ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES
COLLEGE OF NATURAL AND COMPUTATIONAL SCIENCES

KNOWLEDGE, ATTITUDE AND PRACTICE REGARDING *MYCOBACTERIUM TUBERCULOSIS* AMONG ABIOTKIRS PREPARATORY SCHOOL STUDENTS, ADDIS ABABA

BY
SEWINET WOGARI

A THESIS SUBMITTED TO THE DEPARTMENT OF ZOOLOGICAL SCIENCES IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS OF SCIENCE IN BIOLOGY

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This is to certify that the thesis prepared by Sewinet Wogari in title: 'KNOWLEDGE, ATTITUDE AND PRACTICE REGARDING *MYCOBACTERIUM TUBERCULOSIS* AMONG ABIOTKIRS PREPARATORY SCHOOL STUDENTS, ADDIS ABABA', submitted in partial fulfillment of the requirement for the degree of Master of Science in Biology complies with the regulation of the university and meets the accepted standards with respect to originality and quality.

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Abstract

Tuberculosis (TB) is still among the top ten tropical diseases in the world and affects millions of people in the developing world including Ethiopia. This study aimed to assess the knowledge, attitude and practice (KAP) about TB in Abiotkirs Preparatory School students from September 2019 to October 2019. Qualitative data were collected through well-structured questionnaire and the data analyzed by descriptive statistics. The findings showed that from the total of 76 respondents 64(84.2%) of the students have information about TB and 12(15.8 %) of them have no information. Only 5(6.6%) of participant students gate an information about TB through the activity of co-curricular activity or TB&HIV clubs. Students who got information through TV and radio were 18(23.7%). The participants who indicated that discussion and drama scenes of passing information about TB were 34.2% and18.4% respectively. On the other hand, 14 (14.5%) respondents believed that TB is transmitted by Mosquito bite, 15(19.7%) unsterile sharp instruments, 44 (57.9%) and 17 (22.4%) didn't know the route of transmission of the disease. From the total of 76 respondents only 10(13%)of them had greater than 5000 Birr monthly income while 54(71%) of the respondents had less than 1000 Birr.

It was also recorded that 28.9% of the students were feeling ashamed of having TB as a disease and 46.1% of them did not feel ashamed if they have TB or not and on the other hand 25% of them didn't know their feelings. In conclusion the KAP study showed that there is a need to raise the knowledge, attitude and practice of the students about TB as a public health problem and need att4enction by concerned bodies.

Keywords: Abiotkirs Preparatory school, students, Attitude, knowledge, Practice, Tuberculosis

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I also owe a debt of gratitude to those very resourceful respondents of the questionnaire whom I cannot mention their names for their valuable contribution that helped me a lot in the endeavor to look in to the actual situation of their knowledge attitude and practice.

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Table of contents

Contents page

LIST OF TABLES

LISTS OF FIGURES

Abbreviators /Acronyms

AIDS	Acquired Immunodeficiency Syndrome
ART	Antiretroviral treatment
ARV	Antiretroviral
BCG	Bacillus Chalmette-Guerin
CDC	Central for Disease Control and Prevention
CFR	Case fatality ratio
DPCD	Disease Preventive and Control Department
DOTS	Directly observed treatment Short Course
DNA	Deoxyribonucleic Acid
EPI	Expanded Program on Immunization
ETB	Ethiopian Birr
Euro/HIV	European center for the epidemiological monitoring of AIDS
FMoH	Federal Ministry of Health
HIV	Human Immunodeficiency virus
INH,H	Isoniazid
IPT	Isoniazid preventive treatment
IPTCS	Intervention Prevention Treatment and care services
IUATLD	International Union Against Tuberculosis
KAP	Knowledge, Attitude and practice
LTBI	Latent Tuberculosis Infection
MBT	Mycobacterium Tuberculosis
MDR	Multi-Drug Resistance
MDR-TB	Multi-Drug Resistance Tuberculosis
MoH	Ministry of Health
NTCP	National Tuberculosis Control Program

NTLCP	National Tuberculosis and Leprosy Control Program
NTM	Non-Tuberculosis Mycobacterium
PCR	Polymerase Chain Reaction
PHC	Public Health Center
RNA	Ribonucleic Acid
TB	Tuberculosis
TLCT	Tuberculosis and Leprosy Control Team
TST	Tuberculin Skin Test
WHO	World Health Organization

