ADDIS ABABA UNIVERSITY
COLLEGE OF HEALTH SCIENCES
SCHOOL OF PUBLIC HEALTH

ASSESSMENT OF KNOWLEDGE ATTITUDE AND PRACTICES OF TUBERCULOSIS PATIENTS TOWARDS TUBERCULOSIS AND ITS TREATMENT IN ADDIS ABABA CITY GOVERNMENT,ETHIOPIA.

BY :- SENAIT ASSEFA

ADVISOR:- ALEMAYEHU MEKONNEN (MD, MPH)

A THESIS SUBMITTED TO THE SCHOOL OF GRADUTE STUDIES OF ADDIS ABABA UNIVERSITY IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS OF PUBLICE HEALTH.

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APPROVED BY THE EXAMINATION BOARD

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Dr Alemayehu Mekonnen	_____
Advisor	Signature
_____	_____
Examiner	Signature

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Acronyms

AAU	Addis Ababa University
DOTS	Directly observed treatment, short course
DST	Drug sensitivity testing
EPTB	Extra-pulmonary Tuberculosis
FMOH	Federal Ministry of Health
HC	Health center
HF	Health facility
HIV	Human Immune deficiency virus
MDR-TB	Multidrug resistant Tuberculosis
TB	Tuberculosis
TB/HIV	Tuberculosis and HIV co-infection
WHO	World Health Organization
XDR-TB	Extensively Drug Resistant Tuberculosis

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Abstract

Background: Tuberculosis (TB) is a chronic infectious disease that has long been one of the major health problems. It affects individuals of all ages and both sexes. Poverty,

malnutrition and over-crowded living conditions have been known for decades to increase the risk of developing the disease. According to the FMOH hospital statistics data, TB is the leading cause of morbidity, the third cause of hospital admission (after deliveries and malaria) and the second cause of death in Ethiopia after malaria. TB is an obstacle to socio-economic development.

Objective: To assess knowledge, attitude and practice (KAP) of TB patients towards tuberculosis and its treatment in Addis Ababa city, Ethiopia.

Methods: The study design was facility based a cross-sectional quantitative survey was undertaken through interviewing 422 patients in eight selected health facilities of Addis Ababa by using purposeful sampling. The sample size was assigned to each health facility proportionally to their quarterly patient flow. Data entry and analysis was done by Epi Info version 6 software package and SPSS version 16.0. Bi-variate and multivariate logistic regression was employed.

Results: The result of the study showed that the level of knowledge of tuberculosis was low. Only 47.6% of patients attained high overall knowledge score. Statistically significant association was found between high knowledge score and attending formal education (OR=2.4, 95% CI= 1.5, 3.9), owner of Radio/TV (OR=2.7, 95%CI=1.4, 5.0), listening health information through Radio/TV (OR=2.0, 95%CI=1.3, 3.0) and knowing of person suffered from TB (OR= 2.5, 95% CI=1.6, 3.6).

Overall attitude of patients scoring favorable attitude was 56.6% .The findings revealed significant association between high score of attitude and formal education (OR=2.1, 95%CI=1.3, 3.5) and listening health information through radio/television (OR=2.2, 95%CI=1.5, 3.3). Although there was a low level of knowledge and considerable number of the study patients had unfavorable attitude, over all 265 (62.8%) of patients scored favorable practices.

Conclusion and recommendation: Generally over all knowledge and attitude of TB patients about TB and its treatment were low in Addis Ababa city. So implementation of health education and awareness creation by using different mechanisms and further research are recommended.

1. Background

1.1 Introduction

Tuberculosis (TB) is one of the most wide spread infection known in the world. Approximately 1.7 billion people or one-third of the world's population is to be infected with mycobacterium tubercle bacilli. Every year, about nine million cases of active TB disease and 2 million deaths occur globally. Most of the cases of active TB (7 million) are in Asia and Africa (1-3). Tuberculosis is the major cause of death in developing countries; it comprises 25% of avoidable adult deaths. TB affects mostly young adults in their productive age groups because of the HIV epidemic(4-7).The annual infection rate in developing countries reached 2% or more; where as in developed countries this figure is 0.5 %(8).

Although the new tuberculosis treatment strategy based on short course chemotherapy is introduced in 1991, Africa is falling short of the world health organization's targets for case detection and treatment rates (1). In Africa, more than 4 million people suffer from active tuberculosis (TB) and 650,000 deaths occurred every year (9).

In Ethiopia, the effort of controlling tuberculosis began in the early 1960s with the establishment of TB centers and sanatorium in three major urban areas of the country (7). A nationwide survey conducted in Ethiopia between 1987&1990 showed that the annual risk of infection of 1.4% which is lower than the 3.0% reported in 1953-1955 (10). In 1992, a standardized TB prevention and control program, incorporating directly observed treatment, short course (DOTs) was started as a pilot in Arsi and Bale zones of Oromia region (7).

1.2 Statement of the problem

For the last decade (1999-2008), Ethiopia registered a total 0f 372,427 new smear positive TB cases and 1,166,863 new all forms of TB cases. Though these cases were registered, case detection rate (CDR) remained within the range of 31-38% for the last ten years. Whereas the TSR of smear positive TB patients had increased steadily up to 84% during the same period only 1%short of the global target (11).

The HIV pandemic presents a massive challenge to the control of TB at all levels. The synergy between TB and HIV/AIDS is strong .In high HIV prevalence TB is the leading cause of morbidity and mortality, and HIV is driving the TB epidemic in many countries, especially in sub-Saharan Africa (11). World health organization estimated that three million people had both HIV and tuberculosis infection in 1990 of which 78% occurring in Africa. This association responsible for fueling of the incidence of tuberculosis (4).
In 2004, Ethiopia started TB/HIV collaborative activities. According to the data from the routine report, the co- infection rate of TB/HIV in Ethiopia is declining from 31% in 2007to 20% in 2009.Where as in Addis Ababa, 2008/09 performance TB/HIV co-infection rate was 33%(11).

MDR- TB is a man made problem, during the 1990's .It emerged as a threat to TB control (12). Approximately among 440,000 cases of MDR-TB that occurred in 2008; only 7% were identified and reported by WHO. Of these cases, only a fifth was treated according to WHO standards (13). In Ethiopia, a study conducted from 1994 to 1995 (n=338) in Harari region showed that the overall prevalence of resistance to one or more anti tuberculosis was 37.3%. Initial and acquired resistances were 32.5% and 51.2% respectively .Multi drug resistance was detected in 3.5% of cases who had previously history of treatment (14). And in study from 1984 to 2001, in Ethiopia, showed that the initial resistance to isoniazed ranges from 2% to 21% and initial résistance to streptomycin ranges from 2 to 20%. MDR-TB was also reported in about 1.2% of new and 12% of re-treatment cases (15).

In-adequate and incomplete treatment and poor treatment adherence to MDR-TB drugs has led to a newer form of drug resistance known as extensively drug resistance tuberculosis (XDR-TB)(16). In 2008, XDR-TB reported by as many as 49 countries. In 2007, two countries have confirmed XDR-TB cases in Africa; South Africa (approximately 391 cases) and Mozambique (2 cases). However there is no official report of XDR TB in Ethiopia (11).

1.3 Significance of the study

Ethiopia ranks 15th of the 27 high M(X) DR TB countries with more than 5000 estimated MDR-TB patients reported in 2006 (11). TB is a major public health problem in Addis Ababa and there is an emerging of multi drug resistance tuberculosis which is a challenge for tuberculosis control program. Approximately 645 MDR-TB patients were estimated to enroll for treatment within two years (2009/2010) in Addis Ababa. Currently there is 133 MDR-TB patients enrolled and 117 patients put on treatment and eight deaths occurred. As it is recommended FMOH TB/HIV guideline any TB case requires adherence to the treatment regimen (7). Poor adherence to drug regimens leads to the emergence of MDR-TB (17). Poor awareness about the disease was one of the reason contributing to poor adherences and defaulting(18).This adherence level for effective management of the disease requires pts knowledge, attitude and practice towards the regimen. So previously limited study has been conducted to assess knowledge attitude and practice of patients in the region. There for this study can provide information on the existing knowledge, attitude and practice of TB patients. The findings can be used as an input for program planners for FMOH, Addis Ababa health bureau (AAHB) and other partners working on TB programs.

2. Literature Review

Tuberculosis control program

Tuberculosis (TB) is an infectious disease caused by mycobacterium tuberculosis. Occasionally the disease can also be caused by mycobacterium bovis and mycobacterium africanum. Most commonly transmitted by inhalation of infected droplet nuclei and principally affects the lungs (7).

Tuberculosis (TB) control program in the world has developed between 1948 &1963 (the classical TB control period), The new realistic tuberculosis control program had been launched in 1964 (the realistic TB control period, 1964-1990). However tuberculosis did not decrease as expected, and the simple and clear TB control program aiming at 85% or more cure rate, later by DOTs strategy (DOTs period, 1991-1999). And to expand and strengthen tuberculosis control program more and more, the stop-TB partner-ship has been started in 2000 (the stop –TB period, 2000 -) (19).

The global detection rate of new smear positive cases by DOTS programs increased from 11% in 1995 to 45% in 2003 and could reached 60% by 2005. More than 17 million patients were treated through DOTS program between 1994 and 2003, with an overall treatment success rate of more than 80% since 1998. In 2003 an overall reported treatment success was 82%. In African countries with high and low HIV infection rates (71% and 74%) respectively (20).

For the last decade (1999-2008), Ethiopia registered; CDR remained within the range of 31-38% for the last ten years. Whereas the treatment success rate (TSR) of smear positive TB patients had increased steadily up to 84% during same period only 1%short of the global target.

Based on 2008 /09 report TSR of Addis Ababa region was 72% and case detection rate was 63%, it indicates below the WHO's targets for treatment success and case detection (11).

Burden of the disease

The incidence of tuberculosis cases occurring each year was predicted to increase from 7.5 million in 1990, 8.8 million in 1995, 10.2 million in 2000 and 11.9 million in 2005. Approximately, 2.5 million in 1990, 3million in 1995 and 3.5 million in 2000 deaths occurred from TB in the world. The most important cause, of world- wide increase in TB are; non–compliance with control program, in-adequate diagnosis and treatment, migration, Human immune deficiency virus (HIV), ambulatory and self administered treatment and increasing drug resistance(21-23).

Tuberculosis kills approximately 1 million women per year and it is estimated that almost 1 billion women and Girls are infected with TB world-wide. Studies from Vietnam have shown that women with pulmonary TB are diagnosed on average 2 weeks later than men because of delays from the health care provider. In a study of persons with cough it was found that men were given sputum examinations more often than women (24).

The highest level of TB infection in the world may be found in eastern Asia, Oceania and in several areas in Africa. In Africa more than 4 million people suffer from active tuberculosis (TB) and 650,000 deaths occurred every year (8, 9).

TB is a major public health problem in Ethiopia, ranks seventh among the world's 22 high burden TB countries which accounts approximately 80% of the estimated number of new TB cases arising each year(7, 25) and the third in African countries (11).

In Ethiopia, 2008/09, a total of 145,602(97.8%) new all forms of TB cases were notified out of which 44,396(30%) were pulmonary smear positive cases. The CDR for smear positive TB cases was very low (34%) compared to the global target of at least 70% (11).

According to FMOH, hospital statistic data TB is the leading cause of morbidity, the second cause of death and the third cause of hospital admission in Ethiopia (7, 11). In Addis Ababa, 2008/09,a total of 14,639 new all forms of TB cases were notified out of which 3,027 were pulmonary smear positive cases (11).

Health care seeking behavior and treatment compliance

In a study conducted among patients with tuberculosis on the DOTS regimen in Jimma zone to determine rate of defaulting and factors associated with it, showed that overall rate of defaulting was 6.7%. The default rate from the DOTS regimen was found to be quite low when compared to the rate of defaulting from the standard regimen in Jimma zone. Socio-economic factors including distance of patients' residence from the health institution, lack of money for paying transportation and poor awareness about the disease were the major reasons contributing to poor compliance and defaulting(18).

A study conducted in 2002 to assess Knowledge, Attitude and Practice of tuberculosis patients and their care takers in Bahir Dar Special Zone Amhara Region. In this study, twenty four percent of patients mentioned bacteria/germs as the cause of tuberculosis and thirty six percent of patients mentioned that wind blow/"Nefas simeta" as the cause of tuberculosis. The study showed that only 31.6% of the respondents scored higher over all knowledge score. Statistically significant association was found between scoring higher overall knowledge and education level of write and read, being civil servant and private worker. The study showed that 242(58.0%) and 28(6.7%) of patients agreed TB may be caused by germs and by witchcraft respectively. And 95.7% of patients agreed on the statement of taking drugs prescribed by modern medicine can cure TB and 36.9% of patients agreed on traditional medicine can cure TB. Only 15% caretakers and 14% of patients had favorable attitude to the follow up and control of the spread of tuberculosis. Statistical significant association was found between high score of attitude and formal education, being civil servant ,being never married, monthly income greater than 500+Birr and listening through radio(26).

