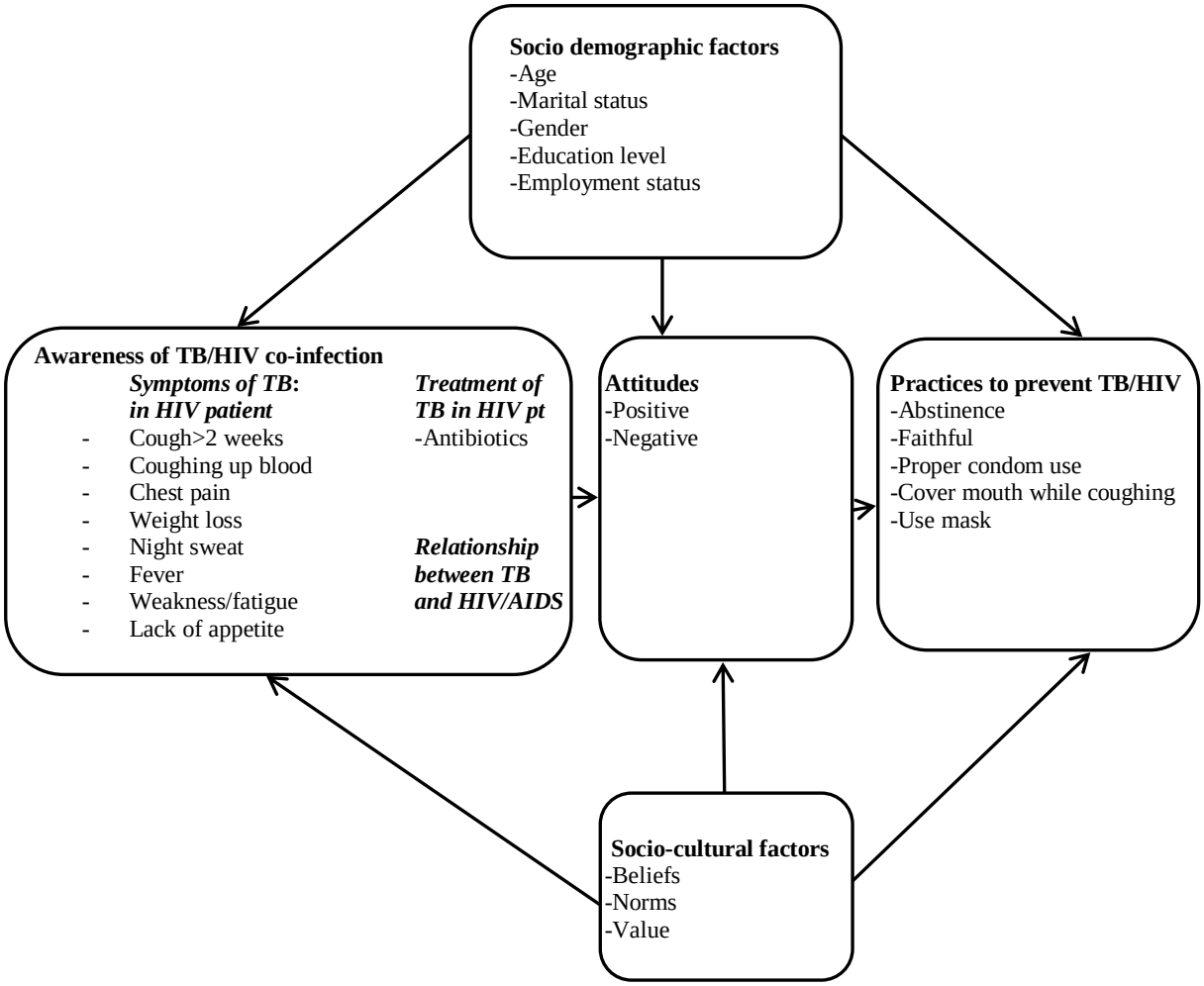
Community awareness and beliefs towards TB and HIV/AIDS co-infection and health have significant impact on health seeking behaviour and treatment outcomes(Jane *et al*., 2010). Perceived knowledge on the causes of TB has been found to influence transmission of the disease, and certain beliefs may result in failure to recognize symptoms and thus delay diagnosis(Mangesho *et al*., 2007).While this biological and epidemiological interconnectedness of TB and HIV has been increasingly taken into account in health systems and disease control programs, very little discussion has focused on the community perceptions of TB and HIV co-infection and the implications of community dialogue on TB control(Bond *et al*., 2006).When explanatory models of individuals are conflicting with those of healthcare providers, there is a lack of congruence in beliefs and practices leading to poorer patient adherence to recommendations and management of illness thereby resulting in poorer patient outcomes(Kleinman*et al*., 1978). Perceptions around disease and ill health, not just of patients but of family, friends, and general community members, have been identified as important factors influencing health seeking behaviour (Okello*et al*., 2007).

It has been shown that several studies conducted in Tanzania established knowledge, perception and attitude towards TB and only relationship between TB and HIV(Haasnoot *et al*.,2010; Mangesho et al.,2007; Kilale et al., 2008).Moreover, studies conducted in several parts of Africa recommended the need of establishing evidence based approaches to prevent and control TB during HIV era based on cultural, social, economic and geographical contexts (Owiti *et al*., 2008;Olaitan *et al*., 2011; Deridew A *et al*,.2010; Buregyera *et al.,2011;*Edginton *et al.*,2002).

Therefore the purpose of this study is to explorecommunity's awareness on understanding of symptoms, treatment and prevention of TB/HIV co-infection. Furthermore, my study will explore community's attitude and practices in order to make strategies to control TB and HIV in rural underserved area like Tunduru since limited information is available.My study will also stimulate further studies on TB and HIV/AIDS co-infection related awareness, attitude and practice.

1.3Conceptual Framework

Conceptual framework for Tuberculosis and HIV/AIDS co-infection related awareness, attitude and practices in Tunduru District, Southern Tanzania



Description of components of the framework

The framework explains the factors which influences awareness, attitude and practices of the respondents towards prevention and control of TB and HIV co-infection. Awareness can be explained by individuals who were aware of symptoms of TB in HIV co-infection like cough of more than 2 weeks, cough up of blood, chest pain, fever, nightsweat, weight loss, weakness/fatigue and lack of appetite. Also if an individual is aware of the fact that TB can be treated in HIV/AIDS patients by using antibiotis (anti TB drugs) and relationship between TB and HIV infections. On the other hand attitude of respondents towards TB and HIV co-infection can either be positive or negative. Likewise, factors such as abstinence, be faithful, proper condom use, cover the mouth while coughing were reported as practices towards prevention and control of TB and HIV infections. It has been shown that community awareness of TB and HIV co-infection has an implication on attitude of an individual, likewise attitude influences the degree of practices towards control and prevention of TB and HIV co-infection.

The framework assumes that awareness, attitudes and practices towards TB and HIV co-infection can be influenced by several factors in the community. Socio-demographic factors like age, marital status, gender, employment status and education level were documented to influence awareness, attitude and practices of TB and HIV co-infection. Moreover, socio-cultural factors like beliefs, norms and value were found to influence community attitude, practices and awareness of TB/HIV co-infection.

1.4Research questions:

1.4.1 Main Question:

1. What is the level of awareness,attitude and practicethe community members have towards TB/HIV co-infections?

1.4.2 Specific questions

1. What proportion of community members who know the symptomsof TB in HIV/AIDS patient?
2. What proportion of community members who know thatTB can be treated and cured in someone withHIV/AIDSinfection?
3. What proportion of community members who know relationship between TB and HIV/AIDS co-infection?
4. What attitude the community members have towards TB and HIV/AIDS co-infection?
5. What proportion of community members who practice preventive measures towards TB and HIV/AIDS co-infection?

1.5Objectives:

1.5.1 Broad Objective:

1. To assess community awareness, attitudes, and practice of community towards TB and HIV/AIDS co-infection in Tunduru district by June 2013

1.5.2 Specific Objectives:

1. To determine proportion of community members who know symptoms of TB inHIV/AIDS patient in Tunduru District.
2. To determine proportion of community members who know that TB can be treated and cured in someonewith HIV/AIDS infection in Tunduru District.

3. To determine proportion of community members who know relationship between TB and HIV/AIDS co-infection in Tunduru District.

4. To determine the attitude of community members towards TB and HIV/AIDS co-infection in Tunduru District.

5. To determine what proportion of community members who actually practice preventive measures on TB and HIV/AIDS co-infection in Tunduru District.

1.6 Rationale

The study aimed at generating new information of awareness, attitude and practice about TB and HIV/AIDS co-infection in the general population of Tunduru District.This will eventually allow the District Health Management Team and health care providers to tailor services to the specific needs of the patients as well as community and hence provide new insights into early health care seeking behavior and later on reducing morbidity and mortality due to TB and HIV/AIDS co-infection. Furthermore, my study was conducted in partial fulfillment of the requirements for degree of Master in Public Health.

