

**ADDIS ABABA UNIVERSITY
FACULTY OF MEDICINE
DEPARTMENT OF COMMUNITY HEALTH**

**Assessment of Acceptability of Provider-Initiated HIV Counseling
and Testing among Tuberculosis Patients in
Addis Ababa**

By:

IBRAHIM NURSIEN BESHIR (B.Sc)

**A thesis submitted to the school of Graduate Studies of
Addis Ababa University
In partial fulfillment of the requirement for the Degree of
Master of Public Health**

July, 2007

ADDIS ABABA, ETHIOPIA

ADDIS ABABA UNIVERSITY

Faculty of Medicine

**Assessment of Acceptability of Provider-Initiated HIV Counseling and
Testing among Tuberculosis Patients in Addis Ababa**

By:

Ibrahim Nursien Beshir (BSc.)

**Department of Community Health, Faculty of Medicine,
Addis Ababa University**

Approved by the Examining Board:

Chairman, Department Graduate Committee

Advisor

Examiner

Examiner

Acknowledgment

First and foremost, All the Praises and Thanks be to Allah, the LORD of the Alamin, for being with me all the time.

I would like to extend my heartfelt gratitude and thanks to my Advisor Dr. Mulugeta Betre for his unreserved support and provision of valuable advice and ideas from the beginning of the research proposal to the completion of the thesis work.

The department of community health deserves utmost thanks for sponsoring of the study endeavor.

I wish to express my deep appreciation to all medical directors of all study sites, who allowed me to get the necessary information needed for my thesis work. I am grateful to the staff of all study sites who have given their precious time to collect the necessary data and the study participants who gave the necessary information of the thesis.

Finally, I appreciate greatly and dearly the endurance and patience paid by my family and friends and, for their morale support through out the study period.

Table of Content

	Page
Acknowledgement -----	I
Table of contents-----	II
List of Tables-----	III
List of Figures-----	IV
List of Acronyms-----	V
1) Abstract-----	vi
2) Introduction-----	1
3) Literature Review-----	5
4) Rationale of the study-----	13
5) Objective of the study-----	14
6) Methods and Materials-----	15
7) Results-----	23
8) Discussion-----	36
9) Strengths and Limitations of the study-----	41
10) Conclusion-----	42
11) Recommendation-----	43
12) References-----	44
13) Annexes-----	49
Annex I: Conceptual framework of PIHCT-----	49
Annex II: Structured English Version Questionnaire-----	50
Annex III: Structured Amharic Version Questionnaire-----	59

List of Tables

Page

I. Table 1: Socio-Demographic Characteristics of Tuberculosis Patients by sex in Addis Ababa, March, 2007-----	25
II. Table 2: Tuberculosis Patients' Knowledge, and Attitude related to TB/ HIV/AIDS and perceived risk of HIV infection in Addis Ababa, March, 2007-----	28
III. Table 3: Knowledge and Attitude Related To PIHCT among Tuberculosis Patients in Addis Ababa, March, 2007-----	30
IV. Table 4: HIV testing and barriers to PIHCT among Tuberculosis Patients in Addis Ababa March, 2007-----	31
V. Table 5: TB Patients' acceptability of PIHCT by Age Class in Addis Ababa, March, 2007---- -----	33
VI. Table 6: Univariable and Multiple Logistic Regression Analysis of Factors Associated with acceptability of PIHCT-----	35

List of Figures

	Page
1. Figure I: Schematic Presentation of Sampling Procedure-----	18
2. Figure II: hypothesized predictors of PIHCT-----	49

List of Acronyms and Abbreviations

AAU: Addis Ababa University
AIDS: Acquired Immune Deficiency Syndrome
AOR: Adjusted Odds Ratio
ARV: Antiretroviral
BSS: Behavioral Survey surveillance
BCC: Behavior Change Communication
DCH: Department of Community Health
DOTs: Directly Observed Treatment
HBC: High Burden Countries
HIV: Human Immunodeficiency Virus
HIV CT: HIV Counseling and Testing
IEC: Information Education Communication
MF: Medical Faculty
M.TB: Mycobacterium Tuberculosis
NTP: National Tuberculosis Programme
OI: Opportunistic Infections
OR: Odds Ratio
PIHCT: Provider-Initiated HIV Counseling and Testing
PLWHA: People Living With HIV/AIDS
TB: Tuberculosis
UNAIDS: Joint United Nations Programme on HIV/AIDS
VCT: Voluntary Counseling and Testing
WHO: World Health Organization

1. Abstract

Introduction: Unless patients know their HIV status, they cannot benefit from the available care and treatment options. Therefore, various counseling and testing strategies are needed to identify more HIV infected patients.

Objective: This study was conducted in March 2007 to assess acceptability of PIHCT and the factors influencing its uptake among TB patients in Addis Ababa.

Methods: Institution-based, cross-sectional study was conducted and 423 TB patients interviewed. A two stage sampling method was used for the selection of study subjects. In the first stage of sampling, six health centers were selected by simple random sampling. In the second stage of sampling, patients were systematically selected in each selected health center.

Results: Most of the patients were initiated for HIV testing by their TB treatment supervisor 402(98.5%). Among those who were initiated by their treatment supervisor for HIV testing, 266(66.2%; 95%CI= 61.6-70.8) had under gone HIV testing. Adjusted correlates of acceptability of PIHCT include younger age group (20-24) (AOR=3.0, 95% CI=1.2-8.1), primary education (AOR=2.0, 95% CI=1.04-3.8), secondary and above education (AOR=1.9, 95% CI=1.01-3.7), and recognition that any one should get tested for HIV (AOR=5.5, 95% CI=1.4-21.7). The reported barriers for acceptability of PIHCT include no risk perception for HIV infection 54(40.3%), tested before 53(39.3%), and fear of learning positive result 40 (29.8%) of the study participants.

Conclusion and Recommendation: The wide spread support, and evidence of high acceptability of PIHCT in this study holds significant promise for the control, prevention and treatment of both HIV/AIDS and TB. Concerted efforts to consolidate, sustain, and scale up PIHCT, however, should be accompanied by intensive IEC on TB /HIV.

2. INTRODUCTION

Human immunodeficiency virus (HIV) infection is a major risk factor for the development of tuberculosis (TB). The increase in reported cases of TB since the mid-1980 is attributed, in part, to TB occurring in persons infected with HIV, the virus that causes AIDS [45].

HIV infection is now the most important single predictor of TB incidence in sub-Saharan Africa. The region accounts 70% of the world's 14 million people who are co-infected [6]. In some countries in sub-Saharan Africa, up to 70% of the patients with smear positive pulmonary TB are HIV-positive [46].

The prevalence of HIV co-infection among adult TB cases is estimated to be 40% in urban areas in Ethiopia [12 It accounted for an estimated 38% of all TB case incidences in 2003. In 1998, the prevalence of TB/HIV co-infection was 45.3% among TB patients in Addis Ababa [8].

Voluntary HIV counseling and testing (VCT) has been carried out in many places with excellent results, it is cost-effective, and a gateway to most HIV related services including provision of antiretroviral drugs [49, 50]. However, in most sub-Saharan African countries, many people still don't know their HIV status [48]. For instance, only 10% of patients know their sero-status in the world [3, 47]. In Ethiopia 6.6% of tuberculosis patients know their status as described in one cross-sectional study in north Gonder [26].

Due to under utilization of client-initiated HIV testing, the revised UNAIDS/WHO policy statement on HIV testing recommended that provider-initiated HIV testing should be implemented in clinical setting[58].

Tuberculosis (TB) patients are one of the target populations for the provider-initiated counseling and testing [51-53]. The WHO has, therefore, incorporated routine counseling and testing as a component of TB/HIV collaborative efforts [23]. Subsequently, the National TB and HIV guideline in Ethiopia recommends HIV counseling and testing as a routine care for TB patients [54]. However, the acceptability of this approach has not been studied. Assessments done on the acceptability of VCT among patients and in the general population gave mixed results [42, 55, and 56]. The objective of this study was to assess the acceptability of PIHCT among TB patients and the factors influencing its uptake in Addis Ababa.

3. Literature review

3.1. TB and HIV Epidemiology

Despite effective treatment, tuberculosis (TB) remains a leading infectious cause of death among both young and adults of both sexes, and of people living with AIDS [1].

TB and HIV are the overlapping epidemic in sub-Saharan Africa. According to the WHO 2000 estimation, there were an estimated 8.3 million new cases of TB worldwide. Ninety five percent of TB cases and 98% of TB deaths are in developing countries. Approximately, 75% of TB cases in developing countries are in the economically productive age group (15–50 years). In 2000, Sub-Saharan Africa had the highest TB incidence rate (290/100000 per year) and the highest annual rate of increase of cases (6%). There was 1.8 million deaths from TB in 2000, with 226000 attributable to HIV (12%). TB deaths comprise 25% of all avoidable adult deaths in developing countries [2, 3].

According to the latest figures from the UNAIDS, the total number of people living with HIV reached its highest level; an estimated 40.3 million people are now living with HIV, and close to 5 million people were newly infected with the virus in 2005. Sub-Saharan Africa has just over 10% of the world's population, but home to more than 60% (25.8 million of 40.3 million) of people living with HIV where the highest rates of TB infection are found [2, 4].

In Ethiopia, the first HIV/AIDS cases were reported in the mid-1980s. Since then, the epidemic has spread to the general population in both urban and rural areas. The average prevalence rate of HIV infection in the adult population is estimated to be 4.4% with a much higher proportion in urban (12.6%) areas than in rural areas (2.6%) in 2005 [7, 9].

Ethiopia is a country where AIDS caused an estimated 30% of all adult deaths in 2003, but less than 10% of people in need of antiretroviral therapy were receiving it by mid-2005.

The HIV pandemic presents a massive challenge to the control of tuberculosis in Ethiopia. It's accounted for an estimated 38% or 54,000 of all TB cases incidence in 2003. This proportion

is expected to continue to rise in the coming years, contributing to a total projected TB case load of 180,000 in 2008[7, 9].

According to the estimate by WHO (2005) the prevalence and incidence of TB of all forms is estimated to be 533 and 356 per 100,000 population, respectively. Sero prevalence of HIV among adult TB is 21 %. Ethiopia stands seventh in the list of high burden countries (HBC) for TB [3].

There were 15,237 all type of TB cases registered in Addis Ababa in 2003/04[10]. The prevalence of HIV in tuberculosis patients was 45.3% in Addis Ababa in 1998[8].

3.2. Co infection of TB and HIV

Although it is well known that TB is one of the most common opportunistic infections in HIV-positive people, and very high proportions of TB patients are found to be HIV-positive in Africa, TB clinics in many countries do not routinely offer HIV testing or even refer TB patients to HIV services.

Report on the integration of TB and HIV care in Rwanda, in 2004 shows that, 45.5% of the 6108 registered TB patients were tested for HIV, and 46% were found to be positive. By the first quarter of 2006, 64% of the 1909 registered TB patients were tested, and 49% were HIV positive [11].

The prevalence of HIV co-infection among adult TB cases is estimated to be 40% in urban areas in Ethiopia [12]. HIV/AIDS accounted for an estimated 32% of the 141,000 TB cases in 2005[13]. In 1998, the prevalence of TB/HIV co-infection was 45.3% among TB patients in Addis Ababa [8].

