



**ADDIS ABABA UNIVERSITY**  
**COLLEGE OF HEALTH SCIENCES**  
**SCHOOL OF PUBLIC HEALTH**

**KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS TUBERCULOSIS CASE  
DETECTION AMONG URBAN HEALTH EXTENSION PROFESSIONALS WORKING  
IN ADDIS ABABA, ETHIOPIA**

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DEPARTMENT OF PUBLIC HEALTH  
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## **Acronyms and abbreviations**

AIDS	Acquired Immuno-Deficiency Syndrome
AOR	Adjusted Odds Ratio
BSC	Bachelor of Science
CBTC	Community Based Tuberculosis Care
CDR	Case Detection Rate
CHVs	Community Health Volunteers
CHWs	Community Health Workers
CI	Confidence Interval
COR	Crudes Odds Ratio
DOTs	Directly Observed Treatment
FMOH	Federal Ministry of Health
HAD	Health Development Army
HEP	Health Extension Program
HIV	Human Immunodeficiency Virus
HEWs	Health Extension Workers
HSTP	Health Sector Transformation Plan
IRT	Integrated Refresher Training
KAP	Knowledge, Attitude and Practice
NGOs	Non-governmental Organizations
PHCU	Primary Health Care Unit

PLHIV	People Living with HIV
PTB	Pulmonary Tuberculosis
REC	Research Ethical Committee
SD	Standard Deviation
SPSS	Statistical Product and Service Solutions
TB	Tuberculosis
UHE-ps	Urban Health Extension Professionals
UHEP	Urban Health Extension Program

## Abstract

**Background:** - Knowledge, attitude and practice gaps are among the main challenges in providing quality basic health services to the urban community. This can be among the reasons for low tuberculosis case detection by urban health extension professionals. Identifying knowledge, attitude and practice gaps and associated factors, and taking active measures towards the gaps could improve tuberculosis case detection.

**Objective:** - To assess the level of knowledge, attitude and practice of urban health extension professionals towards tuberculosis case detection and associated factors in Addis Ababa, Ethiopia.

**Methods:** - A cross-sectional study design was used from April to May 2019 in randomly selected four sub-cities in Addis Ababa, Ethiopia. Data was collected from 402 study participants using structured questionnaire. Epi info version 7 was used for data entry and SPSS version 20 software for data analyses. To identify variables which have significant association with the outcome variables, multivariable logistic regression analysis was performed. The statistical significant was determined by adjusted odds ratio with 95% confidence interval.

**Result:** - This study showed that 56.2 of the respondents have good knowledge, 58.5% good attitude and 52% good practice towards tuberculosis case detection. Age group of 25-34 years old and frequency of supportive supervision on weekly basis are significantly associated with good knowledge with p-value of 0.008[AOR=2.487, (95% CI =1.265-4.888)] and p-value of 0.006[AOR=2.911, (95% CI=1.361-6.225)] respectively. Similarly getting referral feedbacks from the catchment health centres is significantly associated with the good practice of the study respondents with p-value of 0.001[AOR=3.526, (95% CI=1.665-7.467)].

**Conclusion:** - This study reveals that half of the urban health extension professionals have a good knowledge, attitude and practice which is relatively not satisfactory to provide good quality services to the urban community. Interventions that boost the knowledge, attitude and practice level of them should be implemented including frequent supportive supervision, providing referral feedback timely from the health centers and engaging family members in supporting tuberculosis patients.

# **1. INTRODUCTION**

## **1.1 Background**

Tuberculosis (TB) is a chronic infectious disease caused by a bacterium called *Mycobacterium tuberculosis*. Throughout the world TB is a major public health problem(1,2). About one third of the population in the world is estimated to be infected with tubercle bacilli and is at risk of developing active TB at any time in the future. Mainly the disease affects the lungs (pulmonary TB) but it can also affect other sites of our body which is known as extra pulmonary TB)(1–4). TB is the ninth leading cause of mortality worldwide, and the leading cause from a single infectious agent, ranking above HIV/AIDS(3).

According to the Ministry of Health, 2017, annual report among all forms of the TB cases, 40% were bacteriologically confirmed new and relapse, 29% were clinically diagnosed new cases and 31% were extra pulmonary new TB cases in Ethiopia. Among the total TB cases detected in the year 4.2% were previously treated cases. There was a high variation among regions and city administrations that range from 88 cases to 368 per 100,000 in Somali and Dire Dawa respectively. Addis Ababa city administration is among those with more than 200 cases per 100,000(5).

As a strategy urban health extension program was one of the focus areas during implementation of Health Sector Development Plan IV to strengthen urban health services. This program mainly focuses on health promotion and disease prevention activities at the community level. The main objective of urban health extension program (UHEP) is to provide home and community based health promotion as well as preventive quality health services for urban community.

Implementation of urban health extension program was started in Addis Ababa in 2009 by deploying female diploma nurses after providing 3 months pre-service training on service packages to provide basic health service at community level(6,7). Disease prevention, promoting healthy life styles, providing basic curative services and screening and referring clients/cases to the health facility for further investigation are among the main focus areas of the program(8). Tuberculosis prevention and control program is one of the packages included in the program packages(6). Involvement of the community in TB prevention and control activities, which is

community Based Tuberculosis Care (CBTC), is a working partnership among the health sector and the community in TB prevention and care activities (1,2,9). Providing quality TB prevention and controlling services at community level is crucial to reduce transmission of TB, morbidity and mortality by TB is the main purpose of CBTC(9).

In tuberculosis prevention and control program health extension professionals have great role like actively searching for tuberculosis suspects during their home visits, early identification of tuberculosis suspects, tracing contacts of TB cases, and supporting and encouraging TB patients to adhere to their medications and tracing of defaulters and referring them to the health facility for further investigation and treatment (2,5,9,10).

Despite their contribution in tuberculosis prevention and control program, as shown in health extension program assessment result which was done by ministry of health and mid-term review of health sector transformation plan (HSTP), health extension professionals have competency gaps in providing services in the urban community(7,11). In addition to that as indicated in the special bulletin 2019 of federal ministry of health, generally health extension professionals have knowledge, attitude and skill gaps in delivering quality health services to their communities(12).

The health service provider having good level of knowledge could have good level good level of confidence to provide the service and hence may have practice of detecting tuberculosis suspects. And this may increase tuberculosis case detection ability of the service provider(13). Frequent household visit by health extension professionals increases the chance of getting adequate information about tuberculosis for the community. An individual with sufficient information about signs and symptoms of tuberculosis can visit the health facility at any time when the situation happens (14). The aim of this study was to assess knowledge, attitude and practice level of urban health extension professionals (UHE-ps) and associated factors towards TB case detection.

## **1.2. Statement of the problem**

According to the annual report of Federal Ministry of Health, 2017, one-third of the estimated people with tuberculosis are un-detected and un-treated every year in Ethiopia. The report in the same year shows that tuberculosis case detection rate of Addis Ababa was 64%, which is below the target set for the year (85%). Addis Ababa city administration is one of the high tuberculosis burden regional states (5).

In the annual plan of Addis Ababa Regional Health Bureau in 2017, among all forms of tuberculosis cases detected, 40% of them were expected from UHE-ps through referral of presumptive tuberculosis cases to the health facilities. But the contribution of UHE-ps in tuberculosis case detection was only 3%(15).

For the low performance one of the contributing factors is knowledge, attitude and practice gaps in providing quality services in addition to access issues. Different studies, reviews and assessment results clearly show that they have competency gaps in the general program area(7,11,12). And a study done in Addis Ababa on the competency level of UHE-ps shows that almost half of the UHE-ps were not competent(16). The result of the special bulletin 2019 of federal ministry of health, also shows that knowledge, attitude and practice gaps exist in delivering quality health services to their communities(12). It is obvious that knowledge and attitude gaps among the service providers affect tuberculosis case detection through decreased interest to visit households and less confidence to perform their duty in the community. Hence, this could affect their practice in accomplishing activities that increase their case detection ability(11,14).

By considering the gaps on their competency gaps(7,11,12) with the low TB case detection(15) by UHE-ps, this study was designed to assess the level of knowledge, attitude and practice (KAP) and associated factors towards TB case detection among UHE-ps. Identifying the real factors could help to resolve the problem and improves the case detection by UHE-ps by improving their KAP level.

### **1.3. Significance of the study**

Early detection of suspect cases reduces the infectious period of the tuberculosis disease. Effective screening of suspected TB cases can increase the detection rate and have great contribution to achieve tuberculosis prevention and control goals and improves the health condition of the general community regarding tuberculosis.

Identifying urban health extension professionals' knowledge, attitude and practice gaps and taking active measures towards the gaps could improve tuberculosis case detection. This study also will benefit the health system by recommending identified factors that are associated with the KAP of UHE-ps towards TB case detection, providing the findings to the policy makers and planners. Information about KAP of UHE-ps towards TB case detection in urban setting is not known, specifically at Addis Ababa. It also helps to cover the areas not addressed by others. And it will serve as future reference for researchers on the area since little is done on the area. The result of this study could also be used by Addis Ababa regional health bureau or FMOH to optimize the approach to increase TB case detection by UHE-ps. In addition to that findings of this study could be used when revising the CBTC implementation manual and the approaches.

## **2. LITERATURE REVIEW**

Community-based screening of TB case significantly improves the case detection rate (CDR) for all age groups (17). More than two folds of new tuberculosis cases were detected through active case finding compared to routine passive case finding at health facility. Study done in Somali region shows that 20.3% of the tuberculosis patients detected were referred by health extension workers from the nearby community(14). For every smear-positive case on the treatment of tuberculosis at the health facility, there are 2.5 undetected pulmonary tuberculosis (PTB) cases found in the community (18).

Involvement of HEWs in the tuberculosis disease prevention and control activities in the community improves the TB case detection because of improved access to the services for the local community (17). Nearly two folds of tuberculosis cases were identified by health extension workers (66%) through door-to-door visits in the community compared to clients identified in the health facility (34%). Through the household visits by health extension workers, contacts of the tuberculosis smear positive cases were identified. Among identified household contacts, 14.9% of them had symptoms suggestive of TB(19).

In the study conducted in the southern Ethiopia, almost one-third of the study participants consult their parents, close friends, religious leaders and elders or community leaders rather than consulting health workers during their illnesses if they got tuberculosis(20). This may result in high number of undiagnosed TB cases in the community. One of the most important barriers to improve tuberculosis care is identified as low tuberculosis case detection rate (21).

### **2.1. Level of knowledge, attitude and practice of health extension workers/community health workers towards TB case detection**

A study conducted in Brazil on active case finding of tuberculosis, most of the community health workers (CHWs) have weaknesses in cough investigation at home visits (22). Another study conducted in Nigeria shows that half of the study participants are well knowledgeable and half of them had not satisfactory knowledge about tuberculosis. For example majority of the respondents of the study were unaware about the duration of the treatment of tuberculosis and even one-fourth of the study participants had no awareness about cure of tuberculosis using DOTs strategy (23).

Regarding attitude of the study participants study conducted in Nigeria shows that almost all respondents of the study have compassion and desire to support a person with tuberculosis diseases. There is statistically significant association between work experiences of the community health workers and attitude towards tuberculosis with P-value of 0.049 (23).

A study conducted in Ethiopian Somali region shows that overall 20.3% of the PTB patients were referred by HEWs for further investigation and treatment from their community. The same study shows that more than half of the PTB patients had never been visited by a HEW. A home visit by HEWs nearly tripled the chance of being referred by HEWs to the health facility for further investigation. Less frequent home visits by HEWs is directly related to delay of health care seeking of the patients; in which it affects early case detection of tuberculosis (14).

A study conducted in southern region clearly indicates that actively searching for TB suspect cases in the community have great effect on tuberculosis case detection rate(24). Work experience of the study participants is significantly associated with their case detection practice with P-value of 0.003(23).

On the other hands, even if they had taken in-service training most of the health extension professionals were in problems in demonstrating required competencies in delivering quality services to the community in their catchment areas which is as a result of lack of critical thinking and knowledge(25).

## **2.2. Factors affecting knowledge, attitude and practice of health extension workers/community health workers towards TB case detection**

Different studies show that there are many factors that affect KAP of health care professionals. The factors can be either external or internal. Mainly the influencing factors can be categorized in to socio-demographic individual(provider)related factors, health system related factors and environmental factors (26).

### **2.2.1. Socio-demographic and individual (provider) related factors**

A study conducted in Nigeria shows that the age of the study participants was associated with their knowledge towards tuberculosis. Study participants of younger age have better knowledge of tuberculosis. In the same study, year of service of the respondents is also associated with attitude and practice with P-values 0.049 and 0.003 respectively. But sex, educational level, religion, marital status and workshop attendance have no association with knowledge, attitude and practice of respondents of the study towards tuberculosis (23).

There are also different conditions that affect the ability of health extension professionals to perform their work in a better way. Problem solving approaches and the commitment they have on their day to day activity to provide better quality services to the community are among the factors that affect their performance (27,28). Frequency of home visits by health extension professionals increases the chance of the referral of the suspect cases to the health facility. Home to home visit by the health extension workers tripled referral of the suspect cases to the health facility(17).

A study conducted in southern part of Ethiopia shows that through the visits by HEWs, household contacts had symptoms suggestive to tuberculosis (19). Becoming active part of case detection of tuberculosis contributes to gaining of experience, new knowledge and skills which in turn improves their satisfaction (27).

### **2.2.2. Environmental factors**

In the study conducted in Northern Ethiopia, most of the study participants indicated that they had no support from their families and from the community(29). Because of fear of TB infection and inappropriate health education messages by media, some community members stigmatize tuberculosis patients. As a result stigma is one of the factors that cause delay of health seeking behavior of TB patients and which affects early detection of TB cases(29,30). Geographic factors like distance from the health posts to the households in the boarder of the kebele(in the urban context may be transport cost) are also other factors that affect the case detection and hence it influences the case detection practice level of the health extension workers. In addition to that lack of ownership and community support are also among the barriers that affect sustainability of the community health programs.

### **2.2.3. Health system related factors**

Strong health system has generally great contribution in better tuberculosis case detection. There are many health system related factors that influence case detection of tuberculosis. For example, in-service training, supportive supervision from woreda or regional health bureau and absence of formal referral papers to refer presumptive TB cases (17). It is clear that supervision skills and approaches are very important to motivate and improve the performance of HEWs. But a study shows that the approach relays on faultfinding, infrequent and non-systemic supervision types which created discomfort for their work(31).

Providing training for health extension workers to increase their capacity has direct effect on tuberculosis case detection rate(16). Lack of in-service training is identified as one of the factors for low involvement of health extension workers in referral of suspected cases to the health facility. After receiving refresher training, HEWs were more motivated to visit households (17). Getting trained empowered the health extension workers and motivates them to work more effectively (27,31). Another issue in relation to the health system is poor referral linkage between health centers and health extension professionals and poor experience of providing feedbacks to health extension workers for referred suspect cases (17,32).