Another study conducted in 2009 in a rural district of Amhara Region, Ethiopia to describe and analyze health care seeking among TB suspects and pulmonary TB (PTB) cases, showed the majority, 787 (78%)TB suspects and 33 (82.5%) PTB cases had taken health care actions for symptoms from sources outside their homes. The median delay before the first action was 30 days. Women were found to be less likely to visit a medical health provider than men. Those with a long duration of cough and those with a previous history of TB were more likely to visit a medical health provider compared to those with a shorter duration of cough and with no history of TB(27).

A survey conducted in Ethiopia in 2009 (n= 924) to investigate patterns of health seeking behavior and determine risks factors for delayed among pulmonary TB patients showed that Fifty three percent of patients had delayed their first consultation for >or= 30 days. Patient delay for women was 54% and men 51%. The delay was higher for patients who used informal treatment (median 31 days) than those who did not (15 days). Prolonged patient delay (>or= 30 days) was significantly associated with smear positive pulmonary disease, rural residence, illiteracy and lack of awareness/misperceptions of causes of pulmonary TB, prior treatment with holy water, treatment by private practitioners and treatment by drug vendors(28).

A study conducted among patients registered at the Addis Ababa Tuberculosis Centre in Ethiopia to determine the rate of defaulting from treatment and factors associated with it. A high rate of defaulting, 82% was found. The rates of defaulting were higher in males, in the older age groups and in those living near to the TB centre. Social problems and feeling of improvement were the top two reasons for patients to default. Inadequate knowledge, low educational level, nearer distance and negative attitude toward the TB Centre were found to be statistically significant predictors for defaulting $p < 0.0001$, $p < 0.001$, $p < 0.001$, and $p < 0.05$ respectively(29).

A study conducted in Southwest Ethiopia among TB suspects to assess knowledge about and stigma towards TB and their health seeking behavior of the 476 pulmonary TB suspects revealed, 395 (83.0%) had ever heard of TB; "Evil eye" (50.4%), germs (33.7%), Satan and witchcraft (15.9%) were thought to be causes of TB. 91.6% of the TB suspects thought that the lungs were the most affected part of the body. Cough for more than 2 weeks (74.4%) and hemoptysis (50.6%) were mentioned as TB symptoms. Airborne transmission through coughing (83.8%), drinking unclean water and eating unclean food (34.2%) were stated as modes of TB transmission. Further, 82.3% responded that it is possible to prevent TB. To avoid coughing in front of people and proper disposal of sputum were cited as preventive strategies by 69.9% and 63.1% of the respondents respectively. Individuals who could read and write were more likely to be aware about TB and more likely to know that TB is caused by a microorganism than non-educated individuals. Males were more likely to know the cause of TB than females. 51.3% of TB suspects perceived that other people would consider them inferior if they

had TB, 39.5% would be embarrassed, High stigma towards TB was reported by 199(51.2%). 220 (46.2%) did not seek help for their illness and 120 (25.2%) contacted a health institution, 125 (26.3%) went to drug vendors, 29 (6.1%) did self medication and 2(0.4%) went to traditional healers. Individuals who had previous anti-TB treatment were more likely to have appropriate health seeking behavior than those who had not(30).

Similar studies conducted in South Africa Patients with tuberculosis (TB) were interviewed to ascertain their knowledge and attitudes about the disease. The major signs and symptoms were cough by 89%, loss of appetite by 67%, weight loss by 63% and night sweats by 62%. Although 87% thought that TB affected many people, it was rarely discussed; they considered their families were not at risk, it was easy to prevent, there was complete recovery after treatment and it was an acceptable disease to family and friends. It was concluded that denial of personal involvement and a positive attitude towards cure and prevention may be factors that allow tuberculosis patients to cope with their disease(31).

Another study conducted in South Africa to examine patterns of health seeking behavior among TB patients in 2001(n=298) showed that median total delay for hospitalization was 10 weeks , with patient delay contributing a greater proportion than service provider delay . Patients more often presented initially to public hospitals (41%) or clinics (31%) than to spiritual (traditional health (15%) or private practioner (13%). Total delay was shorter amongst those presenting to hospitals than those presenting to clinics, with a significantly smaller proportion of the total delay attributable to the health service provider (18% vs. 42%)(32).

Between January 2006 and July 2007 a cross-sectional study conducted on pulmonary TB patients in Zambia to investigate patient's attitudes to seek health care, assess the care received from government health care centers based on TB patients' reports, and to seek associations with patient adherence to TB treatment programme revealed, delayed to seek treatment (68%) even when knowledge of TB symptoms was high (78%) or when they suspected that they had TB (73%). Respondent adherence to taking medication was high (77%) but low adherence to submitting follow-up sputum (47%) was observed in this group. Respondent adherence to treatment was significantly associated with respondent's knowledge about the disease and its treatment ($p < 0.0001$) (33).

Between 2000 and 2001 a study in Nigeria (n= 168), on TB patients to assess the effects of knowledge attitude and practice on their care seeking behavior, showed that out of 32 patients who presented and diagnosed with in 4 weeks of onset of symptoms 50% had knowledge of the a etiological agent of the disease and 60% had some idea of the mode of transmission of the 105 patients who presented and were diagnosed 12 weeks after the onset of symptoms, 97% had no knowledge of the a etiological agent and 95% had no idea of the mode of transmission(34).

Another study also conducted in Nigeria to exploring the health seeking behavior of TB patients in 2010 showed that appreciable level of knowledge of the infection and this makes the respondents not to absolutely fear the epidemics in terms of not being curable or manageable. The respondents know the basic symptoms of TB to include: a cough that persists for more than a month (100%); feeling tired all the time (83%), weight loss (73%), cough blood (98%), loss of appetite (32%), night sweat (45%), and fever (20%). Knowledge of the severity of an illness will determine the course of action for treatment of the illness. However overwhelming majority does not accept that TB is an air borne disease. Significantly over 90 percent accept modern health care as the best route for managing TB (35).

A cross sectional survey from Cameroon in 2007 (n= 243) to determine patient delay and its causes in patients resulted that Median patient delay in Cameroon was 2.0 (1-4) weeks, shorter than the 4.3 (2-13) week delay in Ethiopia. Significantly fewer patients delayed more than 1, 2 and 3 months in Cameroon than in Ethiopia. Delays in Cameroon were significantly associated with being the main income earner, the belief that TB is stigmatizing, and the use of traditional medicine - the latter being the only factor significant in both studies(36).

A study conducted between 1997 and 2004 in Scotland to examine perceptions and understanding of disease causation in tuberculosis patients showed varying levels of knowledge, but most believed that tuberculosis was caused by a pathogen, spread by person-to-person contact. Modes of transmission were thought to include airborne transmission, sharing utensils with an infected individual, consumption of contaminated foods/liquids, and exchange of bodily fluids. Prolonged contact was not thought to be

required for transmission to occur. Impaired immunity, social factors and environmental factors were believed to enhance the potential for transmission(37).

A cross sectional study was conducted in Pakistan to assess knowledge of patients with tuberculosis; about their disease and misconceptions regarding TB. A total of 170 patients were interviewed. Cough, fever, bloody sputum and chest pain were recognized as the common symptoms of TB. Eleven (7%) patients thought TB was not an infectious disease and 18 (10.6%) did not consider it a preventable disease. Contaminated food was considered the source of infection by 81 (47.6%) and 96 (57%) considered emotional trauma/stress the causative agent of TB. No counseling about preventing spread was received by 81 (50%) patients and 97 (57%) considered separating dishes as an important means of preventing spread. Thirty one (18%) patients would have discontinued their medications following relief of symptoms. Thirty nine (23%) of the respondents thought that TB could lead to infertility and 66 (38.8%) believed that there were reduced chances of getting married following infection(38).

A KAP survey conducted in Iraq 2004 (n= 1000) on TB patients and health care workers, showed that 64.4% of patients had good knowledge, while 54.8% had negative attitudes and practices towards TB. Of health care workers, 95.5% had good knowledge about TB and by contrast, health care workers practice was poor: only 38.2% handled suspected TB cases correctly(39).

A study in Turkey in 2005 to assess patients adherence to TB treatment revealed that a higher rate of adherence was observed among females than males (79.2 versus 58.4%, respectively), older patients were more non adherent. The adherence rate in non-smokers was significantly higher than that of smokers (81.4 and 52.4%, respectively), patients with pulmonary TB (65.0%), while patients with extra respiratory TB had the lowest adherence rates (45.5%). The presence of cough was significantly associated with adherence. A significantly higher adherence rate was observed in patients without hemoptysis (40).

Drug Resistance

Drug Resistance is defined as Resistance to first line anti-tuberculosis (TB) drugs. MDR-TB is resistant to at least rifampicin and isoniazid among the first line anti tubercular drugs and XDR-TB is resistant to at least rifampicin and isoniazid among the first line anti tubercular drugs (MDR-TB) in addition to resistance to any fluroquinolones and at least one of three injectable second line anti tubercular drugs i.e. amikacin, kanamycin and/or capreomycin (16, 41).

Although progress has been made to reduce global incidence of drug susceptible tuberculosis, the emergence of multi drug resistant (MDR) and extensively drug resistant (XDR) tuberculosis threaten to undermine these progress (13).

The re- emergence of TB has become a major health problem worldwide, especially in Asia and Africa. Failure to combat this disease due to non – adherence or in appropriate drug regimens has selected for the emergence of multiple drug resistant (MDR) TB (17). MDR- TB treatment requires the use of second line drugs that are long complex and costly, and has a considerable rate of adverse effects than first line –drugs (12).

Approximately, 489,139 MDR-TB cases emerged in 2006 globally and the proportion of resistance among all cases is around 4.8%. China and Indian carry approximately 50% of the global burden and the Russian federation a further 7% (42).

Drug resistance exists in most African countries as a result of under investment in basic TB control; poor management of anti tuberculosis drugs and virtual absence of infection control measures (43). Study conducted in Africa to asses factors leading to development of drug resistance resulted that the re-treatment failure rate was the most predictive indicator for MDR-TB (44).

Globally, Ethiopia ranks 15th of the 27 high M(X) DR TB countries with estimated 5825 MDR-TB cases in 2006 (11) .A national survey conducted from DST between 2003 and 2006 showed that levels of MDR–TB are: 1.6% and 11.8% in new and re treatment cases of TB patients respectively (7).

Prevalence rates of XDR-TB of total MDR cases are; 6.6% overall worldwide, 6.5% in industrialized countries, 13.6% in Russia and Eastern Europe, 1.5% in Asia, 0.6% in Africa and Middle East and 15.4% in Republic of Korea (16) .

3. Objectives

3.1. General objective

The general objective of this study was to assess knowledge, attitude and practice (KAP) of tuberculosis patients towards tuberculosis and its treatment in Addis Ababa City Government, Ethiopia.

3.2. Specific Objectives

1. To assess the level of knowledge of tuberculosis patients & about cause, mode of transmission, sign and symptom, prevention of tuberculosis & its treatment.
2. To assess the attitude of tuberculosis patients towards cause, treatment (modern, traditional).
3. To assess the practice of tuberculosis patients in attending follow up, Compliance and seeking care.
4. To identify factors that influences the knowledge attitude and practice of tuberculosis patients regarding tuberculosis and its treatment.

4. Methodology

4.1 Study area and period

The study was conducted in Addis Ababa city government which is the capital city of Ethiopia. Administratively, Addis Ababa is divided in to 10 sub cities and 116 woredas with an area of 540 sq. km. According to the 2007 population census, the total population of Addis Ababa was 2,738,248 of which 1,304,518(49%) were males and 433,730(51%) were females.

At the time of this study, Oct 2010 to May 2011, there were a total of 30 hospitals, 27 health centers, 387 clinics, and 42 health posts in Addis Ababa. Among these, currently TB service is provided at 67 HF including 12 Government and 12 private Hospitals, 27 HC, 16 private higher Clinics. Hospitals, Health Centers and Clinics were selected for the current study using based on TB patient load. Tuberculosis control program utilizing the directly Observed Treatment Short course (DOTS) and microscopic examination of sputum is being carried out. A total of 14,639 tuberculosis cases were registered during September 2009/ 2002EC to August 2010 /2002EC.

4.2 Study design: - The study used quantitative study method in the form of facility based cross –sectional survey.

4.3 Source population: - The source population was all TB cases registered and put on TB treatment in Addis Ababa Health facilities.

4.4 Study Population: - All TB cases registered and put on TB treatment in the selected Health facilities at the time of the survey/study.