In the southern region of Ethiopia, a research on HIV and tuberculosis co infection has shown that, the HIV prevalence was 18% for female and 21% for male TB patients. Fifteen percent and 30%, respectively, of the rural and urban patients with TB were HIV positive. In 1994, the prevalence of TB/HIV co-infection was 44.4% among TB patients in an institution based study conducted in Shashemene town [14, 15].

3.3. The impact of HIV on tuberculosis

HIV fuels the tuberculosis epidemic in several ways. HIV promotes progression to active TB both in people with recently acquired and with latent *Mycobacterium tuberculosis* infections [9]. HIV is the most powerful known risk factor for reactivation of latent tuberculosis infection to active disease [2]. HIV infected people are more susceptible to be TB infected when they are exposed to M. TB [6, 16].

The life time risk of active tuberculosis in persons with TB infection alone is estimated to be only 5-10%, but the annual risk of developing TB in a PLWHA who is co-infected with M. TB ranges from 5 to 15 percent with an estimated life time risk above 30% [12]. HIV also increases the rate of recurrent TB, which may be due to either endogenous reactivation (true relapse) or exogenous re-infection, increasing tuberculosis cases in PLWHA pose an

increased risk of TB transmission to the general community, whether or not HIV-infected[2, 3, 4, 16, 17].

Research shows that even in areas where there is a good TB control programme, when the sero-prevalence of HIV is high, the annual percentage increase in TB will be high and difficult to the control of TB [17].

HIV has impact on TB patients and programmes and that has great implication for TB control policies. The impact of HIV on patients includes the effect of HIV on diagnosis and on the pattern of HIV-related TB, response of HIV-infected TB patients to TB treatment, the benefits of antiretroviral therapy (ART), and the quality and continuity of care for TB patients. The impacts on national TB programmes (NTP) includes increased case load, impaired NTP performance, and increased need for access to ART and difficulties in reaching TB control targets[6]. TB also accelerates HIV disease progression and is associated with decreased survival. TB specific mortality is fourfold higher among HIV-infected patients than among the uninfected patients [18]. Globally, TB kills 1.7 million people a year. Of nearly 9 million new cases in 2004, 741,000 were among people living with HIV [19].

3.4. HIV counseling and testing

HIV testing has always been seen as a major tool in the fight against HIV/AIDS. HIV counseling and testing (HCT) is a corner stone for early access to prevention as well as to care and support services [20]. Despite the personal implications of knowing one's HIV status might be expected that everyone would want to get tested particularly in areas of high HIV

prevalence like urban Africa [21, 22]. But the vast majority of HIV infected people don't know their HIV status [23]. In a study done in Addis Ababa, regarding reasons of the unmet need group (180) for not demanding pre-marital VCT, the most commonly cited reasons were not perceiving oneself at risk (57.8%) followed by no consideration at all (23.9%), afraid of positive result, (15.6%) and fear of stigma (3.9 %) [24].

In contrast to the industrialized countries, many HIV infected people in developing countries including Ethiopia do not know their HIV status [25]. A country wide BSS reported that only 4.6% of youth having had VCT for HIV in 2000[9].The rate of VCT service utilization among TB patients was only 6.6% as described in one cross- sectional study in north Gonder [26]. Studies on the factors why people may not want to learn their HIV status among youth and pregnant women commonly cited are low risk perception, fear of stigma and discrimination, lack of perceived benefits of VCT, fear of partner's reactions, and unable to cope with positive test [21, 27, 28].

Still, in many high-prevalence countries, fewer than one in ten HIV-positive individuals are aware that they are infected with the HIV virus [23, 29].

There has been widespread concern about the slow uptake of VCT in many parts of sub-Saharan Africa [30, 31]. In an attempt to increase the uptake of HIV testing and ART, In June 2004, as part of a change in testing policy recommendations, UNAIDS and the World Health Organization recommended the routine offer of HIV testing by healthcare providers in a wide range of clinical encounters [32, 33]. The goal of routine testing is to increase the proportion of individuals aware of their status, and thereby reduce "HIV exceptionalism," lessen HIV-

related stigma, and provide more people access to life-saving therapy [33, 34]. While provider-initiated approaches to testing are gaining popularity, there have been concerns that routine testing policies are potentially coercive, that counseling will no longer be practiced, that people may be dissuaded from visiting their doctors for fear of being tested, and that this policy may increase testing-related partner violence [32, 35, 36, and 37].

Following the joint UNAIDS and World Health Organization guidance in 2004, over the past two years there has been increasing movement in African countries towards a model of HIV testing and counseling that makes the HIV test a routine part of medical care in countries. Testing, they argue, is the gateway to HIV treatment and an essential component of prevention programmes.

Community-based cross-sectional study in Botswana, found that 81% of people reported that they were either 'extremely' or very much in favor of routine testing, and 68% of the sample felt that they could not refuse a test. Just under half of those questioned (48%) had undergone testing (a much higher proportion than seen in other African countries). But the key barriers to testing were the same as those the world over: fear of learning one's HIV status, lack of perceived HIV risk and fear of having to change one's sexual practices [38].

Researchers in Uganda looked at the effects of introducing routine testing on the clinical profile of HIV-positive patients in their care, and found that over the course of a year, routine testing shifted the profile strongly towards asymptomatic patients who needed less intensive clinical management when they started treatment. Prior to routine testing 65% of patients had CD4 counts below 200 and three-quarters were symptomatic. After routine testing was

introduced, the proportion with CD4 counts below 200 fell to 45% and the proportion that were symptomatic fell to 55% [39].

Studies on acceptability of routine testing in different parts of Africa has shown that, in pilot and clinical trials, when HIV counseling and testing is routinely offered by health providers, the acceptability rate of HIV testing is reported to be satisfactorily high, reaching 90 to 100% of patients attending TB clinics in several countries [40-42]. For instance, 91% of TB patients in Guyana [40], 99% in South Africa [41], and 91% of TB patients in Malawi [42] were accepted and tested for HIV.

From studies conducted in Ethiopia, acceptance of HIV counseling and testing under routine care in Addis Ababa and southern Ethiopia was found to be 57.8% and 35% among Tb patients [43, 44].

4. Rationale of the Study

HIV testing is fundamental to both prevention and treatment of HIV. Unless patients know their status, they cannot benefit from the available care and treatment options. Therefore, various counseling and testing strategies are needed to identify more HIV infected patients.

The National TB and HIV guideline in Ethiopia recommends HIV counseling and testing as a routine care for TB patients [54]. Addis Ababa City Administration Health Bureau is implementing Provider Initiated HIV Counseling and Testing (PIHCT) in response to the high HIV prevalence among TB patients, and in an attempt to increase the uptake of HIV testing and ART.

Though, there are studies conducted on willingness to accept PIHCT on different parts of Ethiopian towns before the implementation of the service, the acceptability of this approach has not been studied after its implementation. Assessments done on the acceptability of VCT among patients and in the general population gave mixed results [42, 55, and 56].

Therefore, this study was proposed to assess the acceptability of PIHCT among TB patients and the factors influencing its uptake in Addis Ababa. The study might help design measures to increase the up take of HIV testing, and also introduce a system for HIV surveillance among TB patients in Ethiopia.

5. Objectives

5.1. General

- To assess acceptability of PIHCT and factors influencing its uptake among tuberculosis patients in Addis Ababa

5.2. Specific

- To determine acceptability of PIHCT among TB patients in Addis Ababa
- To identify factors influencing uptake of PIHCT among TB patients in Addis Ababa

6. Methods and Materials

6.1. The study area

The study was conducted in Addis Ababa. It is the capital city of Ethiopia, and is administratively divided in to 10 sub cities and 103 Kebeles. According to 1994 national census, Addis Ababa has a projected population of 3,042,956 for 2006/07 of which females account for 51%.

Currently, TB control program utilizes the DOTS and is being run in two TB specialized hospitals (St. Peter Hospital and Zenbework Hospital), five city governmental hospitals, 24 health centers and five health stations and one mission of charity clinic. The city started implementing PIHCT as a pilot at Zewditu memorial hospital and Kasanchis health center TB clinics since 2004. Starting from January 2006 the city is providing PIHCT in all the 24 health centers at TB clinic. According to MOH there were 15,237 all type of TB cases registered in Addis Ababa in 2003/04[10].

6.2. Study design

Institution based, cross-sectional study was conducted in March 2007 among TB patients who have been following their treatment under DOTS strategy. The study has taken into account an analytic approach of internally comparing accepters and non-accepters of PIHCT.

6.3. Study population

For this study, the source population was all TB patients who were registered for DOTS between September 2006 and March 2007 in Addis Ababa. In order to avoid the effect of severe cases and poor access to HIV testing services, patients in hospitals and health stations respectively were excluded from the study. The study population was all tuberculosis patients in selected health center namely: Bole, Kotebe, Cazanches, Selam, Akaki, and Woreda 7.

6.4. Sample size determination

The required sample size of the study population was determined using a formula for a single population.

$$n = [z (\alpha/2)^2 * p (1-P)] / d^2$$

To determine the sample size for the study, the following assumption was considered.

- ◆ “P”, the proportion of Tb patients accepting PIHCT among TB patients. This was assumed to be 50%. Since similar studies that determined acceptability for PIHCT were not available.
- ◆ "n" is the required sample size,
- ◆ "Z" is a standard score corresponding to 95% confidence level;
- ◆ “d ” is the margin of error 5% and 10% allowance for non-responses was taken. Accordingly, the required sample size was calculated to be 423

6.5. Sampling procedures

A two stage sampling procedure was employed in order to select a representative sample from the source population. Six out of 24 health centers implementing PIHCT were selected using simple random sampling method (primary sampling stage). And from selected health centers, using patient’s registration book, 423 study participants were selected by systematic random sampling (secondary sampling stage) [fig1]. To minimize the non-response rate, the study also considered 10% of patients.

6.5.1. Inclusion criteria

- All types of TB patients who were following their treatment at the sampled health centers in Addis Ababa during the study period.