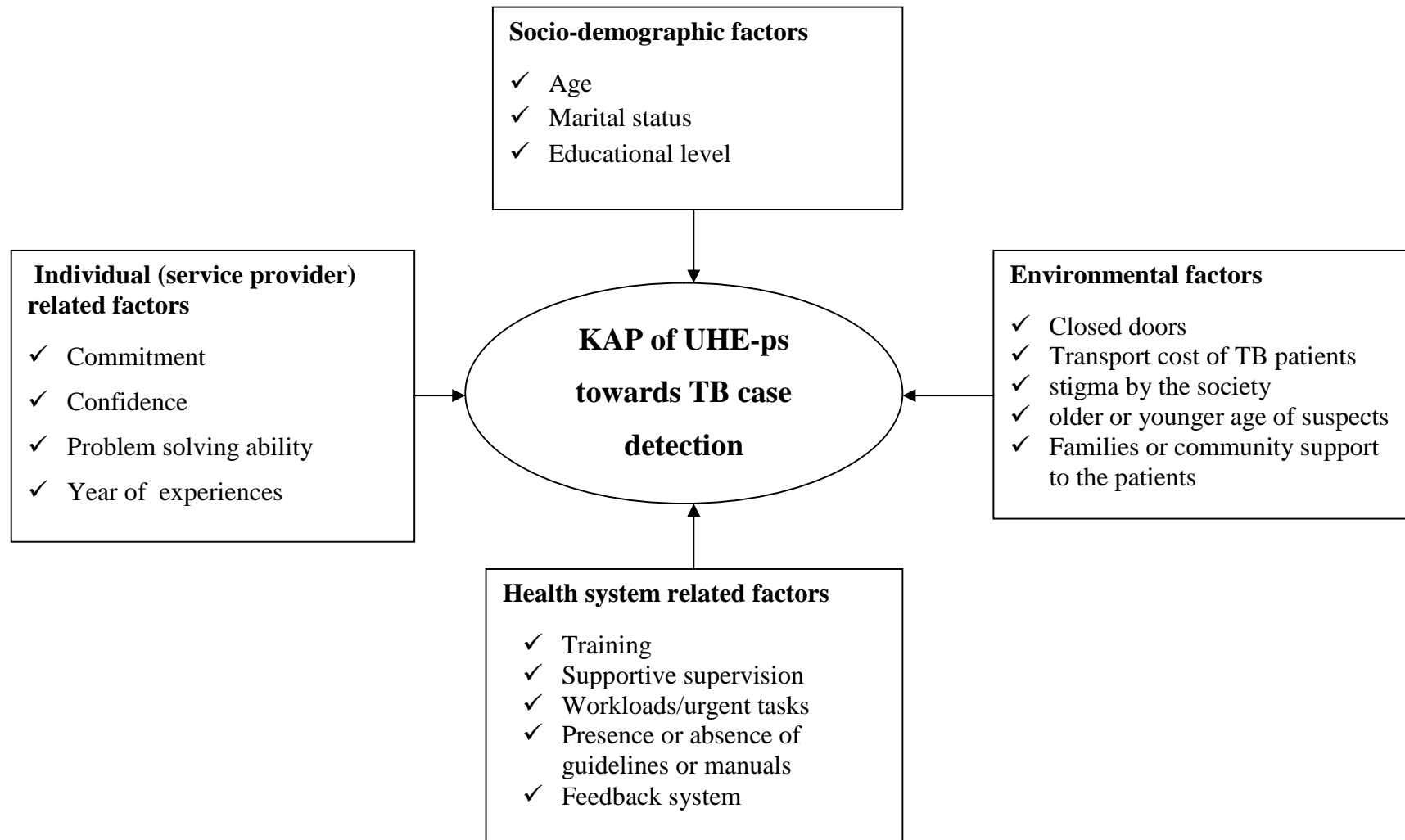
In addition to that incentives are among crucial factors for HEW's better performance and improve quality of tuberculosis case detection. Poor feedback of the results and too few health extension workers carrying out house-to house visit are some of the barriers in the intervention activities. Providing incentives (for example telephone airtime) to health extension workers for each number of cases screened and number of patients diagnosed was used to motivate and facilitate the communication(27).

Transportation cost may have its own effect on the case detection. Another challenges community health volunteers (CHVs) facing was lack of referral form to refer suspected tuberculosis case to the health centers/health facilities. To overcome the problems regular follow up is very effective but not conducted regularly by the CHVs because of the reasons like transportation problem, low CHVs motivation and more focus was given to activities of non-governmental organizations (NGO) for which they worked(33).

A qualitative study conducted in Oromia regional state shows that health extension workers are burdened by additional tasks which are non-health related and from other sectors. So many activities have been added to the HEP program because of integration with different areas(31). Situational analysis done by Yale Global Health leadership institute on Ethiopian health extension program shows that more than two third of the HEWs believe that they are overloaded with different assigned tasks which have been affecting their performance(34). Another study also shows that different development partners are also using HEWs to implement their program activities which have been creating heavier workloads for HEWs(35).

### 3. CONCEPTUAL FRAMEWORK

The conceptual framework for this study is constructed based on the factors that influence tuberculosis case detection by HEWs that are indicated in the literature part and by adopting National Tuberculosis program conceptual framework.



## **4. OBJECTIVES**

### **4.1. General objective**

- To assess the level of knowledge, attitude and practice towards tuberculosis case detection and associated factors among urban health extension professionals working in Addis Ababa, Ethiopia.

### **4.2. Specific objectives**

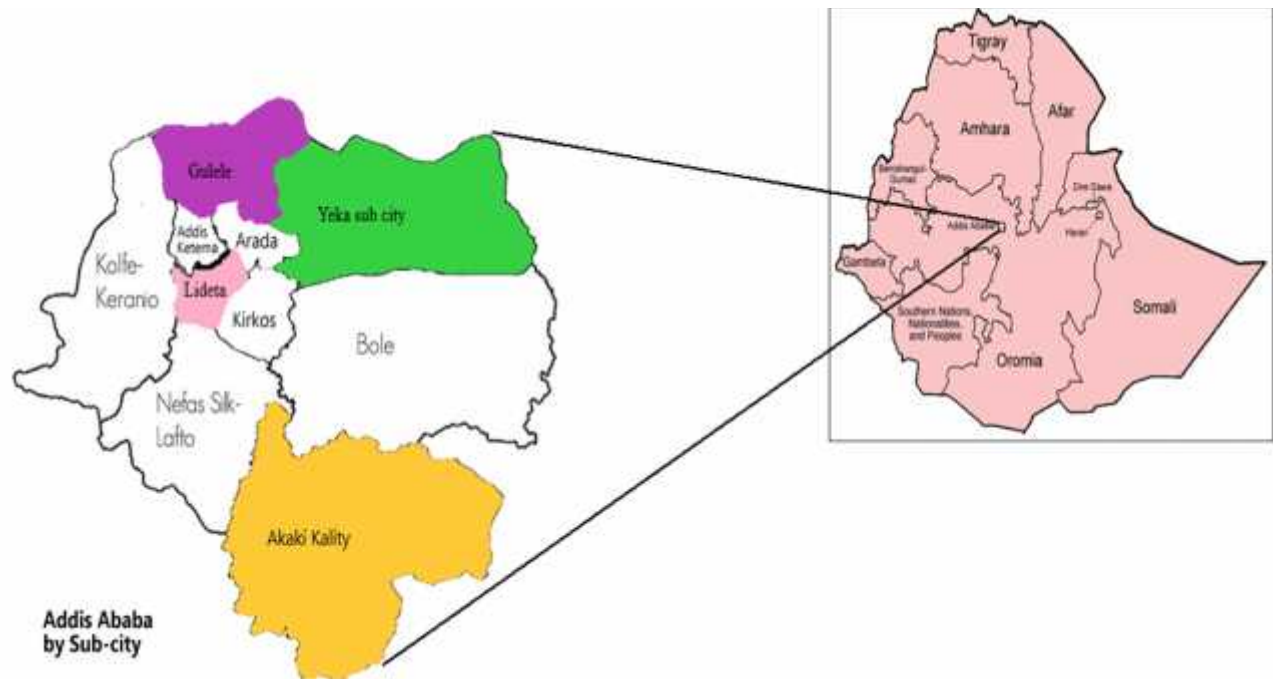
- To determine knowledge of UHE-ps towards TB case detection
- To determine attitude level of UHE-ps towards TB case detection
- To determine practice level of UHE-ps towards TB case detection
- To identify factors affecting knowledge, attitude and practice level of UHE-ps towards TB case detection.

## 5. METHODS

### 5.1. Study area and study period

This study was carried out in Addis Ababa, Ethiopia. Addis Ababa is the capital city of Federal Democratic Republic of Ethiopia and has 10 sub cities and 119 woredas (smallest administrative unit). Addis Ababa is the largest city in the country by population, with a total population of 3,384,569 according to the 2007 census. Figure 1 shows map of the study area. Currently there are total of 98 government health centers in Addis Ababa. In the selected four sub cities there are 43 woredas and 36 health centers. All of the health centers are currently providing tuberculosis prevention and control services. Totally there are 1141 UHE-ps currently working in Addis Ababa. In the selected four sub-cities currently there are 440 UHE-ps serving a total of 1,177,022 populations.

The study period was from April-May, 2019.



**Figure 1: Map of Addis Ababa city administration** (source: - Addis Ababa city administration website <http://www.addisababa.gov.et/es/web/guest/city-map>)

## 5.2. Study design

Institution based quantitative cross-sectional study design was employed to assess knowledge, attitude and practice of urban health extension professionals in detecting TB suspects.

## 5.3. Source population

The source population was all urban health extension professionals working in Addis Ababa.

## 5.4. Study population

The study population constitutes UHE-ps working in the randomly selected four sub-cities.

## 5.5. Sample size

The proportion of UHE-ps knowledge, attitude and practice towards TB case detection is unknown. Because of lack of the evidences, 50% proportion was taken for sample size determination. Moreover, it assumes the degree of precision for generalization as 0.05 and degree of confidence with which to conclude equals 95%. With the above assumptions the sample size was calculated using single population proportion.

### *Assumption*

n = Sample size

$z_{\alpha/2} = 1.96$ , which is the upper percentile of the standard normal distribution.

p = proportion of UHE-ps knowledge, attitude and practice towards TB detection, which is approximately 50%

d = degree of precision 0.05

By deploying single population proportion formula the sample size was calculated using the formula

$$n = \frac{(z_{\alpha/2})^2 \cdot p \cdot (1 - p)}{d^2}$$
$$= \frac{(1.96)^2 (0.5 \times 0.5)}{0.05^2} = 384$$

By adding 10% for non- response rate; and finally it makes the total sample size 422.

## **5.6. Sampling technique**

There are 10 sub-cities in Addis Ababa city administration. For the purpose of this study four sub cities were selected randomly/lottery method/. The four sub-cities included in this study were Akaki Kality sub-city, Gulele sub-city, Lideta sub-city and Yeka sub-city. All urban health extension professionals in the selected four sub cities were included in the study. The main reason to include all urban health extension professionals in the four selected sub cities is that the total number of UHE-ps in the four sub cities is nearly equal to the sample size of the study. And in addition to that scarcity of resource to cover more than four sub cities in this study. There were 440 urban health extension professionals active before data collection (during project proposal preparation) period in the selected four sub-cities in Addis Ababa.

### **5.6.1. Inclusion criteria**

All urban health extension professionals working in the selected four sub cities were included in the study. There are 440 UHE-ps in the selected four sub-cities. As indicated above the main reason to include all UHE-ps in the four selected sub cities is related to their number.

### **5.6.2. Exclusion criteria**

- a. Service year of less than six months.
- b. Seriously ill, including maternity leave

## **5.7. Data collection procedures**

A self-administered questionnaire was used to collect data. The questionnaire contains variables related to socio-demographic, general questions, knowledge, attitude and practice of UHE-ps towards TB case detection. Original questionnaire was prepared in English and translated to Amharic language (national language of Ethiopia) and finally back to English to check its consistency. Pre-test was done before actual data collection to check the clarity, sequence, consistency and time required to fill the entire questionnaire. For the pre-test 10% (on 40 UHE-ps) of the total sample size was used. Some amendments were done after pre-test. Four data collectors were recruited to facilitate the data collection process. One day training was provided to the data collectors by the principal investigator. During the orientation, the importance of obtaining the respondents consent and respecting their right to respond or not to respond to the

whole questionnaire or any part of the questions was emphasized, in addition to ensuring confidentiality. A brief explanation of the study was given to the study participants. All data collectors were closely supervised by the principal investigator.

The study tool was adapted from different previous related studies(13,20,23,27,36). Generally the questionnaire contained 40 questions consisting of five sections: Section A: Socio-demographic information (4 questions). This included the respondents' age, education level, marital status and years' experience as UHE-ps. Section B: General information questions (10 questions) related to tuberculosis case detection. Section C: Knowledge about TB (10questions). In this section, the respondents were asked about the as the cause of disease, the mode of transmission, signs and symptoms, prevention measures, related to treatment and etc. Section D: Attitude on TB. The respondents were asked about their feelings regarding TB case detection which were answered on the Likert-scale. Section E: practice section. In this section participants were asked about their practice of home visits, referring suspect cases and coordination between UHE-ps and TB department and related questions.

## **5.8. Operational definitions**

**Urban health extension professionals** refers to female diploma or level IV nurses hired to work in the community basically on preventive and basic curative services focusing on households, youth centers and schools.

**Competency** refers to skills, traits, qualities or characteristics that contribute to a person's ability to perform responsibilities in an organization.

**Community Based Tuberculosis Care (CBTC)** is a working partnership among the health sector and the community in TB prevention and care activities(9)

**Tuberculosis suspects** refers to any person with cough for two weeks or more; or with other signs and symptoms TB patients like fever for more than 2 weeks, night sweats, unexplained weight loss and loss of appetite; or people living with HIV/AIDS with cough of any duration.

**Tuberculosis case detection** refers to identification of tuberculosis suspects (people with symptoms of TB) by urban health extension professionals during their home visits; or it refers to

a symptom based screening of tuberculosis suspects in the community and referring them to the health facility for further investigation(10).

**A TB contact** is defined as a person living in the same household or being in frequent contact with a person who has pulmonary tuberculosis.

**Environmental factors** refer to those factors which are external to the service providers that affect the KAP level of the study participants towards tuberculosis case detection. These are geographic factors, factors related to the TB suspects/patients (social, financial, cultural etc.), age of the clients and others

**Health system related factors** refers to factors that may determine the KAP level of UHE-ps which are related to the health system like training, supervision, workload, coordination between PHCUs, feedback system etc.

**Good knowledge** refers to the knowledge level of the study participants whose knowledge score from the knowledge questions was equal or greater than the mean score of knowledge.

**Good attitude** refers to the level of an attitude of the participants of the study whose score from the attitude questions is greater than or equal to the mean score of attitude.

**Good practice** refers to the practice level of the study participants whose practice score from the practice questions is greater than or equal to the mean score of practice.

## **5.9. Data management**

The collected data was checked for completeness, accuracy and clarity. Codes were given to the each questionnaire, and participant during data collection, so that any identified errors could get traced back using the codes. The necessary feedback was given to the data collectors. Coded data was entered into Epi info version 7 computer software package. After the entry of every questionnaire is completed, the soft copy of every questionnaire was checked with its hard copy to see for the consistency. After the cross checking, cleaning was made to avoid missing values, outliers and other inconsistencies before analysis. Data was cleaned using frequency to see the missing value and descending and ascending order to see the outliers. Cleaned data was exported to SPSS version 20 software package for analysis. Data was handled in different folders and

backups were kept in different stages of analysis and report writing by giving consecutive version names.

### **5.10. Data analysis procedures**

The coded data was entered in to computer using Epi Info version 7 software and transferred to SPSS version 20. Coding of different variables was also carried out before analysis. Missing values, duplicates and outliers in the data were checked. Descriptive statistical values such as; frequencies, percentage, mean and standard deviations were used primarily to summarize as well as to describe the data.