Inclusion criteria: All registered TB patients aged 18 and above who started treatment and volunteered to participate in the survey.

Exclusion criteria: Tuberculosis cases whose address either out of Addis Ababa or who are referred to other institutions out of Addis and seriously ill cases.

4.5 Sample size determination:

The sample size was determined using the formula for estimating a single population proportion.

$$n = \frac{(Z\ \alpha/2)^2\ p\ (1-p)}{d^2}$$

Where:

n=the required sample size

Z=The value of Z in the standard normal distribution that corresponds to α-level 0.05.

p=Assumed proportion of knowledge of TB patients=P=50%

d=The margin of error (precision) =5%

$$n = \frac{(1.96)^2 x 0.50(0.50)}{(0.05)^2} = 384$$

Taking a 10% non-response rate, the total sample size was 422.

4.6 Sampling procedure

Through examining three month reports(from June 1 to August 30) of 2010 of the 67 health facilities providing TB diagnosis and treatment services, the patient load across the facilities was compared. Based on the result, those facilities that have optimal client flow & documentation was purposefully selected. In addition, in order to maintain representativeness of the study facilities from different sub cities and level was taken into consideration. Accordingly, Addis General Hospital, Yeka HC, Kotebe HC, Addis Ketema HC, Kolfe HC, Meshualkia HC, T/hymanot higher clinic were included in this study. St Peter TB specialized Hospital which was the only Hospital that gives MDR-TB diagnosis and treatment service was also included in the study due to the type of service the facility was providing.

Hence, the calculated sample size was allocated to the facilities based on their case load during the previous three months.

Finally, those TB patients that fulfill the inclusion criteria were interviewed until the calculated sample size attained for the respective facilities.

4.7 Data collection procedure

Data was collected from 422 patients at TB clinic using interviewer administered structured questionnaire, the questionnaire was developed by adapting from previous similar studies(26) and reviewing of different literatures. Interviewers were trained on how to use the data collection instruments and approach study participants.

4.8 Variables

Dependant variables

-Knowledge about cause, transmission, sign and symptom, prevention and its treatment.

-Attitude towards tuberculosis and its treatment (Modern/Traditional).

-Practice in attending follow up, compliance and seeking care when need arise.

Independent variables

- Socio – demographic variables; Age, Sex, Marital status, Religion, Ethnicity

-Socio – economic variables: Monthly income, Occupation, Educational status

-Enabling factors-Television/Radio owner, Knowledge of a person suffers from TB, Number of children.

4.9 Operational Definition

- **Knowledge:** It is information that an individual is aware of it. In this study it was measured based on the ability of patients correctly identify and respond to cause (1question), mode of transmission and factors related to transmission (2questions), sign & symptoms(7 questions), possible ways of prevention of tuberculosis(3questions) and treatment(1question).Each correct answer had one point.

  -Overall knowledge: It is the summary of all the above 14 questions. The mean was considered to classify high and low knowledge.

  -**High Knowledge:**-Knowledge score that fell above the mean.

  -**Low Knowledge: -** Knowledge score below the mean.

- **Attitude:** is the perception or outlook regarding tuberculosis. It was measured by feelings towards the cause (2 questions), treatment and about the follow up (3 questions) and felling when others knew that you had TB (1 question). Six questions show respondents' agreement or disagreement. Each had one point if correctly answered. The base for classification of favorable and un favorable was the mean of each score.

  -Favorable Attitude: - Attitude score that fell above the mean.

  -Unfavorable Attitude:-Attitude score below the mean.

- **Practice:** is the overt behavior, habit or custom that a person does, follow up or carry out in his/her daily life. It was measured based on previous health seeking behavior, decisions and actions taken to seek treatment and advice. Twelve questions were used to assess the experience and practice of the patients. Each

had one point if correctly answered. The base for classification of favorable and unfavorable was the mean of each score.

-Favorable Practices: - practice score that fell above the mean.

-Unfavorable Practices:-practice score below the mean.

- Smear positive pulmonary TB: A patient with two sputum specimens positive for acid fast bacilli by microscopy.
- Smear Negative pulmonary TB: A patient with three sputum specimens negative for acid fast bacilli by microscopy.
- Multi drug-resistant TB: Mycobacterium tuberculosis resistant to isoniazid and rifampicin, with or without resistance to other drugs.
- Extra pulmonary TB: Tuberculosis in organs other than the lungs.
- Optimal client flow: Three month reports (from June 1 to August 30) of 2010 of the 67 health facilities providing TB diagnosis and treatment services, the patient load more than 120 TB patients.

4.10 Data quality management

The questionnaire was prepared originally in English and then translated in to Amharic for the actual data collection and back translated in to English. One day training was given for two supervisors (BSC Nurses) and eight data collectors (Diploma Nurses) and the questionnaire was pre-tested in two health facilities other than the actual sites. The pretesting was served to make data collectors familiar to the instrument and based on the findings the questionnaire was modified. The collected data was checked for completeness during data collection before entered in data entry form.

4.11 Data analysis technique:

EPI-6 and SPSS 16.0 were used for data entry, editing and analysis.

Frequencies and percentage of different variables was computed for description as appropriate. Odds ratio with 95% confidence interval was computed to assess the presence and degree of association between the dependent Versus Socio-demographic and other enabling factors, multiple logistic regression was used to reduce bias due to confounders.

4.12 Ethical consideration

Ethical clearance was obtained from REC (Research and Ethical Committee) of the School of Public Health, Addis Ababa University and from ethical committee of AAHB and St Peter Hospital. Consent was obtained from HF the study was conducted and the study participants after a brief explanation of the benefit of the study. Participants' confidentiality of information was assured by excluding names as identification in the questionnaire.

4.13 Dissemination of Results

Primarily this study will be defended in the SPH, as partial fulfillment of the degree of masters in PH. It is also serve as an input for the FMOH, Addis Ababa health bureau and other partners working on TB program. Finally the findings may be published in national and international journals for dissemination worldwide.

5. Results

5.1. Socio demographic characteristics of the study population

A total of 422 patients were interviewed, giving 100% response rate. Of the study subjects, 215(50.9%) and 207(49.1%) were males and females respectively. Among all, 194(46.0%) of patients were 18-27 years of age. The mean age was 24.2±9.12SDyears with median age of 22 years, minimum of 18 and maximum of 64 years (Table 1).

Two hundred thirty five (55.7%) of patients were never married, 149(35.3%) currently married. 21(5%) divorced, of which 2(0.5%) were occurred after TB diagnosis and 17(4%) patients were widowed, of these 3(0.7%) were due to TB (Table 1).

The socio-economic characteristics of the study showed that, among all patient, 323(76.5%) of patients attended formal education, among this 171(40.5%) of patients were 7-12 grade completed. while 99(23.5%) of patients reported that they were took informal education (were illiterate and only read and write). Similarly, results of occupational status of patients indicated, 236(55.9%) of patients were employed where as 186(44.1%) of patients were unemployed (Table 1).

Table 1: Socio demographic characteristics of the study population, Addis Ababa city Government, May 2011

Characteristics	**Numbers (n=422)**	**Percent**
Sex		
Male	215	50.9
Female	207	49.1
Age(years)		
18-22	106	25.1
23-27	88	20.9
28-32	77	18.2
33-37	43	10.2
38-42	47	11.1
43+	61	14.5
Mean+ SD	24.2+9.1	
Marital status		

Never married	235	55.7
Currently married	149	35.3
Divorced/Separated	21	5.0
Widowed	17	4.0
Religion		
Orthodox	295	69.9
Other Christianity	27	6.4
Muslim	100	23.7
Ethnicity		
Amhara	170	40.3
Guragie	124	29.4
Oromo	92	21.8
Tegrie	25	5.9
Others	11	2.5
Education		
Illiterate	80	19.5
Read & write	19	4.5
Grade 1-6	95	22.5
Grade 7-12	171	40.5
12+	57	13.5
Occupation		
Un employed	186	44.1
Employed	236	55.9

5.2. Enabling factors of the study population

A Little bit more than half, 246(58.3%) of patients have no child where as 12(2.8%) of patients have 7+ children.

Majority, 368(87.2%) of patients were owners of Radio/Television. Among those that have Radio/Television, 262(62.2%) of patients listen health information through these media (Table 2).

Table 2: Enabling factors of the study population, Addis Ababa city Government, May 2011.

Characteristics	**Numbers (n=422)**	**Percent**

No of children		
No child	246	58.3
1-6	164	38.9
7+	12	2.8
Do you have Radio/TV		
Yes	368	87.2
No	54	12.8
Do you listen to Radio/TV		
Yes	262	62.1
No	160	37.9

5.3. Categories of patients, treatment follow up and satisfaction

One hundred thirty five (32.0%) of patients were sputum smear positive pulmonary tuberculosis (SPPTB), 186 (44.1%) were sputum smear negative pulmonary tuberculosis (SNPTB), 20 (4.7%) were multi drug resistant tuberculosis and 81(19.2%) were extra pulmonary tuberculosis cases.

Almost all, 421(99.8%) of patients reported taking medication as ordered. Thirteen patients missed (9 patients once, 3 patients twice and 1 patient three times) their appointment dates. The reasons for missed appointments were: - 4 of them forgetting the date of appointment, 7 going to somewhere during the appointment dates and the rest reported drug side effects (Table 3).

From all patients, 69(16.4%) had developed side effects of treatment. The side effects reported were gastritis 28(6.6%), itching and or rush 21 (5.0%), body weakness 7(1.6%), numbness of extremities 6(1.4%) and others 7(1.7%) (Liver and vision problem).
The actions taken by patients that developed side effects were; stopping the drugs for a short time, continuing medication as ordered and consulting health workers (Table 3).

Majority, 404(95.7%) of patients were satisfied with the care provided during health facility visit while 15(3.6%) of patients were not satisfied. The reported reasons were short date of appointment, inconvenient time (late hour appointment) for drug collection and difficulties faced to get contact person required to start TB treatment (Table 3).

Table 3: Categories of patients, treatment follow up and satisfaction with care Provided during health institution visit, Addis Ababa City Government, May 2011.

Characteristics	Number (n=422)	Percent
Categories of patients		
Smear +ve pul. TB (SPPTB)	135	32.0
Smear –ve pul.TB(SNPTB)	186	44.1
MDR-TB	20	4.7
Extra-pul.TB(EPTB)	81	19.2
Taking treatment as ordered		
Yes	421	99.8
No	1	0.2
Had side effects		
Yes	69	16.4
No	353	83.6
Being satisfied with the care provided		
Yes	404	95.7
No	15	3.6
No response	3	0.7

5.4. Knowledge of patients about TB; Information, duration of treatment, outcome, organs that affect, disease related to TB.

Regarding knowledge of patients related to tuberculosis was examined. Accordingly it showed that 319 (75.6%) of patients reported that they heard about the disease called tuberculosis and 240(56.9%) of patients mentioned that they knew someone who was infected with tuberculosis before diagnosed the disease. Four hundred eleven (97.4%) of patients mentioned that the outcome of TB patients if not treated was death (Table 4).

Among all patients, 350(82.9 %) of patients mentioned that tuberculosis affects lungs followed by lymph nodes and glands 102(24.2%) and bones 96(22.7 %). Patients mentioned diseases that Co-exist with tuberculosis were HIV/AIDS 238(56.4%), followed by pneumonia 104(24.6%) and diarrhea 34(8.1%). Majority 389 (89.8%) of patients mentioned that HIV/AIDS could complicate tuberculosis (Table 4).

Table 4: Knowledge of patients about TB; Information, duration of treatment, outcome, organs that affect, disease related to TB**,** Addis Ababa City Government, May 2011.

Characteristics	**Numbers (n=422)**	**Percent**
Heard about TB		
Yes	319	75.6
No	103	24.4
Know someone infected with TB		
Yes	240	56.9
No	182	43.1
Length of TB Treatment(DOTS		
Correct	419	99.4
Incorrect	3	0.6
Outcome of TB patients if not treated		
Death	411	97.4
Disability	9	2.1
Spontaneous cure	2	0.5
Organs that TB affects*		
Lungs	350	82.9
Bones	96	22.7
Skin	51	12.1
Lymph nodes &Glands	102	24.2
Intestine ,Liver, kidney, Heart	37	8.8
Others	12	2.8
Disease related to TB*		
HIV/AIDS	238	56.4
Diarrhea	34	8.1
Pneumonia	104	24.6
Common cold	13	3.1
Others	22	5.2
HIV/AIDS complicates TB		
Yes	379	89.8
No	43	10.2

*Multiple responses

5.5. Knowledge about TB cause, transmission, sign and symptom, prevention and its treatment.

According to table 5 TB patients, 319 (75.6%) mentioned the cause of tuberculosis however 103(24.4%) of patients said they don't know the cause of tuberculosis. The causes mentioned by majority of patients were Wind blow/"Nefas Simeta" 145(34.3%) and Bacteria/Germs 115(27.3%). Bad smelling, "Meche", lack of balanced diet, cold water, cigarette smoking, ingesting raw milk, and contaminated food were other causes mentioned by patients (Table 5).