6.5.2. Exclusion criteria

- All TB patients who are diagnosed in Addis Ababa tuberculosis center but were transferred out to other health institutions for follow up.
- All TB patients admitted at hospitals, and follow their treatment at health stations.
- TB patients who discontinue their treatment,
- Those below the age of 18 yrs old

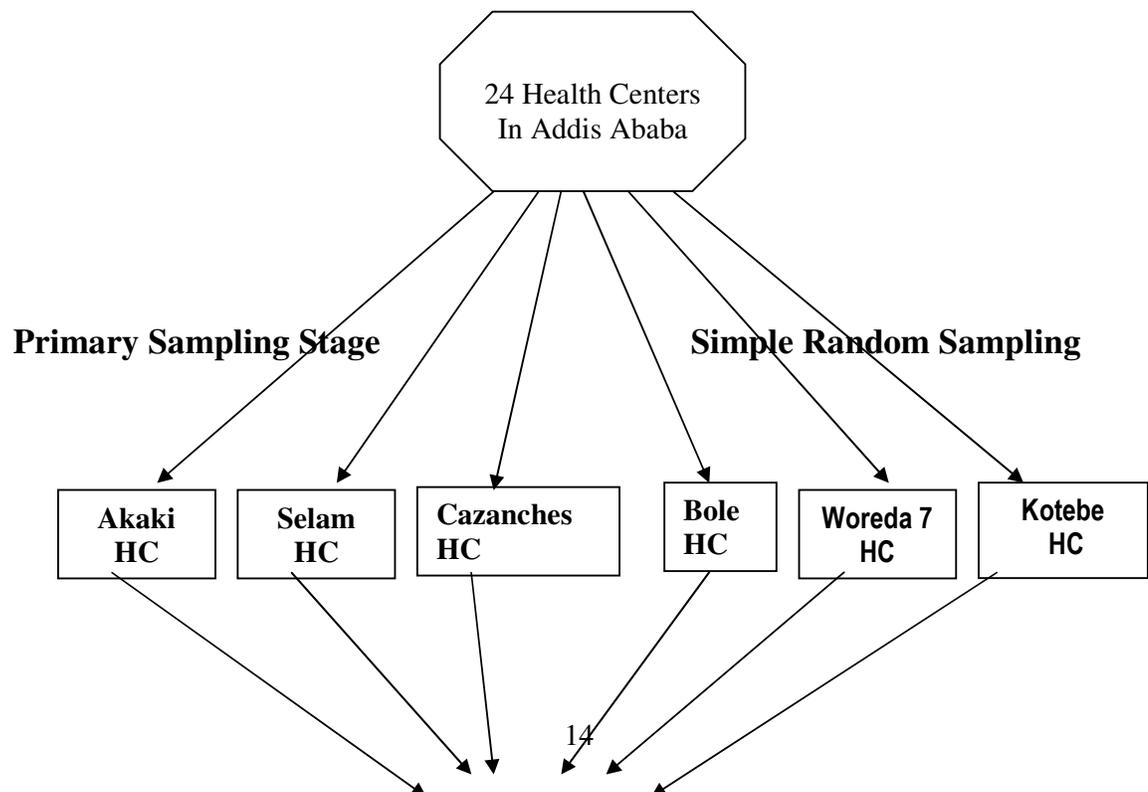




Fig-1: Schematic presentation of sampling procedure

6.6. Data collection

The study utilized closed ended structured questionnaire. Six nurses conducted the interview using pre-tested structured questionnaire. The interview was carried out on appointment days in which patients come to treatment centers to collect their drug. One supervisor who is BSc holder was recruited to assist the data collection process. The main responsibility of the supervisor was on checking whether the questionnaire is correctly and consistently completed or not. Two day training was given to the supervisor and data collectors on the objective of the study, the questions and extent of explanations, and the way to keep the privacy and confidentiality. The questionnaire was prepared in English and translated in to Amharic then back to English to check the consistency of questions. The structured questionnaire was pre-tested in health centers which were not included in the study in Addis Ababa, to identify the clarity of question, their sensitiveness as well as gap on data collector. Discussion was held based on the result of the pre-test to make correction. Questions were grouped and sequenced in terms of their sensitivity and objectives they focus on. The questionnaire addressed the patients' acceptability of PIHCT, perceived barriers for HIV testing, socio-demographic and economic characteristics, knowledge and attitude on HIV/AIDS/TB/PIHCT, knowledge on TB/HIV association, and self perceived risk.

6.7. Operational definitions.

- ◆ **Provider-Initiated HIV counseling and testing:** is a process in which the individual undergoes counseling and HIV testing by health provider initiation
- ◆ **Acceptability:** was measured by the proportion of TB patients who accept PIHCT
- ◆ **Acceptors:** TB patients who accept PIHCT.
- ◆ **Non-acceptors:** TB patients who were refused to PIHCT.
- ◆ **Risk perception for HIV/AIDS:** respondents feeling of vulnerability of being infected for HIV/AIDS.

6.8. Study Variables

6.8.1. Dependent Variables

The dependent variable measured was:-

- ◆ Acceptability of PIHCT

6.8.2. Independent Variables

The independent variables measured were:-

- ◆ Socio-demographic and economic characteristic: (age, sex, educational level, occupation, marital status, ethnicity, religion, family size, monthly family income, history of family member treated for tuberculosis).
- ◆ Knowledge on, and attitude of HIV/AIDS/TB
- ◆ Knowledge of, and attitude towards PIHCT

- ◆ Perceived barriers for HIV testing
- ◆ Self- perceived risk of HIV infection

6.9. *Data processing and analysis*

The collected data were entered and analyzed using SPSS 13 for windows soft ware. To describe the characteristics of the study population, means, medians, and percentages were calculated. In the analyses process, individuals who accept PIHCT (n = 266) with non-acceptors of PIHCT (n = 136) were compared. Univariable logistic regression was performed on theoretically relevant factors to examine the relationship between each factor and the dependent variable. Chi-square statistics and odds ratios were generated with 95% confidence intervals to guide interpretation. Variables that were found with a statistically significant association ($p < 0.05$) at univariate logistic analysis were entered and analyzed by multiple logistic regression analysis.

6.10. Data Quality Assurance

To ensure quality, all the data from each treatment center, were checked for completeness, accuracy, clarity and consistency by the Principal Investigator and the supervisor immediately after the data were collected. The principal investigator and the supervisor were closely monitoring the data collection. Double entry was performed to assure quality of data. The data were intensively cleaned before analysis.

6.11. Ethical Considerations

The ethical approval and clearance were obtained from the Department Of Community Health, and the Faculty of Medicine, AAU Ethical Committee. Officials were contacted and permission was secured at all levels. The necessary explanation about the purpose of the study and its procedure were given and verbal consent obtained from the respondents. To assure confidentiality, anonymous interview was conducted after explaining to the respondents her/his name was unnecessary. Referral (link-up) arrangement was made for those who might wish to consider HIV testing as a result of the interview. Finally, a specific safe place was arranged to put the questionnaires after completion of the interview.

6.12. Dissemination of Findings

The findings of this study will be communicated to different organizations that facilitated the study and to those who have a stake in TB/HIV integrated services. These include the Addis Ababa University, Ministry of Health, Regional Health Bureaus, and others. The findings will be presented in different seminars, meetings and workshops and published in a scientific journal.

7. Results

The response rate was 96.45%, 408 of the 423 patients. Among the fifteen non-respondents, thirteen were not willing to participate in the interview. The remaining two had more than 5% missing responses. Characteristics of patients enrolled in the study are presented in Table 1.

7.1. Socio-demographic profiles

Fifty point five percent of the study participants were male with nearly 1.02 to 1 sex ratio. The mean and median ages of the patients were 31.02+ 10.39 and 29 years old respectively. Over half of (51.7%) the study populations were between 15-29 years old followed by 30-44 age group which account for 152 (37.3%) of the study participants (Table 1).

Most (75.2%) of those interviewed were Orthodox Christians followed by Muslim, 63(15.4%). Over half (50.7%) of the study participants were from Amhara ethnic group followed by Oromo, 102(25.0%). The rest were Guarge, Tigray, and few others as shown in Table 1.

Regarding the marital status of the participants, 51.7% were married in union, 40.0% were single, and 4.9% were divorced. Forty-four point nine percent of the participants had secondary and above education, and 38.3% of the study population had at least a primary (Grade 1-8) education. Twenty one point three percent of the respondents were civil/private servant, and 15.4% were housewives. Of the total, eighty four of the participants (20.6%) were daily laborers, and 61 (15.0%) were jobless.

Around 70.4% of the sampled patients were from family size of four or less persons. One hundred and ninety of the participants (44.6%) reported that their family monthly incomes were less than 350 Birr per month, and Only 3(0.7%) of the participants did not want to mention their family house hold monthly income.

Of the total respondents, 49.0% of females and 54.4% of males were married in union. In addition, 40.1% and 36.4% of females and males respectively, had at least a primary (1-8) education as shown in Table 1.

Table 1: Socio-Demographic Characteristics of Tuberculosis Patients by sex in Addis Ababa, March 2007.

Variables	Sex of the patient		Total (n=408) Freq (%)
	Male (n=206) Freq (%)	Female (n=202) Freq (%)	
Age (Years)			
15-19	11 (5.3%)	17 (8.4%)	28 (6.9%)
20-24	45 (21.8%)	53 (26.2%)	98 (24.0%)
25-29	37 (18.0%)	48 (23.8%)	85 (20.8%)
30-34	35 (17.0%)	36 (17.6%)	71 (17.4%)
35-39	24 (11.7%)	22 (10.9%)	46 (11.3%)
40-44	24 (11.7%)	11 (5.4%)	35 (8.6%)
+45	30 (14.6%)	15 (7.5%)	45 (11.1%)
Religion			
Orthodox	127 (76.2%)	150 (74.3%)	307 (75.2%)
Muslim	34 (16.5%)	29 (14.4%)	63 (15.4%)
Protestant	13 (6.3%)	22 (10.9%)	35 (8.6%)
Others *	2 (1.0%)	1 (0.5%)	3 (0.7%)
Ethnic group			
Amhara	96 (46.6%)	111 (55.0%)	207 (50.7%)
Oromo	51 (24.8%)	51 (25.2%)	102 (25.0%)
Guarge	37 (18.0%)	23 (11.4%)	60 (14.7%)
Tigray	16 (7.8%)	9 (4.5%)	25 (6.1%)
Other**	6 (2.9%)	8 (4.0%)	14 (3.4%)
Marital status			
Married in union	112 (54.4%)	99 (49.0%)	211 (51.7%)
Single	88 (42.7%)	75 (37.1%)	163 (40.0%)
Divorced	5 (2.4%)	15 (7.4%)	20 (4.9%)
Widowed	0	12 (5.9%)	12 (2.9%)
Unmarried couples	1 (0.5%)	1 (0.5%)	2 (0.5%)
Educational status			
Illiterate	8 (3.9%)	1 (0.5%)	9 (2.2%)
Read and Write	13 (6.3%)	47 (23.3%)	60 (14.7%)
Grade 1-6	43 (20.9%)	52 (25.7%)	95 (23.3%)
Grade 7-8	32 (15.5%)	29 (14.4%)	61 (15.0%)
Grade 9-12	85 (41.3%)	61 (30.2%)	146 (35.8%)
Above Grade 12	25 (12.1%)	11 (5.4%)	37 (9.1%)
Employment status			
Civil/private servant	66 (32.0%)	21 (10.4%)	87 (21.3%)
No job	11 (5.3%)	50 (24.8%)	61 (15.0%)
Daily laborer	60 (29.1%)	24 (11.9%)	84 (20.6%)
House wife	0	63 (31.2%)	63 (15.0%)
Merchant	42 (20.4%)	11 (5.4%)	53 (13.0%)
Student	13 (6.3%)	15 (7.4%)	28 (6.9%)
Domestic servants	2 (1.0%)	13 (6.4%)	15 (3.7%)
Other	12 (5.8%)	5 (2.5%)	17 (4.2%)
Monthly Family Income (in Birr)			
<350***	87 (42.2%)	103 (51.0%)	190 (44.6%)
≥350	118 (57.3%)	97 (48.0%)	215 (54.7%)

to other as TB patients. Only 12.5% of patients were afraid of being infected with TB before they were diagnosed for TB.

Responses on questions relating to source of TB included from TB patients by 303 (74.3%), and from polluted air by 325(79.7%) of study participants. There were still misconceptions on source of TB. Seven point one percent of the sampled TB patients indicated cold weather and contaminated water as source of TB. Other reported misconceptions of the route of TB transmission were sexual intercourse, evil spirit, lack of food, smoking, and taking much alcohol as shown on Table 2.