Logistic regression analysis was carried out at two levels. Bi- variable and multi- variable analysis was done between independents and dependent variables to identify independent factors. A binary logistic regression model was used to identify factors associated with KAP level of UHE-ps towards TB case detection. Variables with P-value less than 0.2 in bivariate analysis were entered in to multivariable logistic regressions to control confounders. Multivariable logistic regression model was used to identify factors associated with KAP level of UHE-ps towards TB case detection. During the analysis p-value and 95% CI for OR was used in determining the significance of association. Result was presented in text, table and graphs.

### **5.11. Study variables**

#### 5.11.1. Dependent variables

- ✓ Level of knowledge
- ✓ Level of attitude
- ✓ Level of practice

#### 5.11.2. Independent variables

- a) Socio-demographic and individual provider related variables (age, marital status, educational level, work experience as UHE-ps, commitment, confidence, problem solving ability, etc.)
- b) Environmental variables (Closed doors, families or community support to the patients, stigma by the society)
- c) Health system-related variables (training, supportive supervision & Feedback system, workloads/urgent tasks, presence or absence of guidelines or manuals)

### **5.12. Data quality assurance**

Quality of the data was assured through careful design, translation and retranslation and pre-testing of the questionnaire, close supervision of the data collectors and proper handling of the data. Questions were made easy and clear. After pre-test on 40 UHE-ps from Kirkos sub-city, some necessary modifications were made on the tool based on the findings during the pre-test. Training was provided to data collectors on the study tool and data collection producers prior to the beginning of the data collection. Each questionnaire was coded separately after data collection. The principal investigator supervised the field activity closely on daily basis. Data entry was done carefully after checking each questionnaire filled by the respondents. And also data cleaning was also done after finalizing data entry to Epi info version 7 and exporting to SPSS version 20 version.

### **5.13. Ethical consideration**

Ethical clearance for the research was obtained from Research Ethical Committee (REC) of Addis Ababa University, college of health science, school of public health. After getting approval by the REC, letter was also obtained from Addis Ababa University, collage of Health Sciences, school of Public Health. Ethical clearance was also given by Addis Ababa regional health bureau, Health Research and Emergency Management Directorate. Letters of support/permission was received from Addis Ababa regional Health Bureau and sub-city health offices in the study area. Informed consent was also obtained from the respondents before the data collection. Similarly the respondents were informed about the purpose of the study. The respondents were also informed that all information obtained from them will be kept confidential and is meant only for the purpose of the study. The respondents were also informed that she will have the right either to involve or not in the study. The study will be important to contribute necessary information for decision makers and other concerned bodies in the study area and at national level at large.

### **5.14. Dissemination of results**

Final copy of the report will be submitted to Addis Ababa University, School of public health. The finding of the study will be communicated to all relevant organizations and bodies who can make use of the study findings including Addis Ababa Health Bureau, Addis Ababa University, School of Public Health, and Ministry of Health and will be sent for publication to Local or International Journals.

## 6. RESULT

A total of 402 female urban health extension professionals were participated in this study giving the response rate of 95.26%.

### 6.1. Sociodemographic characteristics

The mean age of the study participants was 27.8(3.51±SD). Nearly 80% (319) of the respondents were in the age group of 25-34 years. Regarding their marital status, more than half (56%) of the respondents are married and nearly 40% of them were single. Over 80% of the respondents are diploma graduates where as others are BSC degree holders. Their work experiences as an urban health extension professionals ranges from 7 months to 10 years. The mean service duration of the study participants of this study as urban health extension professional is 4.66. The sociodemographic characteristics of the respondents are shown in the table 1.

Table 1: Socio-demographic characteristics of respondents in selected four Sub-city, Addis Ababa, Ethiopia, April-May 2019, (N=402)

Variables	Number	Percent
<b>Age-group</b>		
24	63	15.67
25-34	319	79.35
35	20	4.98
<b>Total</b>	<b>402</b>	<b>100</b>
<b>Marital status</b>		
Single	159	39.55
Married	225	55.97
Divorced	8	1.99
Widowed	7	1.74
Separated	3	0.75
<b>Total</b>	<b>402</b>	<b>100</b>

**Educational status**

Degree	72	17.91
Diploma	330	82.09
<b>Total</b>	<b>402</b>	<b>100</b>

**Work experiences**

3 years	169	42.04
4-6 years	105	26.12
7 years	128	31.84
<b>Total</b>	<b>402</b>	<b>100</b>

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**6.2. Level of knowledge, attitude and practice of urban health extension professionals****I. Knowledge towards tuberculosis case detection**

For the question asked about the cause of tuberculosis, 397(98.76%) of the respondents stated the answer correctly as mycobacterium tuberculosis. For the true/false question, “TB is mainly a disease of the lungs, but it can also affect other parts of the body”, about 358(89.01%) of the study participants stated the answer correctly.

More than half 205 (51.00%) of the study participants know that “a person infected with TB stays infected for a life and may develop the disease at any time in the future”. Regarding the signs and symptoms of tuberculosis 370(92.04%) stated cough (Persistent, productive, blood stained), 338(84.08%) stated appetite loss, 354(88.06%) stated night sweetening, 347(86.32%) stated weight loss and 31(7.71%) listed additional signs and symptoms of tuberculosis chest pain (24), chills (1), fatigue (3) and fever (2).

For the question “Who is at risk of acquiring TB? respondents response include diabetic patients 72(17.91%), people living with HIV/AIDS 362(90.05%), children under the age of five and elderly people 203(50.49%) ,those who have close contact with people with active TB 324(80.59%) and people living in overcrowded setting (13), immunocompromised people (7) and health care workers(1).

For the question how a person prevents infection by tuberculosis the most frequently mentioned responses are opening windows at home 391(97.26%), good nutrition 255(63.43%) and cooking caw milk before feeding 329(81.84%). Other responses include opening windows in public transport buses, properly disposing sputum, minimizing contact with confirmed TB patients and early starting of treatment and properly completing the treatment. For the question asked about the main aim of tuberculosis treatment the most frequently selected responses are cure patient from TB 389(96.77%), decrease TB transmission 360(89.55%), prevent death from TB disease 335(83.33%) and prevent the development of acquired drug resistance 310(77.11%).

Table 2: Knowledge of urban health extension professionals towards tuberculosis case detection in selected four sub cities, Addis Ababa, Ethiopia, April-May 2019, (N=402)

Questions	Response	Frequency	Percent
What is the cause of tuberculosis?	Correct response	397	98.76
	Incorrect response	5	1.24
TB is mainly a disease of the lungs, but it can also affect other parts of the body.	True	358	89.05
	False	44	10.95
A person infected with TB stays infected for a life and may develop the disease at any time in the future	True	205	51.00
	False	194	48.26
	I don't know	3	0.75
What are the main signs and Symptoms of PTB? (multiple answers possible)	Poor appetite	338	84.08
	Wight loss	347	86.32
	Night sweating	354	88.06
	Cough(Persistent, productive, blood stained)	370	92.04
	Diabetic patients	72	17.91
Who is at risk of acquiring TB? (Risk groups for TB?) (Multiple answers possible?)	People living with HIV/AIDS	362	90.05
	Children under the age of five and elderly people	203	50.50
	People who have close contact with active TB cases	324	80.60
How can a person prevent getting TB infections? (multiple answers are possible)	Opening windows at home	391	97.26
	Good nutrition	255	63.43
	Cooking caw milk before feeding	329	81.84
A TB contact is a person who	True	314	78.11

has been living with a confirmed TB patient.	False	86	21.39
	I don't know	2	0.50
	Cure the patient from TB	389	96.77
What is the main aim of tuberculosis treatment? (multiple choice is possible)	Decrease TB transmission	360	89.55
	Prevent death from TB disease	335	83.33
	Prevent the development of acquired drug resistance	310	77.11
How many phases a TB treatments do have?	One	26	6.47
	Two	340	84.58
	I don't know	36	8.96
DOT is the most effective strategy for making sure patients take their medicines.	True	325	80.85
	False	67	16.67
	I don't know	10	2.49

The mean score of the knowledge of the study participants was 7.53( $\pm$ 1.51 SD). Among the study participants 226(56.22%) of them have good knowledge towards tuberculosis case detection. But 176(43.78%) of the study participants have poor knowledge towards tuberculosis case detection. More details are in table 3 below.

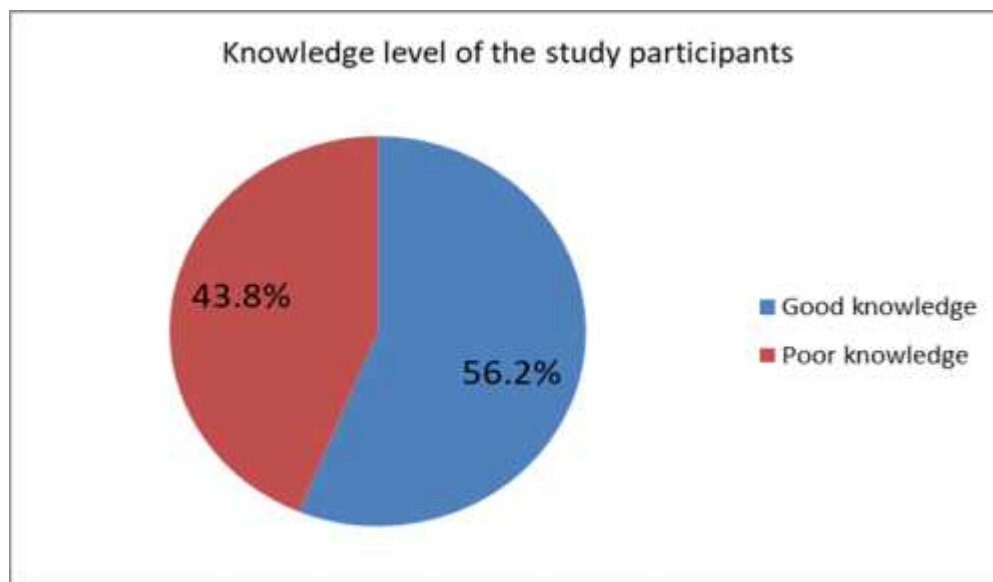


Figure 2: Knowledge level of the study participants in selected four sub cities, Addis Ababa, Ethiopia, April-May 2019, (N=402)

Table 3: Knowledge level of the study participants in each sub groups of the socio-demographic variables in the four selected sub cities, Addis Ababa, Ethiopia, April-May 2019, (N=402)

		Good knowledge		Poor knowledge		Total	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
Age Group	24 years	27	42.86%	36	57.14%	63	100%
	25-34 years	187	58.62%	132	41.38%	319	100%
	35 years	12	60.00%	8	40.00%	20	100%
Educational level	Diploma	192	58.18%	138	41.82%	330	100%
	Degree	34	47.22%	38	52.78%	72	100%
Marital status	Single	89	55.97%	70	44.03%	159	100%
	Married	137	56.38%	106	43.62%	243	100%
Work experience	3 years	89	52.66%	80	47.34%	169	100%
	4-6 years	55	52.38%	50	47.62%	105	100%
	7 years	82	64.06%	46	35.94%	128	100%

## II. Attitude towards tuberculosis case detection

Among the study participants 279 (69.40%) of the respondents strongly agree that community engagement is essential for the tuberculosis control activities. However 45(11.19%) of the respondents disagree that community engagement is essential for the tuberculosis control activities. Among the study participants asked for the importance of tuberculosis related training provided to them, around 61 (15%) of the respondents do not think that the training provided to them is important to improve their knowledge, attitude and practice towards TB case detection. But most of the respondents, strongly agree 169(42.04) and agree 116(28.86%) that the training that they have received was important to improve their competency in tuberculosis case detection.

For the question, “Do you think that enough recognition or motivation was given to best performers of TB case detection activities?” the participants of the study responded that strongly agree 100(24.88%), agree 82(20.39%), neutral 64(15.92%), disagree 122(30.35%) and strongly disagree 34(8.46%). Nearly two-third (64.9%) of the respondents strongly agrees for the question they were asked for whether they are happy to help any tuberculosis patients whom they get during their home to home visit. But still 12.2% (49) of the respondents are not happy to help any tuberculosis patients they found during their home to home visits.

Almost 90% (358) of the study participants believe that continuous supportive supervision can improve their practice of identifying tuberculosis suspect cases in the community. And 10% of the respondents either do not believe that continuous supportive supervision by those who are responsible to supervise them can improve their practice or have no any idea about the importance of the supportive supervision on their practice improvement of the on tuberculosis case detection.

More than 94% of the respondents believe that properly documenting TB patients and suspect cases data is helpful for effective follow-ups of tuberculosis cases. And more than 4% of the study participants either do not believe that proper documentation of TB suspects data is important or they have no idea about the documentation of referred suspect cases or patients data.

306(76.12%) of the participants believe that minimizing urgent/unplanned tasks can increase their capacity of TB case detection. But 37(9.20%) of the study respondents didn't believe that minimizing unplanned tasks can increase their case detection and 59(14.68%) of them not sure that minimizing unplanned tasks either increase their case detection capacity or not.

Regarding whether stigma and discrimination are a concern for TB patients in the community where the urban health extension professionals have been working, the response from them is around 62.44%(251) of the respondents believe that there is stigma and discrimination for TB patients, whereas nearly 29.85%(120) of the study participants do not believe it is the problem in their community where they have been working. The detail of the attitude responses of the study participants is presented in the table 4 below as:

Table 4:- Attitude of the study participants towards tuberculosis case detection among urban health extension professionals in selected four sub cities, Addis Ababa, Ethiopia, April-May 2019, (N=402)

Questions	Responses				
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Do you agree that community engagement is essential for the control of TB?	279(69.40%)	71(17.66%)	6(1.49%)	45(11.19%)	1(0.25%)
Do you think that the training provided to you was important to improve your knowledge, attitude and practice towards TB case detection	169(42.04%)	116(28.86%)	55(13.68%)	54(13.43%)	8(1.99%)
Do you think that enough recognition or motivation was given to best performers of TB case detection	100(24.88%)	82(20.39%)	64(15.92%)	122(30.35%)	34(8.46%)
I am happy to help any TB patients whom I get during my home to home visit	261(64.93%)	81(20.15%)	8(1.99%)	49(12.19%)	3(0.75%)
Do you believe that continuous supportive supervision can improve my practice of identifying TB suspect cases in the community	223(55.47%)	135(33.58%)	28(6.97%)	13(3.23%)	3(0.75%)

Do you think that properly documenting TB patients and suspect cases date is helpful for effective follow-ups of TB case?	309(76.87%)	71(17.66%)	16(3.98%)	4(0.99%)	2(0.49%)
Do you think that Minimizing urgent tasks can increase our capacity of TB case detection?	191(47.51%)	115(28.61%)	59(14.68%)	36(8.96%)	1(0.25%)
Do you believe that stigma and discrimination is a concern for TB patients in a community where you have been working?	99(24.63%)	152(37.81%)	31(7.71%)	106(26.37%)	14(3.48%)

Regarding attitude level of the study participants, the mean score of attitude was 32.77( $\pm$ 3.86 SD). Among the study participants 235(58.46%) of the respondents have good attitude towards tuberculosis case detection with mean score of 32.77 from the attitude questions. On the other hands 167(41.54%) of the study participants have poor attitude level towards tuberculosis case detection.