Majority 297(70.4%) of patients reported that transmission of tuberculosis is through air droplet. Other Ways and risk factors for transmission of tuberculosis mentioned by the patients included overcrowding, using utensils that a TB patient used, sexual contact, sleeping together and contact with sweat of TB (Table 5).

Cough$\geq$ 2weeks,persistent fever, loss of weight, hemoptysis, night sweating, chest pain, rheumatism, loss of appetite, swelling and ulcer of any external body part and body weakness were mentioned as the sign and symptom of all forms of tuberculosis. The mean score knowledge about the sign and symptom of tuberculosis was 3.24$\pm$1.8SD with minimum of zero and maximum of seven (out of seven questions).Eleven patients scored seven out of seven. Thirty patients did not mention at least one correct sign and symptom of TB. Most, 357(84.6%) of patients mentioned that cough greater than or equal to two weeks as the common sign and symptom of tuberculosis. Among all patients, 220 (52.1%) of the patients scored below the mean whereas 202 (47.9%) scored above the mean (Table 5).

Majority 407 (96.4%) of patients were mentioned that prevention of tuberculosis was possible using different mechanisms. Among these prevention mechanisms, not coughing/sneezing in front of other people was mentioned by 360 (85.3%) of patients, spiting in a container was mentioned by 256(60.7%) and ventilating living room/open windows was mentioned by 164 (38.9%) of patients. Other mechanisms such as not using utensils that were used by a TB patient 100(23.7%) and avoiding sexual contact with TB patients 9(2.1%) were also mentioned. In line with this49 (11.6%) patients mentioned that TB patients who are already treated and cured can spread the disease (Table 5).

Table 5: Knowledge of TB patients about TB cause, transmission, sign and symptom, prevention and its treatment. Addis Ababa City Government, May 2011

Characteristics	Numbers (n=422)	Percent
Cause for TB		
Bacteria/germ	115	27.3
Wind blow/Nefas simeta	145	34.4
"Meche"	9	2.1
Bad smelling	21	5.0
Cold water	1	0.1
Cigarettes smoking	2	0.5
Lack of balanced diet	19	4.5
Ingesting raw milk	4	0.9
Contaminated food	3	0.7
I don't know	103	24.4
Mode of transmission*		
Air droplet	297	70.4
Overcrowding	119	28.2
Using utensils that a patient used	72	17.1
Sexual contact	4	0.9
Sleeping together &contact with sweet	2	0.5
Sign & Symptoms*		
Cough ≥two weeks	357	84.6
Persistent fever	172	40.8
Loss of weight	177	41.9
Hemoptysis	127	30.1
Night sweating	158	37.4
Chest pain	172	40.8
Rheumatism	144	34.1
Loss of appetite	206	48.8
Swelling/Ulcer of any external body part	12	2.8
Body weakness	24	5.7
Prevention the spread of TB		
Possible to prevent TB infection (Yes)	407	96.4
Person with TB can prevent its spread by*		
Not coughing /sneezing in front of other people	360	85.3
Spiting in a container/not in open field	256	60.7
Ventilating living rooms	164	38.9
Not using utensils that a TB patient used	100	23.7
Avoid sexual contact/Sleeping together	9	2.1
Treatment		
TB patient who are treated and cured spread TB(yes)	49	11.6

***** Multiple responses

5.6. Patients overall knowledge on tuberculosis and its treatment.

Accordingly, Patients' overall knowledge of evaluated by summarizing the fourteen questions. The study showed that the mean knowledge score was 6.5±2.8 SD with median 6.0. Based on this, overall knowledge of patients categorized into high knowledge that fall above the mean and low knowledge that fall below the mean. 221 (52.4%) of patients scored below the mean while 201 (47.6%) of patients scored above the mean.

Statistically significant association was found between scoring high overall knowledge and attending formal education (OR=2.4, 95% CI= 1.5, 3.9) compared to informal education; listening health information through radio/TV (OR=2.0, 95%CI=1.3, 3.0) compared to those don't listening and knowing of person suffered from TB (OR= 2.5, 95% CI=1.6, 3.6) compared to those who don't know TB patient.

However the multivariate analysis showed, significant association between high score of overall knowledge and knowing of patients suffered from TB (OR=2.2, 95%CI=1.4, 3.5) and whose age of 33+ (OR=2.2, 95%CI=1.2, 3.9)(Table 6).

Table 6: Factors associated with patients overall knowledge about Tuberculosis and its treatment, Addis Ababa City Government, May 2011

Characteristics	Overall Knowledge			
	High n (%)	Low n (%)	COR (95%CI)	AOR (95%CI)
Sex				
Female	91(44.0%)	116(56.0%)	1	1
Male	110(51.2%)	105(48.8%)	1.3(0.9, 1.9)	1.3(0.8, 2.0)
Age(years)				
18-32	46(43.4%)	60(56.6%)	1	1
33+	155(49.1%)	161(50.9%)	1.3(0.8, 1.8)	2.2(1.2, 3.9)
Education				
Informal	31(31.3%)	68(68.7%)	1	1
Formal	170(52.6%)	153(47.4%)	2.4(1.5, 3.9)	1.3(0.8, 2.0)
Occupation				
Unemployed	86(46.2%)	100(53.8%)	1	1
Employed	115(48.7%)	121(51.3%)	1.1(0.8, 1.6)	0.6(0.4, 1.1)
Marital status				
Ever married	81(43.3%)	106(56.7%)	1	1
Never married	120(51.1%)	115(48.9%)	1.4(0.9, 2.0)	1.0(0.5, 1.9)
Do you own Radio/TV?				
No	12(27.8%)	39(72.2%)	1	1
Yes	186(50.5%)	182(49.5%)	2.7(1.4, 5.0)	1.9(0.9, 4.1)
Do you listen Radio/TV?				
No	59(36.9%)	101(63.1%)	1	1
Yes	142(54.2%)	120(45.8%)	2.0(1.3, 3.0)	1.2(0.7, 2.1)
Knowledge of person Suffered from TB				
No	64(35.2%)	118(64.8%)	1	1
Yes	137(57.1%)	103(42.9%)	2.5(1.6, 3.6)	2.2(1.4, 3.5)
Having children?				
Yes	72(42.9%)	96(57.1%)	1	1
No	127(53.1%)	112(46.9%)	1.5(1.0, 2.3)	2.0(1.0, 3.9)

5.7. Attitude of Tuberculosis Patients about Tuberculosis and its Treatment

Patients' agreement or disagreement about tuberculosis and its treatment was also assessed. The findings revealed that majority of the patients 413 (97.9%) agreed that taking drugs prescribed by doctors can cure TB while 9 (2.1%) of patients disagree with the same statement. Similarly, 22 (5.2%) and 19 (4.5%) of patients agreed that making sacrifices to appease angry sprit or demons and traditional medicines can cure TB respectively (Table 7).

Regarding the cause of TB, more than half of patients 282 (66.8%) agreed that TB may be caused by germs, where as 53 (12.6%) of patients disagree on this statement. Six (1.4%) of patients agreed that TB may be caused by witchcraft (Table 7).

From all patients, 327 (77.5%) of patients agreed they don't stigmatized when other peoples knew they were diagnosed as tuberculosis patients but 90 (21.3%) of patients disagreed on this statement (Table 7).

Table 7: Attitude of patients about tuberculosis and its treatment, Addis Ababa city Government, May 2011

Characteristics	Numbers (n=422)	Percent
Making sacrifices to appease angry sprit or demons can cure TB		
Agree	22	5.2
Disagree	392	92.9
I don't know	8	1.9
Taking drugs prescribed by doctors can cure TB		
Agree	413	97.9
Disagree	9	2.1
Traditional medicines can cure TB		
Agree	19	4.5
Disagree	395	93.6
I don't know	8	1.9
TB may be caused by witchcraft		
Agree	6	1.4
Disagree	412	97.6
I don't know	4	0.9
TB may be caused by germs		
Agree	282	66.8
Disagree	53	12.6
I don't know	87	20.6
I do not mind if others know that I am suffering from TB		
Agree	327	77.5
Disagree	90	21.3
I don't know	5	1.2

5.8. Believe and opinions of patients about tuberculosis and its treatment

On the study Patients were also questioned about their believe and opinion regarding the disease. The findings indicated that, 85 (20.1%) of patients were ashamed when they were told they have TB, 305 (72.3%) of patients thought that many people in the world affected by tuberculosis. However, only 45 (10.7%) of patients mentioned that people like to talk always/ often about TB in the community and 198(46.9%) of patients never talk about the disease (Table 8).

Of all patients, 73 (17.3%) of patients mentioned that the chance of the family getting tuberculosis is high, 127 (30.1%) of patients though that the chance of the family getting TB is to be rare. And also 214 (50.7%) patients reported that tuberculosis was accepted by their families and friends (Table 8).

Among all, 320(75.5%) of patients believe that the health of TB patients after full treatment will be completely well. Prevention of tuberculosis was reported as easy procedure by 272 (64.5%) and 203(48.1%) of patients reported that tuberculosis affects anybody (Table 8).

Table 8: Believe and opinions of patients about tuberculosis, Addis Ababa city Government, May 2011

Characteristics	Numbers (n=422)	Percent
Ashamed when has TB		
Yes	85	20.1
No	337	79.9
How much people do you think TB affect in the world?		
Many people	305	72.3
Some	105	24.9
None	12	2.8
How often do you think people like to talk about TB?		
Always/often	45	10.7
Sometimes	179	42.4
Never	198	46.9
How do you rank the chance of Your family getting TB?		
High	73	17.3
Medium	104	24.6
Little	127	30.1
None	118	28.0
What happens after full TB treatment?		
Completely well	320	75.8
Reasonably well	86	20.4
Disabled	12	2.8
I don't know	4	0.9
To your family and friends TB is:		
Acceptable	214	50.7
No interest	157	37.2
Embarrassing	29	6.9
Disgrace	22	5.2
Preventing TB is:		
Easy	272	64.5
Difficult	142	33.6
Impossible	8	1.9
Which group of people TB affects most?		
Rich	1	0.2
Average	22	5.2
Anybody	203	48.1
Poor	196	46.4

5.9. Patients overall attitude on tuberculosis control and its treatment.

To evaluate the overall attitude of patients' six questions were summarized.

The mean score attitude was 2.5±0.8SD. Accordingly, overall attitude of patients categorized into Favorable attitude that fall above the mean and unfavorable attitude that falls below the mean. Of all patients 183 (43.4%) and 239 (56.6%) scored below and above the mean respectively (Table 9).

Multivariate analysis results, revealed significant association between high score of overall attitude and formal education (OR=1.8, 95%CI=1.1, 3.2), Owner of Radio/TV (OR=3.5, 95%CI=1.5, 6.1) and listening health information through radio/television (OR=2.6, 95%CI=1.6, 4.3) (Table 9).

Table 9: Factors associated with patients overall attitude on Tuberculosis and its treatment, Addis Ababa City Government, May 2011

Characteristics	Overall Attitude			
	Favorable n (%)	Unfavorable n (%)	COR (95%CI)	AOR (95%CI)
Sex				
Female	118(57.0%)	89(43.0%)	1	1
Male	121(56.3%)	94(43.7%)	0.9(0.7, 1.4)	0.8(0.5, 1.3)
Age (years)				
18-32	161(59.4%)	110(40.6%)	1	1
33+	78(51.7%)	73(48.3%)	0.7 (0.5, 1.1)	0.8(0.4, 1.4)
Education				
Informal	42(42.4%)	57(57.6%)	1	1
Formal	197(61.0%)	126(39.0%)	2.1(1.3, 3.5)	1.8(1.1, 3.2)
Occupation				
Unemployed	104(55.9%)	82(44.1%)	1	1
Employed	135(57.2%)	101(42.8%)	1.1(0.7, 1.6)	0.9(0.6, 1.4)
Marital status				
Ever married	101(54.0%)	86(46.0%)	1	1
Never married	138(58.7%)	97(41.3%)	1.2(0.8, 1.8)	0.9(0.5, 1.7)
Do you Have children?				
Yes	95(54.0%)	81(46.0%)	1	1
No	144(58.5%)	102(41.5%)	0.8 (0.6, 1.2)	1.0(0.5, 2.0)
Do you own Radio/TV?				
No	32(59.3%)	22(40.7%)	1	1
Yes	207(56.2%)	161(43.8%)	1.1(0.6, 2.0)	3.0(1.5, 6.1)
Do you listen Radio/TV?				
No	71(44.4%)	89(55.6%)	1	1
Yes	168(64.1%)	94(35.9%)	2.2(1.5, 3.3)	2.6(1.6, 4.3)
Knowledge of person suffered from TB				
No	94(51.6%)	88(48.4%)	1	1
Yes	145(60.4%)	95(39.6%)	1.4(0.9, 2.1)	1.4(0.7, 1.7)

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5.10. Practice of patients in health seeking activities

Four hundred three (95.5%) of patients visited health institution first for treatment where as 19 (4.5%) of patients visited Holly water and religious healers. Among those patients

who has visited health facility first, 143 (33.9%) of patients made more than three visits before the diagnosis of tuberculosis had been established. Similarly patients waited for less than 7 days for diagnosis and start of treatment reported by 291 (69.9%) of patients.