1.INTRODUCTION

1.1 Background of the Study

Tuberculosis(TB) is an infectious disease caused in most cases by bacteria called *Mycobacterium tuberculosis*. Humans acquire infection by breathing in infectious droplets, which have been expelled from the respiratory tract of infected person. TB mainly infect and damage the lungs, but bacterium may spread to any other part of the body.Ethiopian ranked seventh in the worled for TB burden and third in Africa in 2008, with an estimated TB incidence of 378 new cases per 100,000 persons, 163 new smear positive cases per 100,000 persons and prevelence of 579 per 100,000 persons (WHO,2009). Following an update to estimate for TB cases and in the Africa Region, the most recent WHO estimates for Ethiopia are:annual TB incidence (including HIV positive) of 261 per 100,000; prevelance(including HIV positive) of 394 per 100,000 and mortality (excluding HIV) of 35 per 100,000 people (WHO,2011).

In Ethiopia the proportion of TB with known HIV status is 43% and 15% of those with known HIV status are positive.sixty-nine percent (69%) of TB and HIV co-infected patients have started cotrimoxazole prophylaxis,while 39% are on ART (WHO,2011). Universal testing strategy is prone to missing identification of MDRTB patients in settings where drug-resistant TB is prevalent, and so recommend that universal testing in these settings should be adopted (Laura et al., 2016).

1.2. Statement of the Problem

TB is transmitted through air from infectious person to others while coughing, sneezing, singing or talking. A single cough can bring out up to 4,000 droplets. Most infections do not have symptoms, known as latent tuberculosis. It is estimated that up to 10% of infected persons will gradually develop active TB in their lifetime and fatal up to 50% of patients if left untreated according to WHO, report (2008) Tuberculosis continues to be a major public health problem across the world, including Ethiopia.

The main factors associated with TB acquiring and development of disease and its epidemiological burden includes poverty, infection with HIV, poor nutritional status, smoking,

poor access to health facilities, lack of financial source, lack of awareness and knowledge about the cause, mode of transmission, and symptoms TB, lack health education, socio-economic status and traditional beliefs. These are thought to have an essential impact on the health seeking behavior of patients, delay in diagnosis, treatment compliance and treatment success rate. The chance of contact with a person who has an infectious form of TB, the intimacy and length of that contact, the degree of infectiousness of the case, and the divided environment in which the contact happens are all important determinants of the probability of transmission.

Ethiopia is among the high TB burden countries where the knowledge, attitude and awarness of the population is important for control of the transmission of the disease among the population. However, the dynamics of the relationship between socioeconomic development and TB epidemiology, and the causal pathways that link the transmission of the disease among student were not fully understood. In response, a study to idntify the attitude, knolwledge and behaviour of AbiotKirs preparatory secondary school studnets were designed to fill the afromentioned gap.

1.3. Objectives

1.3.1. General Objective

The study aims at addressing the Knowledge Attitude and Practice (KAP) of Abiotkirs Preparatory School Students about TB.

1.3.2. Specific Objectives

The specific objectives of the study were to:

- Determine the knowledge of students regarding TB
- Know the attitude of the students about TB
- Evaluate the practice of the students on TB

1.4. Significance of the Study

KAPs are an important component in tuberculosis (TB) control, we do not know how much AbiyotKirs preparatory school students know about TB. This study assesses the level of knowledge, attitudes, and practices of the participants. The information generated is useful for running of co-curricular activities such as TB and HIV club and also redesigning the existing practices in the school. Thus, the study findings have an impact in the co-curricular activities of the school and in the meantime in raising KAPs regarding TB disease transmission and control. This align with the country health policy which is pillaring on disease prevention and control.

2. LITERATURE REVIEW

2.1. Mycobacterium Tuberculosis

The International Union Against Tuberculosis Control and Lung Disease (IUATLD), defined tuberculosis as an infectious disease caused in most cases by bacteria called *Mycobacterium tuberculosis* (MTB). Humans acquire usually infection by breathing in infectious droplets, which have been expelled from the respiratory tract of infected person. TB diseases mainly infected and damage the lungs, but bacterium may spread to any other part of the body.