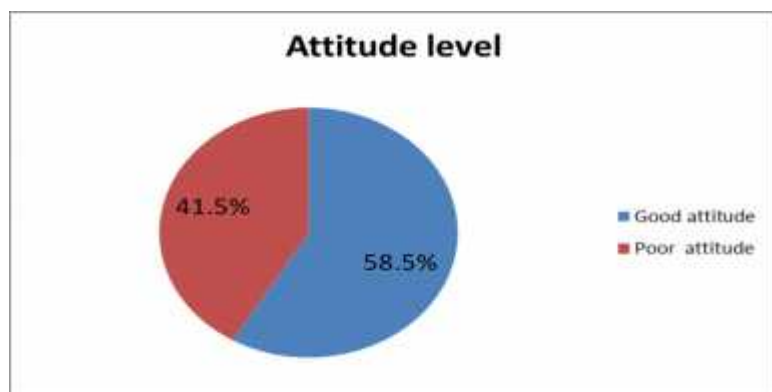


Figure 3: Attitude level of the study participants in selected four sub cities, Addis Ababa, Ethiopia, April-May 2019, (N=402)

Table 5: Attitude level of the study participants in each sub groups of the socio-demographic variables in the four selected sub cities, Addis Ababa, Ethiopia, April-May 2019, (N=402)

Variable	Category	Attitude Level					
		Good attitude		Poor attitude		Total	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
Age group	24 years	43	68.25	20	31.75	63	100
	25-34 years	180	56.43	139	43.57	319	100
	35 years	12	60.00	8	40.00	20	100
Educational level	Degree	40	55.56	32	44.46	72	100
	Diploma	195	59.09	135	40.91	330	100
Marital status	Single	108	67.92	51	32.08	159	100
	Married	127	52.36	116	47.74	243	100
Work experience as UHE-ps	3 years	103	60.95	66	39.05	169	100
	4-6 years	54	51.43	51	48.57	105	100
	7 years	78	60.94	50	39.06	128	100

### III. Practice towards tuberculosis case detection

Among the study participants nearly 365(90.79%) of the respondents have had household visits for TB patients or suspects in the last six months. And 37(9.20%) of the study participants have never visited households for tuberculosis cases or suspects.

86% of the respondents (among who never visited households for TB patients), did not visit households because of the closed doors during home visits in the catchment areas. But 14% of the respondents among those who didn't visited households for tuberculosis didn't specify their reasons for why they didn't visited.

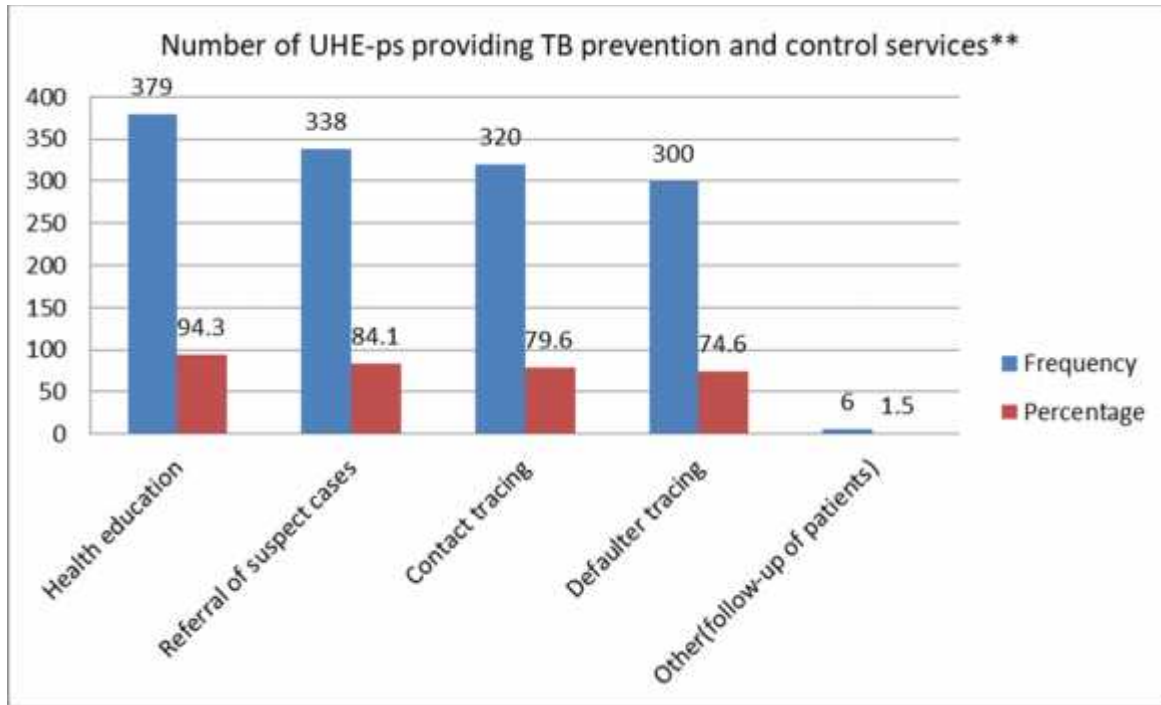
Regarding the frequency of the household visits for tuberculosis patients or suspects, 143(39.2%) every week, twice a week 135(37%), every day 55(15.1%) and 32(8.8%) of them have different

household visiting schedules [monthly (16), twice a month (12) and as unplanned and as needed by UHE-ps (4)].

As shown in the figure 4 concerning the services an urban health extension professionals have been providing for households or community during home visits or in the general community regarding tuberculosis prevention and control program, the most repeatedly mentioned service was health education 379(94.28). And the study participants responded referral of the suspect cases to the catchment health center 338(84.08%); contact tracing 320(79.60%), defaulter tracing 300(74.63%) and follow up of TB patients on treatment (6 participants). In addition to that 284(70.65%) of the study participants have been providing all the four listed services for the community.

Almost all 99.8% (401) participants in this study were involved in tuberculosis case detection. Regarding their experience of asking every person for “cough more than two weeks” during their routine house to house visits, about 241(60.09%) responded that always they have been asking and nearly 159(39.65%) of the respondents were asking ‘sometimes’.

As UHE-ps, 224(55.72%) of the study participants have been referring Tb suspect cases to the catchment health center ‘always’, whereas 177(44.03%) of the respondents have been referring tuberculosis suspect cases to the health center ‘sometimes’.



\*\* Multiple answers were possible

Figure 4: Number of study participants providing TB prevention and control services in selected four sub cities, Addis Ababa, Ethiopia, April-May 2019, (N=402)

The main barriers that have been influencing the case detection by the UHE-ps are ‘referred suspects not going to the health centre’, ‘not willing to be open to tell their fillings/symptoms to UHE-ps’, ‘not getting feedbacks from the health centres’ (Table 6)

Table 6: Main challenges UHE-ps have been facing regarding referral of Tb suspect cases to the health center in selected four sub cities, Addis Ababa, Ethiopia, April-May 2019, (N=242)

Main challenges	Frequency	Percent
Referred suspects not going to the health center	65	26.86
Not willing to be open(not telling his/her feelings/symptoms properly) and not practicing the advice given to them	50	20.66
Not getting feedbacks from the health centers, shortage of referral slips	27	11.16
The referred TB suspects not going to the health facility on time	18	7.44
Misconceptions and thoughts in the community that it is simple cough, chills, it's not TB, it will relief soon by itself they think that those who have TB have HIV	16	6.61
Absence of health center in the woreda and distance from the health center is far for the community and wide to cover by one UHE-ps	15	6.19
poor patient handling and unsatisfying services in the health center	15	6.19
Others**	36	14.88

\*\*Absence of laboratory investigations, X-ray and GeneXpert in the health center (8), Absence of people at home during home visits (7), Workload (7), confidentiality problem in the health professionals (2), Fear of discrimination (2), giving less value for UHE-ps because our only role is referring suspects we are not participating in the treatment part (2), going to another health facility far from the catchment which is difficult to follow their real status (2), low attention for TB prevention activities (2), Not properly following and defaulting from the treatment (2), being not trained(UHE-ps) (1) and needs continuous follow-up and health education (1)

Regarding the relation between health extension professionals and health center's TB department or TB focal persons, more than 250(62.19%) of the respondents have formal relation with the TB department of their catchment health center. Whereas 152(37.81%) respondents have no formal relation with the health center TB department. Among the study participants 230(57.21%) of the study respondents are using the Tb guideline/package regularly. But 172(42.79%) of the study respondents have not been using the TB guideline on their routine activities.

The mean score of the study participants for the practice was 5.50 ( $\pm 1.49$  SD). Of the study participants 209(51.99%), whose mean score from the practice questions are greater than or equal to the mean score, have good practice towards tuberculosis case detection. And 193 (48.01%) of the study participants have poor knowledge level towards tuberculosis case detection.

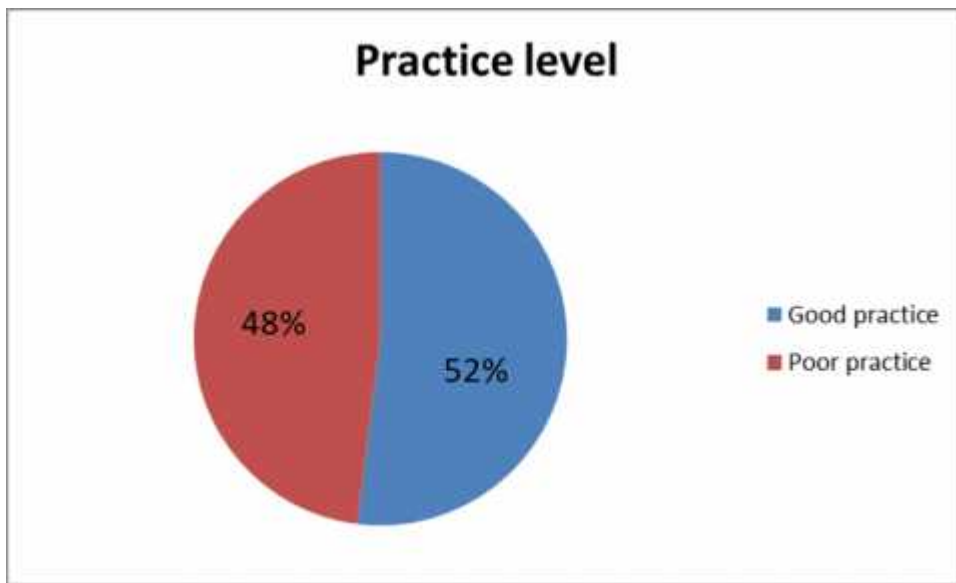


Figure 5: Practice level of the study participants in selected four sub cities, Addis Ababa, Ethiopia, April-May 2019, (N=402)

Table 7: Practice level of the study participants in each sub groups of the socio-demographic variables in the four selected sub cities, Addis Ababa, Ethiopia, April-May 2019, (N=402)

Variable	Category	Practice Level					
		Good practice		Poor practice		Total	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
Age group	24 years	29	46.03	34	53.97	63	100
	25-34 years	168	52.66	151	47.34	319	100
	35 years	12	60.00	8	40.00	20	100
Educational level	Degree	41	56.94	31	43.06	72	100
	Diploma	168	50.91	162	49.09	330	100
Marital status	Single	85	53.46	74	46.54	159	100
	Married	124	51.03	119	48.97	243	100
Work experience as UHE-ps	3 years	85	50.30	84	49.70	169	100
	4-6 years	56	53.33	49	46.67	105	100
	7 years	68	53.13	60	46.88	128	100

### **6.3. Factors affecting knowledge, attitude and practice of urban health extension professionals towards tuberculosis case detection**

All possible factors that were expected to be associated with the KAP level of the health extension professionals towards tuberculosis case detection were fitted in the binary and multivariable logistic regression and those factors that show significance association were used in the analysis of the result.

### 6.3.1. Sociodemographic and UHE-ps (providers) related factors

As shown in the table 8 below, important variables which were independently associated with the knowledge level of the study participants such as age, educational level, marital status and work experiences as UHE-ps were identified by bivariate analysis and P-value  $\leq 0.2$  were selected for multivariable analysis. Based on the analysis demographic characteristics like age, educational level and their work experience as UHE-ps had showed association with their knowledge level.

Among the sociodemographic factors age group of 25-34 years was significantly associated with the knowledge level of the study participants. The respondents' age group of 25-34 years old are more than two times more likely to have good knowledge towards tuberculosis case detection compared with those in age group of  $\leq 24$  years old with the p-value of 0.008[AOR = 2.49, 95% CI = (1.27-4.89)]. But age group of  $\geq 35$  years old is not significantly associated with the knowledge level of the study participants towards tuberculosis case detection.

And educational status of the study participants is significantly associated with the knowledge level of the study participants. Study participants who are diploma in their educational status are two times more likely to have good knowledge compared to those who are degree holders with p-value of 0.001[AOR = 2.29, 95%CI = (1.23-4.30)].

The work experience of the respondents as urban health extension professionals is not significantly associated with the knowledge level of the study participants.

Table 8: Bivariate and multivariable analysis of factors associated with knowledge level of the study participants towards TB case detection in selected four sub cities, Addis Ababa, Ethiopia, April-May 2019, (N=402)

Variables	Knowledge Level		COR (95% CI)	AOR (95% CI)	P-value
	Good	Poor			
<b>Age-group</b>					
24 years	27(11.95%)	36(20.45%)	1.00		
25-34 years	187(82.74%)	132(75.0%)	1.89(1.09-3.26)*	2.49(1.27-4.89)	0.008
35 years	12(5.31%)	8(4.55%)	2(0.72-5.57)	2.06(0.65-6.55)	0.223
<b>Educational Level</b>					
Diploma	192(84.96%)	138(78.4%)	1.56(0.93-2.59)	2.29(1.23-4.30)	0.01
Degree	34(15.04%)	38(21.6%)	1.00		
<b>Work experience</b>					
3years	89(39.38%)	80(45.5%)	0.62(0.39-0.99)*	0.83(0.45-1.52)	0.537
4-6 years	55(24.34%)	50(28.4%)	0.62(0.37-1.05)	0.59(0.33-1.07)	0.081
7years	82(36.28%)	46(26.1%)	1.00		
<b>Supportive supervision</b>					
No	141(62.39%)	132(75%)	1.00		
Yes	85(37.61%)	44(25%)	1.81(1.17-2.79)*	1.45(0.89-2.36)	0.138
<b>Frequency of supportive supervision</b>					
Weekly	62(29.70%)	46(27.7%)	2.47(1.24-4.92)*	2.91(1.36-6.23)	0.006
Twice a month	129(61.70%)	87(52.4%)	2.72(1.44-5.13)*	3.32(1.65-6.65)	0.001
Monthly	18(8.60%)	33(19.9%)	1.00		
<b>Who is responsible to supervise UHE-ps</b>					
UHEP supervisor	93(44.5%)	108(65.1%)	1.87(0.68-5.10)	1.94(0.68-5.52)	0.217
Supervisors from different level**	11(52.6%)	45(27.1%)	5.29(1.89-14.80)*	6.20(2.11-18.26)	0.001

Health professionals from the catchment health centre	6	13	1.00
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\* Represented are P-value less than 0.05 and considered as significantly associated with the outcome variable for COR

\*\* Leaders and professionals who supervises UHE-ps (like Sub city HEP officers, woreda health office heads, core process owners

As shown in table 9 below, marital status of the respondents of the study shows statistically significant association with attitude level of the study participants towards tuberculosis case detection with p-value of 0.005 [AOR = 1.96, (95% CI= 1.23-3.13)]. Study participants who are single in their marital status are nearly two times more likely to have good attitude towards tuberculosis case detection when compared with those who are married. But work experience of the study participants as an urban health extension professionals have no significant association with an attitude level of the study respondents.