Patients' knowledge of TB and HIV/AIDS association nearly 81% of the participants believed that the cases of TB have been increasing after the era of HIV/AIDS. Likewise 80.9% of the participants believed that the control of HIV/AIDS could help TB control.

Regarding self perceived risk of HIV infection, 155 (38%) of the participants think that can get infected with HIV. Among those who think that they can get the virus, 51.6 % & 29.9% of the respondents have minimal and moderate chance of being infected with HIV respectively as shown on table 2.

Table 2: Tuberculosis Patients' Knowledge and Attitude Related to TB/ HIV/AIDS and perceived risk of HIV infection in Addis Ababa March 2007

TB/HIV/AIDS Related Questions	Frequency	%
Route of HIV transmission[#]		
Sexual contact	405	99.3
Sharing of sharp materials with PLWHA	380	93.1
Blood contact	222	54.4
Transfusion of blood	160	39.2
Mother to child during pregnancy	159	39.0
Mother to child by breast feeding	153	37.5
Other*	6	1.4
Methods of HIV prevention[#]		
Abstinence	385	94.6
Staying with only one uninfected partner	303	74.3
Use of condom every time during sexual intercourse	248	60.9
No sharing sharps like needles	35	8.6
Others**	5	1.2
Source of TB[#]		
From TB patients	303	74.3
Polluted air	325	79.3
Clod whether	16	3.9
Contaminated Water	13	3.2
Health personnel/health unit	21	5.1
Others***	12	2.9
Chance of getting infected with HIV (n= 155)		
Minimal	80	51.6
Moderate	46	29.7
High	29	28.7

Multiple responses were possible

* sharing meal, mosquito bite

** No drink alcohol, chewing chat, and praying

*** Lack of food, smoking, taking much alcohol, sexual intercourse, evil spirit etc

7.3. Knowledge, and Attitude towards PIHCT

Of the 408 patients interviewed, 391(95.8%) reported that they are aware of the availability of PIHCT before this interview. The most common source of information for PIHCT mentioned by participants were health worker/institutions (87.5%), and mass media (52.1%) followed by friends (20.2%) as shown on Table 3. Majority of the patients have positive views toward PIHCT after it was explained (table 3). Ninety four point four percent were “extremely” or

“very much” in favor of PIHCT. Three hundred ninety one (95.8%) of the respondents agreed that any one should get tested for HIV.

Most of the participants (97.1%) believed that PIHCT is important. Among those who believe PIHCT is important, majority agreed that PIHCT result in increased number of tested people (56.9%), to gain access to ART (94.7%), makes it easier for TB patients to get tested (61.1%), and results in decreased discrimination of HIV- positive TB patients (39.1%). On the other hand, among those who believe PIHCT has influence 13 (3.2%), 8(66.7%) believed that PIHCT would cause TB patients to avoid seeing their health provider for fear of being tested.

Table3: Knowledge and Attitude Related To PIHCT among Tuberculosis Patients in Addis Ababa, March 2007

Variables	Frequency	%
Sources of information (n=391)*		
Mass media	203	52.1
Health worker/ institution	342	87.5

Friends	79	20.2
Family member	45	11.5
Others**	6	1.5
In favor of PIHCT (n=391)		
Extremely	261	64.0
Very much	123	30.1
Some what	13	3.2
Not at all	4	1.0
Reasons for PIHCT is important (n=396) *		
Helps TB patients to get access to ART	375	94.7
Makes easier for TB pts to get tested	242	61.1
Results in less discrimination	155	39.1
Increases number of tested people	224	56.9
Reasons for PIHCT has influence (n=13) *		
Cause TB pts to avoid seeing doctor or nurse	8	66.7
Violet human right	5	41.7
Increase women violence	1	8.3

* Multiple answers were possible

** School, workplace meeting, anti-AIDS club, neighbor

7.4. HIV Testing among Tuberculosis Patients

It was found that 320 (78.4%) of the sampled TB patients were ever counseled and tested for HIV (either client or provider initiated) in the past. Among those ever tested: 266 (65.2%) patients were tested during their TB treatment and the remaining 54 (16.9%) of the participants had tested for HIV before being diagnosed for tuberculosis.

The reasons for the last HIV test mentioned by participants were, initiated by health workers 268 (65.7%), and voluntary HIV counseling and testing by 49 (12%).

Centers used for HIV testing reported by patients were 267 (65.4%) in their current TB treatment centers, 35 (8.6%) in other facilities, and 18 (4.4%) in free standing VCT centers as shown in table 4.

Table 4: HIV Testing reason, sites and Barriers to PIHCT among Tuberculosis Patients who had not been tested In Addis Ababa March 2007

Variable	Frequency	%
The reason for HIV testing		
Initiated by health worker	268	65.7
Voluntary testing by your self	49	12.0
Voluntarily because infected with TB	2	0.5
Donation of blood	1	0.2
When did you get tested for HIV		
Before your illness	54	13.2
After your illness	266	65.2
Utilized HIV testing centers		
TB treatment center	267	65.4
Other facility	35	8.6
Free standing VCT center	18	4.4
Testing barriers*		
No risk perception for HIV infection	54	40.3
Tested before	53	39.3
Fear of learning positive result	40	29.8
Believe that being tested is not useful	13	9.7
Fear of stigma and discrimination	5	3.7
Let me complete my treatment	7	5.2
Partner trust	2	1.5

* Multiple response were possible

7.5. Acceptability of PIHCT

Most of the patients were initiated for HIV counseling and testing by their TB treatment supervisor 402 (98.5%). Among those who were initiated by their treatment supervisor for HIV testing, 266 (66.2%; 95%CI= 61.6-70.8) had under gone HIV testing. All of the HIV tested patients had collected their HIV test result. Table 5–presents reported impediment for acceptability of PIHCT among TB patients who have not been tested for HIV following their supervisor initiation (n=136). Patients when asked to list any barrier for HIV testing, could mention multiple responses. The reported barriers for acceptability of PIHCT include no risk perception for HIV infection 54(40.3%), tested before 53(39.3%), and Fear of learning positive result 40(29.8%) of the study participants. The remaining reported perceived barriers for HIV testing are also presented in Table 4.

7.6. Result of Univariable and Multiple Logistic Regression Analysis

This study assessed factors associated with acceptability of PIHCT. A logistic regression model was used to examine factors associated with acceptability of PIHCT (having been tested for HIV following supervisor initiation) as dependent variable. Variables that were found to be statistically significant ($p < 0.05$) at univariate logistic regression analysis were entered and analyzed by multiple logistic regression analysis.

Table 5: TB Patients' acceptability of PIHCT by Age Class in Addis Ababa, March 2007

Age (Years)	Total	Acceptors (%)
15-19	26	16 (61.5)
20-24	96	73 (76.0)
25-29	84	59 (70.2)
30-34	71	47 (66.2)
35-39	45	29 (64.4)
40-44	35	23 (65.7)
45-49	16	8 (50.0)

The acceptability of PIHCT decreased linearly with age, particularly from age group (20-25) (Table 5), being particularly low among older age (+50 years).

7.6.1. Univariable Logistic Regression Analysis of Factors Associated with acceptability of PIHCT

In the univariable logistic regression analysis, acceptability of PIHCT was not significantly ($p>0.05$) associated with other characteristics namely: sex ($p=0.7$), ethnicity ($p=0.7$), marital status ($p=0.4$), religion ($p=0.9$), occupational status ($p=0.5$), average household income ($p=0.9$) and family size (0.9) among socio-demographics variables.

Knowledge factors such as believing that HIV is not curable illness ($p=0.7$), believing that HIV infection could be asymptomatic ($p=0.1$), afraid of being infected with TB ($p=0.2$), reveal to others as a TB patient ($p=0.2$), were not found to be statistically associated with acceptability of PIHCT.

Believed that PIHCT is important ($p=0.9$), think can get the virus (0.07), Knew TB cases increasing after the era of HIV/AIDS ($p=0.7$), and control of HIV/AIDS can help TB control ($p=0.2$) were also not significantly associated with acceptability of PIHCT.

Age group, status of education, knowing anyone infected with HIV or died of AIDS, ever heard of PIHCT, and agreed any one can check his/her sero-status were found significantly associated with acceptability of PIHCT in univariable logistic regression analysis (Table 6).

7.6.2. Multiple Logistic Regression Analysis of Factors Associated with Having Been Tested for HIV

After adjusting for significant independent variables (see Table 6), age group (20-24), had primary education, had secondary and above education, and agreed any one can check his/her sero-status were each associated with higher odds of having tested for HIV following their supervisor initiation.

Patients who were at younger age group (20-24) had higher odd of acceptability of PIHCT (AOR= 3.0; 95% CI= 1.2-8.1) than older age group patients. Patients who reported that they had primary education, secondary and above education were close to two times more likely to get tested for HIV following their supervisor initiation than illiterate/read write only (AOR=2.0, 95% CI=1.04-3.8) and (AOR=1.9, 95% CI=1.01-3.7) respectively. In addition, patients who reported that agreed any one can check his/her sero-status had higher odds of acceptability of PIHCT (AOR=5.5; 95% CI=1.4-21.7) as shown in table 6.

Table 6: Univariable and Multiple Logistic Regression Analysis of Factors Associated With acceptability of PIHCT.

Variables*	Acceptors	Non-acceptors	OR (95% CI)	AOR (95% CI)
Age group				
+50 ^R	11	18	1.0	1.0
45-49	8	8	1.6 (0.5-5.6)	1.7 (0.4-6.5)
40-44	23	12	3.1 (1.1-8.7)	2.0 (0.7-6.1)
35-39	29	16	3.0 (1.1-7.8)	1.9 (0.7-5.4)
30-34	47	24	3.2 (1.3-7.9)	2.0 (0.8-5.3)
25-29	59	25	3.9 (1.6-9.4)	2.2 (0.9-5.9)
20-24	73	23	5.2 (2.2-12.6)	3.0 (1.2-8.1)
15-19	16	10	2.6 (0.9-7.8)	1.8 (0.5-5.7)
Educational status				
Illiterate / read and write ^R	31	37	1.0	1.0

Primary	107	47	2.7 (1.5-4.9)	2.0 (1.04-3.8)
Secondary and above	128	52	2.9 (1.7-5.2)	1.9 (1.01-3.7)
Knowing anyone infected with HIV or died of AIDS				
No ^R	42	33	1.0	1.0
Yes	224	103	1.7 (1.02-2.9)	1.3 (0.7-2.2)
Ever heard of PIHCT				
No ^R	5	12	1.0	1.0
yes	261	124	5.1 (1.7-14.7)	2.1 (0.6-7.3)
Agreed any one can check his/her sero-status				
No ^R	3	10	1.0	1.0
Yes	263	122	7.2 (1.9-26.6)	5.5 (1.4-21.7)

R= Reference category,

*= Variables with statistical significant in Univariable logistic analysis

8. Discussion

HIV testing is fundamental to both prevention and treatment of HIV. Efforts to increase the coverage of HIV testing have recently extended to the provision of “opt-out” or routine HIV testing, where the healthcare provider rather than the client or patient initiates the test.