It was also identified that, 165 (39.1%) of patients feel sign and symptoms of tuberculosis for more than 3 weeks before their first contact of health institution.

Among all patients, 383 (90.8%) of patients reported that peoples could prevent themselves from tuberculosis by applying various mechanisms. Some of the preventive mechanisms mentioned include; Good quality and hygienic foods, Clean environment, Vaccination, Taking drugs prescribed by health workers, Abiding by health workers advice, Avoid overcrowding (Table 10).

Table 10: Practices of Tuberculosis patient about tuberculosis, Addis Ababa City Government, May 2011

Characteristics	**Numbers (n=422)**	**Percent**

Help sought for the first time		
Holly water	17	4.0
Religious people	2	0.5
Health institution	403	95.5
Number of visit to health institution		
Once	71	16.8
Twice	97	23.0
Three times	92	21.8
More than 3 times	143	33.9
Sign and symptoms recognized		
One week back	60	14.2
Two weeks back	116	27.5
Three weeks back	81	19.2
More than 3 weeks back	165	39.1
Delay for diagnosis		
Less than one week	291	69.0
7-14 days	37	8.8
15-21 days	46	10.8
More than 22 days	48	11.4
Prevention practices *		
Good quality and hygienic food	319	75.6
Clean environment	323	76.5
Taking drugs prescribed by HW	353	83.6
Abiding by HW advice	369	87.4
Not sharing utensils	363	86.0
Avoid overcrowding	300	71.1
Vaccination	250	59.2
Taking traditional medicine	17	4.0
Beg the evildoer	5	1.2

*Multiple responses

5.11. Patients' overall practices on TB and its treatment

Patients' overall practices evaluated by summarizing twelve questions.

The findings revealed that the mean practices scored were 8.5±2.0SD with median 9. The patients' practices were categorized into favorable practice that fall above the mean and

not favorable practice that fall below the mean. Among 422patients, 265(62.8%) of patients scored above the mean while 157 (37.2%) of patients scored below the mean (Table 11).

Multi variate analysis revealed a significant association between scoring favorable practices and age of 33 and above.

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Table 11: Factors associated with patients overall practice about tuberculosis and its treatment, Addis Ababa City Government, May 2011

Characteristics	Practice score			
	Favorable	Unfavorable	COR	AOR

	n (%)	n (%)	(95%CI)	(95%CI)
Sex				
Female	125(60.4%)	82(39.6%)	1	1
Male	140(65.1%)	75(34.9%)	1.2(0.8, 1.8)	1.0(0.7, 1.6)
Age(years)				
18-32	161(59.4%)	110(40.6%)	1	1
33+	104(68.9%)	47(31.1%)	1.5(0.9, 2.2)	1.8(1.1, 3.2)
Education				
Informal	58(58.6%)	41(41.4%)	1	1
Formal	207(64.1%)	116(35.9%)	1.3(0.8, 2.0)	1.5(0.9, 2.7)
Occupation				
Unemployed	113(60.8%)	73(39.2%)	1	1
Employed	152(64.4%)	84(35.6%)	1.2(0.8, 1.7)	1.0(0.1, 1.6)
Marital status				
Ever married	119(63.6%)	68(36.4%)	1	1
Never married	146(62.1%)	89(37.9%)	0.9(0.6, 1.4)	0.8(0.4, 1.5)
Do you have children?				
Yes	111(63.1%)	65(36.9%)	1	1
No	154(62.6%)	92(37.4%)	0.9(0.6, 1.4)	1.4(0.7, 2.8)
Do you own Radio/TV?				
No	33(61.1%)	21(38.9%)	1	1
Yes	232(63.0%)	136(37.0%)	1.1(0.6, 2.0)	1.1(0.5, 2.2)
Do you listen Radio/TV?				
No	101(63.1%)	59(36.9%)	1	1
Yes	163(62.2%)	99(37.8%)	0.9(0.6, 1.4)	0.8(0.5, 1.4)
Knowledge of person suffered from TB				
No	113(62.1%)	69(37.9 %)	1	1
Yes	152(63.3%)	88(36.7%)	1.1(0.7, 1.6)	1.0(0.6, 1.5)

6. Discussion

This study provided important information regarding TB patients' knowledge, attitude and practice about tuberculosis and its treatment.

Knowledge; The result of this study has shown that overall knowledge of patients about tuberculosis disease was unsatisfactory but it is better than the study conducted on Amhara region in Ethiopia (26).And lower than the study conducted in Iraq (39).

The odds of high score of overall knowledge in patients attended formal education is 2.4 times higher than the odds of scoring high overall knowledge in patients attended in informal education. This may be attributed to relatively better awareness towards general health issues and better access to health information in those attended formal education. But this was not significant when adjusted.

From all patients, 319(75.6%) of patients heard about the disease before diagnosed which is lower than the study conducted in Southwest Ethiopia in which 83% of TB suspects had ever heard of TB (30). Also it was found that 43.6% of patients have got the information from mass media while 9.2% of patients heard from health professionals. This suggests that the role of propagating health information using mass media is significant, which amplify promotion of health education conducted in different settings is important. Meanwhile the finding also evidenced that individualized or group health education at health facilities should be strengthened in such a way that could address those community members who visit the facilities for different services.

In this study, twenty seven percent of patients mentioned bacteria/germs as the cause of tuberculosis whereas the study done on Southwest Ethiopia showed that 33.7% of TB suspected patients(30) and in Nigeria 50% of patients had knowledge of the a etiological agent of the disease (34),which may be due to, besides its low coverage, the focus of health education materials aimed for general public is mainly on rout of transmission and prevention methods.

Thirty four percent of patients mentioned that wind blow/"Nefas simeta" as the cause of tuberculosis which is almost similar in the study conducted on Amhara region in Ethiopia (26).This shows that the association of wind/cold air with TB is considerable that might affect the level of ventilation required to prevent TB transmission. In our study, contaminated food as a cause of TB was reported only by 3(0.7%) of patients whereas the study done in Pakistan showed that contaminated food was considered as the cause by 81 (47.6%) of patients(38).

Males were more likely to know the cause of TB than females which is similar with the study conducted in South west Ethiopia(30).This may be attributed to better access males have to information.

In general, although patients received health education on regular bases including with other topics and individually during the start of treatment, the findings implied that knowledge of cause of tuberculosis is insufficient. As knowledge on the cause is one important factor that affects health care service seeking behavior and practices, the findings of this study is indicative that a focused health education intervention is needed to increase awareness of patients and community.

Knowledge about route of transmission of the disease is another factor in TB prevention and control program. In this study 70% of patients have knowledge about the routes of transmission, similar study done in South west Ethiopia indicated that 83.8% of patients have knowledge about the route of transmission(30), Whereas the study conducted in Nigeria indicated that 60% of patients have knowledge about the transmission (34).

It has been indicated that patients' knowledge about the symptoms of disease has direct relation with early diagnosis and treatment, which in turn also affects patients' prognosis. This study showed that 84.6 % of patients mentioned that cough is one of sign and symptom of TB almost similar with the study done in South Africa reported by 89% of patients (31).

On the other hand, loss of appetite, weight loss and night sweating were reported by low number of patients compared with the study done in south Africa (31).These findings of the study are indicative that to be tailored in line with the current increasing incidence of extra pulmonary tuberculosis, efforts should also be made to address awareness of the community on symptoms of tuberculosis other than cough.

The finding of this study about TB preventive mechanisms was found to be promising in that majority of the study subjects mentioned most of the approved preventive methods correctly; this may be due to the fact that the study area was in Addis Ababa and it was a facility based study which increases access for health information and available health education give more attention to this area.

Fifteen (3.6%) of patients reported TB is not a preventable diseases and 100(23.7%) of patients considered separating dishes as an important means of preventing the spread. whereas study done in Pakistan showed that 18(10.6%) of patients did not consider it a preventable disease and 97(57%) considered separating dishes as an important means of preventing spread(38).

Attitude; Among all patients, 43.4% of patients have unfavorable attitude about tuberculosis and its treatment whereas the study done in Iraq which revealed 54.8% of patients had unfavorable attitudes and practices towards TB (39).Negative attitude of patients towards health care seeking and tuberculosis treatment approach was identified as an important attribute for defaulting(29). There for the finding of this study are also suggestive that further interventions are mandatory in order to change attitudes of tuberculosis patients.

Among all patients, 282(66.8%) of patients agreed TB may be caused by germs and 6(1.4%) of patients agreed on TB may be caused by witchcraft whereas the study conducted Amhara region in Ethiopia which is almost similar showed that 242(58.0%) and 28(6.7%) of patients agreed respectively. Four hundred thirteen (97.4%) of patients agreed on the statement of taking drugs prescribed by modern medicine can cure TB and 19 (4.5%) of patients agreed on traditional medicine can cure TB whereas the study conducted on Amhara region in Ethiopia showed that 95.7% and 36.9% of patients agreed on respectively (26) The significant difference identified concerning the traditional medicine might be explained by the fact that Amhara region is more rural and host less heterogeneous community compared to Addis.

Twenty two (5.2%) of patients perceived that other people would consider them inferior and 29 (6.9%) of patients embarrassed if they had TB which is not in accordance from the study done in Southwest Ethiopia (30).

The findings regarding the patients believes about transmission of the disease within the family was also alarming, in that of all patients, only 73 (17.3%) of patients mentioned that the chance of the family getting tuberculosis is high.

In lines with the findings regarding to patients attitude and source of information, the odds of patients who listen radio/television have scored favorable attitude 2.2 times higher than those who have not listen. This finding indicated that health education messages transmitted through mass media are one important means of increasing the community awareness. And planning to further expand health education programs using mass media will have a better impact.

From all patients, 72.3% of patients mentioned that TB affects many people however 46.9% of patients never discussed about the disease; Majority,127(30.1%) of patients reported that the chance of the family getting the disease is rare, there is a complete cure after full TB treatment 320(75.8%), it is easy to prevent the disease 272(64.5%) and it affects mostly anybody203(48.1%) which is almost similar with the study done in South Africa (31).

Practice: Among all patients, 95.5% of patients' first visit made to health institution which is better than the study in South Africa (32). The relatively good modern health care service attending practice evidenced in this study may be attributable to the fact that the study was conducted in the capital city of Ethiopia where the residents might have a better tendency towards modern health care seeking behavior and also there are accessible health facilities.

However, 39.1% of patients delay above the median patient delay of 3 weeks (21days) in recognition of sign and symptoms at health institution which is better than similar study conducted in Ethiopia in which fifty three percent of patients had delayed their first consultation for >or= 30 days (28).

As early diagnosis and initiation of treatment is one of the important Tuberculosis control strategies, the finding of the study on the patients' days of delay before getting health care service indicated that this is also an area which requires attention.

7. Strengths and Limitation of the Study

Strengths of the study

- It addressed patients from different sub city and level of facilities in the city.
- It tries to address patient related factors influencing TB prevention and control strategies.

Limitation of the study

- Care takers knowledge attitude and practices regarding TB and its treatment not addressed.
- The study was conducted only on patients who are diagnosed and taking TB treatment.
- Since the design is cross sectional temporal relations could not be assessed.

8. Conclusion

This study assessed knowledge, attitude, and practice of Tuberculosis patients who are taking their treatment and follow up care at different health facilities found in Addis Ababa. The study findings identified that there was knowledge gap in areas of disease cause, ways of transmission, and symptoms other than cough. And significant number of studied patients also showed unfavorable attitude towards the disease and its treatment.

On the other hand, Patients' belief regarding the treatment outcome, and the observed association found between having the information through mass media and some of the needed behavior manifested by patients were the identified findings which needs to be reinforced.

In general, the overall result of the study indicated that there was a low level of knowledge and considerable number of the study patients had unfavorable attitude towards the disease. However, patients practice in terms of seeking modern health care service was found to be relatively good.

Therefore, specific intervention strategies should be designed to improve the identified gaps and also to strengthen the positive behaviors and practices. Accordingly, the following recommendations are suggested based on the findings.