Statistically significant association was also observed between knowledge level of the study respondents and their attitude level. Study participants who have good knowledge level towards tuberculosis case detection are more than two (2.39) time more likely to have good attitude level towards tuberculosis case detection with p-value of 0.001 [AOR = 2.39, (95% CI=1.53-3.75)].

Table 9: Bivariate and multivariable logistic regression analysis of sociodemographic factors associated with attitude level regarding tuberculosis case detection among urban health extension professionals in selected four sub cities, Addis Ababa, Ethiopia, April-May 2019 (N=402) (95% CI)

Independent Variable	Attitude level		COR (95% CI)	AOR (95% CI)	p-values
	Good	Poor			
<b>Marital Status</b>					
Single	108	51	1.93(1.27-2.94)*	1.96(1.23-3.13)	0.005
Married	127	116	1.00		
<b>Work Experience</b>					
≤3 years	103	66	1(0.63-1.60)	0.87(0.51-1.48)	0.61

4-6 years	54	51	0.68(0.40-1.14)	0.67(0.38-1.19)	0.17
≥7 years	78	50	1.00		
<b>Commitment</b>					
No	57	31	1.00		
Yes	178	136	0.71(0.44-1.16)	0.85(0.49-1.46)	0.55
<b>Frequency of supportive supervision (N=375)</b>					
Weekly	68	40	1.64(0.83-3.21)	1.35(0.65-2.81)	0.42
Twice a month	118	98		1.01(0.52-1.96)	0.97
Monthly	26	25	1.00		
<b>Family support</b>					
Very good support	71	30	1.80(0.99-3.28)	1.24(0.63-2.46)	0.53
Medium support	114	99	0.88(0.53-1.44)	0.57(0.32-1.01)	0.06
Low support	50	38	1.00		
<b>Knowledge Level</b>					
Good knowledge	149	77	2.03(1.35-3.03)*	2.39(1.53-3.75)	<0.001
Poor knowledge	86	90	1.00		
<b>Getting feedback from the HC</b>					
Always	61	31	1.66(0.88-3.14)	1.79(0.86-3.69)	0.12
Sometimes	136	104	1.10(0.65-1.88)	1.29(0.70-2.39)	0.41
Never	38	32	1.00		

\* Represented are P-value less than 0.05 and considered as significantly associated with the outcome variable for COR

Regarding practice level of the study participants as shown in table 10, statistically significant association was also observed with the knowledge level of the respondents. Among the respondents of the study, those who have good level of knowledge have good practice level towards tuberculosis case detection with p-value of 0.001 [AOR = 2.219, (95% CI=1.402-3.511)].

Table 10: Bivariate and multivariable logistic regression analysis of factors associated with practice regarding tuberculosis case detection among urban health extension professionals in selected four sub cities, Addis Ababa, Ethiopia, April-May 2019 (N=396) (95%CI)

Independent Variable	Practice Level		COR (95% CI)	AOR (95% CI)	p-value
	Good	Poor			
<b>Frequency of supportive supervision</b>					
Weekly	66	42	1.91 (0.98-3.75)	1.50 (0.71-3.15)	0.284
Twice a week	106	110	1.17 (0.64-2.17)	0.97 (0.49-1.87)	0.916
Monthly	23	28	1.00		
<b>Family support</b>					
Very good Support	67	34	3.45 (1.89-6.28)*	2.33 (1.18-4.58)	0.014
Medium support	110	103	1.87 (1.12-3.12)*	1.258(0.69-2.28)	0.448
Low support	32	56	1.00		
<b>Knowledge Level</b>					
Good Knowledge	136	90	2.13(1.43-3.18)*	2.22(1.40-3.51)	0.001
Poor Knowledge	73	103	1.00		
<b>Attitude Level</b>					
Good Attitude	136	99	1.77(1.19-2.64)*	1.31(0.8-2.06)	0.248
Poor Attitude	73	94	1.00		
<b>Frequency of getting referral feedbacks from the catchment HC</b>					
Always	59	33	3.43 (1.79-6.58)*	3.53(1.67-7.47)	0.001
Sometimes	126	114	2.19 (1.22-3.69)*	2.53 (1.32-4.85)	0.005
Never get	24	46	1.00		
<b>Being trained on TB</b>					
No	91	115	1.00		
Yes	118	78	1.91(1.29-2.84)*	1.47(0.94-2.31)	0.094
<b>Having TB guideline</b>					
No	48	66	1.00		
Yes	161	127	1.74(1.12-2.70)*	1.32(0.79-2.19)	0.28

\*\* Represents P-value less than or equal to 0.05 and considered as significantly associated with the outcome variable for bivariable analysis

Work experience as an urban health extension professionals, commitment, confidence and problem solving ability of UHE-ps on her day to day activities have no statistically significant association with knowledge, attitude and practice level of the study participants.

### 6.3.2. Environmental factors

Different factors which were identified as environmental factors (which are external factors for health extension professionals, except health system related factors, that affect case detection capacity of UHE-ps) like transport cost of the TB patients, doors being closed during home to home visits, stigma and discrimination of TB patients in the community, TB suspects/patients being under age of five years or older age and community or family support to TB patients were fitted in the binary logistic regression model. Based on the above analysis community/family members support to TB patients has shown an association with the practice level of the study participants. Those study participants who stated family/community support to the TB patients as “good support” are 2.33 times more likely to have good practice towards tuberculosis case detection than those who stated family support to the TB patients as “ very low support” with p-value of 0.014[AOR = 2.33, (95% CI = 1.18-4.58)]. The details are shown in the table 10 above. But others are not significantly associated with knowledge, attitude or practice level of the study participants.

### 6.3.3. Health system related factors

From the multivariable analysis, factors associated with KAP of the study participants are identified. Among the factors used in the analysis some of them show significant association with the KAP level of the study participants.

Frequency of supportive supervision provided to urban health extension professionals is significantly associated with their knowledge level as shown in table 8 above. Study participants who have been getting supportive supervision weekly are three times more likely to have good knowledge compared to those who get on monthly with the p-value of 0.006[AOR = 2.91, (95% CI=1.36-6.23)]. And those who have been getting supportive supervision twice a month are 3.3 time more likely to have good knowledge than those who have been getting supportive supervision on monthly basis with the p-value of 0.001[AOR=3.32, (95% CI=1.65-6.65)]. But

frequencies of supportive supervision have no statistically significant association with attitude and practice level of the study participants.

Among the study participants those who are supervised by supervisors from different level (i.e. sub city health extension program officers, disease prevention and control core process coordinators, woreda health office heads) are six times more likely to have good knowledge than those who have been supervised by health professionals from the catchment health center with the p-value of 0.001 [AOR=6.20, (95% CI=2.11-18.26)]. But being supervised by health extension program supervisors is not significantly associated with knowledge, attitude and practice level of the study participants.

Statistically significant association was observed between frequency of getting referral feedbacks from the catchment health centers and practice level of the study respondents. Study participants who have been getting referral feedbacks from the catchment health center for the referred suspects cases 'always' are 3.53 times more likely to have good knowledge level towards tuberculosis case detection compared with those who never have got referral feedback for the referred suspect cases with p-value of 0.001[AOR = 3.53, (95% CI = 1.67-7.47)]. Study participants who have been getting referral feedback 'sometimes' are 2.528 times more likely to have good practice towards tuberculosis case detection than those who have never got referral feedback with p-value of 0.005[AOR = 2.53, (95% CI = 1.32-4.85)].

But getting tuberculosis related training and presence of community based tuberculosis guideline is not significantly associated with knowledge, attitude and practice level of the study participants. Statistically significant association is also not observed between frequency of getting supportive supervision and attitude and practice level of the study participants. Details are shown in tables 8, 9 and 10.

## 7. DISCUSSION

In this study among the study participants 56.2% of them have good knowledge towards tuberculosis case detection. The knowledge level of the study participants in this study is relatively similar with the studies done in Mozambique (57.3%)(36). But it is higher when compared to the study done in Nigeria (50%)(23). The possible reason for this may be due the massive Integrated Refresher Training(IRT) for urban health extension professionals provided before one year(2). In addition to that different professional mix, who work as CHWs, in the study conducted in Nigeria may also be a reason.

Among the study participants involved in this study 58.5% of them have good attitude towards tuberculosis case detection. The attitude level of the study participants done in Nigeria, which was 43.7%, is lower than the attitude level of this study(23). And in the study done in Mozambique the attitude level of the study participants was relatively better than our study results even if the level of attitude is not specified in the article, but for each measurement the level of attitude is clearly indicated(36). Most of the urban health extension professionals have less interested in the general work or program and due to this reason their attrition rate is even more than 10% every year, this may be one of the indications for their lower level of attitude(37,38).

Regarding the practice level, 52% of the study participants have good practice level towards tuberculosis case detection. This shows that the practice level of the study participants in this study is higher than similar study conducted in Mozambique in which only 35.6% of the study participants have good practice about tuberculosis(36). This is may be due to some of them in Mozambique case had never worked with TB patients. But UHE-ps have at least some exposure in tuberculosis control and prevention activities.

The result of this study shows that the age group of 25-34 years old is significantly associated with the knowledge level of the study participants with the p-value of 0.008. Similarly the study conducted in Nigeria in similar study participants shows that the younger age group of the study respondents have a better knowledge on tuberculosis with p-value of 0.048(23). The reason for the lower knowledge level among the study participants who are younger in the age may be unexplained. Hence, it needs further study on the possible reasons. In addition to that almost

80% of the study participants are under the age group of 25-34 and so it may be related to the number of samples in the age category.

And educational status of the study participants is significantly associated with their knowledge level that educational level and knowledge level are inversely related. Having an educational level of diploma in this study are more knowledgeable than those with degree holders. The reason for the lower knowledge level among the study participants who are degree in their educational status may be unexplained. Hence, it needs further study on the possible reasons. In addition to that educational quality of the health science colleges may also get special attention. In addition that it may be because of the lower sample size of the degree holder participants in the study.

Attitude level of the study participants is significantly associated with the knowledge level of the study participants with p-value of 0.001. Those study participants with good level of knowledge towards TB case detection have good attitude when compared with those who have poor knowledge level.

Regarding marital status of the study participants, those who are single in their marital status have good attitude towards tuberculosis case detection.

Those study participants who stated the family/community support to TB patients is “very good support” are significantly associated with the practice level of the study participants. Those who stated the family support “very good” are more than two times more likely to have a good practice than those who stated “no support at all” with AOR=2.33, (95%CI=1.18-4.58). This is also supported by the study by stating that ownership and community support is crucial for the good practice of the community health workers. Qualitative study done in Ethiopia shows that good support to tuberculosis patients minimizes stigma towards tuberculosis in the community. Hence, this may increase detection rate by urban health extension professionals(30).

Frequency of the supportive supervision in which the urban health extension professionals get from those who are responsible to supervise them on weekly and twice a month basis are significantly associated with the knowledge level of the study participants. Study participants who have been getting supportive supervision on weekly bases are three times more likely to have a good knowledge level when compared with those supervised on a monthly bases with

AOR=2.91, (95%CI=1.36-6.23). And also those who were supervised twice a month were more than three times more likely to have good knowledge when compared with those who have been supervising on a monthly bases with AOR=3.32, (95%CI=1.65-6.65).

Getting supportive supervision from supervisors from different level (sub city health extension program officers, disease prevention and control core process owners and woreda health office heads) is significantly associated with the knowledge level of the study participants. The study participants who have been supervised by supervisors from different level are six times more likely to have good knowledge than those supervised by health professionals from the health centers with AOR=6.20, (95%CI=2.11-18.26).

Frequency of getting referral feedbacks from the catchment health center always as well as sometimes is significantly associated with the practice level of the study participants towards tuberculosis case detection with AOR=3.53, (95%CI=1.67-7.47) and AOR=2.53, (95%CI=1.32-4.85) respectively. The finding in this section shows that receiving referral feedback from the catchment health centers for all referred cases is a motivating factor for urban health extension professionals to refer more suspect cases to the health facility. Qualitative study conducted in Ethiopia shows that there is loose linkage among health centers and urban health extension professionals(32). In addition to that different literatures clearly indicates that there is poor experience of providing feedbacks for referred cases from the health centers (17,20,32). These may contribute for the low performance of them in the general work area. Hence, this study shows that continuous feedback for referred cases is associated with their good practice level. And also most of the urban health extension professionals are demotivated by different factors which are currently addressed by health extension program (HEP) optimization initiative in the Federal Democratic Republic of Ethiopia, Ministry of Health(7).

## **8. STRENGTH AND LIMITATIONS**

### **Strength**

- ✚ This study has tried to assess the level of knowledge, attitude and practice of urban health extension professionals towards tuberculosis case detection where there have not been similar previous studies carried out as to the knowledge of the investigator.
- ✚ A better response rate of 95% gained from the participants of the study.

### **Limitations**

- ✓ Practice level was approximated by self-reporting, rather than direct observation, in which they may overstate
- ✓ The data collection process took longer time than planned since they are outreach workers most of them available only early morning. Hence, there may be information contamination.

## 9. CONCLUSION

The results of the study shows that more than half of (56.2%) of the study participants had good knowledge level, 58.5% of the respondents had good attitude level and 52% of the study participants had good practice level towards tuberculosis case detection. Generally the KAP level of the urban health extension professionals working in Addis Ababa city is considered to be inadequate for effective tuberculosis case detection.

Tuberculosis case detection practice is better among study participants who have been getting better support from the community members or family members in supporting tuberculosis patients or suspect cases. Frequent supportive supervision is also one of the best ways of increasing the knowledge level of urban health extension professionals which in turn increases their practice level of tuberculosis case detection. Strong feedback system for the referred cases for further investigation is also crucial in improving the practice level of urban health extension professionals in tuberculosis case detection.

In addition to that, further study needs to be conducted to explore additional information about how to influence the knowledge, attitude and practice of UHE-ps towards tuberculosis case detection.

## 10.RECOMMENDATION

- **For MOH:-** Since getting referral feedback from the health facility has great impact on UHE-ps case detection practice, it is better to strengthen referral system and, is better to avail a system to assign responsible body to follow provision of feedback to the urban health extension professionals from the health center professionals for referred suspect cases.
- Continuous and action oriented supportive supervision system should be maintained and provided to the UHE-ps by woreda health offices and catchment health centers.
- Community engagement system should be strengthened regarding the support to the patients by the community or family members of the patients.
- Education needs further study to assess the quality of education in health science colleges.
- Health extension professionals should empower community members to support tuberculosis patients/suspects in their community/family by providing awareness creation on tuberculosis disease.

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## **ANNEXES**

### **Annex I- Participants information sheet**

**Title of the Research Project:** - Knowledge, attitude and practice towards tuberculosis case detection and associated factors among urban health extension workers working in Addis Ababa, Ethiopia.

**Name of the principal investigator:** - Temesgen Markos

**Name of the Organization:** Addis Ababa University, Collage of health sciences, school of Public Health.

**Name of the Sponsor:** Self

Information sheet and consent form is prepared for urban health extension professionals, under Addis Ababa City Administration Regional Health Bureau working in the selected four sub-cities (namely Akaki Kality, Lideta, Gulele and Yeka sub cities), who are going to participate in the research project entitled as “Knowledge, attitude and practice towards tuberculosis case detection among urban health extension professionals working in Addis Ababa, Ethiopia, 2019”

#### **Introduction:**

This information sheet and consent form is prepared with the aim of explaining the research project that the participants are asked to join by the group of research team. The main aim of this research project is to assess the level of knowledge, attitude and practice towards tuberculosis case detection and associated factors with KAP among urban health extension professionals working in Addis Ababa, Ethiopia, in 2019.