CHAPTER TWO

2.0 LITERATURE REVIEW

It was estimated that 40 million people thought to be living with HIV worldwide. An overwhelming global HIV burden affects low- and middle income countries, where 95% of people living with HIV reside (WHO, 2001). In sub-Saharan Africa, an estimated 22.5 million people were living with HIV/AIDS in 2009.In 2011 it was estimated that the prevalence of HIV/AIDS is 5 percent of Tanzanian adults age 15-49 (UNAIDS, 2010; TACAIDS, 2013). Approximately two billion people are living with TB worldwide. There were an estimated 0.5 million TB cases and 64 000 deaths among children in 2011 (CDC, 2010). About 8 – 10 million people develop the overt disease annually while about 3 million die annually (Eddleston *et al.*, 2002).

The dual epidemics of TB and HIV/AIDS remain significantly global public health problems. In 2011, there were an estimated 8.7 million new cases of TB (13% co-infected with HIV) and 1.4 million people died from TB, including almost one million deaths among HIV-negative individuals and 430 000 among people who were HIV-positive. (WHO, 2012).

Studies in different countries report that knowledge about TB and HIV co-infection is affected by socio-economic variables (Hoa NP *et al*., 2004; Ouedraogo M *et al*.,2006; Somma D *et al*., 2008), low awareness (Mesfin MM *et al*.,2009; Ayuo PO *et al*.,2008; Needham DM et al.,2001), attitude (Johansson E*et al*.,2000; Long NH *et al*., 1999), income (Chang CT *et al*.,2007), rural residence (Mesfin MM *et al*.,2009), illiteracy (Mesfin MM *et al*.,2009), gender (Needham DM et al.,2001;Yimer S *et al*., 2007; Yimer S et al.,2009), marital status (Ayuo PO *et al*.,2008) and distance to the clinic (Ayuo PO *et al*.,2008; Yimer S *et al*., 2007) were reported to affect the health care seeking behavior (Shetty N *et al*., 2000; Getahun H *et al*.,1999).

Awarenessof the causes of TB/HIV co-infection

Knowledge and perception about any disease is necessary and important in order to optimize the patients' treatment and to improve their quality of life (Jaramillo*et al*,. 2001). Numerous studies have proved that lack of knowledge is likely to prevent appropriate positive healthcare seeking behaviors (WHO, 2009). Like other chronic illness, appropriate knowledge towards Tuberculosis (TB) and HIV/AIDS was significantly associated with positive healthcare seeking action (Hoa *et al.,* 2003). Community awareness on TB/ HIV co-infection was found to be very crucial in prevention of TB and HIV/AIDS co-infection (Deridew A *et al*,.2010). In some studies it was found that the community has low knowledge on co-infection as many people responded that there is no difference between those two diseases.(Senguptа*et al.,* 2011).People believed that TB and HIV co-infection can be caused by having sexafter spontaneous abortion, environmental pollution or witchcraft. These beliefs impair early seeking of health services and adherence (Stata Corp, 2009).

Awareness of symptoms of TB in HIV/AIDS patient

Symptoms of TB do not differ between PLWHAand HIV negative individual. The symptoms are cough of more than 2 weeks, cough up blood, chest pain, weight loss, night sweat, body weakness /fatigue and lack of appetite. In the study conducted in Ethiopia, it was found that approximately 75% of respondents mentioned cough as a major symptom of TB while major symptoms of HIV/AIDS were mentioned to be severe wasting and diarrhea (Senguptа*et al*., 2011, Nair*et al*., 1997). Knowledge on TB and HIV/AIDS transmission was high as 80% of the respondents understand that HIV can be transmitted through sexual intercourse while TB by air (Owiti*et al*., 2008).It was observed that knowledge on TB and HIV/AIDS co-infection was higher in literate individuals**,** however there was no gender difference regarding the knowledge (Alwood *et al*., 1994).

Awareness of relationship between TB and HIV/AIDS co-infections

HIV/AIDS upsurges the advancement of TB from latent to active disease. In a several study it was observed that TB was consistently confused with HIV infection by respondents (Alpert*et al*.,1997). In some other surveys conducted the strong conceptual linkage between TB and HIV/AIDS was displayed (MoH& SW 2008). Most participants believed having TB was synonymous with having HIV/AIDS, and it was a common perception that all TB patients are HIV positive. Having a low level of education was significantly related to low level of TB/HIV co-infection knowledge (Mangesho *et al.,* 2007; Haasnoot *et al.,* 2010;Jane M *et al*., 2010;Buregyeya*et al.,* 2011). This may have detrimentally affect TB treatment if HIV negative individuals believe they cannot get TB and so don't seek care. This perception also contributes to solidifying the perceived association between TB and HIV, and may contribute to delays in seeking TB treatment if symptoms are thought to be due to HIV (Sengupta *et al.,* 2011).

In study conducted in Nigeria, it was found that less than half of the respondents knew that TB increases the progression of HIV/AIDS (41.7%), HIV/AIDS increases the progression of TB (42.0%), there is reciprocal interaction between HIV/AIDS and TB (46.2%), it is not easy to detect HIV/AIDS and TB co-infections (22.2%), HIV/AIDS and TB co-infections are not curable (38.5%) and the co-infections is treatable (48.6%). However, 84.3% of participants knew that many people worldwide have died from HIV/AIDS and TB co-infections (Olaitan *et al.,* 2011).

Also in the study conducted in Libya, gender and literacy level of an individual had a role to play. About TB risk factors, the respondents were asked whether HIV-positive patient is more likely to be infected with TB. Five hundred and ninety four (59.4%) of the respondents in Libya were agreed that HIV infected patients are at greater risk of getting TB (Mukhtar A *et al*., 2012).

Awareness regarding treatment of TB in HIV patient

There is a strong misperception about treatment of co-infected patients. In the study conducted in rural Uganda it was found that 28% of people did not know that TB can be treated and cured in HIV patients**.** This theme also emerged in some studies as with participants mentioned that TB in HIV co-infection is different types of disease which is not curable. This finding is consistent with other studies where TB is believed not to be curable if the patient also has HIV (Buregyeya*et al*., 2011). As with TB alone, if the general population doesn't think that TB is curable in HIV patients, they will not seek care if they are HIV positive (or will not encourage their HIV positive friends to seek treatment), accepting the perceived fatality of the condition (Okello *et al*., 2007).However, those findings are contrary with the study which was conducted in South Africa which show that 64.7% of the respondents reported that TB can be treated in TB/HIV co-infected patients (Ndoro*et al.,* 2009). This has an impact on early health seeking behavior for the co-infected individuals.

In some other studies conducted in Ethiopia, it has been shown that, theknowledge on TB/HIV co-infection is approximately closer to HIV knowledge. However, the mean TB knowledge was found to be low .It appears that HIV knowledge is influencing co-infection knowledge. Although initially surprising that TB/HIV co-infection knowledge is so much higher than knowledge about TB alone, this is explained by the major focus on HIV education in many countries (Deribew*et al*., 2010). Any educational campaigns addressing TB are likely to be encompassed within HIV interventions, thus knowledge around TB in the context of HIV (and the association between the two diseases) is much more frequently addressed than TB alone. TB programming alone is neglected and only messages around TB as an opportunistic infection in HIV patients are disseminated. Within the clinical setting a very admirable effort is made to screen HIV patients for TB by asking HIV patients about cough symptoms lasting 2 weeks or more, and WHO staging charts (with TB listed as a symptom of HIV in clinical stages three and four) are prominently displayed in clinics. All of this contributes to increasing awareness about the association between TB and HIV, but doesn't help to improve knowledge aboutTB alone or its treatability (Moller*et al.,* 2011).

Community attitude towards TB/HIV co-infection

With regards toattitude on TB and HIV/AIDS co-infection, the study conducted in Nepal, showed that 78% of community members said that TB and HIV/AIDS co-infected people should not be isolated from their families. Moreover in the same study 90% of the respondents expressed that TB and HIV co-infected people should not be refused from the society. Likewise 39.2 % of community including family members of PLTB informed that the spouse of TB/HIV co-infected people should not go for the second marriage (NAC, 2012). In the study conducted in South Africa 96.6% of the respondents had good attitudes towards testing HIV and TB as they strong agreed conducting TB testing in people with HIV and HIV testing in people with TB (Ndoro *et al*., 2009) . Regarding attitude towards disclosure of TB and HIV status in a co-infected patient, the study conducted in Ghana established that females had negative attitude towards disclosure of TB and HIV status which lead to discrimination and isolation of those people from the society for fear of infection(Dodor *et al.*,2009)

Community practices towards prevention of TB/HIV co-infection

Regarding practices towards TB and HIV/AIDS co-infection prevention, the study conducted in Nepal documented that 60% of the community members did not use mask or any protective measures while visiting to the public places, on addition only 35% of individuals cover their mouth when coughing or sneezingand 85% of the respondents visited health facilities when they got cough for more than two weeks with evening fever or blood sputum (NAC, 2012). Also in another study conducted in North East Libya six hundred and eighty two (68.2%) respondents agreed that wearing a face mask can prevent transmission of TB from one person to another (Mukhtar *et al*., 2012). In another study conducted in South Africa only 42% of respondents reported to undergo HIV testing (Ndoro *et al.,* 2009).