9. Recommendation

Based on the findings of this study, the following recommendations were given to the responsible bodies:-

Program level

- Sub city health office in collaboration with health extension workers at worda level should maintain continuous education on TB that targeting all community.
- Preparation of IEC and BCC materials focusing on increasing awareness and bringing attitudinal change about TB.

Facility level (to health service providers)

- Health service providers should give continuous health information regarding TB for patients and their care takers at TB clinic not only at the start of treatment.
- Improving service delivery strategies in relation to drug collection timing and designing alternative defaulters tracing mechanisms.

Community level

- Expanding IEC activities using the different mass media should be given prompt attention in order to reach the community at large concerning TB causes, transmission, symptoms, prevention and treatment approach and outcomes.
- Patients play a significant role in effective implementation of disease prevention and control strategies, therefore using patients as cadres to advocate favorable attitude and increase community awareness is also recommended.
- Incorporate tuberculosis related points in the package of information carried into the population by AIDS club workers.

Research

- Further research should be conducted to determine behavior of people who are not diagnosed and started TB treatment regarding tuberculosis and its treatment in the community.

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11. Annexs

Annex 1: English version informed consent sheet

Study information sheet

Hello, my name is ----------and I have been working with Senait Assefa on TB/HIV. Currently I am here & I would like to have discussion with you and gather information on level of awareness, attitude and practice of TB patients regarding TB. It takes 20 minutes, though it seems long time the study helps to improve behaviors by generating information about knowledge attitude practice and factors influencing knowledge attitude and practice studying to improve future intervention.

Your name will not be asked and unique identification is not required. You do not have to discuss issues that you do not want to. If you want to withdraw from the study any time along the discussion process, you will not be obliged to continue or give reasons for doing so.

Refusing to participate or withdrawing from the study along the process will not have any consequences on you and the services provided to you.
I would like to appreciate your help in responding to this interview. If you have any question or anything that is not clear please direct to Senait Assefa Addis Ababa University a College of Health sciences school of public health. Call phone 0911686839,Email:senaitass@yahoo.com
If you are clear with the information provided and agree to participate please sign on the consent form attached.

Consent Form

I, the undersigned individual am oriented about the objective of the study. I have informed that all of my information will be kept confidential and used solely for this study.

In addition, I have been well informed that my name will not be asked and unique identification is not required. I have the right not to discuss issues that I do not want to. If I want to withdraw from the study any time along the discussion process. I will not be obliged to continue or give reasons for doing so.

However, my agreement to participate in this study is with the assumption that, the information that I provide during the discussion will help greatly to decrease the burden of the disease.

Signature _____

Date _____

Annex 2: English questionnaire

Part one: Demographic Variable of the Patient

No	Questions	Suggested options	Code	Skip
101	Age of respondents _____	1.18-22 2.23-27 3.28-32 4.33-37 5.38-42 6.43+		
102	sex of respondent	1. Male 2. Female		
103	Have you ever –attended school?	1. Yes 2. No		
104	The highest level of school completed.	1 Illiterate 2 read and write 3.1-6 grades completed 4. 7-12 5. 12+ 6.College and University		
105	Occupation	1 unemployed 2.civil servant 3 Student 4 Housewife 5 Private Worker 6 Pensioned 7 Other specify		
106	Average monthly income	1. No income 2. <500 3.501-1000 4. 1001-2000 5. >2000 6.not willing to respond		
107	Marital status	1. Never married 2. currently married 3.Divorced/separated 4. Widowed 5. No response		
107.1	If divorced	1. Before contracting TB 2. After contracting TB		
107.2	If widowed	1.Due to tuberculosis 2. Other cause		
108	How many children do you have? _____	1.no child 2.1-6 3.7+		
109	Ethnicity	1 Amhara 2 Oromo 3. Tigrie 4. Guragie 5. Others		
110	Religion	1 Orthodox Christian 2 Other Christianity 3 Muslim 4 .No religion 5. No response		
111	Do you have (Television) or Radio	1.Yes		

		2.No		
112	Do you listen health education about TB through radio Or Television?	1.Yes 2.No		
113	Categories of patients	1.SPPTB 2.SNPTB 3.MDR-TB 4.EPTB		

Part Two: Questions Related to Knowledge of the patient

No	Questions	Suggested operations for the questions	code	skip
201	Have you heard about the disease called TB?	1.Yes 2.No		
201.1	Where do you get the information	1.Health workers 2.Mass media 3.Relatives/Friends 4.Workplace		
202	Do you know anyone who is infected with TB?	1.Yes 2.No		
203	What is the cause of tuberculosis (do not read item 203.1 to 203.3?			
203.1	Bacteria/ germ	1.Mentioned 2.Not mentioned		
203.2	Other specifies	----------		
204	How is tuberculosis transmitted?(Do not read item 204.1 to 204.4			
204.1	Through air droplet	1.Mentioned 2.Not mentioned		
204.2	Through overcrowding	1.Mentioned 2.Not mentioned		
204.3	Other specifies	……		
205	What are the signs and symptom of tuberculosis? (do not read item 205.1 to 205.9)			
205.1	Long-lasting cough (two weeks and greater)	1.mentioned 2. Not mentioned		
205.2	Persistent fever	1 Mentioned 2 Not Mentioned		
205.3	Loss of weight	1 Mentioned 2 Not Mentioned		
205.4	Hemoptysis	1 Mentioned 2 Not Mentioned		
205.5	Night sweating	1 Mentioned 2 Not Mentioned		
205.6	Chest pain	1.Mentioned 2.NotMentioned		
205.7	Rheumatism	1.Mentioned 2.NotMentioned		
205.8	Loss of appetite	1 Mentioned 2 Not Mentioned		

205.9	Swelling and or ulcer of any external body part	1 Mentioned 2 Not Mentioned		
206	It is possible to prevent TB infection?	1.Yes 2.No		
207	How could a person with tuberculosis prevent the spread of TB to others? (do not read item 207.1 to 207.3)			
207.1	Not coughing /sneezing in front of other people	1. Mentioned 2. Not Mentioned		
207.2	Spit in a container with cup or not spitting out in the open every where	1. Mentioned 2. Not Mentioned		
207.3	Ventilating the living room/open windows	1. Mentioned 2. Not Mentioned		
207.4	Other specifies	……..		
208	Could a patient with tuberculosis who is already treated and cured spread tuberculosis?	1.Yes 2.No 3.No answer		
209	What do you though the total duration of tuberculosis treatment?	……months/years		
210	What is the outcome of TB patient if not treated?	1. Death 2.Disability 3.Spontaneous cure 4. Other specify….		
211	Tuberculosis affects(Do not read item 213.1to 213.5)			
211.1	Lungs	1. Mentioned 2. Not Mentioned		
211.2	Bones	1. Mentioned 2. Not Mentioned		
211.3	Skin	1. Mentioned 2 .Not Mentioned		
211.4	Lymph nodes and glands	1. Mentioned 2. Not Mentioned		
211.5	Other specifies	…….		
212	Which diseases are closely related to TB? (Do not read item from 214.1-214.4)			
212.1	HIV/AIDS	1. Mentioned 2. Not Mentioned		
212.2	Diarrhea	1. Mentioned 2. Not Mentioned		
212.3	pneumonia	1. Mentioned 2. Not Mentioned		
212.4	Other specify	……		
213	Do you think HIV/AIDS complicates TB	1 yes 2.No		

Part three: questions related to Attitude of the patient towards TB and its treatment continued

No	Questions	Suggested options	Code	Skip to question no

301	Response to statements about TB and its treatment			
301.1	Making sacrifices to appease. (giving what is wanted, the angry sprit or demons) can cure TB	1.Agree 2. Disagree 3.I don't know		
301.2	Taking drugs prescribed by doctors can cure TB	1.Agree 2. Disagree 3. I don't know		
301.3	Taking traditional medicines can cure TB	1.Agree 2.Disagree 3. I don't know		
301.4	TB may be caused by witchcraft	1.Agree 2.Disagree 3. I don't know		
301.5	TB may be caused by germs	1.Agree 2.Disagree 3.I don't know		
301.6	I do not mind if others know that I am suffering from TB	1.Agree 2.Disagree 3. I don't know		
302	Were you ashamed when you were told that you have tuberculosis?	1.yes 2.No		
303	Are you satisfied with the care provided to you by the health workers during you health institution visit?	1.Yes 2.No		304
304	If no why? (inter in the space)			
305	Do you take treatment as ordered?	1.Yes 2. No		306
306	If no why? (inter in the space)	_____		

307	Have you ever interrupted/ discontinued your treatment	1.Yes 2. No		308
308	If yes why	----------		

309	Have you ever missed any appointment?	1.Yes 2. No		310
310	If yes why?	----------		
311	How many times did you miss treatment?	1.once 2.Twice 3.Three times 4.More than three times		
312	How do you see treatment duration?	1.Long 2.Short 3.Ok 4.No response		
313	Frequency of occurrence of tuberculosis			
313.1	How much people do you think TB affect in the world?	1.Many people 2.Some 3.None		
313.2	How often do you think people like to talk about TB	1.Always 2.Often 3. Some 4.Never		
313.3	How do you rank the chance of your family getting TB	1.High 2.Medium 3.Little 4.None		
313.4	What happens after full TB treatment	1.completely well 2.Reasonably well 3.Disabled 4.Don't know		
314	Predicting of disease outcome			
314.1	Preventing TB is	1.easy 2.difficult 3.impossible		
314.2	TB causes pain	1.always 2.often 3.some times 4.never		

315	Threat			
315.1	To your family and friends TB is	1.Acceptable 2.No interest 3.Embarrassing 4.Disgrace		
315.2	Which group of people do you	1.Rich		

	think TB affects most?	2.Average 3.Any body 4.Poor		

Part Four: Questions related to the practices and Health seeking behavior of Tuberculosis patient

No	Questions	Suggested option	Code	Skip
401	Where did you go to seek help for the first time?	(do not read options circle the mentioned once) 1To holly water near by 2.To religious healers 3.To wizards /Ten quay/ kalicha/ magician 4. Health institutions 5. Others specify		
402	For how many times did you visit the above health institution?	(Do not read options circle the mentioned once) 1.Once 2.Twice 3.Three times 4.More than three times		
403	When did you start to recognize /feel the sign and symptoms like cough, fever, night sweating, and weight loss before you come to this health institution?	(do not read options circle the mentioned once) 1.One weak back 2.Two weeks back 3.Three weeks back 4.More than three weeks		
404	For how long did you wait for diagnosis and start of anti TB treatment in this current health institution?	(do not read options circle the mentioned once) 1.Less than 7 days 2.7to 14 days 3.15 to 21 days 4. more than 22days		
405	Is it possible to protect oneself from getting TB? If yes how?	1.Yes 2..No		
	If yes how?			

405.1	Eating good quality and hygienic foods	1.Yes 2.No		
405.2	Having /living in clean environment	1.Yes 2.No		
405.3	Taking drugs prescribed by HW	1.Yes 2.No		
405.4	Abiding (faithful, keep)by doctors advice	1.Yes 2.No		

405.5	By not sharing cups	1.Yes 2.No		
405.6	Avoiding overcrowding	1.Yes 2.No		
405.7	Vaccination	1.Yes 2.No		
405.8	Taking traditional medicines	1.Yes 2.No		
405.9	Beg the evil doer	1.Yes 2.No		
405.10	Other specify	……..		
406	Have you had any side effects due to the anti tuberculosis drugs that you were taking?	1.Yes 2.No		407
407	If the response to 406 was yes, what were the side effects?	……		
408	What actions did you take when you had the side effects?	1.stop the drugs 2. missed the appointment 3.continued to take drugs 4.consulted health professionals 5.Other specify		

Annex 3: Amharic version informed consent sheet

የተሳትፎ መጠየቂያ ቅጽ

ጤና ይስጥልኝ…… እባላለሁ፡፡

አሁን እዚህ ከእርስዎ ጋር በመገኘት ስለ ቲቢ ያለዎትን ዕውቀት አመለካከትና ስለህክምናው ክትትል መወያየትና መረጃ መሰብሰብ እፈልጋለሁ፡፡

ይህንን መረጃ ለመሰብሰብ 20 ደቂቃ ቢወስድም የሚገኘው መረጃ ለወደፊቱ ስለ ቲቢ ያለውን እውቀት አመለካከት የህክምና ክትትል እና በዚህ ላይ ተፅእኖ የሚያመጡ ነገሮችን ለማሻሻል የሚረዳ መሆኑን በመገንዘብ ነው።