The research team included one principal investigator, four degree graduates as data collectors and two advisors from Addis Ababa University.

**Purpose of the Research Project:**

The purpose of this study was to assess the level of knowledge, attitude and practice of urban health extension professionals and associated factors towards tuberculosis case detection in four selected sub cities in Addis Ababa. Doing so is one of the critical issues in order to design appropriate strategies to improve their case detection ability based on the findings.

**Procedure:**

You are kindly invited to take part in this research because I believe you can provide the necessary information for the research. Participation into the study is on voluntary basis. If you are willing to participate in this project, self-administered questionnaire will be provided to you and you will provide your response on the questionnaires.

All the responses given by the participants and the results obtained will be kept anonymous and confidential. No one outside the research team will have access to your responses.

**Risk and /or Discomfort:**

By participating in this research project the respondents might feel that it have some discomfort especially wasting their time (around 30 minutes) but this might not be too much. Risk of participating in this study is nil since the study doesn't need collecting any samples.

**Benefits:**

There might not be direct benefit to the respondent of this study in participating on this research project. But, participation of the study subjects in this study project will help them to understand and internalize some issues addressed in the questionnaire. The greatest benefit from participating in this study is that it will help to develop better intervention strategies to improve the case detection by UHE-ps and will help to improve their performance and hence will improve the general health condition of their community.

**Confidentiality:**

The information that we will be collected from this research project will be kept confidential. Information about you that will be collected from the study will be stored in a file, which will not have your name on it, and it will not be revealed to anyone except the principal investigator. Your participation in this study is voluntary.

**Right to Refusal or Withdraw:**

You have a full right to refuse from participating in this research (they have a right not to respond to some or all the questions) if you do not wish to participate; and this will not affect you. You have also a full right to withdraw from this study at any time you wish, without losing any rights from this project.

**Content and Duration of the Questionnaire:** This questionnaire will look into the details like socio demographic characteristics, knowledge, attitude, practice questions and other general or tuberculosis case detection related factors and questions. Approximately the questionnaire will take 25-30 minutes to give complete response.

**Person to contact:**

This research project will be reviewed and approved by the Research Ethical Committee (REC) of the Addis Ababa University, collage of health science, school of public health. If you want to know more information, you can contact the Research and Ethical Committee through the address below.

Investigator: Temesgen Markos

Mob +251-912939958

Email [tmsgnmarkos@gmail.com](mailto:tmsgnmarkos@gmail.com)

Or [temesgen.markos@moh.gov.et](mailto:temesgen.markos@moh.gov.et)

Advisors: Dr.Mesfin Addise (MD, MPH)

Email [shewit91@yahoo.com](mailto:shewit91@yahoo.com)

Mobile: - +251 0911406790

## Annex II. Consent

Dear respondent I am conducting a study on the knowledge, attitude and practice towards tuberculosis case detection among urban health extension professionals working in selected four sub-cities in Addis Ababa.

The main purpose of the study is that, to assess the level of knowledge, attitude and practice of urban health extension professionals towards tuberculosis case detection. To attain this purpose your honest and genuine participation is very important and highly appreciable. I, therefore, kindly request you to fill this questionnaire as accurately and carefully as possible. Please be assured that all the information gathered will be kept strictly confidential and you do not need to write your name on any part of the questionnaire. Only the researcher has the access of the information and used it for the study purpose only. You have a full right and decision not to respond all the questions or partly.

Are you willing to participate in this study?

Yes [ ]

No [ ]

If yes, proceed to self-administered questionnaire below; If No, thank you!

**Result of interview;** 1) completed 2) partially completed 3) refused 4) others

Witness: signature certifying that the informed consent has been given

Data collector name -----

Signature ----- date -----

**Annex III: - Questionnaire- English version**

**A questionnaire to assess the level of knowledge, attitudes and practice towards tuberculosis case detection and associated factors among urban health extension professionals working in Addis Ababa.**

**Consent:**

My name is **Temesgen Markos**. I am public health (master’s degree) in Addis Ababa University. For my thesis I am conducting a study on knowledge, attitude and practice towards tuberculosis case detection among urban health extension professionals working in Addis Ababa, in selected four Sub-Cities. I would like to ask you some questions. To complete the questionnaire it will take about 30 minutes. Any information that you provide will be kept strictly confidential and will not be shown to any other people.

Are you willing to Participate? Yes \_\_\_\_\_ No \_\_\_\_\_

**Individual questionnaire Identification** \_\_\_\_\_

**Data collection date** \_\_\_\_\_

**Name of the Sub-city** \_\_\_\_\_

**Name of the woreda** \_\_\_\_\_

For more information: - Temesgen Markos (PI) cell phone: - +251912939958,  
email: - [tmsgnmarkos@gmail.com](mailto:tmsgnmarkos@gmail.com)

Dr Mesfin Addise (Main Advisor), cell phone ....., email: - [shewit91@yahoo.com](mailto:shewit91@yahoo.com)

**PART 1:- SOCIO-DEMOGRAPHIC STATUS**

No	Questions	Answers	Skip
101	Age in years	-----	
102	Marital status	Single -----1	

		Married -----2 Divorced -----3 Widowed -----4 Separated -----5	
103	What is the highest level of education that you have completed?	-----	
104	Work experience as UHE-ps in years	-----	

**PART 2:- FACTORS RELATED TO KAP OF UHE-PS TOWARDS TB CASE  
DETECTION AND SOME GENERAL QUESTIONS**

No	Questions	Response	skip
201	Which of the following factors do you think are affecting KAP of tuberculosis case detection? (multiple answers are possible)	<ul style="list-style-type: none"> <li>• Commitment of the UHE-ps -----1</li> <li>• Problem solving ability of the UHE-ps-----2</li> <li>• Confidence -----3</li> <li>• Other (specify) -----</li> </ul>	
202	Which of the following factors can affect KAP of UHE-ps in detecting TB suspect cases in the community? (multiple answers are possible)	<ul style="list-style-type: none"> <li>• Closed doors -----1</li> <li>• Stigma &amp; discrimination on TB patients by the society -----2</li> <li>• Transport costs of TB patients-----3</li> <li>• Older/younger age of clients -----4</li> <li>• Other (specify) -----</li> </ul>	
203	Which of the following have been affecting the case finding ability of UHE-ps?	<ul style="list-style-type: none"> <li>• Training on tuberculosis -----1</li> <li>• Supportive supervision -----2</li> <li>• Workloads/urgent tasks -----3</li> <li>• Presence/absence of guidelines/package -----4</li> </ul>	

		• Others (specify) -----	
204	Have you ever been supervised by someone responsible to supervise you?	Yes -----1 Never supervised by anyone -----2	If NO skip to Q207
205	If YES for question number 204, how frequently your supervisor has been supervising you?	Weekly-----1 Twice a month -----2 Other (specify) -----	
206	From whom you have been getting supportive supervision? (multiple answer is possible)	Only Supervisor -----1 Only health center-----2 Others -----	
207	As a health worker in the community level, how do you rate the support of family members/ community's support to the TB patients?	Very good support -----1 Medium support -----2 Low support -----3 No support at all -----4	
208	Have you taken any tuberculosis related training?	Yes -----1 No -----2	If No skip to Q210
209	If "YES" for question number 208, when?	-----	
210	Do you have a community based tuberculosis care guideline/package?	Yes -----1 No -----2	

**PART 3:- QUESTIONS RELATED TO KNOWLEDGE**

No	Questions	Response	skip
301	What is the cause of tuberculosis?	-----	
302	TB is mainly a disease of the lungs, but it can also affect other parts of the body.	True -----1 False -----2 I don't know -----3	
303	A person infected with TB stays infected for a life and may develop the disease at any time in the future	True -----1 False -----2 I don't know -----3	
304	What are the main signs and Symptoms of PTB? (multiple answers possible)	<ul style="list-style-type: none"> <li>• Poor appetite, -----1</li> <li>• Wight loss -----2</li> <li>• Night sweating, -----3</li> <li>• Cough(Persistent, productive, blood stained) -----4</li> <li>• Others -----</li> </ul>	
305	Who is at risk of acquiring TB? (Risk groups for TB?) (Multiple answers possible?)	<ul style="list-style-type: none"> <li>• Diabetic patients -----1</li> <li>• People living with HIV/AIDS-----2</li> <li>• Children under the age of five and elderly people-----3</li> <li>• People who have close contact with active TB cases -----4</li> <li>• Other (specify) -----</li> </ul>	
306	How can a person prevent getting TB infections? (multiple answers are possible)	<ul style="list-style-type: none"> <li>• Opening windows at home -----1</li> <li>• Good nutrition -----2</li> <li>• Cooking caw milk before feeding -----3</li> <li>• Other, (specify)-----</li> </ul>	

307	A TB contact is a person who has been living with a confirmed TB patient.	<ul style="list-style-type: none"> <li>• True -----1</li> <li>• False -----2</li> <li>• I don't know -----99</li> </ul>	
308	What is the main aim of tuberculosis treatment? (multiple choice is possible)	<ul style="list-style-type: none"> <li>• Cure the patient from TB ----- 1</li> <li>• Decrease TB transmission ----- 2</li> <li>• Prevent death from TB disease ----- 3</li> <li>• Prevent the development of acquired drug resistance ---4</li> <li>• Other (specify) -----</li> </ul>	
309	How many phases a TB treatments do have?	<ul style="list-style-type: none"> <li>• One -----1</li> <li>• Two -----2</li> <li>• I don't know -----99</li> <li>• Other (specify) -----</li> </ul>	
310	DOT is the most effective strategy for making sure patients take their medicines.	<ul style="list-style-type: none"> <li>• True -----1</li> <li>• False -----2</li> <li>• I don't know -----3</li> </ul>	

**Part 4:- QUESTIONS RELATED TO ATTITUDE**

No	Questions	Response	skip
401	Do you agree that community engagement is essential for the control of TB?	Strongly agree-----1 Agree -----2 Neutral -----3	

		Disagree -----4 Strongly disagree-----5	
402	Do you think that the training provided to you was important to improve your knowledge, attitude and practice towards TB case detection	Strongly agree-----1 Agree -----2 Neutral -----3 Disagree -----4 Strongly disagree-----5	
403	Do you think that enough recognition or motivation was given to best performers of TB case detection	Strongly agree-----1 Agree -----2 Neutral -----3 Disagree -----4 Strongly disagree-----5	
404	I am happy to help any TB patients whom I get during my home to home visit	Strongly agree-----1 Agree -----2 Neutral -----3 Disagree -----4 Strongly disagree-----5	
405	Do you believe that continuous supportive supervision can improve my practice of identifying TB suspect cases in the community	Strongly agree-----1 Agree -----2 Neutral -----3 Disagree -----4	

		Strongly disagree-----5	
406	Do you think that properly documenting TB patients and suspect cases date is helpful for effective follow-ups of TB case?	Strongly agree-----1 Agree -----2 Neutral -----3 Disagree -----4 Strongly disagree-----5	
407	Do you think that Minimizing urgent/unplanned tasks can increase our capacity of TB case detection?	Strongly agree-----1 Agree -----2 Neutral -----3 Disagree -----4 Strongly disagree-----5	
408	Do you believe that stigma and discrimination is a concern for TB patients in a community where you have been working?	Strongly agree-----1 Agree -----2 Neutral -----3 Disagree -----4 Strongly disagree-----5	

## Part 5:- QUESTIONS RELATED TO PRACTICE

No	Questions	Response	Skip
501	Have you ever had household visit for TB patients/suspects in the last 6 months?	<ul style="list-style-type: none"> <li>• Yes -----1</li> <li>• No -----2</li> </ul>	
502	If “Yes” for question number 501, how frequently do you have home visits for TB patients/suspects?	<ul style="list-style-type: none"> <li>• Every day -----1</li> <li>• Twice a week -----2</li> <li>• Every week -----3</li> <li>• Other (specify) -----</li> </ul>	<b>If No skip to Q #503</b>
503	If “No” for question number 501, what are the reasons for not to visit households?	<ul style="list-style-type: none"> <li>• -----</li> <li>• -----</li> </ul>	
504	What services do you have been providing for households/ community during home visits/in the community regarding tuberculosis prevention and control program?	<ul style="list-style-type: none"> <li>• Health education -----1</li> <li>• Referral of suspect cases -----2</li> <li>• Contact tracing -----3</li> <li>• Defaulter tracing -----4</li> <li>• Other (specify) -----</li> </ul>	
505	Have you had involved in case detection of tuberculosis?	<ul style="list-style-type: none"> <li>Yes -----1</li> <li>No -----2</li> </ul>	If No skip to Q#510 →
506	As UHE-ps during your routine house to house visits, what is your experience of asking every person for “cough more than two weeks”?	<ul style="list-style-type: none"> <li>• Always -----1</li> <li>• Sometimes -----2</li> <li>• Never asked for -----3</li> <li>• Other(specify) -----</li> </ul>	
507	As UHE-ps, how often you have been referring Tb suspect cases to the catchment health center?	<ul style="list-style-type: none"> <li>Always -----1</li> <li>Sometimes -----2</li> <li>Other (specify) -----</li> </ul>	
508	How often have you been getting	Always for all referred cases-----1	

	feedback from the health centers for the cases you have referred to?	Sometimes -----2 Never getting feedbacks -----3 Other (specify) -----	
509	What are the main challenges you have been facing regarding referral of Tb suspect cases to the HCs?	<ul style="list-style-type: none"> <li>• -----</li> <li>• -----</li> </ul>	
510	Do you have formal relation with the health centre's TB department/focal persons	Yes -----1 No -----2	
511	Are you regularly using the Tb guideline/package?	Yes -----1 No -----2	

Annex IV: - Amharic version questionnaire

በአዲስ አበባ ከተማ ውስጥ የሚሰሩ የከተማ ጤና ኤክስቴንሽን ባለሙያዎች በሳምባ ነቀርሳ(ቲቢ) በሽታ ልዩታ ላይ ያላቸውን የእውቀት፣ አመለካከትና ክህሎት ደረጃቸውን ለማጥናት የተዘጋጀ መጠይቅ

ለጥናቱ ተሳታፊዎች የፍቃደኝነት መጠየቂያ ቅጽ

ጤና ይስጥልኝ ስሜ ተመስገን ማርቆስ ይባላል። በአዲስ አበባ ዩኒቨርሲቲ የድህረ ምረቃ ተማሪ ሲሆን ለጥናታዊ ጽሁፍ የሚሆን መረጃ በመሰብሰብ ላይ እገኛለሁ። ጥናታዊ ጽሁፉ በሳንባ ነቀርሳ(ቲቢ) በሽታ ልዩታ (tuberculosis case detection) ላይ የከተማ ጤና ኤክስቴንሽን ባለሙያዎች ያላቸውን እውቀት፣ አመለካከትና ልምድ እንዲሁም ተያያዥነት ያለቸው ጉዳዮች(factors) ላይ ነው። ሁሉንም ጥያቄዎች ሞልቶ ለመጨረስ 30 ደቂቃ ይፈጃል።

የሚሰጡት ማንኛውም መረጃ ምስጥራዊነቱ የሚጠበቅ ሲሆን ሙሉ ለሙሉ ለምርምር ስራ ብቻ የሚውል ይሆናል። ጥናቱ ላይ በመሳተፍዎ የሚያገኙት ልዩ ጥቅም አይኖርም ነገር ግን የሚሰጡት መረጃ ለመንግስትም ሆነ ለሚመለከታው አካል የጤና ኤክስቴንሽን ባለሙያዎችና በቲቢ መቆጣጠርና መከላከል አገልግሎት ዙሪያ የሚደረጉ የማሻሻያ ጥረት የሚረዳ ይሆናል። ይህም ለእርሶም ሆነ አገልግሎት ለሚሰጡት ማህበረሰብ ጠቃሚ ይሆናል። መመለስ ያልፈለጉትን ጥያቄ መተው እንዲሁም ማቋረጥ ይችላሉ። ነገር ግን መረጃው የጤና ኤክስቴንሽን ባለሙያዎች ከቲቢ በሽታ ልዩታ ጋር ተያያዥ ክፍተቶችን ለማስተካከል ጠቃሚ ነው።