There is a wide variety of different understanding about TB and HIV/AIDS co- infection in different regions and community, thus it is critical to have locally relevant information for health messaging and service (Moller V *et al*., 2011). The study to explore the knowledge on

TB and HIV/AIDS co-infection will help to clear the gaps from other studies conducted as very few studies to-date have comprehensively evaluated how the local people view and understand the relationship between these two diseases (NAC, 2012). Correct knowledge and awareness regarding the disease is a general prerequisite for the prevention and control of HIV/AIDS. Literature indicates that TB and HIV control can significantly be enhanced if more concern is given to improve knowledge and attitudes towards disease (Alvarez-Gordillo *et al.*, 2000)

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Description of Study area

The study was conducted in Tunduru District which is one among 6 administrative districts of Ruvuma region located in southern part of Tanzania. The district has the population of 309,677 in 2012 among them 48.6% are males and 51.4% are females. Most people in Tunduru district live in rural areas. The district's economy depends mainly on agriculture as 90% of the residents of Tunduru District are peasants. The main cash crops are cashew nuts, tobacco, rice, maize and groundnuts. The main language is Swahili which is taught in district schools. The district has illiteracy rate of about 25%.Administratively the district is divided into 7 divisions, 35 wards, 148 villages, 1144 hamlets and 58386 households. The district has 54 health facilities which include 3 hospitals, 5 health centres and 46 dispensaries. According to PHC report of 2012, the district has HIV prevalence of 5.6% which is highercompared to other districts of Ruvuma region. This might be contributed to mining activities conducted in Matemanga and Nakapanya divisions. In 2012, 340new TB cases were diagnosedamong those 83 (25%) were HIV positive (co-infected). The district has TB success cure rate of about 84.2%.

3.2 Study design.

The cross-sectionaldescriptive studyusing quantitative techniques was conducted in Tunduru district between May to July 2013.

3.3 Study site

The study sites were 8 villages of Majengo, Kalanje, Nanjoka, Mandingo, Kitanda, Mchoteka, Nalasi and Lipepo. These villages were selected from 4 wards of Majengo, Nanjoka, Mchoteka and Nalasi westlocated in 4 divisions of Nalasi, Mchoteka, Mlingoti East and Westof Tunduru District Council.

3.4Study population

The target population was all people living in Tunduru district while the study population was all people aged 18 years and above. To get study participants, households were visited and one individual with inclusion criteria in each household was interviewed. If the respondents were not found in three visits, the next households were included to replace other respondents.

3.5Sample size:

The sample size was calculated by using the following formula:

$$\frac{n = z^2 p(1-p)}{\varepsilon^2}$$

Whereby

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

p = expected proportion of community members who were aware on TB/HIV co-infection in Tunduru. In this case was unknown therefore p was taken as 0.05

ε = margin of error equal 0.06

Therefore,

1.96x 1.96 x 0.05 (1-0.05) = 267

0.06x0.06

In order to minimize design effect in multistage random sampling the sample size was multiplied by 1.5 to get 400.

Therefore a total of 400 male and female participants were involved in the study.

3.6Sampling method

The participants were selected by using four levels of sampling (multistage cluster sampling). Under this technique all 7 divisions in Tunduru district were written on separate sheets of papers and then 4 divisions were eventually randomly selected for the study using the lottery method. In each of the selected division, 1 ward was randomly selected using the same procedures (number of wards in each division range from three to eight). Later on, two villages were randomly chosen from each ward (total number of villages in each ward range from two to seven). Therefore the total numbers of 8 villages were involved in the study. Among each selected village 50 households to be visited were randomly selected by using the following procedure. Initially the list of all households in the village was requested from Village Executive Director(VEO). Then the table of random number was generated in the computer, the first household was picked randomly when eyes were closed. Later on other households were picked after every three digits until all 50 households were reached in each village. In each of the selected household one participant was chosen to be enrolled in the study. Therefore the total number of 400 participants was involved in the study. Selection method ensured that all households in all study areas had an equal chance of being included in the survey.

3.7 Eligibility criteria

Inclusion criteria: Ability to speak Swahili language or English, and being 18 years of age and above. HIV status and history of TB were not asked to the participants during data collection. Exclusion criteria: Those individuals who were sick and not able to respond to the questionnaire during interview.

3.8Data collection methods

Semi structured interviewer administered questionnaires were used as instrument for data collection which was conducted by principal instigator for the period of 3 weeks. The information regarding awareness, attitude and practices towards TB and HIV co-infection was collected. The questionnaires were developed in English and then translated back into Swahili version. The questionnaires were divided into 4 sections: Section A had information related to the demographic characteristics of the respondents. Section B had information regarding

community awareness of symptoms, prevention and control measures of TB and HIV/AIDS co-infection while section C had information of community attitude towards TB and HIV/AIDS co-infection and section D had information of community practices towards protective measures.

3.9 Study variables:

The dependent variables were:

- ✓ Awareness of TB and HIV/AIDS co-infection
- ✓ Attitude towards TB and HIV/AIDS co-infection
- ✓ Practice towards prevention of TB and HIV/AIDS co-infection

Independent variables included:

- ✓ Age
- ✓ Sex
- ✓ Marital status
- ✓ Level of education
- ✓ Employment status

3.10 Pre-testing of the research instrument

Pretesting was conducted in Bagamoyo district involving individuals above 18 years of age for the purpose of correcting error in the study tool. The district was selected for pretesting because people shared common characteristics as Tunduru residents. The tool was pre-tested in two phases. The initial tool was administered to 20 randomly selected individuals. Later on small corrections were made in the instrument; thereafter it was administered to another 20 more people to finalize the correction of the contents of instrument. The time to interview one participant was found to be between 15 to 30 minutes.

3.11 Data collection procedures

A survey questionnaire was designed to capture data on respondent demographics and TB/HIV co-infection related awareness, attitude and practices. Data were collected for the period of two weeks and checked for the completeness and quality on daily basis according to study work plan.

3.12Data management and quality assurance:

After data collection procedure, every day the Principal Investigator passed through every questionnaires of that particular day. Problems encountered in obtaining data from the community were obtained and solutions were imposed to correct anomalies. Responses were coded and questionnaires were checked for completeness each day after data. In case of any inconsistence of data collected a follow up of the participant was done to obtain the required information. For those participants who were not found a replacement was done by selecting another participant. Data processing was carried out using EPI info statistical package version 3.4.5. Study materials were stored in locked cabinet and recorded in a computer. Back up like flash, CD roam and external hard disc driver were used to store data.

3.13 Data analysis:

Data were entered using EPI info statistical package version 3.4.5. For analysis, the data were exported to SPSS version 16.0 statistical software. For an individual who mentioned chronic cough and other 2 symptoms of TB in HIV patient like cough up of blood, chest pain, body weakness/malaise, loss of appetite, night sweat and fever was regarded as having an awareness of symptoms of TB in HIV patient. For an individual who responded that TB can be treated and cured in patient with HIV was regarded as having awareness that TB is treated and cured in HIV patient. Attitude towards TB and HIV co-infection was evaluated based on score which was computed by using SPSS version 16.0 statistical software. Based on 4 questions of attitude asked to participants, the maximum score was 20and minimum score was 7 while the mean score was 13.8. For an individual who score above mean score was regarded as having positive attitude while individual who score below mean score was regarded as having negative attitude towards TB and HIV.

Different independent variables were fitted univariately to assess their independent effect in terms of the crude odds ratio and its 95% confidence interval (CI). Next, a multivariable logistic regression model was fitted containing all the independent variables that showed a significant effect in the univariate analysis at the 5% significance level, leading to adjusted odds ratio and their 95% confidence intervals. Results from the study were presented by using tables.

3.14Ethical considerations and approval:

Ethical approval was sought from the Muhimbili University of Health and Allied Sciences Ethical Clearance Committee before starting data collection. The letter of ethical approval and permission to conduct the study from MUHAS was submitted to RMO of Ruvuma region and District Executive Director of Tunduru and village leaders for permission to conduct the study. Research ethics was observed to ensure the welfare of participants of research. Before starting interview permission from the respondent were also sought. Participants were given information and a detailed explanation of the study, informed consent was provided by signature or thumbprint of the consent form. Participants were assured that information provided will be treated with utmost anonymity and confidentiality. In order to ensure confidentiality, the questionnaires were assigned person identification number instead of using respondent's name.