በዚህ ቃለ ምልልስ ለመሳተፍ ስምዎትን መግለጽና ሌሎች የግል መለያ መውሰድ አያስፈልገኝም ከእኔ ጋራ ሊወያዩባቸው ባልፈለጉባቸው ነገሮች ዙሪያ ውይይቱን እንዲቀጥሉ አይገደዱም። ቃለ ምልልሱን በፈለጉት ጊዜ ማቋረጥ ይችላሉ። እራስዎን ከቃለ ምልልሱ ሂደት ለማግለል በማንኛውም ጊዜ ቢወስኑ እንዲቀጥሉም ሆነ ለማቋረጥ የፈለጉብን ምክንያት እንዲገልጹ አይገደዱም።

በጥናቱ ላይ ለመሳተፍ ፍቃደኛ አለመሆን ወይም ጥናቱን አቋርጦ መውጣት በእርሶ ላይ የሚፈጥረው አንዳችም ችግር አይኖርም። ሆኖም ግን እርስዎ የሚሰጡን መረጃ የቲቢ በሽተኞች ስለቲቢ ያላቸውን እውቀትና አስተያየት ያለው አስተዋጽኦ የጎላ ነው። ለዚህ ቃለ ምልልስ ፍቃደኛ ቢሆኑልኝ ምስጋናዬ ከፍ ያለ ነው። ጥያቄ ካለዎት ወይም ከተሰጠው ማብራሪያ ገልጽ ያልሆነ ነገር ካለ ሰናይት አሰፋ ስልክ ቁጥር 0911686839 ወይም በ ኢሚል አድራሻ senaitass@yahoo.com ለማብራራትም ሆነ ለመመለስ ዝግጁ ነኝ።

የተሰጥዎትን ማብራሪያ ከተረዱና በጥናቱ ለመሳተፍ ፈቃደኛ ከሆኑ እባክዎን ከዚህ ወረቀት ጋር በተያያዘው የስምምነት መግለጫ ላይ ፊርማዎን ያሳርፉ።

የስምምነት ማረጋገጫ ቅጽ

እኔ በፊርማዬ በስተመጨረሻው መስመር ላይ የሚገኘው ግለሰብ የዚህ ጥናት አላማ ተገልጾልኛል።በተጨማሪም እኔ የምሰጠው መረጃ ለዚህ ጥናት ብቻ እንደሚውልና በሚስጥር እንደሚያዝም ተገልጾልኛል።

በዚህ ጥናት ለመሳተፍ ስምና ሌላ የግል አድራሻ መግለጽ እንደማያስፈልገኝ ተረድቻለው። ከዚህ በተጨማሪም መወያየት በማልፈልጋቸው ጉዳዮች ላይ እንድወያይ

ወይም መመለስ የማልፈልጋቸውን ጥያቄዎች እንድመልስ እንደማልገደድና በጥናቱ ላለመሳተፍ መወሰን ወይንም በፈለኩት ጊዜ በቃለምልልሱ ተሳታፊነቴን ማቋረጥ እንደምችልና ሳቋርጥም ለማቋረጥ የፈለኩበትን ምክንያት ለማስረዳት እንደማልጠየቅ እንዲሁም ለጥናቱ ለመሳተፍ ፈቃደኛ አለመሆኔ ወይንም በጥናቱ ሂደት ላይ ተሳታፊ ከሆንኩ በኋላ አቋርጬ መውጣቴ በኔ ላይ የሚደርሰው አንዳችም ተጽዕኖ እንደሌለ ተረድቻለሁ።

ሆኖም እኔ በዚህ ጥናት ላይ ተሳታፊ ለመሆን ስስማማ በሚገኘው ጠቃሚ መረጃ የቲቢ በሽታ እያደረሰ ያለውን ጫና ለመቀነስ የሚረዳ መሆኑን ተስፋ ለማድረግ ነው።

ፊርማ _____

ቀን _____

Annex 4: Amharic questionnaire

ክፍል አንድ አጠቃላይ የተጠያቂው መግለጫ

ተ.ቁ	መጠይቅ	አማራጭ መልስ	ኮድ	ወደሚቀጥለው ጥያቄ እለፍ
101	እድሜ _____	1. 18-22 2. 23-27 3. 28-32 4. 33-37 5. 38-42 6. 43+		
102	ጸታ	1. ወንድ 2. ሴት		

103	ትምህርት ተምረዋል ?	1. አዎን 2. የለም		***104***
104	ያጠናቀቁት ከፍተኛ የትምህርት ደረጃ ስንት ነው?	1. ማንበብና መጻፍ የማይችል 2. ማንበብና መጻፍ የሚችል 3. 1-6 ክፍል ያጠናቀቀ 4. 7-12ክፍል ያጠናቀቀ 5. 12+ 6. ከፍተኛ ትምህርት ያጠናቀቀ		
105	ስራዎ	1. ምንም ስራ የለኝም 2. የመንግስት ሰራተኛ 3. ተማሪ 4. የቤት እመቤት 5. በግል ስራ ላይ የተሰማራ 6. ጡረተኛ 7. ሌላ ካለ ይጠቀስ		
106	የወር ገቢዎ	1. ምንም ገቢ የለኝም 2. < 500 3. 501-1000 4. 1001-2000 5. >2000 6. መልስ የለኝም		
107	የጋብቻ ሁኔታ	1. ያላገባ 2. ባለትዳር 3. የተለያዩ/የተፋቱ 4. ባለቤትዎ የሞተች /የሞተ 5. መልስ የለኝም		
107.1	የተፋቱ ከሆነ	1. በቲቪ በሽታ ምክንያት 2. በሌላ ምክንያት		
107.2	ባለቤትዎ የሞተች /የሞተብዎ ከሆነ	1. በቲቪ በሽታ ታመዉ 2. በሌላ ምክንያት		
108	ስንት ልጆች አሎዎት? _____	1. ምንም የለኝም 2. 1-6 3. 7+		
109	ብሔር	1. አማራ 2. ኦሮሞ 3. ትግሬ 4. ጉራጌ 5. ሌላ ከሆነ ይጠቀስ		
110	ሀይማኖት	1. ኦርቶዶክስ 2. ሌላ ክርስትና 3. እስልምና 4. ሌላ ከሆነ ይጠቀስ 5. ሀይማኖት የለኝም		
111	ሬዲዮን ወይም ቲቪ አለዎት?	1. አለኝ 2. የለኝም		112
112	የጤና መረጃ በሬዲዮ ወይም በቲቪ ይከታተላሉ?	1. አዎን 2. አልከታተልም		
113	የታመሙት የቲቪ አይነት	1. በአክታዉ ላይ የቲቢ ጀርም የተገኘባቸዉ(SPPTB) 2.. በአክታዉ ላይ የቲቢ ጀርም		

		ያልተገኘባቸዉ (SNPTB) 3. የቲቢ መድሀኒቶችን የተላመደ ቲቢ (MDR_TB) 4. ከሳንባ ዉጭ ሌላ የሰዉነት ክፍልን የሚያጠቃ ቲቢ (EPTB)		

ክፍል ሁለት የበሽተኛውን የእውቀት ደረጃ ለመለካት የቀረቡ ጥያቄዎች

ተ.ቁ	መጠይቅ	አማራጭ መልስ	ኮድ	ወደሚቀጥለው ጥያቄ እለፍ
201	ቲቢ ስለሚባል በሽታ ሰምተው ያውቃሉ?	1. አዎን 2.. ሰምቸ አላውቅም		
201.1	መረጃዉ ከየት ነዉ የሰሙት ?	1. ከጤና ባለሙያ 2. ከብዙሀን መገናኛ 3. ከቅርብ ዘመዶች/ጋደኞች 4 ሌላ ከሆነ ይጠቀስ		
202	በቲቢየተያዘ/የተያዘች ሰው ያውቃሉ?	1. አዎን 2.. አላውቅም		
203	የቲቢ መነሻው/ምክንያቱ ምንድነው ከ203.1-203.2 ያሉትን ጥያቄዎች አታንበብ፣ ከታች ከተዘረዘሩት ውስጥ ከተጠቀሰ ቁጥር 1ን ካልተጠቀሰ ደግሞ ቁጥር 2ን አክብብ/አክብቢ			
203.1	በረቂቅ የበሽታ ተዋህሳን	1. ተጠቅሷል 2. አልተጠቀሰም		
203.2	ሌላ ካለ ይጠቀስ			
204	የሳንባ ቲቢ ከታመመ ሰው ወደ ጤነኛ ሰው እንዴት ይተላለፋል? (ከ204.1-204.3 ያሉትን ጥያቄዎች አታንበብ፣ ከታች ከተዘረዘሩት ውስጥ ከተጠቀሰ ቁጥር 1ን ካልተጠቀሰ ደግሞ ቁጥር 2ን አክብብ/አክብቢ			
204.1	በተበከለ አየር አማካኝነት	1. ተጠቅሷል 2. አልተጠቀሰም		
204.2	ተፋፍጎ በመኖር	1. ተጠቅሷል 2. አልተጠቀሰም		
204.3	ሌላ የመተላለፊያ መንገድ ካለ ይጠቀስ			
205	የሳንባ ቲቢ ና ሌሎች ቲቢ አመልካች ምልክቶች /የህመም ምልክቶች ምን ምን ናቸው? (ከ205.1-205.9 ያሉትን ጥያቄዎች አታንብብ፣ ከታች ከተዘረዘሩት ውስጥ ከተጠቀሰ ቁጥር 1ን ካልተጠቀሰ ቁጥር 2ን አክብብ/አክብቢ			
205.1	ለረጂም ጊዜ ሳል ማሳል (ሁለት ሳምንትና በላይ)	1. ተጠቅሷል 2. አልተጠቀሰም		
205.2	ለረጂም ጊዜ የሰውነት ማተኮስ /ጋበን	1. ተጠቅሷል 2. አልተጠቀሰም		
205.3	የክብደት መቀነስ/የሰውነት መክሳት/ መመንመን	1. ተጠቅሷል 2. አልተጠቀሰም		

205.4	ደም የተቀላቀለበት አክታ መኖር	1. ተጠቅሷል 2. አልተጠቀሰም		
205.5	በተለይ የሌሊት የሰውነት ማላብ	1. ተጠቅሷል 2. አልተጠቀሰም		
205.6	የደረት ውጋት ህመም ስሜት	1. ተጠቅሷል 2. አልተጠቀሰም		
205.7	የሰውነት መቆረጣጠም	1. ተጠቅሷል 2. አልተጠቀሰም		
205.8	የምግብ ፍላጎት መቀነስ	1. ተጠቅሷል 2. አልተጠቀሰም		
205.9	ሌሎች ምልክቶች ካሉ ይጠቀስ			
206	የሳንባ ቲቢ በሽታን መከላከል ይቻላል?	1. አዎን መከላከል ይቻላል 2. አይቻልም 3. መልሱን አላውቅም		207
207	በሳንባ ቲቢ የተያዘ ሰው በሽታው ወደ ጤነኛ ሰው እንዳይተላለፍ /እንዳይዛመት እንዴት ሊከላከል ይችላል? (ከ207.1-207.4) ያሉትን ጥያቄዎች አታንብብ፣ ከታች ከተዘረዘሩት ውስጥ ከተጠቀሰ ቁጥር 1ን ካልተጠቀሰ ቁጥር 2ን አክብብ/አክብቢ			
207.1	በሽተኛው በሚስልና በሚያስነጥስ ጊዜ አፍና አፍንጫውን በጨርቅ በመሸፈን እና ከሰው ፊት ዞር በማለት መሳልና ማስነጠስ በሽታው እንዳይዛመት ያደርጋል	1. ተጠቅሷል 2. አልተጠቀሰም		
207.2	በሽተኛው አክታውነ የትም አለመጣልና ክዳን ባለው እቃ ማጠራቀምና ማስወገድ	1. ተጠቅሷል 2. አልተጠቀሰም		
207.3	ተፋፍጎ መኖርን ማስወገድና በመኖሪያ ቤት ውስጥ ነፋሻ አየር እንዲገባ ለማድረግ በርና መስኮቶችን መክፈት	1. ተጠቅሷል 2. አልተጠቀሰም		
207.4	ሌሎች መከላከያ መንገዶች ካሉ ይጠቀስ			
208	ቲቢ የተያዘ ሰው በትክክል ህክምናውን ከወሰደና ከዳነ በኋላ በሽታውን ለጤነኛ ሰው ሊያዛምት(ሊያስተላልፍ) ይችላል?	1. አዎን ይችላል 2. አይችልም (አያስተላልፍም) 3. መልሱን አላውቅም		
209	የቲቪ የህክምና ጊዜ ስንት ነው?	.....ወር /አመት		
210	በ ቲቢ የተያዘ በሽተኛ የቲቢ መድሃኒት ባይወስድ (ባይታከም) ምን ሊያጋጥመው ይችላል?	1. ሞት 2. ቋሚ የአካል ጉዳት 3. በአጋጣሚ ሊድን ይችላል 4. ሌላ ካለ ይጠቀስ		
211	ቲቢ የትኛውን የሰውነት ክፍል ያጠቃል? (ከ212.1-212.5) ያሉትን ጥያቄዎች አታንብብ፣ ከታች ከተዘረዘሩት ውስጥ ከተጠቀሰ ቁጥር 1ን ካልተጠቀሰ ቁጥር 2ን አክብብ/አክብቢ			
211.1	ሳንባን	1. ተጠቅሷል 2. አልተጠቀሰም		
211.2	አጥንትን	1. ተጠቅሷል 2. አልተጠቀሰም		
211.3	ቆዳን	1. ተጠቅሷል 2. አልተጠቀሰም		