The results of this study demonstrate the acceptability of PIHCT among TB patients and the factors influencing its uptake. Over half (50.5%) of the study subjects were male, 51.7% were between 15-29 years followed between 30-44 years old. the average age of the participants was 31.02 years + 10.39. Forty percent of the participants were single, and 44.9% had secondary and above education. In this study, it was found that 320 (78.4%) of the sampled TB patients were ever tested for HIV (either client or provider initiated) in the past. Among those ever tested: 266 (65.2%) patients were tested during their TB treatment and the

remaining 54 (16.9%) of the participants had tested for HIV before being diagnosed for tuberculosis. Most of the patients were initiated for HIV testing by their TB treatment supervisor 402 (98.5%). Among those who were initiated by their treatment supervisor for HIV testing, 266 (66.2%; 95%CI= 61.6-70.8) had undergone HIV testing. All of the HIV tested patients had collected their HIV test result.

As documented by several studies and WHO [3, 8, 15, 26, 43, and 57], this study also showed that a high prevalence of TB occurred in the young and adult population.

In this study, high proportions of TB patients were aware of TB; curability of TB (99.8%) and source of TB from patients (74.3%). The study as well identified misconceptions regarding source of TB among the TB patients. Cold weather and contaminated water were implicated as a source of TB by 7.1% of sampled TB patients. This finding is similar to finding from study done North Ethiopia [26]. This gap could be due to unplanned health education at health facilities that may affect TB/HIV/AIDS control programs.

In this study, all TB patients reported that they have heard of HIV/AIDS. This result is comparable with the results observed among the community (100%) in north Gonder [26]. This finding is also comparable with a recent finding from BSS round two that revealed that 98% of study populations were aware of HIV /AIDS [13].

Evaluating findings of the participants' knowledge on mode of HIV transmission and prevention indicated the facts that most of the TB patients had the correct knowledge. On the other hand, still few (1.4%) of the participants had misconception on transmission of

HIV/AIDS like mosquito bite and sharing of meal with PLWHA as reported as mode of transmission. Similar findings were observed among TB patients in north Gonder [26]. Misconceptions on HIV transmission and poor knowledge about the disease would cause stigma associated with the disease that have impacts on the control of the epidemic [57, 58].

In this study, there was widespread support for PIHCT, with 94.1% of TB patients reporting that they were either extremely or very much in favor of PIHCT. A majority of respondents felt that PIHCT would increase uptake of ARV, number of tested patients and would decrease HIV related stigma. These results, in conjunction with the high acceptability of PIHCT among TB patients (66.2%) in this study, suggest that PIHCT is beneficial in improving access to testing and there by increasing life-saving treatment users. A similar result was also reported from a population based study on routine testing in Botswana, where 81% of the study participants were extremely or very much in favor of routine HIV test [38].

A relatively high prevalence of self reported HIV testing (78.4%) was found in this study, compared to previous studies conducted in Ethiopia. A study done from south Ethiopia showed that 35% of TB patients at Arba Minch hospital in 2005[44], and institution based study in Addis Ababa in 2006 found that 57.8% of TB patients had been tested for HIV [43].

In this study, the acceptability of PIHCT was found to be (66.2%), which was relatively higher than previous studies conducted in the city. An institution based study in Addis Ababa in 2006 found that 26.4% of TB patients tested for HIV after their provider initiation. This is suggesting that more than two fold increase in acceptability of PIHCT than a study conducted

at the start of the service in the city [43]. This is due to the previous study was conducted at the earlier implementation of PIHCT.

In addition to the implementation of PIHCT in TB clinics, increased access to ART and HIV testing are likely to be the contributing factors for the relatively high prevalence of testing in this study population [46]. Moreover, high knowledge of TB and HIV association could be the possible explanations for the relatively high prevalence of HIV test.

However, this finding is lower than findings from other studies done in several countries. In pilot and clinical trials, when HIV counseling and testing is routinely offered by health providers, the acceptability rate of HIV testing is reported to be satisfactorily high, reaching 90 to 100% of patients attending TB clinics in several countries [40-42]. For instance, 91% of TB patients in Guyana [40], 99% in South Africa [41], and 91% of TB patients in Malawi [42] were accepted and tested for HIV.

In this study, primary, secondary and above education of TB patients was strongly associated with acceptability of PIHCT. Study participants who had primary education, secondary and above education were each two times more likely to accept PIHCT than illiterate/read and write. The result of this study is consistent with the findings from other studies. A study from Botswana reported that the level of education was significantly associated with acceptance of testing [38]. Another study conducted on TB patients in Addis Ababa in 2006, also showed that educational status of patients was significantly associated with having been tested for HIV [43]. The association of acceptance of testing and education can be explained by the fact

that better educated are better in assessing the advantage of testing and may be aware of the benefits of the test and treatment options for TB/HIV co-infections.

In addition, in this study patients at the younger age group (20-24) and those who said agreed that any one should get tested for HIV were also found to be significantly associated with acceptability of PIHCT after adjusted for all independent variables. The later can be explained by having better knowledge on HIV testing enables patients to realize the benefits of testing.

This study did not find the hypothesized association between self-perceived risk of HIV infection and acceptability of PIHCT that had been previously reported in the literature [38, 44].

The most commonly cited perceived barriers for PIHCT among respondents who had not been tested for HIV were lack of HIV risk perception and fear of learning positive result. These findings are similar to findings from studies done on HIV testing in Ethiopia and else where in Africa [21, 24, 27, 38, 44].

9. Strengths and Limitations of the study

Strengths

1. The study used random sampling technique
2. HIV status wasn't asked, and privacy and confidentiality were assured to maximize validity of self report on HIV testing
3. Survey questions were asked in a culturally sensitive and nonjudgmental manner

Limitations

1. Self report might introduce social desirable response
2. As this study is cross sectional, causality cannot be determined from findings
3. Lack of supplementation with qualitative approaches.

10. Conclusion

- Patients with HIV-related TB must make up a substantial proportion of those reached by ART. There was widespread support for PIHCT in this study. This Suggest that

PIHCT is beneficial in improving access to testing and there by increasing life-saving treatment users.

- There is evidence of relatively high acceptability of PIHCT in this study. This holds significant promise for the control, prevention and treatment of TB and HIV/AIDS in Ethiopia.
- Patients of younger age, had better education status and recognition that any one should get tested for HIV were found more likely to be tested for HIV following their supervisor initiation in the past.
- There are still misconceptions about transmission of TB and HIV.
- Lack of self perceived risk of HIV infection, unable to cope with the positive results, and tested before were found to be the main barriers for PIHCT.

11. Recommendations

- The considerably high acceptability of PIHCT found in this study, and because of the promising results on HIV testing, strengthening, sustaining and scaling up of PIHCT to include all TB patients is highly recommended.

- In addition, strengthening, sustaining and scaling up PIHCT to include all patients and clients in a clinical setup is also highly recommended.
- Intensive two stage (group education followed by individual counseling) IEC/BCC on TB/ HIV, and tackling of the testing barriers are critical.

12. References

1. World Health Organization. WHO Report on the Global Tuberculosis epidemic Geneva: WHO (WHO/TB/98.247); 1998.
2. WHO. Tuberculosis and Sustainable Development, The Stop TB Initiative 2000 Report (WHO/CDS/STB/2000.4). Geneva; WHO, 2000
3. WHO. HIV /TB Manual. Geneva; WHO, 2004.
4. Joint United Nations Programme On HIV/AIDS (UNAIDS). AIDS Epidemic Update 2005. Geneva; UNAIDS, 2005

5. WHO. Annual Report on Surveillance, Planning and Financing for tuberculosis Control. Geneva; WHO, 2005
6. Dermot Maher, Anthory Harriesb and Haileyesus Getahun. Tuberculosis and HIV Intervention in Sub-Saharan Africa: Impact on Patients and Programmes; Implication for Policies. *Tropical Medicine and International Health* 2005;10(8):734-742
7. MOH. Technical Document for 5th Report on AIDS in Ethiopia. Addis Ababa; MOH, June 2004
8. Demssie M, Lindtjørn B, Tegbaru B. Human Immunodeficiency Virus (HIV) Infection in Tuberculosis Patients in Addis Ababa. *Ethiop. J. Health Dev.*2000;14(3):277-282
9. MOH. 5th AIDS Report In Ethiopia .Addis Ababa; MOH, 2004
10. MOH. Health and Health Indicator. Addis Ababa; MOH,2003/04
11. Gasana M et al. *Integrating tuberculosis and HIV care in Rwanda*. The 2006 HIV/AIDS Implementers Meeting of the President's Emergency Plan for AIDS Relief, Durban, South Africa, abstract 150.
12. MOH. Tuberculosis and Leprosy Prevention and Control National Manual. Addis Ababa; MOH, 2002.
13. MOH. 6TH AIDS Report in Ethiopia. Addis Ababa, September 2006.

14. Mohammed Ahmed, Luelseged Takele, Sahlemariam Gebresenbet, et al: HIV and tuberculosis co infection in the southern region of Ethiopia: a prospective epidemiological study. *Scandinavian Journal of Infectious Diseases*, Volume 36, Issue 9 September 2004, pages 670 – 673.
15. Afework G. Tuberculosis and HIV infection in southern Ethiopia. MPH thesis; AAU-FM, 1994.
16. Maher D, Floyd K and Raviglione M. Strategic Framework to Decrease the Burden of TB/HIV. Geneva; WHO, 2002.
17. David Coetzee, Katherine Hilderbrand, Eric Goemacre et al. Integrating Tuberculosis and HIV Care In The Primary Care Setting In South Africa. *Tropical Medicine and International Health* 2004; 9(6): A11-A15 Supplement

18. Connolly C, Reid A, Davies G, Sturm W, et al. Relapse and Mortality among HIV – Infected and Uninfected Patients with Tuberculosis Successfully Treated with Twice Directly Observed Therapy In Rural South Africa. *AIDS*1999;13:1543-1547
19. United Nations: The Millennium Development Goals report, 2006.
20. CDC. Global AIDS Program: Strategies for VC. www.cdc.gov; CDC, Accessed At 7/12/2004.
21. Alemayehu Amberbir, Kebede Deribe, Wassie Lingerh et al. Uptake of VCT and Correlates among Women Attending ANC: Implication to Prevention of Mother to Child Transmission of HIV, South West Ethiopia. The Preceding Annual EPHA scientific conference; Page 1.2005
22. Fylkenes K.,Haworth A, Rosenvard C,Kwapa P. HIV Counseling and Testing Overemphasized High Acceptance Rates a Threat to Confidentiality and the Right not to Know. *AIDS* 199;13:2469-74
23. WHO. Interim Policy on Collaborative TB/HIV Activities (WHO/HTM/TB/2004.330). Geneva; WHO, 2005.
24. Habte. D. Assessment of the magnitude and determinants of Utilization and demand for premarital VCT in civil marriage in A.A Ethiopia. Masters Thesis July 2003. Addis Ababa.
25. Peter Godfrey-Faussett, Dermot Maher, Ya Diul Mukadi et al. How Human Immunodeficiency Virus Voluntary Testing Can Contribute to Tuberculosis Control. *Bulletin of the World Health Organization* 2002; 80 (12)
26. Aklilu A. Assessment of Willingness of TB Patients towards VCT in Selected Health Centers, North Gondar Administrative Zone. MPH Thesis; AAU-FM, 2004
27. Lemessa O. Utilization of VCT, Perceived Barriers and Preferences of Adolescents of 15 To 24 Years of Age in Harar Town, Eastern Ethiopia. The Proceeding Annual EPHA scientific conference, 2005;Page 3,2005
28. Zenebu Y. Determinant of VCT Utilization Among Youth In Jijiga Town, Ethiopia The Proceeding of the Annual EPHA scientific conference; Pp 59,2005
29. WHO. TB/ HIV Research Priorities in Resources –Limited (WHO/HTM/TB/2005.355). Geneva; WHO, 2005.
30. WHO (2003) Leading the health sector response to HIV/AIDS. Geneva: World Health Organization.