3.15Limitations of study

- The study was not purposely included TB and HIV/AIDS co-infected patients to assess their real awareness, attitude, practices and discrimination on patients' perspective.

CHAPTER FOUR

4.0 RESULTS

4.1Description of study participants:

Table 1 shows Social demographic characteristics of the study sample of 400 respondents whereby 195(48.8%) were males and 205(51.2%) were females. The mean age of the respondents were 38.06 years, ranged from 18 to 78 years with standard deviation of 12.6. Most of the respondents 221 (55.2%) were of the age range between 25-42 years whilst 248 (62%) were living with partners. In addition, majority of respondents 186 (46.5%) had primary level education while 54(13.5%) of the respondents had never attended formal education and 244(61%) were not employed.

Table 1: Social demographic characteristics of study participants in Tunduru District, Southern Tanzania

VARIABLE	NUMBER (N)	PERCENT (%)
SEX		
Male	195	48.8
Female	205	51.2
AGE (YEARS)		
< 25	51	12.8
25-42	221	55.2
43-59	104	26
60+	24	6
MARITAL STATUS		
Live with partner	248	62
Don’t live with partner	152	38
EDUCATION		
Never been to school	54	13.5
Primary education	186	46.5
Secondary education	118	29.5
Post-secondary education	42	10.5
EMPLOYMENT STATUS		
Employed	156	39
Not employed	244	61

4.3 Factors associated with awareness of symptoms, treatment, prevention and relationship of TB and HIV co-infection.

Table 2 shows factors associated with awareness of symptoms of TB in a patient with both TB and HIV infections among study participants. The results show that education level,marital and employment status of the respondents had statistically significant determinant of awareness of symptoms of TB in a patients with TB and HIV co-infection as p-value was <0.05.

Table 2: Analysis of factors associated with symptoms of TB in TB/HIV co-infected patient in Tunduru District, Southern Tanzania

VARIABLE	MAIN SYMPTOMS OF TB IN TB/HIV CO-INFECTED		CHI SQUARE	P-VALUE
	KNOW THE SYMPTOMS	DON'T KNOW THE SYMPTOMS		
SEX				
Male	147 (50.0%)	48 (45.3%)	0.694	0.405
Female	147 (50.0%)	58 (54.7%)		
AGE (YEARS)				
< 25	40 (13.6%)	11 (10.4%)	5.686	0.128
25-42	154 (52.4%)	67 (63.2%)		
43-59	84 (28.6%)	20 (18.9%)		
60+	16 (5.4%)	8 (7.5%)		
MARITAL STATUS				
Live with partner	192 (65.3%)	56 (52.8%)	5.147	0.023
Don't live with partner	102 (34.7%)	50 (47.2%)		
EDUCATION				
Never been to school	37 (12.6%)	17 (16.0%)	15.526	0.001
Primary education	124 (42.2%)	62 (58.5%)		
Secondary education	94 (32.0%)	24 (22.6%)		
Post-secondary education	39 (13.3%)	3 (2.8%)		
EMPLOYMENT STATUS				
Employed	131 (44.6%)	25 (23.6%)	14.405	<0.0001
Not employed	163 (55.4)	81 (76.4%)		

The findings show that individuals who live with partners were more likely to be aware of the symptoms of TB in HIV patient. Also individual who could read and write were more likely to be aware of the symptoms of TB in HIV patient than individual who could not read and write. Furthermore, the findings show that individuals who were employed were more likely to be aware of symptoms of TB in HIV patient. Three variables which show significant association with awareness of symptoms of TB in TB/HIV co-infected patient among study participants were used to construct multivariable logistic regression model(category, aOR, 95% CI, P – value) in order to control for confounding effect. The final model in Table 3 indicated that only employment status had statistically significant determinant of awareness of symptoms of TB in TB/HIV co-infected patient among participants (employment status, 2.6; 1.573-4.310, P<0.0001).

Table 3: Regression analysis of the factors affecting symptoms of TB in TB/HIV co-infected patient in Tunduru District, Southern Tanzania

VARIABLE	ADJUSTED OR (Exp(B))	95 % CONFIDENCE INTERVAL		p-value
		Lower	Upper	
Employment status	2.6	1.573	4.31	<0.0001

Participants were asked if TB is treated and completely cured in TB/HIV co-infected patient. Analysis of the results show that sex, education and marital status had statistically significant as p-value was <0.05. In the multivariable logistic regression model (category, aOR, 95% CI, P – value) which used to control for the effect of confounder, only sex (0.2; 0.120-0.297, P<0.0001) remained statistically significant determinant which imply that females were more likely to be aware of TB treatment than males.

Regarding factors associated with awareness of the relationship between TB and HIV, the respondents were asked as whether HIV infected patients are at greater risk of getting TB. The study findings showed that there were no statistically significant differences.

The results also show the factors associated with awareness of prevention of TB and HIV co-infection whereby the final multivariable logistic regression model (category, aOR, 95% CI, P – value) showed that only education level(5.2; 2.597-10.411, P<0.0001) remained statistically significant determinants of awareness of prevention of TB and HIV co-infection among respondents. It can be explained that individuals who could read and write were more likely to be aware of prevention of TB and HIV co-infection.

4.4 Factors associated with attitude towards TB and HIV co-infection:

Table 4 indicates that sex, age, education, marital and employment status had statistically significant to attitude of the respondents towards TB and HIV co-infection as p value was < 0.05.

Table 4: Analysis of factors associated with attitude towards TB and HIV co-infection in Tunduru District, Southern Tanzania

VARIABLE	ATTITUDE TOWARDS TB AND HIV CO-INFECTION		CHI SQUARE	P-VALUE
	NEGATIVE ATTITUDE	POSITIVE ATTITUDE		
SEX				
Male	72 (57.6%)	123 (44.7%)	5.7	0.002
Female	53 (42.4%)	152 (55.3%)		
AGE (YEARS)				
< 25	20 (16.0%)	31 (11.3%)	11.426	0.01
25-42	77 (61.6%)	144 (52.4%)		
43-59	19 (15.2%)	85 (30.9%)		
60+	9 (7.2%)	15 (5.5%)		
MARITAL STATUS				
Live with partner	67 (53.6%)	181 (65.8%)	5.445	0.02
Don't live with partner	58 (46.4%)	94 (34.2%)		
EDUCATION				
Never been to school	23 (18.4%)	31 (11.3%)	24.417	<0.0001
Primary education	70 (56.0%)	116 (42.2%)		
Secondary education	31 (24.8%)	87 (31.6%)		
Post-secondary education	1 (0.8%)	41 (14.9%)		
EMPLOYMENT STATUS				
Employed	27 (21.6%)	129 (46.9%)	23.139	<0.0001
Not employed	98 (78.4%)	146 (53.1%)		

Multivariable logistic regression model (category, aOR, 95% CI, P – value) in table 5 was used to control for the effect of confounder. The final model showed that sex (0.5; 0.287-0.738, P=0001), age (1.4; 1.026- 1.866, P=0.03), education (1.5; 1.03-2.12, P=0.03) and employment status (2.3; 1.248- 4.201, P=0.007) remained statistically significant determinants of attitude towards TB and HIV co-infection among respondents. The findings showed that females were more likely to have negative attitude towards TB and HIV co-infection. However, individuals who were above 25 years, employed, able to read and write were more likely to have positive attitude to TB and HIV co-infection.

Table 5: Regression analysis of the factors affecting attitude towards TB and HIV co-infection in Tunduru District, Southern Tanzania

VARIABLE	ADJUSTED OR (Exp(B))	95 % CONFIDENCE INTERVAL		p-value
		Lower	Upper	
Sex	0.5	0.287	0.738	0.001
Age	1.4	1.026	1.866	0.03
Education	1.5	1.03	2.12	0.03
Employment status	2.3	1.248	4.201	0.007

4.5 Factors associated with practices towards prevention and control of TB and HIV co-infection:

Table 6 shows that practices towards prevention and control of TB had statistically significant to education, marital and employment status of the respondents as p-value was <0.05.It imply that individuals who were able to read and write, live with partner and employed were more likely to practice preventive measures like cough hygiene.