211.4	እጢዎችን	1. ተጠቅሷል 2. አልተጠቀሰም		
211.5	ሌላ የሰውነት ክፍል ካለ ይጠቀስ			
212	የትኞቹ በሽታዎች ከሳንባ ቲቢ ጋር ቁርኝት /በአንድነት ይከሰታሉ? (ከ 213.1-213.4) ያሉትን ጥያቄዎች አታንብብ፣ ከታች ከተዘረዘሩት ውስጥ ከተጠቀሰ ቁጥር 1ን ካልተጠቀሰ ቁጥር 2ን አክብብ/አክብቢ			
212.1	የተፈጥሮ በሽታ ተከላካይ ቅስም ሰባሪ/ኤድስ	1. ተጠቅሷል 2. አልተጠቀሰም		
212.2	የተቅማጥ በሽታ	1. ተጠቅሷል 2. አልተጠቀሰም		
212.3	የሳንባ ምች	1. ተጠቅሷል 2. አልተጠቀሰም		
212.4	ሌሎችበሽታዎች ካሉ ይጠቀሱ			
213	የተፈጥሮ በሽታ ተከላካይ ቅስም ሰባሪ /ኤድስ የ ቲቢ በሽታን ያባብሳል?	1. አዎን ያባብሳል 2. አያባብስም 3. መልሱን አላውቅም		

ክፍል ሦስት የሳንባ ቲቢ በሽተኞችን በበሽታው ላይና በህክምና ላይ ያላቸውን አስተያየት ለመለካትየቀረበ ጥያቄ

ተ.ቁ	መጠይቅ	አማራጭ መልስ		ወደሚቀጥለው እለፍ
301	ስለ ቲቢ በሽታ ለቀረበ አስተያየት ምላሽ			
301.1	ለአማልክት ተገቢውን መስዋዕት በመክፈል የነቀርሳ በሽታን ያድናል	1. እስማማለሁ 2. አልስማማም 3. መልስ የለም		
301.2	በዘመናዊ እና በሰለጠነ ባለሙያ የታዘዘን መድሃኒት በትክክል በመውሰድ የነቀርሳ በሽታን ያድናል	1. እስማማለሁ 2. አልስማማም 3. መልስ የለም		
301.3	የሀገር ባህል መድሃኒት በመውሰድ ከነቀርሳ በሽታ መዳን ይቻላል	1. እስማማለሁ 2. አልስማማም 3. መልስ የለም		
301.4	የሳንባ ቲቢ በጥላ ወጊ ወይንም በቡዳ ወይንም በእርኩስ መንፈስ ሊነሳ ወይንም ሊይዝ	1. እስማማለሁ 2. አልስማማም		

	ይችላል	3. መልስ የለም		
301.5	የሳንባ ቲቢ በሽታ መነሻ በአይን የማይታዩ ረቂቅ ህዋሶች ወይንም ጀርሞች ናቸው	1. እስማማለሁ 2. አልስማማም 3. መልስ የለም		
301.6	በሳንባ ቲቢ በሽታ መያዜን ማንም ሰው ቢያውቅ ግድ የለኝም	1. እስማማለሁ 2. አልስማማም 3. መልስ የለም		
302	የ ቲቢ በሽተኛ መሆንዎ ሲነገርዎ ሀፍረት ተሰምቶዎት ነበር ወይ?	1. አዎን 2. አልተሰማኝም 3. መልስ የለኝም		
303	በተደረገልዎ የህክምና እርዳታና እንክብካቤ ረክተዋል?	1. አዎን ረክቻለሁ 2. አልረካሁም 3. መልስ የለኝም		304
304	የ303 መልስ አልረካሁም ከሆነ ለምን?			
305	የታዘዘልዎን መድሃኒት በትክክል ይወስዳሉ?	1. አዎን እወስዳለሁ 2. አልወስድም 3. መልስ የለኝም		306
306	የ305 መልስ አልወስድም ከሆነ ለምን?			
307	የታዘዘልዎን መድሃኒት አቋርጠው ያውቃሉ?	1. አዎን 2. አቋርጬ አላውቅም 3. መልስ የለኝም		308
308	የ307 ጥያቄ መልስ አዎን ከሆነ ለምን			
309	በህክምና ቀጠሮ ቀን ቀርተው ያውቃሉ?	1. አዎን 2. አቋርጬ አላውቅም 3. መልስ የለኝም		310
310	የ309 ጥያቄ መልስ አዎን ከሆነ ለምን?			
311	ስንት ጊዜ በቀጠሮ ቀን አቋርጠው ቀሩ?	1. አንድ ጊዜ 2. ሁለት ጊዜ 3. ሶስት ጊዜ 4. ከሶስት ጊዜ በላይ		

312	የቲቢ በሽታ የህክምና ጊዜ እርዝመት እንዴት ያዩታል ?	1. ረጅም ነው 2. አጭር ነው 3. ተመጣጣኝ ነው 4. አስተያየት የለኝም		
313	የቲቢ ክስተትን በተመለከተ			
313.1	በዓለም ለይ ምን ያህል ህዝብ በቀነርሳ በሽታ የሚጠቃ ይመስልዎታል?	1. በጣም ብዙ ሕዝብ 2. መጠነኛ ሕዝብ 3. ምንም ሕዝብ አይጠቃም		
313.2	ሕብረተሰቡ ስለ ቲቢ በሽታ በምን ያህል ጊዜ የሚነጋገር ይምስልዎታል?	1. ሁል ጊዜ /ዘወትር/ 2 አልፎ አልፎ 3. በጭራሽ አይወያዩም		
313.3	የቤተሰቦችህ በቲቢ በሽታ መያዝ እድል ምን	1 ከፍተኛ ነው		

	ህያል ይሆናል ብለው ይገምታሉ?	2 መካከለኛ ነው 3 ትንሽ ነው 4 የመያዝ እድል የላቸውም		
313.4	ቲቢ በሽታ የተያዘ ሰው ሙሉ ህክምናውን ከወሰደ በኋላ የሚሰማው ጤንነት	1.ሙሉ ለሙሉ ጤነኛ 2.በመጠኑ ጤነኝነት ስሜት 3.አቅም ማጣት		
314	የቲቢ በሽታ አጠቃላይ ገጽታ			
314.1	የቲቢ በሽታ መከላከል ተግባር	1.ቀላል ነው 2..አስቸጋሪ ነው 3. ፈጽሞ አይቻልም		
314.2	የቲቢ በሽታ ስቃይ /ህመም የሚያደርሰው	1 ሁል ጊዜ /ዘወትር 2 ብዙ ጊዜ ነው 3 አልፎ አልፎ ነው 4 በጭራሽ ስቃይ አያደርስም		
315	የቲቢ በሽታ የሚያደርሰው ጉዳት-ጥቃት			
315.1	የቲቢ በሽታ በጓደኞችዎና በቤተሰብዎ ዘንድ እንዴት ነው?	1 ተቀባይነት አለው 2 ምንም ስሜት አይፈጥርም 3 አሳፋሪ ነገር ነው 4 ክብርን ዝቅ የሚያደርግ		
315.2	የቲቢ በሽታ በአብዛኛው የሚያጠቃው ምን ዓይነት የኑሮ ደረጃ ያላቸውን ነው?	1 ሀብታሞችን 2 መካከለኛ የኑሮ ደረጃ ያላቸውን 3 በማንኛውም የኑሮ ደረጃ ላይ ያሉትን 4 ድሆችን		

ክፍል አራት የበሽተኞች የህክምና ፍላጎትና ተግባራዊ እንቅስቃሴ ለማደጥናት የቀረበ ጥያቄ

ተ.ቁ	መጠይቅ	አማራጭ መልሶች	ኮድ	ወደሚቀጥለው ጥያቄ እለፍ
401	የጤንነት መታወክ ሲደርስብዎ ለመጀመሪያ ጊዜ የህክምና እርዳተታ ለማግኘት ወደ የት ሄዱ?	(አማራጭ መልሶችን አታንብ) 1 ወደ ጸበል 2 ወደ አዋቂ የሀይማኖት አባቶች 3 ወደ ጠንቋይ /ቃልቻ/ 4 ወደ ጤና ድርጅቶች 5 ሌላ ካለ ይጠቀስ……		
402	በተራ ቁጥር 401 ላይ ወደተመለከተው የጤና ድርጅት ስንት ጊዜ ሄዱ ?	(አማራጭ መልሶችን አታንብ 1 አንድ ጊዜ 2 ሁለት ጊዜ 3 ሦስት ጊዜ		

		4 ከሦስት ጊዜ በላይ		
403	የህመም ስሜት መች ጀመርዎ?(ለመጀመሪያ ጊዜ ወደ የጤና ድርጅት ከመምጣትዎ በፊት ያለውን ጊዜ ይጠቅሱ)	(አማራጭ መልሶችን አታንብ) 1 ከአንድ ሳምንት በፊት 2 ከሁለት ሳምንት በፊት 3 ከሦስት ሳምንት በፊት 4 ከሦስት ሳምንት በላይ		
404	እዚህ የጤና ድርጅት መጥተው ምርመራ በጀመሩ በምን ያህል ጊዜ ውስጥ የነቀርሳ መድሀኒት ተጀመረልዎ ?	(አማራጭ መልሶን አታንብ) 1 ከ7 ቀን ባነሰ ጊዜ 2 ከ7እስከ14 ቀናት ውስጥ 3 ከ15 እስከ21ቀናት ውስጥ 4 ከ22 ቀናት በላይ		
405	ሰዎች እራሳቸውን ከቲቢ በሽታ ሊጠብቁ ይችላሉ?	1 አዎ ሊጠበቁ ይችላሉ 2 የለም ሊጠብቁ አይችሉም 3 መልሱን አላውቅም		
	አዎ ከሆነ እንዴት ?			
405.1	ተመጣጣኝና ንጽህናውን የተጠበቀ ምግብ በመመገብ	1 አዎ 2 የለም		
405.2	ንጽሕናው በተጠበቀና ጤናማ በሆነ አካባቢ መኖር	1 አዎ 2 የለም		
405.3	በጤና ባለሙ የታዛዘ ህክምና በመከታተል	1 አዎ 2 የለም		

405.4	የጤና ባለሙያን ምክር በመከተል	1 አዎ 2 የለም		
405.5	የሳንባ ቲቢ በሽተኛ የተጠቀመበትን ኩባያ ባለመጋራት	1 አዎ 2 የለም		
405.6	ተፋፍጎ መኖርን በማስወገድ መከላከል	1 አዎ 2 የለም		
405.7	ክትባትን በመውሰድ	1 አዎ 2 የለም		
405.8	የባህል መድሃኒት በመውሰድ	1 አዎ 2 የለም		
405.9	እርኩስ መንፈስን በመለማመን	1 አዎ 2 የለም		

405.10	ሌላ ካለ ይጠቀስ			
406	የቲቢ በሽታ መድሃኒት በመውሰድዎ በመድሃኒቱ ምክንያት ያልተፈለገ ጉዳት ደርሶብዎ ያውቃል?	1 አዎ 2 የለም		
407	የጥያቄ ቁጥር 406 መልስ አዎን ከሆነ፣ የደረሰው ያልተፈለገ ውጤት ያስከተለው ችግር ምን ነበር?			
408	በቁጥር 407 ለተመለከተው ችግር መፍትሄው ምን ነበር?	1 መድሃኒቱን ከመውሰድ መቆጠብ 2 በቀጠሮ ቀን አለመገኘት 3 መድሃኒቱንም መውሰድ መቀጠል 4 የጤና ባለሙያ ማማከር 5 ሌላ ካለ ይጠቀስ…….		

አመሠግናለሁ

ያረጋገጠው ተቆጣጣሪ ስምና ፊርማ……

Declaration

I, the under signed, declare that this thesis is my original work in partial fulfillment of the requirements for the degree of Masters of Public Health. All the sources of the materials used for this thesis and all people and institutions who gave support for this work are fully acknowledged.

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Date of submission: ----------

Approval of the primary advisor

This thesis has been submitted for examination with my approval as a university Advisor.

Advisor’s name-Dr. Alemayehu mekonnen

Signature----------

Date: May, 2011