TB has been reported to be the leading killer for the HIV-infected population with weakened immune systems. A quarter of a million TB related deaths were HIV associated, with most of them in Africa (Elizinga *et al*., 2004). WHO (2009) reported that TB inflicts significant socio-economic costs, 98% of deaths occurring in developing world. Fifty-five percent occurred in Southeast Asia and 31% in sub-Saharan Africa, In addition, the death of TB affects mostly young adults in their most productive age (15-50 years).

In 2005, WHO declared TB an emergency in Africa, 3 million of new TB cases were found in Africa, it is accounts for almost one third of the global total, and has the highest incidence 363 and prevalence 475 per 100.000 inhabitants (WHO, 2008). An estimated 1.7 million people died from TB in 2009 in the world, the highest number of deaths was in the Africa Region. Sub-Saharan Africa is experiencing an escalating number of tuberculosis (TB) incidents annually, although other parts of the world seem to more successful in controlling the epidemic such as in Peru, Uruguay, Cuba, (WHO, 2005; WHO, 2009). According the First Ethiopian National Population Based Tuberculosis Prevalence Survey, tuberculosis has been recognized as major public health problem in Ethiopia more than half a century ago. The effect to control tuberculosis began in the early 1960s with the establishment of TB centers and sanatoria in three major urban areas in the country namely Addis Ababa, Asmara and Harar.

2.1.1Aetiological agents and pathogenesis of TB

Robert Koch described the method of staining specimen slides, the method of culturing and Inoculating of the bacilli into animals as he discovered the bacilli in 1895. And this was

considered as a breakthrough in the understanding of TB bacteriology. The discovery enhanced further to the development of finding a remedy for tuberculosis (Sakula, 1982).

Mycobacterium tuberculosis belongs to the genus Mycobacterium. The genus is classified into the Mycobacterium tuberculosis complex, which produces tuberculosis diseases in humans and other non-tuberculosis Mycobacterium species or opportunistic Mycobacteria which can produce disease in immune compromised individuals (Wayne 1982; Drobniewsky *et al.*, 2003). The species that causes tuberculosis in humans and which is responsible for tuberculosis information all around the world is the Mycobacterium tuberculosis, and hence it is epidemiologically the most important (Niemann *et al.*, 2000).

Non-tuberculous mycobacteria (NTM), also known as environmental mycobacteria, which includes a group of prevalent opportunistic pathogens called *M.avium complex* (MAC). NTM is responsible for some infections among immune compromised patients (Niemann *et al.*, 2000).

2.1.2 Pathogenesis of tuberculosis

It is through airborne nuclei droplets that the causative agent Mycobacterium tuberculosis is transmitted. The droplet is passed into the air, when a person infected with pulmonary tuberculosis coughs sneezes or speaks.

When a healthy individual inhales the tubercle nuclei, the first implant is in the lungs at bronchiole or alveolar level happens. The bacilli multiply and produced the primary lesion. Some bacilli pass into the Hilary lymph nodes causing lymph node enlargement. The bacilli from the lesion and from the enlarged Hilary lymph nodes can be more widely disseminated via the lymphatic system or blood circulatory system leading to serious complications such as meningitis, bone, joint and renal tuberculosis (Festenstein and Grange, 1991). Fig 1. The host response to tuberculosis is through cell mediated immunity, and the cells involved include macrophages and T-lymphocytes. The lymphocytes recognize TB antigens and release cytokines such as gamma interferon, which activates macrophages at the site of the lesion (Riley, 1982).