ጥናቱ ላይ ለመሳተፍ ፈቃደኛ ነዎት? አዎ  ፈቃደኛ አይደለሁም

የመጠይቁ መለያ ቁጥር \_\_\_\_\_

መረጃዎ የተሰበሰበበት ቀን \_\_\_\_\_

ክፍለ ከተማ \_\_\_\_\_

ወረዳ/ጤና ጣቢያ \_\_\_\_\_

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**ክፍል 1:- ማህበራዊና ኢኮኖሚያዊ ሁኔታ**

ተ.ቁ	ጥያቄዎች	መልስ	ዝላል
101	እድሜ (በአመት)	-----	
102	የጋብቻ ሁኔታ	ያላገባች-----1 ያገባች -----2 የፈታች -----3 ባሏ የሞተባት -----4 የተለያዩች-----5	
103	አሁን ያሉበት ከፍተኛው የትምህርት ደረጃ (በመማር ላይ ያሉበትን የት/ት ደረጃ አያካትትም)	-----	
104	በጤና ኤክስቴንሽን ባለሙያነት ስንት አመት የስራ አገልግሎት አለዎት?	-----	

**ክፍል 2:- አጠቃላይ ጥያቄዎችና ከቲቢ በሽታ እውቀት፣አመለካከትና ልምድ ጋር ተያያዥነት ያላቸው ጉዳዮች**

ተ.ቁ	ጥያቄዎች	መልስ	ዝላል
201	የቲቢ በሽታ ልዩ ባይ ላይ ከሚከተሉት ጉዳዮች የትኛው ተጽዕኖ ያሳድራል ብለው ያስባሉ? (ከአንድ በላይ መልስ መስጠት ይቻላል)	የጤና ኤክስፔንሽን ባለሙያዎ ቁርጠኝነት /Commitment/-----1 የጤና ኤክስፔንሽን ባለሙያዎ ለችግሮች መፍትሄ የመስጠት ችሎታዎ-----2 ድፍረት(Confidence)-----3 ሌላ ካለ ይጠቀስ -----	
202	የቲቢ በሽታ ልዩ ባይ ከጤና ኤክስፔንሽን ባለሙያዎ ቁጥጥር ወጪ ከሆኑ ጉዳዮች የትኛው ተጽዕኖ ያሳድራል ብለው ያስባሉ? (ከአንድ በላይ መልስ መስጠት ይቻላል)	የመኖሪያ ቤቶች ዝግ መሆን-----1 ለቲቢ ታማሚዎች በማህበረሰቡ የሚደርሰው መድሎና ማግለል-----2 የትራንስፖርት ወጪ-----3 እድሜያቸው ገና ልጅ የሆኑ/እድሜያቸው የገፋ ሰዎች-4 ሌላ ካለ ይጠቀስ -----	
203	ከሚከተሉት መካከል የትኛው ጉዳይ የቲቢ ተጠርጣሪዎችን ፈልጎ የማግኘት ችሎታ ላይ ተጽዕኖ እያሳደረብዎት ነው?	ስልጠና (ቲቢን በተመለከተ)-----1 ድጋፋዊ ክትትል-----2 የስራ ጫና/ደራሽ ስራ-----3 መመሪያ /guidelines/መኖገር ወይም አለመኖር/---4 ሌላ ካለ ይገለጽ -----	
204	ድጋፋዊ ክትትል ለማድረግ ሀላፊነት ከተሰጠው አካል ድጋፍዎ ክትትል ተደርጎሎት ያወቃል?	አዎ-----1 ተደርጎ አያወቅም -----2	መልሱ አይደለም ስያሜ ወደ ጥያቄ ቁጥር 207 ይለፉ
205	የጥያቄ ቁጥር 4 መልስ አዎ ከሆነ ሱፐርቫይዘር በየስንት ጊዜ ነው ድጋፋዊ ክትትል የሚያደርግሎት?	በየሳምንቱ -----1 በወር ሁለት ጊዜ -----2 ሌላ ካለ ይገለጽ-----	

206	<p>የድጋፋዊ ክትትል የሚደረግለት ከማን ነው?(ከአንድ በላይ መልስ መስጠት ይቻላል)</p>	<p>ከሱፐርቫይዘር -----1  ከጤና ጣቢያ -----2  ከሌሎች(ይጠቀስ)-----</p>	
207	<p>እንደአንድ በማህበረሰብ ደረጃ እንደሚሰራ የጤና ባለሙያ ለቲቢ ታማሚዎች ቤተሰብ/የማህበረሰቡ የሚያደርገውን ድጋፍ እንዴት ይገልጹታል?</p>	<p>በጣም ጥሩ ድጋፍ ያደርጋል-----1  መካከለኛ ነው-----2  ዝቅተኛ የሆነ ድጋፍ-----3  ምንም ዓይነት ድጋፍ አይሰጥም-----4</p>	
208	<p>ከቲቢ ጋር ተዛማጅነት ያለውን ስልጠና ወስደው ያውቃሉ? (ይህ መረጃ ከሚሰበሰቡበት ጊዜ ወደኋላ ባለው አንድ አመት ውስጥ)</p>	<p>አዎ-----1  አይደለም-----2</p>	<p>መልስዎ አይደለም  → ከሆነ ወደ ጥያቄ ቁጥር 210 ይለፉ</p>
209	<p>ለጥያቄ ቁጥር 208 መልስዎ አዎ ከሆነ መቼ?</p>	<p>-----</p>	
210	<p>የማህበረሰብ አቀፍ ቲቢ አገልግሎት መመሪያ/ፓኬጅ አለዎት?</p>	<p>አዎ-----1  አይደለም-----2</p>	

ክፍል 3:- ስለቲቢ በሽታ ያለውን እውቀት መጠይቆች			
ተ.ቁ	ጥያቄዎች	መልስ	ዝላል
301	የቲቢ በሽታ አምጪ ተህዋስ ምንድነው?	-----	
302	ቲቢ በዋናነት የሳንባ በሽታ ሲሆን ሌሎች የሰውነት ክፍሎችንም ያጠቃል	እውነት -----1 ሀሰት -----2 አላውቅም -----3	
303	በቲቢ በሽታ የተበከለ(infected) ሰው ለህይወት ዘመኑ በሙሉ እንደተበከለ የሚቆይ ሲሆን ወደፊት በማንኛውም ጊዜ በበሽታው ልታመም ይችላል	እውነት -----1 ሀሰት -----2 አላውቅም -----3	
304	የሳምባ ቲቢ ዋና ዋና ምልክቶች ምንድናቸው? (ከአንድ በላይ አማራጭ መስጠት ይቻላል)	የምግብ ፍላጎት መቀነስ -----1 ክብደት መቀነስ-----2 የሌሊት ላብ-----3 ሳል(የማያቋርጥ፣ አክታ ያለው፣ ደም የቀላቀለ)-----4 ሌላ ካለ ይገለጽ-----	
305	በቲቢ በሽታ ለመያዝ ይበልጥ ተጋላጭ የሆነው የማህበረሰብ ክፍል የቱ ነው? (Risk groups for TB?) (ከአንድ በላይ አማራጭ መስጠት ይቻላል)	<ul style="list-style-type: none"> <li>• የስኳር በሽታዎች-----1</li> <li>• በደማቸው ኤችአይቪ ያለባቸው ሰዎች-----2</li> <li>• እድሜያቸው ከ5 አመት በታች የሆኑ ህጻናትና እድሜያቸው የገፋ ሰዎች-----3</li> <li>• ከቲቢ ታማሚዎች ጋር የቅርበት ግንኙነት ያላቸው ሰዎች-----4</li> <li>• ሌላ ካለ ይገለጽ-----</li> </ul>	
306	በቲቢ በሽታ እንዳይያዙ እንዴት መከላከል ይቻላል? (ከአንድ በላይ አማራጭ መስጠት ይቻላል)	ቤት ውስጥ መስኮት በመክፈት-----1 ጥሩ የሆነ አመጋገብ -----2 ወተትን ከመጠጣት በፊት ማፍላት-----3	

		ሌላ ካለ ይገለጹ-----	
307	ከተቤ. ጋር ግንኙነት ያለው ሰው (TB contact) ማለት በምርመራ የተረጋገጠ ቲቤ በሽታ ካለበት ሰው ጋር አብሮ የሚኖር ሰው ማለት ነው።	እውነት -----1 ሀሰት -----2 አላውቅም -----3	
308	የተቤ. በሽታ ህክምና ዋና አላማ ምንድነው? (ከአንድ በላይ አማራጭ መስጠት ይቻላል)	ታማሚውን ከበሽታው ማዳን----- 1 የበሽታው ስርጭት መቀነስ----- 2 በተቤ. ምክንያት የሚመጠውን ሞት ለማስቀረት--- 3 የተቤ. በሽታ መድሃኒት መላመድን ለመከላከል----- 4 ሌላ ካለ ይጠቀስ -----	
309	የተቤ. ህክምና ስንት ደረጃዎች (phases) አሉት?	አንድ-----1 ሁለት-----2 አላውቅም-----3 ሌላ ካለ ይጠቀስ -----	
310	ቲቤ. ታማሚዎች በባለሙያ ፊት መድሃኒት እንዲወስዱ የማድረግ ዘዴ(DOT) ታካሚዎች መድሃኒታቸውን መውሰዳቸውን እርግጠኛ የምንሆንበት ወጤታማው ዘዴ ነው	እውነት-----1 ወሸት-----2 አላውቅም-----3	

**ክፍል 4 ከአመለካከት ጋር ተዛማጅነት ያላቸው ጥያቄዎች**

ተ.ቁ	ጥያቄዎች	መልስ	ዝላል
401	የቲቢ በሽታን ለመቆጣጠር የማህበረሰብ ተሳትፎ ቁልፍ ነው ብለው ያስባሉ?	በጣም እስማማለሁ-----1 እስማማለሁ-----2 መስማማትም አለመስማማትም አልችልም-----3 አልስማማም -----4 በጣም አልስማማም-----5	
402	የተሰጠዎት ስልጠና የቲቢ በሽታ ልዩታ ላይ ያሉትን እውቀት፤ አመለካከትና ልምድን ለማሻሻል የሚጠቅም ነው ብለው ያስባሉ?	በጣም እስማማለሁ-----1 እስማማለሁ-----2 መስማማትም አለመስማማትም አልችልም-----3 አልስማማም -----4 በጣም አልስማማም-----5	
403	በቲቢ በሽታ ልዩታ ላይ የላቀ አፈጻጸም ላላቸው በቂ እውቅና ወይም ማበረታቻ እየተሰጠ ነው ብለው ያስባሉ?	በጣም እስማማለሁ-----1 እስማማለሁ-----2 መስማማትም አለመስማማትም አልችልም-----3 አልስማማም -----4 በጣም አልስማማም-----5	
404	ቤት ለቤት ጉብኝት በሚደረግበት ጊዜ ማንኛውንም የቲቢ ታካሚን/ተጠርጣሪን ለመርዳት በጣም ዝግጁ ነኝ ብለው ያስባሉ?	በጣም እስማማለሁ-----1 እስማማለሁ-----2 መስማማትም አለመስማማትም አልችልም-----3 አልስማማም -----4	

		በጣም አልስማማም-----5	
405	ተከታታይነት ያለው ድጋፋዊ ክትትል ከማህበረሰብ ውስጥ የቲቢ ተጠርጣሪዎች ልዩታ ላይ ያለኝን ልምድ ያሻሽላል ብለው ያስባሉ?	በጣም እስማማለሁ-----1 እስማማለሁ-----2 መስማማትም አለመስማማትም አልችልም-----3 አልስማማም -----4 በጣም አልስማማም-----5	
406	የቲቢ ታማሚዎችና የተጠርጣሪዎችን መረጃ በአግባቡ አደራጅቶ መያዝ ታማሚዎችን ውጤታማ በሆነ መልኩ ለመከታተል ጠቃሚ ነው ነው ብለው ያስባሉ?	በጣም እስማማለሁ-----1 እስማማለሁ-----2 መስማማትም አለመስማማትም አልችልም-----3 አልስማማም -----4 በጣም አልስማማም-----5	
407	ደራሽ/ያልታቀዱ ስራዎችን መቀነስ የቲቢ ተጠርጣሪዎች ልዩታ አቅምን ይጨምራል ብለው ያስባሉ?	በጣም እስማማለሁ-----1 እስማማለሁ-----2 መስማማትም አለመስማማትም አልችልም-----3 አልስማማም -----4 በጣም አልስማማም-----5	
408	እርሶ በሚሰሩበት ማህበረሰብ ውስጥ ለቲቢ ታማሚዎች መድሎና መገለል ችግር ነው ብለው ያስባሉ?	በጣም እስማማለሁ-----1 እስማማለሁ-----2 መስማማትም አለመስማማትም አልችልም-----3 አልስማማም -----4 በጣም አልስማማም-----5	

**ክፍል 5 የተግባር/የክህሊት ጥያቄዎች**

ተቁ	ጥያቄዎች	መልስ	ዝላል
501	ባለፉት ስድስት ወራት ውስጥ ለተቤታማሚዎች/ተጠርጣሪዎች ቤት ለቤት ጉብኝት አድርገው ያወቃሉ?	አዎ -----1 አይደለም-----2	የጥያቄ ቁ1 መልስ አይደለም ከሆነ ወደ ጥያቄ ቁጥር 3 ይለፉ
502	ለጥያቄ ቁጥር 1 መልስዎ አዎ ከሆነ ለተቤታማሚዎች መቼ መቼ ጉብኝት ያደርጋሉ?	በየቀኑ -----1 በሳምንት ሁለት ቀን-----2 በየሳምንቱ -----3 ሌላ ካለ ይጠቀስ -----	
503	ለጥያቄ ቁጥር 1 መልስዎ አይደለም ከሆነ ጉብኝት ላለማድረግዎ ምክንያት ምን ሊሆን ይህላል?	----- -----	
504	በማህበረሰብ/ቤት ለቤት ጉብኝት በሚደረግበት ጊዜ ተቤታማሚዎች መቆጣጠር ፕሮግራምን በተመለከተ ምን ምን አይነት አገልግሎቶችን ይሰጣሉ?	የጤና ትምህርት መስጠት-----1 ተጠርጣሪን ወደ ጤና ተቋም መላክ-----2 ከተቤታማሚ ጋር ግንኙነት ያላቸውን ሰዎች መለየት-----3 መድኃኒት ያቋረጡትን መለየት-----4 ሌላ ካለ ይገለጽ-----	
505	በተቤታ ልዩታ ስራ ላይ ተሳትፈው ያወቃሉ?	አዎ -----1 አይደለም-----2	መልሱ አይደለም ከሆነ ወደ ጥያቄ ቁጥር 510 ይለፉ
506	እንደ ጤና ኤክስፔንሽን ባለሙያነትዎ ቤት ለቤት ጉብኝት በሚያደርጉበት	ሁልጊዜ እጠይቃለሁ -----1 አንዳንዴ እጠይቃለሁ-----2	