31. Global HIV Prevention Working Group (2003) Access to HIV prevention: Closing the gap Bill and Melinda Gates Foundation and Henry J. Kaiser Foundation.
32. Kenyon K (2005) Routine HIV testing: A view from Botswana.
33. De Cock KM (2005) HIV testing in the era of treatment scale-up. *Health Hum Rights* 8: 31–35.
34. Consultative meeting on HIV Testing and counseling in the Africa region; 17 November 2004. Johannesburg: Joint United Nations Programme on HIV/AIDS.
35. Csete J, Schleifer R, Cohen J (2004) "Opt-out" testing for HIV in Africa: A caution. *Lancet* 363: 493–494.
36. The international community of women living with HIV/AIDS (2005): Point of view. *Health Hum Rights* 8: 25–26.
37. Gruskin S, Tarantola D, Maluwa M, Ahmed S (2004) National HIV testing policies: Human rights considerations. Proceedings of the XVth International AIDS Conference 11–16 July 2004; Bangkok, Thailand.
38. Weiser SD, Heisler M, Leiter K, Percy-de Korte F, Tlou S, et al. Routine HIV testing in Botswana: A population-based study on attitudes, practices, and human rights concerns. *PLoS Med* 2006; 3(7): e261. DOI: 10.1371/journal.pmed.0030261.
39. Bunnell R et al. *Changes in sexual behaviour and risk of HIV transmission after two years of antiretroviral therapy and prevention interventions in rural Uganda*. The 2006 HIV/AIDS Implementers Meeting of the President's Emergency Plan for AIDS Relief, Durban, South Africa, abstract 87.
40. Center for Disease Control and Prevention .HIV Counseling, Testing, and Care of Tuberculosis Patients at Chest Clinics –Guyana, 2005-2006.*MMWR* 2006;55(31): 849-851.
41. Harry Hisler. Lessons learned from ProTEST TB/HIV pilot districts in South Africa. ProTEST Lessons Learned Workshop 3rd Feb 2003.
42. Rony Zachariah, Marie-Paule L. Spielmann, Christina Chinji, et al Voluntary Counseling, HIV Testing and Adjunctive Co-trimazole Reduces Mortality in Tuberculosis Patients in Thyolo, Malawi. *AIDS* 2003,17; 1053-1061.
43. Melaku M. Assessment of VCT Utilization, and Willingness to Accept Provider-Initiated HIV Counseling and Testing among Tuberculosis Patients in Addis Ababa. MPH Thesis; AAU-FM, 2006

44. Degu J, Aschalew E, Bernt L .Acceptability of HIV counseling and testing among tuberculosis patients in south Ethiopia. Arba Minch, 2005.
45. American Lung Association, HIV and TB fact sheet. USA, 2005
46. WHO. Guidelines for Implementing Collaborative TB and HIV Programme Activity. Geneva; WHO, 2003.
47. WHO. Guidelines for Implementing Collaborative TB and HIV Programme Activity. Geneva; WHO, 2003.
48. WHO: Towards universal Access: Part II.A report on '3by5' and beyond.2006.
49. The Voluntary HIV-1Counseling and Testing Study Group: Efficacy of VoluntaryHIV-1Counselingand Testing among individuals and couples in: Kenya, Tanzania, and Trinidad: a randomized trial. *Lancet* 2000, 356:103-112.
50. UNAIDS: HIV Voluntary Counseling and testing: agate way to prevention and care. Five case studies related to mother-to-child transmission of HIV, Tuberculosis, young people, and reaching general population groups. *UNAIDS Case Study* June 2002.
51. WHO: The right to know: new approaches to HIV testing and counseling. 2003.
52. WHO/UNAIDS: UNAIDS/WHO Policy Statement on HIV testing. June 2004.
53. Fujiwara P, Clevenbergh P, Dlodlo R: Management of adults living with HIV /AIDS in low-income, high-burden settings, with special reference to persons with tuberculosis. *Int J Tuberc Lung Dis* 2005, 9(9):946-958.
54. The Federal Ministry of Health of Ethiopia: TB/ HIV implementation guideline. Addis Ababa, July 2005.
55. Michel C, Nicolas M, Philipe P, Marie LN, Isabelle V, Francos D, et al: Acceptability of voluntary HIV testing by pregnant women in developing countries: an international survey. *AIDS*1998, 12:2489-2493.
56. Fylkesnes K, Siziya S: A randomized trial on acceptability of voluntary HIV counseling and testing. *Trop Med Int Health*2004, 9(5):566-572.
57. WHO. The Economic Impacts of Tuberculosis, the Stop TB Initiative. .2000 Geneva, March (WHO/cds/stb/2000.5).
58. UNAIDS Global Reference Group on HIV/AIDS and Human Rights (2004) UNAIDS/WHO policy statement on HIV testing.

13. Annexes

Annex I: Conceptual framework of PIHCT

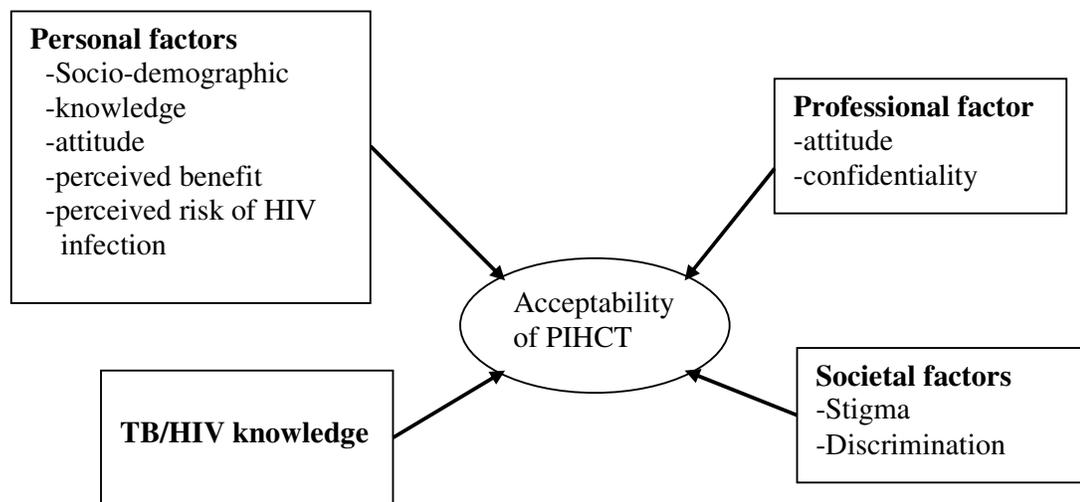


Fig. 2 hypothesized model for predictors of PIHCT

Annex II: Structured English Version Questionnaire

Addis Ababa University

Faculty of medicine, Department of community health

Consent form that certify the respondents agreement before the interview

Assessment of acceptability of provider initiated HIV counseling and testing among TB Patients in Addis Ababa

01. Name of treatment center-----

02. Questionnaire identification number -----

Introduction: my name is ----- I am representing the study team being coordinated by the department of community health, faculty of medicine, Addis Ababa, and interviewing TB patients who follow their treatment at..... (name of the health institution) about the acceptability of PIHCT and factors influencing its uptake, among TB patients in this health facility. You are selected to be one of the participants in the study. The study will be conducted through interview. Your name is not going to be required (registered) and the information you give us should be kept confidential and will be used only for study purpose. A code number will identify every participant and no names will be used. If a report of the result is published, only summarized information of the total group will appear. The interview is voluntary; you have the right to participate, or not to participate (refuse to do so) at any time during the interview. Your refusal will not have any effect on services that you or any member of your family receives. However, your participation is important to fulfill the study and in order to help design appropriate TB/HIV health services for Addis Ababa and other similar setups.

Part One: Socio-Demographic Variables

No	Questions	Coding classifications	Remark
101	How old are you at your last birthday?	Years (full yrs)	
102	Record sex of the patient	Male -- 1 Female -- 2	
103	What is your religion?	Orthodox -- 1 Muslim -- 2 Protestant -- 3 Catholic -- 4 Other (specify) -- 5	
104	To which ethnic group do you belong?	Amhara -- 1 Oromo -- 2 Gurage -- 3 Tigray -- 4 Other (specify) -- 5 No response -- 99	
105	What is your current marital status?	Married in union -- 1 Never married -- 2 Divorced -- 3 Widowed -- 4 Unmarried couples -- 5 Too young -- 6	
106	What is your completed educational status?	-----Grade completed Read and write --1 Illiterate --2 No response -- 99	
107	What is your current occupation?	Civil servant -- 1 House wife -- 2 Daily laborer -- 3 Domestic servant -- 4 Hotels worker -- 5 Student -- 6 Merchant -- 7 No job -- 8 Others(specify) -- 9	
108	What is your average household income per month?	-----Birr Eth No income -- 1 No response -- 99	
109	What is your family size?	-----in numbers	

		No response -- 99	
110	Do you have any family member treated before and/or being treated now for tuberculosis?	Yes -- 1 No -- 2 No response -- 99	

Part Two: Knowledge, attitude, and opinions on TB/HIV/AIDS

NO	QUESTIONS	CODING CLASSIFICATIONS	REMAK
201	Have you ever been concerned of being infected with TB?	yes --1 no -- 2 no response -- 99	
202	As a TB patient do you reveal it to others?	Yes -- 1 No -- 2 No response -- 99	
203	In your opinion which segment of population is at risk of getting TB? (Multiple response is possible, needs probing)	the poor people -- 1 those who live with TB patients -- 2 people living with HIV/AIDS -- 3 other(specify) -- 4 no response -- 99	
204	From where can some one get TB? (Multiple response is possible, Needs probing)	From TB patients -- 1 Health personnel/health unit -- 2 Polluted air -- 3 Contaminated Water -- 4 Having Sexual intercourse -- 5 Evil sprit -- 6 Other(specify) -- 7 No response -- 99	
205	Do you belief that TB can be cured?	Yes -- 1 No -- 2 No response -- 99	
206	Do you think the prevalence of TB increasing after the era of HIV/AIDS?	Yes -- 1 No -- 2 No response -- 99	
207	Do you think control of HIV/AIDS helps for the control of TB?	Yes -- 1 No -- 2 No response -- 99	
208	Have you ever heard of HIV or the disease called AIDS?	Yes -- 1 No -- 2 No response -- 99	If response is no, stop here
209	Can HIV be cured?	Yes -- 1 No -- 2 No response -- 99	
210	How is HIV/AIDS transmitted? (Multiple response is possible, Needs probing)	Sexual intercourse --1 Mother to Child during pregnancy -- 2 Mother to Child during breastfeeding -- 3 Transfusion of infected blood -- 4 Sharing of Sharps with someone who is	

		infected(Needles, etc) -- 5 shaking hands a person living with HIV/AIDS -- 6 wearing clothes of a person living with HIV/AIDS -- 7 sharing a meal with a person living with HIV/AIDS -- 8 Mosquito bite -- 9 Blood contact -- 10 Other(Specify) -- 11 No response -- 99	
211	How can people protect themselves from getting HIV/AIDS? (Multiple response is possible, Needs probing)	Avoiding Sex (abstinence) -- 1 Using a condom every time during sex -- 2 Staying with only one uninfected partner faithful -- 3 Others (specify) -- 4 No response -- 99	
212	Do you know any one who is infected with HIV or who has died of AIDS?	Yes -- 1 No -- 2 No response -- 99	
213	May a healthy looking person be positive for HIV?	Yes -- 1 No -- 2 No response -- 99	

Part three: Personal risk perception

No	Questions	Coding Classifications	Remark
301	Do you think you can get the virus?	Yes -- 1 No -- 2 No response -- 99	If response is no, go to Q 304
302	What are your chances of getting infected with HIV?	Minimal-- 1 moderate -- 2 high -- 3 No response -- 99	
303	If the answer is moderate or high, what are the reasons?	I had multiple sexual partner -- 1 I had sexual contact with out condom-- 2 I had injection with un sterile needle -- 3 I had sexual contact with HIV positive person -- 4 Other specify -- 5 No response -- 99	
304	If your response is no to question number 301,what are the reasons	I trust my sexual partner -- 1 no injection with un sterile needle -- 2 I always use condom -- 3 Other specify -- 4 No response -- 99	

Part four: provider-initiated HIV counseling and testing.