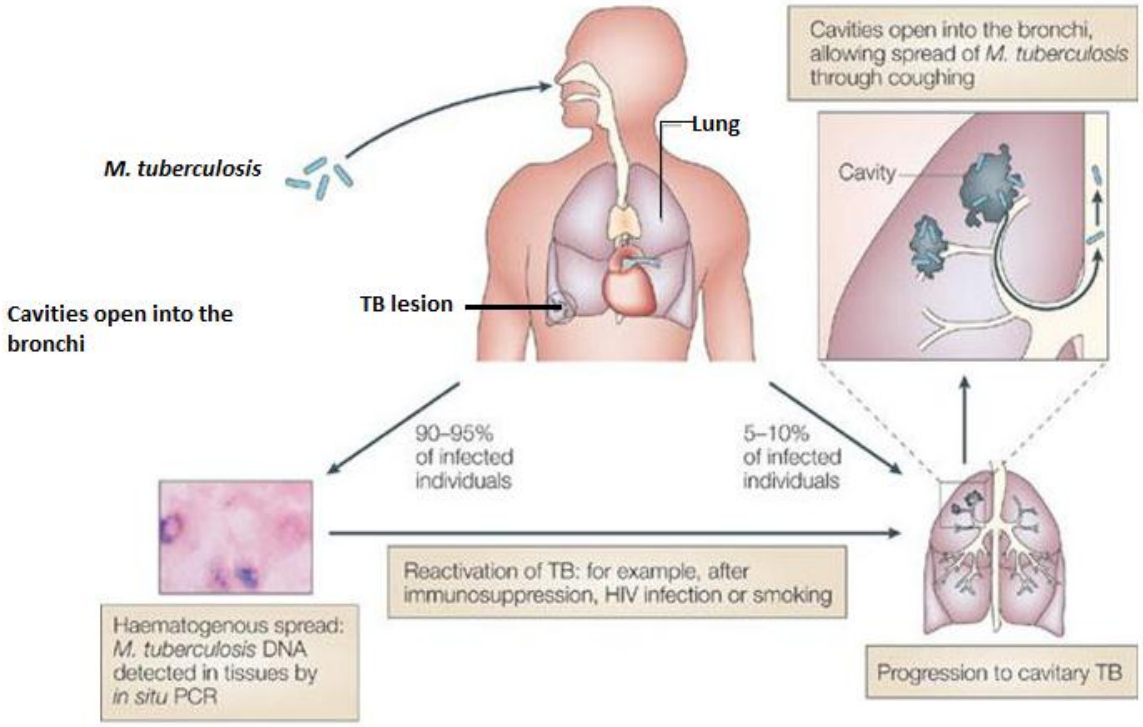

Figure 1: The host response to TB through cell mediated immunity (Adopted from Riley, 1982).

2.2. Diagnostic, Treatment and TB Prevention

2.2.1. Diagnostic

Diagnostic tests include sputum, smears and cultures to identify *M. tuberculosis*, chest X-rays, Tuberculin Skin Test (TST). In developing countries health workers emphasize on the sputum examination, which is in term of coast effectiveness is affordable. Currently, it is diagnosed using molecular diagnostic techniques, the majority of molecular tests have been focused on (i) detection of nucleic acids, both DNA and RNA, that are specific to Mycobacterium tuberculosis, by amplification techniques such as polymerase chain reaction (PCR); and (ii) detection of mutations in the genes that are associated with resistance to antituberculosis drugs by sequencing or nucleic acid hybridization. Recent developments in direct and rapid detection of mycobacteria, with emphasis on M. tuberculosis species identification by 16S rRNA gene sequence analysis or oligo hybridization and strain typing, as well as detection of drug susceptibility patterns, all contribute to these advances (Balasingham *et al.*, 2009).

2.2.2. Treatment

The aim of the treatment is to heal the sick, avoid transmission of the disease, its spread and therefore, decrease morbidity and mortality. The treatment of TB includes anti tuberculosis therapy with daily oral doses of Streptomycin (S); Isoniazid (INH, H); Rifampin Pyrazinamide (Z); Ethambutol (E) for at least 6 months, retreatment required to add injectable drug (streptomycin) during the first two months. Longer courses may be required for patients with AIDS or for patients who respond slowly Nyamathi *et al.,* (2004) After 2 to 4 weeks, the disease generally is no longer infectious. The patient can resume his normal lifestyle while taking medication. Some patient may get side-effects from the antibiotics. The most common side-effects are: nausea, joint pain, visual disturbances, burning sensation in the feet, renal failure, red-orange urine, fever, skin flush, reaction, jaundice (yellow skin or eyes), abdominal pain, dizziness, confessional states Deafness Nyamathi *et al.,* (2004)

2.2.3. TB Prevention

The priority of prevention would be: diagnose patients whose sputum smear is positive and reassuring that patients follow the treatment effective until the end; and sterilize sputum by exposure to sunlight. Insisting on environmental Health: The goal is to reduce the risk from the sputum of patients with undiagnosed contagious. A vaccine against *M. Tuberculosis* is available. It is called BCG (Bacillus of calmette and Guerin, after the two Frenchmen that developed it. BCG consists of a live attenuated strain derived from Mycobacterium Bovis. This strain of Mycobacterium has remained a virulent for over 60 years; it is not 100% effective. This vaccination at birth is under the Expanded Program on Immunization EPI (WHO recommendation) by intradermal injection of the posterior arm and anterior forearm 0.05 ml of heat-dried BCG 0.5 or 1mg/ml. After 1 year of age, the dose is 0.1 ml. A second vaccination is desirable at the age of entering school (Pichardet.E and Minta.D,2000).