Table 6: Analysis of factors associated with practices towards prevention and control measures against TB infection in Tunduru District, Southern Tanzania

VARIABLE	COVER MOUTH WHILE COUGHING		CHI SQUARE	P-VALUE
	YES	NO		
SEX				
Male	162 (48.5%)	33 (50.0%)	0.049	0.82
Female	172 (51.5%)	33 (50.0%)		
AGE (YEARS)				
< 25	45 (13.5%)	6 (9.1%)	4.582	0.21
25-42	188 (56.3%)	33 (50.0%)		
43-59	84 (25.1%)	20 (30.3%)		
60+	17 (5.1%)	7 (10.6%)		
MARITAL STATUS				
Live with partner	226 (67.7%)	22 (33.3%)	27.57	<0.0001
Don't live with partner	108 (32.3%)	44 (66.7%)		
EDUCATION				
Never been to school	42 (12.6%)	12 (18.2%)	28.902	<0.0001
Primary education	139 (41.6%)	47 (71.2%)		
Secondary education	112 (33.5%)	6 (9.1%)		
Post-secondary education	41 (12.3%)	1 (1.5%)		
EMPLOYMENT STATUS				
Employed	145 (43.4%)	11 (16.7%)	16.572	<0.0001
Not employed	189 (56.6%)	55 (83.3%)		

Three variables which show significant association with practices towards prevention and control of TB infection among study participants were used to construct multivariable logistic regression model (category, aOR, 95% CI, P – value) in order to control for confounding effect. The final model in Table 7 indicated that only marital status (3.2; 1.755-5.735, P<0.0001) remained statistically significant determinant of practices towards prevention of TB infection among participants. It implies that individuals who live with partner were more likely to practices cough hygiene than those who do not live with partners.

Table 7: Regression analysis of the factors affecting practices towards prevention of TB in Tunduru District, Southern Tanzania

VARIABLE	ADJUSTED OR (Exp(B))	95 % CONFIDENCE INTERVAL		p-value
		Lower	Upper	
Marital status	3.2	1.755	5.735	<0.0001

HIV testing as practice towards prevention and control of HIV infection and ultimately TB was asked to respondents. The findings show that age, education level, Marital and employment status of the respondents had statistically significant determinant of practices of HIV testing among respondents as p-value was <0.05 as shown in table 8.

Table 8: Analysis of factors associated with testing HIV infection in Tunduru District, Southern Tanzania

VARIABLE	TESTED FOR HIV		CHI SQUARE	P-VALUE
	YES	NO		
SEX				
Male	139 (50.2%)	56 (45.5%)	0.738	0.39
Female	138 (49.8%)	67 (54.5%)		
AGE (YEARS)				
< 25	24 (8.7%)	27(22.0%)	18.767	<0.0001
25-42	156 (56.3%)	65 (52.8%)		
43-59	81 (30.0%)	21 (17.1%)		
60+	14 (5.1%)	10 (8.1%)		
MARITAL STATUS				
Live with partner	191 (69.0%)	57 (46.3%)	18.485	<0.0001
Don't live with partner	86 (31.0%)	66 (53.7%)		
EDUCATION				
Never been to school	27 (9.7%)	27 (22.0%)	38.719	<0.0001
Primary education	112 (40.4%)	74 (60.2%)		
Secondary education	100 (36.1%)	18 (14.6%)		
Post-secondary education	38 (13.7%)	4 (3.3%)		
EMPLOYMENT STATUS				
Employed	133 (48.0%)	23 (18.7%)	30.769	<0.0001
Not employed	144 (52.0%)	100 (81.3%)		

Multivariable logistic regression model (category, aOR, 95% CI, P – value) in table 8 was used to control for the effect of confounder. The final model in table 9 shows that age (1.5; 1.096-2.007, P=011), education level (1.2; 1.144-2.409, P=0.008), marital status (1.8; 1.099-2.808, P=0.018) and employment status remained statistically significant determinants of HIV testing among respondents. The findings show that individuals who were above 25 years, able to read and write, employed and live with partner were more likely to test for HIV.

Table 9: Regression analysis of the factors affecting HIV testing in Tunduru District, Southern Tanzania

VARIABLE	ADJUSTED OR (Exp(B))	95 % CONFIDENCE INTERVAL		p-value
		Lower	Upper	
Education	1.2	1.144	2.409	0.008
Age	1.5	1.096	2.007	0.011
Marital status	1.8	1.099	2.808	0.018
Employment status	2.3	1.253	4.382	0.008

CHAPTER FIVE

5.0 DISCUSSION

5.1 Introduction

In this study, we identified gaps from the community about awareness, attitude and practices towards TB and HIV co-infection which might lead to inappropriate health care seeking behavior and hence control of TB and HIV co-infection. Literature indicates that TB and HIV control can significantly be enhanced if more concern is given to improve knowledge and attitudes towards diseases (Alvarez-Gordillo *et al.,* 2000).

5.2 Awareness of symptoms of TB in HIV/AIDS patient.

Individuals who were capable to mention three symptoms including chronic cough of more than 2 weeks as a cardinal public health TB symptom was considered as having awareness of symptoms of TB in HIV patient. Other symptoms of TB were cough up blood, chest pain, weight loss, night sweat, body weakness /fatigue and lack of appetite. Study findings revealed that individuals who were employed or have certain means of income were 2.6 times higher likely to know the symptoms of TB in HIV patient compared to those who were not employed. The study findings were similar to the findings of the study conducted in Uganda whereby those individuals with moderate to higher income had awareness of symptoms of TB in HIV patient (Obuku *et al*., 2012). The study conducted in South Africa had similar result as my study findings whereby it was revealed that 80% of employed were capable of mentioned cough of more than 2 weeks and cough up of blood as prime symptom of TB (Edginton ME *et al*.,2002). The findings might be contributed to the fact that individuals who were employed were more likely to access media like newspaper, radio and television than those who were not employed (Hoa N *et al*.,2003).

Other studies conducted in Ethiopia showed that 75% of the respondents were able to know the symptoms of TB in HIV infected patient and it was found that educated respondents were more likely to know the symptoms due to the fact that they have increased like hood of understanding and retaining information (Sengupta *et al*., 2011). Contrary to those findings,

my study showed that age, education, gender and marital status of the respondents had no statistically significant differences.

5.3Awareness that TB can be treated and completely cured in someone with HIV infection

The study established statistically significant difference between gender of an individual and awareness of treatment of TB in HIV/AIDS patient. Females were more aware that TB can be treated and cured in HIV patient by 80% more compared to males. Study findings are similar to study conducted in urban Uganda whereby gender had significant role to play, it was found that eighty five percent of respondents said that TB is treated and cured by using specific drugs (69.4%) (Obuku E.A *et al.*, 2012). In the study conducted in Ilala and Kinondoni municipalities in Dar-Es-Salaam it was established that males had little awareness on treatment of TB in HIV patient than females (Kilale AM *et al*.,2008). This might be contributed to the fact that females have access to several health educations and advocacy programs given by health workers during ANC visits also there is the possibility that females have access to mass media compared to males (Abebe G *et al*., 2010).

Age of respondents, level of education, employment and marital status had no statistically significant difference unlike other studies which conducted in other places. In the study conducted in South Africa, 64.7 percent of the respondents had good knowledge that TB can be treated and completely cured in TB/HIV co-infected patients, the level of knowledge was influenced by education of an individual (Ndoro *et al.*,2009).However, in other study conducted in rural Uganda it was found that 48 percent of people did not know that TB can be treated and cured in HIV patients**.** In the same study participants mentioned that TB in HIV co-infection is different type of disease which is not curable (Buregyeya *et al.,* 2011). The findings from the study have serious repercussion because if the general population think that TB is incurable in HIV patients, they will not seek for care if they are HIV positive (or will not reassure their HIV positive friends to seek for care and treatment), accepting the perceived fatality of the condition(Okello *et al*., 2007). Eventually, it will cause prompt spread of TB

infection in the community leading to increased morbidity and mortality due to TB/HIV co-infection.

5.4 Awareness of relationship between TB and HIV co-infection.

The study explores community awareness of the relationship between TB and HIV infection, whereby respondents were asked as whether HIV infected patients were at greater risks of getting TB. The study findings showed that there were no statistically significant differences between age of the respondents, education level, gender, marital and employment status. The findings were contrary to study findings conducted in several places. In a study conducted in Simanjiro district, 78% of secondary school children and only 22% of adults with no primary education had the knowledge on relationship between TB and HIV that HIV/AIDS makes someone more vulnerable to Tuberculosis infection. Adult population had different views in the sense that some said HIV and TB were the same disease; others indicated that TB and HIV were caused by eating infected food (Haasnoot *et al.,* 2010).

In another study conducted in Uganda most participants believed having TB was synonymous with having HIV/AIDS, and it was a common perception that all TB patients are HIV positive. Having low education level was significantly related to low level of understanding on TB and HIV interactions in a co-infected patient (Buregyeya *et al.,* 2011). Moreover, in the study conducted in South Africa 60% of respondents believe that all TB patients will also have HIV infection (Jane M *et al.,* 2010). However, in the study conducted in Libya there was no statistically significant difference between the level of education of respondents and their knowledge about the reciprocal interaction between HIV/AIDS and TB co-infections (Alvarez-Gordillo *et al.,* 2000). In another study conducted in Nigeria it was found that less than half of the respondents knew that TB increases the progression of HIV/AIDS (41.7 percent), HIV/AIDS increases the progression of TB (42.0 percent) and there is reciprocal interaction between HIV/AIDS and TB (46.2 percent)(Olaitan *et al*., 2011).