No	Questions	Coding Classifications	Remark
401	Have you ever heard of PIHCT?	Yes -- 1 No -- 2 No response -- 99	If response is no, go to Q 403
402	If your response to Q401 is yes, where did you get the information? (Multiple response is possible, Needs probing)	Health workers -- 1 Mass media -- 2 Family member -- 3 friends -- 4 Other(specify)-- 5 No response -- 99	
403	Do you agree that any one should check his /her HIV sero-status?	Yes -- 1 No -- 2 No response -- 99	
404	To what extent are you in favor of PIHCT?	Extremely in favor -- 1 Very much -- 2 Some what -- 3 Not at all--4 No response -- 99	
405	Did you feel that PIHCT is important?	Yes -- 1 No -- 2 No response -- 99	If response is no, go to Q 407
406	If your response to Q405 is yes, what are the reasons for feeling that PIHCT is important?	Helps TB patients get access to ART—1 Makes easier for TB patients to get tested—2 Results in less discrimination (bad treatment) of HIV positive TB patients—3 Increase number of tested people – 4 Other(specify)-- 5 No response -- 99	
407	Did you feel that PIHCT has influence?	Yes -- 1 No -- 2 No response -- 99	If response is no, go to Q 409
408	If your response to Q407 is yes, what are the reasons for feeling that PIHCT has influence?	Will cause TB patients to avoid seeing health professionals for fear of being tested—1 Violate TB patients human right – 2 Leads to more violence against women – 3 Other(specify)-- 4 No response -- 99	
409	At which time should one be tested for	When one is sick -- 1	

	HIV? (Multiple response is possible, Needs probing)	<p>Before marriage -- 2 If only has multiple partners -- 3 At any time -- 4 Other (specify) -- 5 No responses -- 99</p>	
410	Who are people in need of HIV test? (Multiple response is possible, Needs probing)	<p>Female commercial sex workers -- 1 Drivers -- 2 People with history of unprotected sex --3 TB patients -- 4 Those with multiple partners -- 5 Any one sexually active -- 6 Those who are sick -- 7 Any one at risk -- 8 Others (specify) -- 9 No responses -- 99</p>	
411	I don't want to know the result, but have you ever been tested for HIV?	<p>Yes -- 1 No -- 2 No response -- 99</p>	If response is no, go to Q 415
412	If your response to Q411 is yes, what was the reason of having HIV test?	<p>Voluntary testing by your self -- 1 Initiated by health worker -- 2 Donation of blood -- 3 Infected with TB -- 4 Others(specify) -- 5 No response -- 99</p>	
413	If your response to Q411 is yes, when did you do your last test for HIV?	<p>Before my illness -- 1 After my illness -- 2 Other(specify) -- 3 No response -- 99</p>	
414	If your response to Q411 is yes, where did you do your test?	<p>Your TB treatment center -- 1 Other health facilities -- 2 Free standing VCT centers -- 3 Other (specify) -- 4 No response -- 99</p>	
415	If your response to Q411 is no, what are your reasons for not to be tested? (Multiple response is possible, Needs probing)	<p>Fear of stigma and discrimination follow the positive result -- 1 Fear of partner's reaction -- 2 Unable to cope with the positive result --3 I am not risk person for HIV -- 4 Difficult to pay for VCT service -- 6 Absence of VCT center in TB treatment center -- 7 Belief as Begin tested is not useful -- 8 Not sure of the confidentiality -- 9 Don't want to know the result -- 10 Partners trust -- 11 self trust -- 12 Other (specify) -- 13 No response -- 99</p>	

416	Did your TB treatment supervisor initiate you for HIV counseling and testing any time during your TB treatment follow-up?	Yes -- 1 No -- 2 No response -- 99	If response is no, stop here
417	If your response to Q416 is yes, I don't want to know the result, but have you had HIV counseling and testing following your supervisor initiation?	Yes -- 1 No -- 2 No response -- 99	If response is no, go to Q 421
418	If your response to Q417 is yes, did you receive counseling before testing?	Yes -- 1 No -- 2 No response -- 99	
419	If your response to Q417 is yes, were you satisfied with HIV counseling you received?	Yes -- 1 No -- 2 No response -- 99	
420	If your response to Q417 is yes, don't tell me result; do you know the result of your test?	Yes -- 1 No -- 2 No response -- 99	
421	If your response to Q417 is no, what were your reasons for not to be tested? (Multiple response is possible, Needs probing)	Fear of stigma and discrimination following the positive result -- 1 Fear of partner's reaction -- 2 Unable to cope with the positive result --3 I am not risk person for HIV -- 4 Fear of discrimination (bad treatment) by health providers--5 No access to good quality clinic--6 Other people advised not to test-- 7 Belief as Being tested is not useful -- 8 Not sure of the confidentiality -- 9 Don't want to know the result -- 10 Partners trust -- 11 Tested before -- 12 Other (specify) -- 13 No response -- 99	

Do you have any question?

That is the end of our interview. Thank you very much for taking time to answer these questions.

Annex III: Structured Amharic Version Questionnaire

በአዲስ አበባ ዩኒቨርሲቲ፣ ህክምና ፋክሊቲ፣ የህብረተሰብ ጤና ትምህርት ክፍል

102	የተጠያቂው ስታ	ወንድ ---1 ሴት ---2	
103	ሐይማኖትዎ ምንድን ነው?	እርቶዶክስ ---1 ሙስሊም ---2 ፕሮቴስታንት ---3 ካቶሊክ ---4 ሌላ ካለ ይገለጹ ---5 መልስ የለም ---99	
104	ብሔራዎ ምንድን ነው?	አማራ ---1 አሮሞ ---2 ጉራጌ ---3 ትግራይ ---4 ሌላ ካለ ይገለጹ ---5 መልስ የለም ---99	
105	በአሁኑ ወቅት የጋብቻ ሁኔታዎ እንዴት ነው?	ያገቡ ---1 ያላገቡ ---2 የተፋቱ ---3 ባል/ሚስት የሞተባቸው ---4 ያልተጋቡ ጥንዶች ---5 ለጋብቻ ያደረሱ ---6	
106	ተምረው የጨረሱት ክፍተኛው የትምህርት ደረጃ ስንት ነው?	_____ ክፍል ያጠናቀቁ ማንበብና መጻፍ $\frac{3}{4}T > M$...1 ማንበብና መጻፍ የማይችል ---2 መልስ የለም ---99	
107	በአሁኑ ወቅት ያሉበት የስራ አይነት ምንድን ነው?	የመንግስት ሰራተኛ ---1 የቤት እመቤት ---2 የቀን ሰራተኛ ---3 የቤት ሰራተኛ ---4 የቡና ቤት ሰራተኛ ---5 ተማሪ ---6 ነጋዴ ---7 ስራ የሌለው ---8 ሌላ ካለ ይገለጹ ---9	
108	ጠቅላላ የቤተሰብ አማካይ የወር ገቢ ስንት ነው?	_____ የኢ/ብር ገቢ የሌለው ---8 መልስ ---99	
109	የቤተሰብ አባላት ብዛት ስንት ነው?	_____ ቁጥር መልስ የለም ---99	
110	ክቤተሰብዎ ውስጥ በቲቢ በሽታ ታሞ ህክምና የወሰደ አለ? (ከአሁን በፊት ወይም አሁን)	አዎ ---1 የለም ---2 መልስ የለም ---99	

ክፍል ሁለት:- ስለ ኤች.አይ.ቪ ኤድስ እና ቲቢ ያለዎትን እውቀት አስተያየት አመለካከት

ተ.ቁ	ጥያቄዎች	መልስ ሊሆኑ የሚችሉ ዝርዝሮች	አስተያየት
201	በሳምባ ነቀርሳ /ቲቢ በሽታ እያዛለሁ የሚል ስጋት ነበርዎት;	አዎ ---1 የለኝም ---2 መልስ የለም ---99	
202	የሳምባ ነቀርሳ/ቲቢ በሽታ እንዳለቦለሁ ለሌሎች ሰዎች ይናገራሉ;	እናገራለሁ ---1 አልናገርም ---2	

		መልስ የለም ---99	
203	በእርሶዎ አመለካከት/አይታ ለሳምባ ነቀርሳ/ቲቢ በሽታ በተለየ መልኩ ተጋላጭ የሆነ የህብረተሰብ ክፍል የትኛው ይሆናል ብለው ያምናሉ; (ከአንድ በላይ መልስ ይቻላል:: አታንብበው የሚሰጡትን ሁሉ መልስ አክብቦው)	ደሀው ህብረተሰብ ---1 ከቲቢ ህሙማን ጋር የሚኖር ሰው ---2 ከኤች አይ ቪ ኤድስ ጋር አብሮ የሚኖር ሰው ---3 ሌላ ካለ ይገለጽ ---5 መልስ የለም ---99	
204	አንድ ሰው የሳንባ ነቀርሳ በሽታ ከየት ሊያዘው ይችላል; (ከአንድ በላይ መልስ ይቻላል::የሚሰጡትን ሁሉ መልስ አክብቦው)	ከቲቢ በሽተኛ ---1 ከጤና ባለሙያዎች/ተቋማት ---2 ከተበከለ አየር ---3 ከተበከለ ውሀ ---3 ከግብረ ስጋ ግንኙነት ---5 ከእርኩስ መንፈስ ---6 ሌላ ካለ ይገለጽ ---7 መልስ የለም ---99	
205	የሳምባ ነቀርሳ/ቲቢ በህክምና ሊድን/ሊፈወስ ይችላል;	አዎን ---1 አይፈውስም ---2 ሌላ ካለ ይገለጽ ---3 መልስ የለም ---99	
206	የኤች አይ ቪ/ኤድስን በሽታ ከተከሰተ ወዲህ የሳንባ ነቀርሳ/ቲቢ ህሙማን የጨመረ ይመስልዎታል;	አዎን ---1 የለም ---2 መልስ የለም ---99	
207	የኤች አይ ቪ/ኤድስ መቆጣጠር የሳንባ ነቀርሳ/ቲቢን ለመቆጣጠር የሚረዳ ይመስልዎታል;	ይረዳል ---1 አይረዳውም ---2 መልስ የለም ---99	
208	ስለ ኤች አይ ቪ/ኤድስ በሽታ ሰምተው ያውቃሉ;	አዎ ሰምቻለሁ ---1 አልሰማሁም ---2 መልስ የለም ---99	
209	የኤች አይ ቪ ኤድስ በሽታ ፈጥሽ መድኃኒት ያለው ይመስልዎታል;	አዎ ---1 የለውም ---2 መልስ የለም ---99	መልስዎ አልሰማሁም ከሆነ ቃለመጠ ይቆን እዚህ ላይ ይጨርሱ
210	የኤች አይ ቪ ኤድስ በሽታ በምን መንገድ ሊተላለፍ ይችላል; (ከአንድ በላይ መልስ ይቻላል አታንብበው የሚሰጡትን ሁሉ መልስ አክብቦው)	በግብረ ሥጋ ግንኙነት ---1 ከእናት ወደ ፅንሰ በእርግዝና ጊዜ ---2 ከእናት ወደ ልጅ በጡት መጥባት ---3 በኤች አይ ቪ ኤድስ የተበከለ ደም መቀበል ---4 ኤች አይ ቪ ኤድስ ከያዘው ሰው ጋር በጋራ ስለታም ነገሮችን መጠቀም ---5 መጨባበጥ ---6 የኤች አይ ቪ ኤድስ በሽታኛ ልብሶች መልበስ ---7 ኤች አይ ቪ ኤድስ ከያዘው ሰው ጋር አብሮ መመገብ ---8 በወባ ትንኝ ---9 በደም ንክኪ ---10 ሌላ ካለ ይገለጸው ---11 መልስ የለም ---99	