2.3. Review: Study Related to Knowledge and Attitudes of Tuberculosis

Knowledge and attitudes have played significant roles in prevention of complications and progression tuberculosis disease, Mngesho *et al.,* (2007), explored to assess the knowledge, attitudes and practice as regards to TB and its treatment in Pawpaw district, central Tanzania.

The result revealed although TB was an important health problem that the communities of the districts have a low knowledge on the causes and the transmission of tuberculosis which is a likely cause of the delay in seeking treatment.

According to (Hoa *et al.,* 2003); the result revealed that the lack of TB knowledge limits people's ability to prevent TB spread and early treatment. From the study, the researchers claimed that knowledge, attitudes and practices played significant roles in adherence to anti-TB treatment, and thus in the prevention of complications and progression of the disease.

Mohamed *et al.,* (2007) in study to measure the patients' knowledge about tuberculosis and its treatment in Omdurman, Sudan, reported that respondent's satisfactory knowledge was statistically significant when correlated to respondent's age, gender, and residence, level of education and source of prescription. They also reported that respondents who previously caught the disease knew the duration of the therapy better compared to new cases.

2.3.1. Factors Influencing knowledge and Attitude of Tuberculosis

Factors affecting KAPs are different such as lack of awareness and miss understanding on the transmission way of TB, this idea studied by different researchers. The evil spirit and sexual intercourse have been found to be incriminated as a cause for TB. Their community also exhibits a great deal of ostracism towards People with TB. "Cold" has been cited as a cause of TB in Ethiopia. Belief in an association between HIV and TB has been found in Zambia and Ethiopia Gelaw *et al.,* (2001). Others investigated that knowledge and beliefs about tuberculosis among non-working women in Cape Town, the result indicated that alienation of people with TB has also been found in relatively developed countries like South Africa. Metcalf *et al*., (1990),

The others studies Assessed and documented the knowledge of TB and its management practices among medical interns in Nigeria. The result revealed gross inadequacies in the knowledge of TB among medical interns. Although the dismal inability of none of the medical interns to correctly state the estimated number of new cases of TB per year is unacceptable, this might not be unconnected with the general absence of accurate data and poor record keeping culture in almost every sphere of the Nigerian state. Busari et al., (2008) Khan, *et al*., (2005), of assessing medical in terms knowledge of TB in Pakistan the finding showed a poor recognition of the burden of TB and its public health significance was equally identified among medical interns in

that country. There was an understanding of transmission of TB but poor awareness of definitions of MDR-TB and XDR-TB. Only a paltry 16.7% of the interns could correctly define MDR-TB while none was aware of XDR-TB. Ailinger *et al.*, (2007), study findings revealed that ethnic Malayo-Polynesians in Taiwan, similar study from (Nyamathi *et al*., 2004) to investigate Tuberculosis (TB) knowledge, perceived risk, and risk behaviors in a sample of homeless persons with latent TB in the United States, were somewhat less likely than the general population to perceive themselves as at-risk of contracting TB.

Lack of knowledge about TB and a low perceived risk of infection elevate the risk of TB infection and transmission to others. Therefore, one significant component of TB education should focus on increasing perceived susceptibility from the viewpoint of epidemiological data and then helping at-risk populations to discuss related concerns. This study showed that misconceptions regarding tuberculosis were widespread in Abiotkirs preparatory school students. Poor knowledge of People with TB concerning their disease may contribute to the high burden of TB disease in the country.