My study findings revealed no statistically significant difference between respondent's level of education, age, gender, marital and employment status and their awareness of relationship between TB and HIV infection. This poses a great threat to the community for TB strides in the shadow of HIV/AIDS as one of the leading causes of death in AIDS patients(Haasnoot *et al*., 2010).

5.5 Awareness of prevention and control measures of TB and HIV co-infection

It is envisaged that appropriate understanding of prevention and control measure of TB/HIV co-infection was important for the success of avoidance the spread of both diseases (WHO, 2012). From the study, the final multivariable logistic regression model showed that only education level had statistically significant determinant of awareness of respondents towards prevention of TB and HIV co-infection. It has been found that individuals who were able to read and write were 5.2 times higher aware that TB and HIV infections can be prevented than illiterate individuals. In Tunduru, health information on TB and HIV/AIDS is disseminated through education talks in schools, health facilities, places of work and media. It is therefore not surprising that those who never been to school were associated with low awareness of TB and HIV prevention.

Study findings are similar to the study conducted in Uganda which showed that lack of formal education had an implication on awareness of TB and HIV co-infection prevention. However, in the same study unemployment, never testing for HIV remained statistically significant determinants of poor awareness of community towards prevention and control of TB and HIV co-infection. Furthermore the study identified that younger age, not having formal education, unemployment and not having tested for HIV were associated with a lower level of awareness of prevention of TB and HIV co-infection (Obuku E.A *et al.,* 2012).

5.6 Attitude towards TB and HIV co-infection.

Attitude towards TB and HIV co-infection were determined by asking respondents some questions, scoring them and grading as whether an individual had positive or negative attitude. Several questions were asked on attitude towards participation of TB and HIV co-infected patient in social activities and marriage, attitude towards disclosure of TB and HIV status and attitude towards testing for HIV or TB in a co-infected patient. The study findings established that sex, age, level of education and employment status had statistically significant determinants of attitude towards TB and HIV co-infection among respondents. The findings disclosed that females were 50% more likely to have negative attitude towards TB and HIV co-infection. Furthermore, the findings established that, individuals who were above 25 years, employed, able to read and write were more 1.4, 2.3 and 1.5 respectively more likely to have positive attitude towards TB and HIV co-infection.

Study findings are similar to the study conducted in Nepal which displayed that 90 percent of the respondents who were literate had positive attitude expressed that TB and HIV co-infected people should not be refused from the society. Furthermore, in the same study 78 percent of community members said that TB and HIV/AIDS co-infected people should not be isolated from their families (NAC, 2012). Furthermore the same study conducted in Nepal established negative attitude that 39.2 % of community including family members of PLTB informed that the spouse of TB/HIV co-infected people should not go for the second marriage (NAC, 2012).

In the study conducted in South Africa, respondents who were educated people were more likely to have positive attitudes towards testing of both TB and HIV infection in a co-infected patient whereby 96.6 percent of the respondents had positive attitudes towards HIV and TB testing as they strong agreed conducting TB testing in people with HIV and HIV testing in people with TB (Ndoro *et al.,* 2009). Regarding attitude towards disclosure of TB and HIV status in a co-infected patient, the study conducted in Ghana established that females had negative attitude towards disclosure of TB and HIV status which lead to discrimination and isolation of those people from the society for fear of infection (Dodor *et al.*,2009).The findings are similar to our study findings.

5.7 Practices towards preventive measures against TB/HIV co-infection

The study findings showed that only marital status remained statistically significant determinant of practices towards prevention of TB infection among participants. It implies that individuals who live with partner were 3.2 times more likely to practices cough hygiene than those who do not live with partners. Among those individuals practices cough hygiene 43.7 percent denied to use any protective measure like handkerchief or masks to prevent themselves while coughing or sneezing. This has serious implication since pulmonary TB can easily spread through air by droplets. The study findings are similar to the study which was conducted in Nepal whereby 60 percent of respondents who were not married didn't protect their mouth when coughing or sneezing (NAC, 2012).The findings are dissimilar to the study conducted in Uganda whereby the most frequently mentioned means of TB prevention was avoiding sharing dishes (42.9%), followed by Cough hygiene (34%), which was considered the correct response among individuals who could read and write (Obuku E.*A et al.*, 2012). In another study conducted in North East Libya six hundred and eighty two (68.2%) respondents agreed that wearing a face mask can prevent transmission of TB infection from one person to another (Mukhtar A *et al.*, 2012).

With regards to HIV testing as the practice towards prevention of HIV the study findings revealed that age, education level, marital status and employment status were statistically significant determinants of HIV testing among respondents. The findings show that individuals who were above 25 years, able to read and write, employed and live with partner were more likely to test for HIV. The findings are similar to the study which was conducted in South Africa whereby 42% of respondents who were employed, literate and old age reported to undergo HIV testing (Ndoro *et al.*, 2009).However, there was no gender difference among respondents.

In order to impart effective control and preventive measures of TB/HIV co-infection, HIV testing should be emphasized in the community (WHO, 2009). People should also be encouraged to seek care once they understand their HIV status.HIV testing was associated with a higher TB knowledge score (UNAIDS, 2010). Since 2005 Tanzania's Ministry of Health aggressively rolled out routine provider initiated HIV counseling & testing (MoH & SW, 2008). It is likely that persons with HIV testing history had better general health-seeking behavior and exposure to health information (Obuku E.A *et al.*,2012).

CHAPTER SIX

CONCLUSION AND RECOMMENDATION

Basically, the study has shed some light on community awareness, attitude and practices towards TB/HIV co-infection in Tunduru District. Lack of awareness, negative attitude and poor practices towards prevention of TB and HIV/AIDS was established to be barrier towards TB and HIV diagnostic and treatment services. From the study, it was observed that individuals above 25 years had awareness, positive attitude and proper practices towards TB and HIV co-infection prevention. It is possible due to the fact that individuals of 25 years and above had more repeated chances of reinforcing exposure to TB/HIV information than younger age groups. Furthermore, the study findings revealed that those individuals who had never attended formal education had poor practices, awareness and negative attitude towards TB and HIV co-infection. This calls for innovative action to reach those with limited writing and reading skills through TB/HIV drama, verbal and pictorial messages as part of a comprehensive ACSM strategy. For example, utilizing sign posts or radio jingles to intensify TB/HIV co-infection awareness and prevention campaigns in locally spoken languages.

Efforts to educate the slum population about TB and HIV co-infection should consider messages that reach the younger generation, less educated and unemployed. From the study I also strongly recommended to plan a program to bring desired change in awareness, attitude and practices based on socio-cultural context of the society through the blending of advocacy, communication and social mobilization and behaviour change communication approach for which continues involvement of different stakeholders/actors is equally important.

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APPENDICES

Appendix I: English version questionnaire

Person identification number ☐ **Ward** ☐

Date: ……./……../2013 **Village** ☐

SECTION A: DEMOGRAPHIC

No.	Questions and filters	Coding Categories	Comments
1	Sex of the respondent	1- Male 2- Female ☐	
2	How old are you?	Mention years ☐	
3	What is your marital status?	1- Single 2- Married 3- Cohabit 4- Divorced/ Separated ☐ 5- Widowed	
4	What is your education level?	1-Never been to school 2- Incomplete primary school 3-Completed primary school 4-Incomplete secondary school 5-Completed secondary school 6- High school ☐ 7- University / college	

5	What is your occupation?	1-Peasant 2-Student 3-Businessman/woman 4-Employed 5-Self employed 6-Not employed 7-Housewife 8-Other (mention)……..	

SECTION B: AWARENESS OF SYMPTOMS, PREVENTION AND CONTROL MEASURES OF TB AND HIV/AIDS CO-INFECTION.

No.	**Questions and filters**	**Coding Categories**	**Comments**
6	Can you mention any diseases that are likely to make someone vulnerable to get TB?	_____	
7	Does having TB mean a person is HIV positive?	1-Yes 2-No 3. Don't know	
8	How many HIV patients are likely to get TB?	1- All 2- Most 3- Half 4- Some 5- None	
9	Do you think people with HIV deserve to get TB?	1- Yes 2- No 3- Do not know	

10	What are the main symptoms of TB in HIV co-infected patient?	_____ _____	
11	Is it possible for TB to be cured completely in HIV/AIDS patient?	1- Yes 2- No 3- Do not know	
12	If yes, how?	1- Antibiotic drugs/ pills 2- Traditional medicine 3- Spiritual healing 4- Other_____	
13	Are there any other illnesses that HIV positive people are more likely to get than healthy people?	_____ _____	
14	What do you know about being ill from both TB and HIV at the same time? Tick one or several boxes.	1-Because of HIV, people get ill easier from TB 2-Because of TB, people get ill easier from HIV 3-There is no relation between HIV and TB 4- I don´t know	
15	Can TB and HIV/AIDS co-infection be prevented?	1- Yes 2- No 3- Do not know	

16	If yes, how TB and HIV co-infection be prevented?	1-Avoid unsafe sexual intercourse 2-Prevent from TB infection 3-Regular health check up ☐ 4-Taking medicine 5-Taking nutritious food 6-Awareness campaign 7-Other specify---------- 8- I don't know	
17	Is it necessary to have HIV test for TB infected patient?	1- Yes 2- No ☐ 3- Do not know	
18	Is it necessary to have TB test for HIV infected patient?	1- Yes 2- No ☐ 3- Do not know	

SECTION C: COMMUNITY ATTITUDE TOWARDS TB AND HIV/AIDS CO-INFECTION.