	ወቅት እያንዳንዱን ሰው "ከሁለት ሳምንት በላይ የቆየ ሳል" መኖር አለመኖሩን የመጠየቅ ልምድ ምን ይመስላል?	ጠይቁ አላውቅም-----3 ሌላ ካለ ይጠቀስ -----	
507	እንደ ጤና ኤክስፔንሽን ባለሙያነት ወይ የተባባሰ ተጠርጣሪዎችን ሲያገኙ ወደ አጥቢያ ጤና ጣቢያ (catchment health center) መቼ መቼ ይልካሉ?	ሁልጊዜ-----1 አንዳንዴ-----2 ሌላ ካለ ይጠቀስ -----	
508	ተባባሰ ተጠርጣሪን ለምርመራ ከላኩበት አጥቢያ ጤና ጣቢያ (catchment health center) ምን ያክል ግብረ መልስ እያገኙ ነው?	ሁልጊዜ ለሁሉም ተጠርጣሪዎች -----1 አንዳንዴ-----2 ምንም አይነት ግብረመልስ እያገኘሁ አይደለም----3 ሌላ ካለ ይጠቀስ -----	
509	የተባባሰ ተጠርጣሪዎችን ወደ ጤና ጣቢያ ከመላክ አንጻር እያጋጠሙ ያሉ ዋና ዋና ተግዳሮቶች ምን ምን ናቸው?	• ----- • -----	
510	ከጤና ጣቢያው የተባባሰ አገልግሎት ክፍል/ተጠሪ ባለሙያ ጋር መደበኛ የስራ ግንኙነት አለዎት?	አዎ -----1 የለኝም-----2	
511	የተባባሰ መመሪያ/ፓኬጅ በመደበኛነት ይጠቀማሉ?	አዎ -----1 የለኝም-----2	

**ANNEX V. Supporting letters for different organizations**

**ADDIS ABABA UNIVERSITY  
College of Health Sciences  
School of Public Health  
Ethical Clearance Form**

Date: / \_\_\_ / \_\_\_ / \_\_\_ /  
Ref. No.                      SPH/                      /11

Project number: / 001 /

Date of approval: (D/M/Y)      11/ 2 /2019 /	
Project Title: Knowledge, attitude and practice towards tuberculosis case detection among urban health extension professionals working in Addis Ababa, Ethiopia 2019.	
Name of PI: Temesgen Markos	Phone Number _____
Institution	School of Public Health
Department	Extension /GMPH
Decision of Research and Ethics Committee:	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Approved with Recommendation <input type="checkbox"/> Resubmission <input type="checkbox"/> Disapproved
Valid until	February 5, 2019- July, 2019

Dean, School of Public Health

Signature \_\_\_\_\_

Date /                      /                      /





ሕጠ/ 788 /11  
መ.ጋ.ቤ.ት 5 ቀን 2011 ዓ.ም.

ለ: አዲስ አበባ ከተማ አስተዳደር ጤና ቢሮ  
አዲስ አበባ

ጉዳይ: የትብብር ደብዳቤን ይመለከታል።

በአዲስ አበባ ዩኒቨርሲቲ የሕብረተሰብ ጤና ት/ቤት በተከታታይ ትምህርት ክፍለ ጊዜ ትምህርታቸውን በመከታተል ላይ የሚገኙት ተማሪ ተመስገን ማርቆስ የመመረቅ ዕቅድቸው "Knowledge attitude and practice towards tuberculosis case detection among urban health extension professional is working in Addis Ababa." በሚል ርዕስ ስመስራት በዝግጅት ላይ ይገኛሉ። ስለሆነም በትምህርት ክፍሉ የድጋፍ ደብዳቤ እንዲጻፍላቸው በጠየቁት መሠረት በእናንተ በኩል እስፊላው ትብብር እንዲደረግላቸው እንጠይቃለን።

ከሰላምታ ጋር  
  
ንግሥት ዳሙን ኃ/ማርያም  
ሕብረተሰብ ጤና ት/ቤት ዲ.ን.አ.ሀ. ሳይንስ ኮሌጅ  




አዲስ አበባ ከተማ አስተዳደር ጤና ቢሮ  
City Government of Addis Ababa Health Bureau

Ref.No. 2/2/ጤ/36309/227

Date 26/7/2011

- Lideta Sub-City Health Office
- Gulelle Sub-City Health Office
- Akaki Kality Sub-City Health Office
- Kirkos Sub-City Health Office
- Yeka Sub-City Health Office

Addis Ababa

**Subject:** Request to access Health Facilities to conduct approved research

This letter is to support TEMESGEN MARKOS to conduct research, which is entitled as "KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS TUBERCULOSIS CASE DETECTION AMONG URBAN HEALTH EXTENSION PROFESSIONALS WORKING IN ADDIS ABABA, ETHIOPIA 2019." was duly reviewed and approved by Addis Ababa Health Bureau IRB, and the principal investigator is informed with a copy of this letter to report any changes in the study procedures and submit an activity progress report to the Ethical Committee as required. Therefore we request the Health facility and staffs to provide support to the Principal investigator.



With Regards

Dr. Mohammed W/Kidan  
Ethical Clearance committee

Cc

→ TEMESGEN MARKOS

- To Ethical Clearance Committee  
Addis Ababa



በአቃቲ ቃሊቲ ክፍለ-ከተማ አስተዳደር  
የጤና ጽ/ቤት  
AKAKI-KALITY SUB CITY ADMINISTRATION  
HEALTH OFFICE

ቁጥር:- አቃ/ቃ/ሀ/ሀ/ጤ/ጽ/ 1303/11

ቀን:- 30/08/2011 ዓ.ም.

ለሳሪስ ጤና ጣቢያ  
ለቃሊቲ ጤና ጣቢያ  
ለሰርጫ ጤና ጣቢያ  
ገላጌ ጤና ጣቢያ  
አቃቂ ጤና ጣቢያ  
ኪላ ጤና ጣቢያ  
ሰላም ፍሬ ጤና ጣቢያ  
ወረዳ 5 ጤና/ዕ/ቤት  
ወረዳ 10 ጤና/ዕ/ቤት  
ወረዳ 11 ጤና/ዕ/ቤት  
ወረዳ 12 ጤና/ዕ/ቤት  
ኒዲስ አበባ

ጉዳዩ:- ትብብር ስለመጠየቅ

አቶ ተመስገን ማርቆስ በክፍለ ከተማችን በሚገኙ ጤና ጣቢያዎች እና ወረዳዎች በ-KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS TUBERCULOSIS CASE DETECTION AMONG URBAN HEALTH EXTENSION PROFESSIONALS WORKING IN ADDIS ABABA, ETHIOPIA, 2019 G.C >> ላይ ጥናት እንዲያደርጉ በቁጥር አ/ሀ/ጤ/36309/227 በቀን 27/07/2011 ከአዲስ አበባ ከተማ ጤና ቢሮ በተጻፈ ደብዳቤ ተገልጿል በዚህ መሰረት በየጤና ጣቢያዎች እና ወረዳዎች ለሚያደርጉት ጥናት አስፈላጊውን ትብብር እንዲደረግላቸው እንጠይቃለን።



ከሰላም ፍሬ  
አቶ ግርማ ድማ

ፈ.ውስ እና ተሀደሶ ዋና ስራ ሂደት

ግልጻዊ

አቶ ተመስገን ማርቆስ

☎0118698950፣ 0114390137 ፣0114393506

አአ

መልስ ሲጻፉን የእኛን ቁጥር ይግለጹልን

In replying please quote our Ref. No.



አዲስ አበባ ከተማ አስተዳደር የገሪህ ዘርፍ ከተማ ጤና ጽ/ቤት  
CITY GOVERNMENT OF ADDIS ABABA GULELE SUB-CITY HEALTH OFFICE

ቀን: 08/08/2011 ዓ.ም

ቁጥር: ገ/ክ/ክ/ጤ/ጽ/ቤት/ሰሽ/መ/ክ/502/11

ለአንጣፊ ሩና ጤና ጣቢያ  
ማይጨው ጤና ጣቢያ  
ሽር ሜዳ ጤና ጣቢያ  
ጉቶ ሜዳ ጤና ጣቢያ  
ጥበብ በቀጨኔ ጤና ጣቢያ

አዲስ ህይወት ጤና ጣቢያ  
ህዳሴ ጤና ጣቢያ  
አዲሱ ገበያ ጤና ጣቢያ  
ሰላም ጤና ጣቢያ  
ሸንጌ ጤና ጣቢያ

**ጉዳይ:- ትብብር እንዲደረግላቸው ስለመጠየቅ**

ከላይ በርዕሱ ለመግለጽ እንደተሞከረው በቀን 26/07/2011 ዓም በቁጥር እ/አ/ጤ/36309/227 ክአ.አ ጤና ቢሮ በተጻፈ ደብዳቤ እንደተጠቀሰው ተመስገን ማርቆስ በክፍሉ ከተማችን በሚገኙ በሁሉም የመንግስት ጤና ጣቢያዎች «Knowledge attitude and practice towards tuberculosis case detection among urban health extension professionals working in Addis Ababa, Ethiopia, 2019» በሚል ርዕሰ ጥናት እንዲያካሂዱ የተፈቀደላቸው መሆኑ ተገልጿልናል በመሆኑም ወደ ጤና ተቋማችሁ መረጃ ለመስጠት በሚመጡበት ጊዜ ትብብር እንድታደርጉላቸው እንገልጻለን።



ከሰላምታ ጋር

At

አስፋወሰን ሰለሞን

የህ/ጤ/አደ/መ/ክ/መቆ/ኮፊ.ሰር

**ግልባጭ**  
ሰጤ/ጽ/ቤት  
ለሰሽታ መከላከል ዋና ስራ-ሃደት

በልደታ ከፍል ከተማ አስተዳደር  
ጤና ጽ/ቤት  
የሰው ሀይል አስተዳደር የሰፊ ጊደት



Lideta Sub City Administration office  
Health office  
Human Resource Administration  
Support Process

☎ 0118-722106

✉ 20227/1000

ቁጥር ለክፍለ-መረጃ 1568/11  
Ref.NO:-

ቀን 12/08/11  
Date:-

- ለልደታ ጤና ጣቢያ
- ለተከለሃይማኖት ጤና ጣቢያ
- ለአብነት ጤና ጣቢያ
- ለወ/ሮ በሌላው ጤና ጣቢያ
- ለሀዳሴ ፍሬ ጤና ጣቢያ
- ለዳግም ሀዳሴ ጤና ጣቢያ
- ለወረዳ 5 ጤና ጽ/ቤት
- ለወረዳ 6 ጤና ጽ/ቤት
- ለወረዳ 8 ጤና ጽ/ቤት
- ለወረዳ 9 ጤና ጽ/ቤት
- ልደታ ከ/ከተማ፤

**ጉዳዩ:- ትብብርን ይመለከታል፤**

የአዲስ አበባ ከተማ አስተዳደር ጤና ቢሮ በቁጥር አ/አ/ጤ/36309/227 በቀን 26/07/2011ዓ.ም በተጻፈ ደብዳቤ ተመስገን ማርቆስ በ"Knowledge, Attitude and Practice towards Tuberculosis Case Detection Among Urban Health Extension Professionals Working in Addis Ababa, Ethiopia, 2019." በሚል ርዕስ ጥናት እንዲያደርጉ የተፈቀደላቸው መሆኑን ገልጾልን።

ስለሆነም ተመስገን ማርቆስ ከላይ በተጠቀሰው የጥናት ርዕስ ጉዳይ ላይ በተቋማችሁ ጥናት እንዲያደርጉ አስፈላጊውን ትብብር እንድታደርጉላቸው እየጠየቅን የአዲስ አበባ ከተማ አስተዳደር ጤና ቢሮ የላከውን ደብዳቤ 1 ገጽ ማሰረጃ አያይዘን የላከን መሆኑን ይገልጻለን።

ከሰላምታ ጋር

ፍሬህይወት ሀይል ስዩም  
Firihawot Hailu Seyoum  
የሰው ሀይል አስተዳደር  
ቡድን መሪ



ግልባጭ:-

- ለጤና ጽ/ቤት
- ተመስገን ማርቆስ
- ልደታ ከ/ከተማ፤

የሴቶች መብቶች የሰብአዊ መብቶች ለካል ናቸው ኢድሰን እንግታ ቃላቸንን እንጠብቅ መልስ ሲጽፉ የእኛን ደብዳቤ ቁጥር መጥቀስ አይርሱ።



በየካ ከፍላ ከተማ አስተዳደር ጠፍ ጽ/ቤት

ፊ. 8

City government of Addis Ababa Yeka sub-city Health office

ቁጥር የአ/ከ/ህ/ጠ/ጽ/ቤት/ 334/11  
Ref No

ቀን 27/07/11  
Date

በየካ ከ/ከተማ አስተዳደር

- ለወረዳ 1 ጠና ጣቢያ ~
- ለአካጣጣቂ 1 ጠና ጣቢያ ~
- ለአካጣጣቂ 2 ጠና ጣቢያ ~
- ለወረዳ 4 ጠና ጣቢያ ~
- ለየካ ጠና ጣቢያ ~
- ለወረዳ 6 ጠና ጣቢያ ~

- ለወረዳ 7 ጠና ጣቢያ ~
- ለጠጫ ወረዳ 8 ጠና ጣቢያ ~
- ለከተቤ ጠና ጣቢያ ~
- ለወረዳ 10 ጠና ጣቢያ ~
- ለወረዳ 11 ራዕይ ጠና ጣቢያ ~
- ለወረዳ 12 ጠና ጣቢያ ~
- ለወረዳ 13 ጠና ጣቢያ ~
- ህዳሴ ጠና ጣቢያ ~
- የካ አባይ ጠና ጣቢያ ~

**ጉዳዩ:- የጥናት ጽሁፍ ለመጻፍ ትብብር ስለማድረግ**

ከሳይ ለመግለጽ እንደተሞከረው ተመስጥኝ ማር ቆስ ከአዲስ አበባ ከተማ አስተዳደር ጠና ቢሮ በ26/7/2011 ዓም በቁጥር አ/አ/ጠ/36309/227 በተጻፈ ደብዳቤ በ "KNOWLEDGE ATTITUDE AND PERACTICE TOWARD TUBERCULOSIS CASE DETECTION AMONG URBAN HEALTH EXETENTION PROFESSIONALS WORKING IN ADDISE ABABA, ETHIOPIA 2019" በሚል ርዕስ የጥናት ስራቸውን እንዲሰሩ ድጋፍ እንዲደረግላቸው አሳውቆናል። የደብዳቤውን ኮፒ አያይዘን የሳክን ሲሆን በናንተ በኩል አስፈላጊው ድጋፍ እንዲደረግላቸው እናሳስባለን።



ከሰጣታ ጋር  
  
 Lemel Kebede Tona  
 የራሱ ህክምና ተህዳሮ  
 ማኅ የራሱ ጊደት አስተዳዳሪ

ፋህናቲያ ተገልጋይ አስባሪና ተንክሳሪ እንሆናለን

## **ANNEX VI. Declaration**

I the undersigned declare that this is my original work and has not been presented in this or any other University and all source of materials used for the thesis have been fully acknowledged.

Name of principal investigator: TEMESGEN MARKOS MEKENGO

Signature:- \_\_\_\_\_

Date:- \_\_\_\_\_

Place: Addis Ababa University College of Health Science School of Public Health

Department of General master of public health

This thesis has been submitted for approval to:

Advisor: DR. MESFIN ADDISE (MD, MPH)

Signature:- \_\_\_\_\_

Date:- \_\_\_\_\_