2.3.2. Burden of Tuberculosis TB in Ethiopia

The Central Office of the National Tuberculosis Control Program(NTCP) was established in 1976. In 1992, a standardized TB prevention and control program, incorporating Directly Observed Treatment of Oromia Region. The DOTS strategy has been subsequently scaled up in the country and implemented at the national level.In 1994, it was decided to combine the National TB Control Program and the Leprosy Control Program into one National Tuberculosis & Leprosy Control Program (NTLCM), under the coordination and technical leadership of the MoH. In the same year, the MoH and WHO conducted a review of the TB component of the NTLCP with the objective to revise the NTLCP throughout the country (MoH, 2011).

In June 2000, the Epidemiology/AIDS Department of the MoH was restructured and named the Disease Prevention and Control Department(DPCD). The TB and Leprosy Control Program was former coordinating office was renamed Tuberculosis and Leprosy Control Team(TLCT). Following the2009 reform at the Federal Ministry of Health(FMoH), the TLCT was integrated with other communicable disease control activities and restructured under the newly formed Health Promotion and Diseases Prevention General Directorate, (MoH, 2011).

Currently, major partner's activity collaborating with the FMoH in TB-Leprosy control activities include: WHO, German Leprosy and TB Relief Association(GLRA), USAID, CDC, Italian Development, TBCARE, Heal etc. (MoH, 2011).

Ethiopia is one of the 27 high MDR-TB countries; it is ranked 15th with more than 5000 estimated MDR-TB patients each year. According to the WHO report, the prevalence of MDR-TB has been 2.8% in newly diagnosed patients; it is reportedly even higher in patients who have previously received anti-TB treatment 21%. Published studies on MDR-TB are increasingly available worldwide, but accurate data on drug-resistant TB in Ethiopia is limited (WHO, 2013).

The TB mortality rate (i.e. TB deaths among HIV- negative people per 100,000 populations per year) is falling about 3% per year, and the overall reduction in the period 2000-2017 was 42%. Of the WHO regions, the fastest declines in the 5years 2013-2017 were in the WHO European Region (11% per year) and the WHO South-East Asia Region (4% per year). High TB burden countries with rates of decline exceeding 6% per year in the 5 years 2013-2017 include the Russian Federation (13% per year), Ethiopia (12% per year), Kenya (8% per year) (WHO, 2018).

3. MATERIALS AND METHODS

3.1 Research Design

Cross sectional descriptive study design was conducted to assess the knowledge, attitude and practice towards TB and its transmission of AbiyotKiris Preparatory School Students Addis Ababa, Ethiopia. The data was collected from January 16-30,2019.

3.2. Description of the Study Area

Abiotkirs Preparatory School is located in Woreda 04 of Kirkos Sub-City, Addis Ababa (Figure 2). The Sub-City is surrounded by five other Sub-Cities, which signifies that the Sub-City is found just in the center of Addis Ababa, according to information from school administration the total numbers of the students of the school is 1025, in 2011 Ethiopian calendar (2019). The Sub-City is known for its congregated settings and the living standards of most of the students in the Woreda 4 is so low.

Recently the overcrowded and old residential houses that surround the school- encountered demolition and the population living in the area is transferred to newly built condominium in the outskirts of the metropolis, fortunately this scenario didn't affect the study. Congregated settings and poverty have a higher risk to and incidence of TB, HIV infection and drug use in many countries. According to literature crowded condition in most congregated settings facilitates the transmission of TB. In addition, poor nutritional status and other co-existent illnesses in such settings weaken the immune system of the inhabitants and make them more vulnerable to develop active TB. (CSA, 2015).