No.	**Questions and filters**	**Coding Categories**	**Comments**
19	Participating in social activities is something uncomfortable to people living with both TB and HIV/AIDS infection.	1- Strongly agreed 2-Agreed 3- Neutral 4- Disagreed 5-Strongly disagreed ☐	
20	Participating in marriage for people with both TB and HIV/AIDS infection is unfavourable idea.	1- Strongly agreed 2-Agreed 3- Neutral 4- Disagreed 5-Strongly disagreed ☐	

21	Conducting TB testing in people with HIV and HIV testing in people with TB is something bad.	1- Strongly agreed 2-Agreed 3- Neutral 4- Disagreed 5-Strongly disagreed ☐	
22	It's shameful for TB and HIV co-infected patient to reveal his/her HIV and TB status in the community.	1- Strongly agreed 2-Agreed 3- Neutral ☐ 4- Disagreed 5-Strongly disagreed	

SECTION D: COMMUNITY PRACTICES TOWARDS PREVENTIVE MEASURES.

No.	**Questions and filters**	**Coding Categories**	**Comments**
23	Do you cover the mouth and nose while coughing or sneezing?	1- Yes 2- No ☐	
24	If yes, how often do you cover?	1- Always 2- Sometime ☐	
25	Do you visit health facility if you get cough for more than 2 weeks?	1- Always 2- Sometime ☐ 3-Never	
26	How do you prevent from TB infection?	1- Cover mouth with handkerchief 2-Use of mask 3-Nothing ☐ 4-Don't come in contact with PLTB 5-Stay .away during sneezing 6-Others (Specify…….)	

27	How do you prevent from HIV/AIDS infection?	_____	
28	Have you ever tested for TB?	1- Yes 2- No ☐	
29	Have you ever tested for HIV?	1- Yes 2- No ☐	

THANK YOU FOR YOUR PARTICIPATION

Appendix II: Swahili version questionnaire

Namba ya utambulisho ☐ **Kata** ☐

Tarehe: ……/……../2013 **Kijiji** ☐

SEHEMU A: TAARIFA BINAFSI

Na.	Maswali /Sentensi	Uchaguzi	Maoni
1	Jinsia	1- Mwanamume 2- Mwanamke ☐	
2	Umri wako?	Taja miaka ☐	
3	Hali ya ndoa.	1- Sijaoa/ sijaolewa 2-Nimeoa/ nimeolewa 3- Sijaoa/ sijaolewa nakaa na mpenzi 4- Nimeachika ☐ 5- Nimefiwa na mme/mke	
4	Una kiwango gani cha elimu?	1-Hakuna 2- Sikumaliza elimu ya msingi 3- Nimemaliza elimu ya msingi 4- Sikumaliza elimu ya sekondari 5-Nimemaliza elimu ya sekondari 6-Elimu ya juu ya sekondari 6-Elimu ya chuo/ chuo kikuu ☐	

5	Unafanya kazi gani?	1-Mkulima 2-Mwanafunzi 3-Mfanyabiashara 4-Nimeajiriwa 5-Nimejiajiri 6-Sijaajiriwa 7-Mama wa nyumbani 8-Nyinginezo (taja)……..	

SEHEMU B: UFAHAMU JUU YA DALILI, KINGA NA UDHIBITI WA UGONJWA WA KIFUA KIKUU NA UKIMWI.

Na.	**Maswali**	**Aina**	**Maoni**
6	Je unaweza kutaja ugonjwa wowote unaoweza kumfanya mtu apate ugonjwa wa kifua kikuu?	_____	
7	Je mgonjwa wa kifua kikuu ni lazima awe na UKIMWI?	1-Ndiyo 2-Hapana 3. Sijui	
8	Ni kiwango gani cha wagonjwa wa kifua kikuu wenye maambukizi ya UKIMWI?	1- Wote 2-Kiwango kikubwa 3- Nusu 4- Baadhi 5- Hakuna	
9	Je unafikiri mgonjwa wa kifua kikuu ni lazima apate ugonjwa waUKIMWI?	1- Ndiyo 2- Hapana 3-Sifahamu	

10	Taja dalili kuu za ugonjwa wa kifua kikuu kwa mtu mwenye maambukizi ya UKIMWI?	_____	
11	Je ugonjwa wa kifua kikuu unaweza kutibiwa na kupona kwa mtu mwenye maambukizi ya UKIMWI?	1- Ndiyo 2- Hapana 3-Sifahamu	
12	Kama ndiyo, ni kwa kutumia njia zipi?	1- Madawa/Vidonge 2- Madawa asilia 3- Tiba za kiroho 4- Nyinginezo (Taja)_____	
13	Je ni magonjwa gani mengine ambayo mgonjwa mwenye maambukizi ya UKIMWI anaweza kupata kiurahisi ukilinganisha na mtu asiyeumwa?	_____	
14	Je unafahamu nini kuhusu maambukizo ya pamoja ya kifua kikuu na UKIMWI? Unaweza kuchagua zaidi ya moja**.**	1-Kutokana na maambukizi ya UKIMWI, ni rahisi kwa mtu kupata ugonjwa wa kifua kikuu. 2- Kutokana na maambukizi ya kifua kikuu, ni rahisi kwa mtu kupata ugonjwa wa UKIMWI. 3-Hakuna uhusiano kati ya ugojwa wa kifua kikuu na UKIMWI 4- Sifahamu	
15	Je maambukizi ya pamoja ya kifua kikuu na UKIMWI yanaweza kuzuilika?	1- Ndiyo 2- Hapana 3-Sifahamu	

16	Kama ndiyo, ni kwa jinsi gani maambukizi ya pamoja ya kifua kikuu na UKIMWI yanazuilika?	1-Kujiepusha na ngono zisizo salama 2-Kuzuia maambukizi ya kifua kikuu 3-Kufanya uchunguzi wa mwili mara kwa mara 4-Kunywa dawa 5-Kula vyakula vyenye virutubisho. 6-Kampeni za kulimisha jamii 7-Nyinginezo (Taja)---------- 8- Sifahamu	
17	Je ni muhimu kwa mgonjwa wa kifua kikuu kufanyiwa kipimo cha UKIMWI?	1- Ndiyo 2-Hapana 3- Sifahamu	
18	Je ni muhimu kwa mgonjwa wa UKIMWI kufanyiwa kipimo cha ugonjwa wa kifua kikuu?	1- Ndiyo 2-Hapana 3- Sifahamu	

SEHEMU C: MTAZAMO WA JAMII JUU YA UGONJWA WA KIFUA KIKUU NA UKIMWI.

Na.	**Maswali**	**Aina**	**Maoni**
19	Watu wenye maambukizi ya pamoja ya kifua kikuu na UKIMWI si vizuri kujihusisha na shughuli za jamii.	1- Nakubali kabisa 2-Nakubali 3- Sijui 4- Nakataa 5-Nakataa kabisa	
20	Watu wenye maambukizi ya pamoja ya kifua kikuu na UKIMWI si jambo zuri wakifunga ndoa.	1- Nakubali kabisa 2-Nakubali 3- Sijui 4- Nakataa 5-Nakataa kabisa	

21	Si jambo zuri kwa mgonjwa wa kifua kikuu kufanyiwa uchunguzi wa UKIMWI pia mgonjwa wa UKIMWI kufanyiwa uchunguzi wa kifua kikuu.	1- Nakubali kabisa 2-Nakubali 3- Sijui 4- Nakataa 5-Nakataa kabisa	
22	Ni jambo la aibu kwa mgonjwa mwenye maambukizi ya UKIMWI pamoja na kifua kikuu kuielezea jamii juu ya hali yake ya maambukizi	1- Nakubali kabisa 2-Nakubali 3- Sijui 4- Nakataa 5-Nakataa kabisa	