211	አንድ ሰው በኤች አይ ቪ ኤድስ እንዳይያዝ በምን መንገድ መከላከል ይቻላል; (ከአንድ በላይ መልስ ይቻላል። አታንብበው የሚሰጡትን ሁሉ መልስ አክብበው)	ከግብረ ስጋ ግንኙነት በመቆጠብ ---1 ግብረ ስጋ ግንኙነት በፈፀሙ ቁጥር ኮንዶም መጠቀም ---2 ከበሽታ ነፃ ከሆነ/ች ጋር አንድ ለአንድ መወሰን ---3 ሌላ ካለ ይጠቀስ ---4 አላውቅም ---88 መልስ የለም ---99	
212	ከኤች አይ ቪ ጋር የሚኖር አልያም በኤድስ በሽታ የታመመ ወይም በበሽታው የሞተ ሰው ያውቃሉ;	አውቃለሁ ---1 አላውቅም ---2 መልስ የለም ---99	
213	ጤናኛ የሚመስሉ ሰዎች የኤች አይ ቪ ቫይረስ ሊኖርባቸው ይችላል;	ይችላል ---1 አይችልም ---2 መልስ የለም ---99	

ክፍል ሦስት:- ስለ ኤች አይ ቪ ኤድስ የመጋለጥ ግላዊ እሳቤ

ተ.ቁ	ጥያቄዎች	መልስ ሊሆኑ የሚችሉ ዝርዝሮች	አስተያየት
301	የኤች አይ ቪ ቫይረስ ሊይዘኝ ይችላል ብለው ያስባሉን;	አዎ ---1 አላስብም ---2 መልስ የለም ---99	መልሱ አላስብም ከሆነ ወደ ቁጥር 304 ለመሄድ
302	የራስዎ የኤች አይ ቪ/ኤድስ ተጋለጭነት ምን ያህል ይመስልዎታል;	አነስተኛ ተጋላጭ ነኝ ---1 መካከለኛ ተጋላጭ ነኝ ---2 በጣም ተጋላጭ ነኝ ---3 መልስ የለም ---99	

303	የጥያቄ 301 መልስ አዎ ከሆነ ምክንያቱ ምንድነው ;	<p>ያለ ኮንዶም የግብረ ስጋ ግንኙነት ስለፈጸምኩ -- -1 ኤች አይ ቪ ፖዘቲቭ ከሆነ ሰው ጋር የግብረ ስጋ ግንኙነት ስለፈጸምኩ ---2 ብዙ የወሲብ ጓደኞች ስለነበሩኝ ---3 ሌላ ሰው በተጠቀመበት መርፌ ስለተጠቀምኩ ---4 ሌላ ካለ ይጠቀስ ---5 መልስ የለም ---99</p>	
304	የጥያቄ 301 መልስ አይደለም ከሆነ ምክንያቱ ምንድን ነው;	<p>በአንድ ሰው ተወስኜ ስለምኖር ---1 በተበከለ መርፌ ስለምጠቀም ---2 ሁልጊዜ ኮንዶም ስለምጠቀም ---3 ሌላ/ይጠቀስ/ ---4 መልስ የለም ---99</p>	

ክፍል አራት:- በጤና ባለሙያ አነሳሽነት ላይ የተመሰረተ የኤች አይ ቪ ምርመራና ምክር አገልግሎት አጠቃቀም

ተ.ቁ	ጥያቄዎች	መልስ ሊሆኑ የሚችሉ ዝርዝሮች	አስተያየት
401	በጤና ባለሙያ አነሳሽነት ላይ የተመሠረተ የኤች አይ ቪ ኤድስ ምክርና ምርመራ አገልግሎት መኖሩን ሰምተው ያውቃሉ;	<ul style="list-style-type: none"> ሰምቻለሁ ---1 አልሰማሁም ---2 መልስ የለም ---99 	<ul style="list-style-type: none"> መልሱ አልሰማሁም ከሆነ ወደ ቁጥር 403
402	ለቁጥር 401 መልሱ ሰምቻለሁ ከሆነ መረጃው ከየት ነው ያገኙት;	<ul style="list-style-type: none"> ከጤና ባለሙያዎች/ተቋማት ---1 ብዙሀን መገናኛ ---2 ከቤተሰብ ---3 ከጓደኛ ---4 ሌላ ካለ ይጠቀስ ---5 መልስ የለም ---99 	
403	ማንኛውም ሰው የኤች አይ ቪ ምርመራ ማድረግ አለበት ብለው ይስማማሉ;	<ul style="list-style-type: none"> አዎ ---1 አልሰማማም ---2 መልስ የለም ---99 	
404	በጤና ባለሙያ አነሳሽነት ላይ የተመሰረተ የኤች አይ ዮ=Uጅ ምርመራ አገልግሎትን ምን ያክል ይደግፋሉ;	<ul style="list-style-type: none"> እጅግ በጣም ---1 በጣም ---2 በመጠኑ ---3 አልደግፍም ---4 መልስ የለም ---99 	
405	በጤና ባለሙያ አነሳሽነት ላይ የተመሰረተ የኤች አይ ቪ ምክርና ምርመራ አገልግሎት ጠቃሚ ነው ብለው ያስባሉ;	<ul style="list-style-type: none"> አዎ ---1 አይጠቅምም ---2 መልስ የለም ---99 	<ul style="list-style-type: none"> መልሱ አይጠቅምም ከሆነ ወደ 407 ይሄዱ
406	በቁጥር 405 መልሱ አዎ ከሆነ በጤና ባለሙያ አነሳሽነት ላይ የተመሰረተ የኤች አይ ቪ ምክርና ምርመራ ለተቋሙ ህሙማን መጀመሩ ምን ጥቅም አለው ብለው ያስባሉ;	<ul style="list-style-type: none"> የተቋሙ ህሙማን የፀረ ኤድስ መድሃኒት እንዲያገኙ ይረዳል ---1 ተቋሙ ህሙማን በቀላሉ እንዲመረመሩ ያደርጋል ---2 ኤች አይ ቪ ፖዘቲቭ በሆኑ ተቋሙ ህሙማን ህክምና ላይ የሚደረግ አድልዎ ይቀንሳል ---3 የተመርማሪ ቁጥር እንዲጨምር ያደርጋል ---4 ሌላ ካለ ይገለጽ ---5 መልስ የለም ---99 	
407	በጤና ባለሙያ አነሳሽነት ላይ የተመሰረተ የኤች አይ ቪ ምክርና ምርመራ አገልግሎት ጎዳና አለው ብለው ያስባሉ;	<ul style="list-style-type: none"> አዎ ---1 የለውም ---2 መልስ የለም ---99 	<ul style="list-style-type: none"> መልሱ የለውም ከሆነ ወደ 409 ይሂዱ
408	በቁጥር 407 መልስ አዎ ከሆነ በጤና ባለሙያ አነሳሽነት ላይ የተመሰረተ የኤች አይ ቪ ምክርና ምርመራ አገልግሎት መጀመር ምን ተፅዕኖ ይኖረዋል ብለው ያስባሉ;	<ul style="list-style-type: none"> ተቋሙ ህሙማን የኤች አይ ቪ ምርመራን በመፍራት ወደ ህክምና ማዕከል እንዳይሄዱ ያደርጋል ---1 የተቋሙ ህሙማን ሰብአዊ መብት ሊጥስ ይችላል ---2 በሴቶች ላይ የታወቀ ጥቃት እንዲደርስ ያደርጋል ---3 ሌላ ካለ ይጠቀስ ---4 መልስ የለም ---99 	
409	አንድ ሰው የኤች አይ ቪ ምርመራ ማድረግ ያለበት መቼ ነው;	<ul style="list-style-type: none"> ሲታመም ---1 ከጋብቻ በፊት ---2 ከአንድ በላይ ወሲብ ጓደኛ ሲኖረው ---3 በማንኛውም ጊዜ ---4 ሌላ ካለ ይጠቀስ ---5 መልስ የለም ---99 	
410	የኤች አይ ቪ ምርመራ የሚያስፈልገው ለማን ነው ይላሉ; (ከአንድ በላይ መልስ ይቻላል:: አታንብበው የሚሰጡትን መልስ □□□□)	<ul style="list-style-type: none"> ለሴቶች አዳሪዎች ---1 ለሾፌሮች ---2 ያለ ኮንዶም የግብረ ስጋ ግንኙነት ያደረገ/ች ---3 ለተቋሙ ህሙማን ---4 ከአንድ በላይ ወሲብ ጓደኛ ያለው ---5 የግብረ ስጋ ግንኙነት ማድረግ የጀመረ/ች ---6 ለታመሙ ሰዎች ---7 ማንኛውም ሰው የኤች አይ ቪ ተጋላጭ የሆነ ሰው ---8 ሌላ ካለ ይጠቀስ ---9 መልስ የለም ---99 	
411	የምርመራውን ውጤት ማወቅ አልፈልግም:: የ ኤች አይ ቪ ምርመራ አድርገው ያውቃሉ;	<ul style="list-style-type: none"> ተመርምራ አውቃለሁ ---1 ተመርምራ አላውቅም ---2 መልስ የለም ---99 	<ul style="list-style-type: none"> መልስዎ ተመርምራ አላውቅም ከሆነ ወደ ቁጥር 415 ይሂዱ

ጥያቄ አለዎትን?

ቃለ መጠቀን እዚህ ላይ እንጨርሳለን። ቃለ መጠይቁን ለማድረግ ስለተባበሩን ክልብ አመሰግናለሁ።