SEHEMU D: UTENDAJI WA JAMII JUU YA KUJIKINGA NA MAAMBUKIZI YA UKIMWI PAMOJA NA KIFUA KIKUU

Na.	**Maswali**	**Aina**	**Maoni**
23	Je unafunika mdomo au pua wakati ukiwa unakohoa au kupiga chafya?	1- Ndiyo 2- Hapana	
24	Kama ndiyo, je ni kwa mara ngapi unafunika mdomo au pua?	1- Kila mara 2- Kwa vipindi	
25	Je unahudhuria kwenye kituo cha kutolea huduma za afya mara unapokohoa zaidi ya wiki 2?	1- Kila mara 2- Mara moja moja 3-Sijawahi	
26	Unajizuiaje na maambukizi ya kifua kikuu ukiwa kwenye mkusanyiko wa watu?	1- Najifunika na leso 2-Natumia maski 3-Situmii chochote 4-Sijawahi kuwa karibu na mgonjwa wa kifua kikuu. 5-Nakaa mbali na watu wakipiga	

		chafya. 6-Nyinginezo (Taja)……..	
27	Je unajizuiaje na maambukizi ya UKIMWI?	_____	
28	Je umewahi kupimwa ugonjwa wa kifua kikuu ?	1- Ndiyo 2- Hapana ☐	
29	Je umewahi kupimwa ugonjwa wa UKIMWI?	1- Ndiyo 2- Hapana ☐	

ASANTE SANA KWA KUSHIRIKI

Appendix III: Informed Consent Form, English version

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCE

DIRECTORATE OF RESEARCH AND PUBLICATIONS

INFORMED CONSENT FORM

ID-NO. ☐☐

Greetings,

My name is…….from School of Public Health and Social Sciences at Muhimbili University of Health and Allied Sciences in Dar es Salaam.

Purpose of the Study

Dear respondent I would like to inform you that this is a research study titled "TB and HIV/AIDS co-infection related awareness, attitude and practices: A *case study in Tunduru District*". I would like to give you information about your participation in the study.

This study is aiming at explore community awareness, attitude and practice towards people living with TB/HIV co-infection in Tunduru district. Kindly be honest and true for betterment of the results that could lead to better intervention and recommendations in future. Once you agreed to participate in this study you will answer questions in the questionnaires prepared for research purpose.

Confidentiality

We will protect and treat the information you will be providing with high confidentiality to the best of our knowledge. We will not write your name on the questionnaire or in any

report/documents that might let someone identifies you. Your name will not be linked with the research information in any way. The investigators will take care of the data. And information collected. However, the final results after the analysis will be shared with national stakeholders and I will submit the manuscript for publication in scientific journals.

Right and withdrawal alternatives

Your participation is voluntary. You may decline from participation to the study at any time during interview even if you have consented to participate. Your decision to participate or not will not be associated with your right to work or take part in any other activities. There is no penalty for refusing to participate on the study. You will not experience any loss if you refuse to participate in this study.

Benefits

The information you provide will help to increase our understanding and give a clear picture on community awareness, attitudes and practice of TB/HIV co-infection in Tunduru district, Tanzania. This can therefore help in providing useful information and contribute to future health care policy formulation and strategic planning.

If any damage will occur

It is not expected that there will be any damage for your participation as the respondent to this study.

Risks

There is no harm for participating in the study. However, you are free to stop participation at any time during this discussion in the event you feel uncomfortable.

Who to Contact

If you ever have questions about this study, you should contact the **Principal Investigator**, **Dr Alex Kazula (+255 787 058 680)** of Muhimbili University of Health and Allied Sciences, P. O. Box 65001, Dar es Salaam.

If you ever have further questions you may also contact**Prof K.SMnyika (MUHAS, P.O Box 65001,** Dar es Salaam – Tanzania, Tel **+2552150302-6**); who is the supervisor of this study (Tel. **+255 789 333 145**)

If you ever have questions about your rights as a participant, you may call Professor M. Mushi, Chairman (Research and Publications Committee, MUHAS. P.O.Box 65001, Dar es Salaam – Tanzania, Tel +2552150302-6)

Signature:

Do you agree?

Participant agrees …….. Participant does NOT agree …….....……

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

Signature of participant ……

Signature of Research Assistant ……..

Date of signed consent ……

DECLARATION

The above document describing the benefits, risks, and procedures for the research titled "TB and HIV/AIDS co-infection related awareness, attitude and practices: A *case study in Tunduru District*" has been read and explained to me and I have agreed to participate. I certify that the nature and purpose, the potential benefits and possible risks associated with participating in this study have been explained to me.

Signature or Right Thumb stamp of the respondent.....DATE.....

Signature of Research Assistant.....……DATE.....

Appendix IV: Informed Consent Form, Swahili version

CHUO KIKUU CHA SAYANSI ZA AFYA MUHIMBILI

KURUGENZI YA TAFITI NA UCHAPISHAJI

FOMU YA RIDHAA

Namba ya utambulisho ☐☐

Ridhaa ya kushiriki kwenye utafiti

Hujambo! Ninaitwa …… kutoka ya Chuo Kikuu cha Afya na Sayansi ya Tiba Muhimbili, Dar-Es-Salaam. nashughulika kwenye utafiti huu wenye lengo la kutathmini ufahamu na uelewa wa jamii juu ya ugonjwa wa pamoja wa kifua kikuu na UKIMWI katika wilaya ya Tunduru.

Madhumuni ya Utafiti

Utafiti huu unafanyika katika kutimiza sehemu ya matakwa ya shahada ya uzamili ya sera ya afya na usimamizi ya Chuo Kikuu cha Afya na Sayansi ya Tiba Muhimbili. Utafiti huu unalenga kuchunguza ‘Ufahamu, mtizamo pamoja na utendaji wa jamii juu ya ugonjwa wa kifua kikuu pamoja na UKIMWI katika wilaya ya Tunduru’. Unaombwa kushiriki katika utafiti huu kutokana na upeo na ufahamu ulio nao ambavyo ni muhimu kwa utafiti huu. Tafadhali kuwa mkweli na muwazi kwa vile matokeo ya utafiti huu yanaweza yakatoa maamuzi na mapendekezo ya baadaye.

Nini kinahitajika ili kushiriki

Ukikubali kushiriki katika utafiti huu, utasailiwa ili kuweza kujibu maswali toka kwenye dodoso lililoandaliwa kwa ajili ya utafiti huu.

Usiri

Taarifa zote zitakazokusanywa kupitia dodoso zitaingizwa kwenye ngamizi kwa kutumia namba za utambulisho.Kutakuwa na usiri wa hali ya juu na hakuna mtu yeyote asiyehusika atakayepata taarifa zilizokusanywa.

Hatari

Hatutegemei madhara yoyote kukutokea kwa kushiriki kwako kwenye kwenye utafiti huu.

Haki ya kujitoa au vinginevyo

Ushiriki katika utafiti huu ni wa hiari. Unaweza kuacha kushiriki katika utafiti huu muda wowote hata kama ulikwishatoa idhini yako. Kukataa kushiriki au kujitoa kutoka kwenye utafiti hakutahusisha adhabu yoyote.

Faida

Kama utakubali kushiriki kwenye utafiti huu taarifa utakazotoa zitatuwezesha kutupa mwanga zaidi juu ya mtazamo jamii juu ya ugonjwa wa UKIMWI na kifua kikuu kwa pamoja katika wilaya ya Tunduru. Matokeo ya utafiti huu yanaweza kutoa taarifa ambazo zinaweza kusaidia katika kuboresha sera ya huduma ya afya na mipango.

Endapo utapata madhara

Hutegemewi kupata madhara yoyote kutokana na ushiriki wako katika utafiti huu.

Nani wa kuwasiliana naye

Kama una maswali kuhusiana na utafiti huu, wasiliana na Mtafiti mkuu wa utafiti huu **Dr Alex Kazula (+255 787 058 680)** wa Chuo Kikuu cha Afya na Sayansi ya Tiba Muhimbili, S. L. P. 65001, Dar es Salaam.

Kama una swali kuhusu stahili zako kama mshiriki unaweza kumpigia**Prof K.S Mnyika (**Chuo Kikuu cha Afya na Sayansi ya Tiba Muhimbili, S. L. P. 65001, Dar es Salaam – Tanzania, Simu**+2552150302-6**); Msimamizi wa utafiti huu.

Pia endapo utakuwa na swali kuhusu haki yako kama mshiriki wa utafiti unaweza kumpigia Prof. M. Moshi, (Mwenyekiti wa Baraza la Utafiti na Machapisho), Chuo Kikuu cha Afya na Sayansi ya Tiba Muhimbili, S.L.P 65001, Dar es Salaam – Tanzania, Simu +2552150302-6)

Sahihi: .....

Je umekubali?

Mshiriki amekubali ……..... Mshiriki hajakubali …….....

Mimi ..... nimesoma maelezo ya fomu hii.

Maswali yangu yamejibiwa.Nakubali kushiriki katika utafiti huu.

Sahihi ya mshiriki……

Sahihi ya mtafiti msaidizi……

Tarehe ya kutia sahihi ya idhini ya kushiriki…….