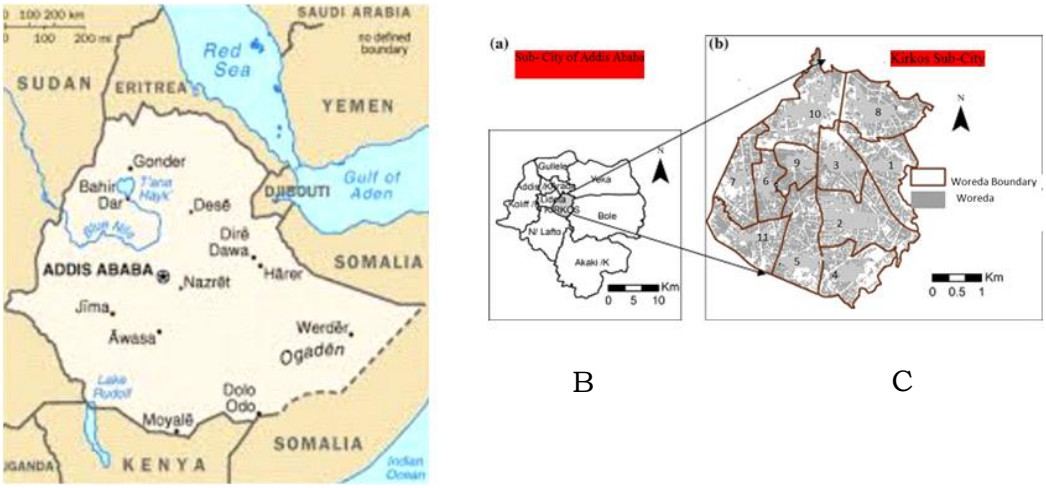

Figure 2. Map of the study area A) Map of Ethiopia, Map B) Map of Addis Ababa and

C) Kirkos subcity

3.3 Method of Data Collection

The data was collected from Abiokirst Preparatory School in Kirkos Sub-city, Addis Ababa from. It is the only government preparatory school in the sub-city. In the study the inclusion criteria were those who consented and were preparatory students of the school, other excluded from the study. The data was collected from January 16 to 30,2019 from study participants.

3.4 Sampling Technique

This study used non – probability sampling technique. From the given non probability sampling technique purposive sample method was applied. This is because to include both grade 11th& and 12th preparatory student's respondents at Abiotkirs Preparatory school kirkos sub-city Addis Ababa, Ethiopia.

3.5. Data collection

3.5.1 Questionnaires

Data was collected regarding socio-demographic characteristics, knowledge, transmission, prevention, attitudes and beliefs about the TB (Annex I). It was organized in such a way that respondents choose one option from the given scales that best aligns with their views.

3.5.2 Procedures of Data Collection

The final version of the questionnaire was distributed to the student who's volunteered to respond to the questionnaires, by their home room teachers. The questionnaires were provided to the participants in the regular class time. The respondents were informed about the purpose of the study and they were also informed that their response will be kept confidentially so they have to fill the questionnaire genuinely. Participants in the study were all volunteers and no incentive was offered in exchange of participation. The questionnaires were distributed following the approval of research proposal and adequate time for the participants was given to answer the survey and but returned within the time frame with some limitations.

To ensure data integrity, the researcher was the only individual permitted to read, classify and code data collected in the study, from the collection of the quantitative data questioners.

3.5.3 Ethical considerations

Ethical approval was obtained from Ethical Review Committee of the College of Natural and Computational Sciences of Addis Ababa University (Annex III). Written informed consent was taken from each study participant 18 and above but for those under 18 their parent/guardian consent were requested (Annex II). The data were collected and analyzed using codes so that the confidentiality of the respondents was maintained throughout the study period.

3.6. Data Analysis

The data was analyzed in a way to produce important information that can answer basic questions, ensure objectives of the study and also show future implications of the study. Data was computed using Excel and data were entered and analyzed using SPSS statistical software package (IBM Corp. Released 2011. IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp).

4. RESULTS AND DISCUSSION

4.1 Socio-demographic characteristics Data Analysis

The majority of the respondents (80.3%) that are found in Abiotkirs preparatory students were greater than 18 years old. Mothers of participants 26(34.2%) completed high school and only 2(2.6%) of participants mothers were hold second degree. No read and write parents were almost the same in both sexes (Father 5.3 and Mother 6.6%). High school complete father's number were equal to the number of first degree holders, which were 16 (21.5%), in opposite second degree holder fathers were not rare that like mothers, second degree mothers 2(2.6%) but fathers 7(9.2%). Most of respondents that is 71.1% monthly incomes were less than 1000ETB, this shows as they come from less income family. This implies educational background and income level of students are important determinants of student's level of knowledge of tuberculosis. Liam et al., (1999) showed that the educational background and income level of patients are important determinants of patients' level of knowledge of tuberculosis, presented in Table 1.

Table 1. The socio-demographic characteristics of respondents

Question items			**Frequency**	**Percentage**
Sex		Male	45	59.2%
		Female	31	40.8%
Age		<18	15	19.7%
		>18	61%	80.3%
Educational Level of respondents/Grades		11	41	53.9%
		12	35	46.1%
Education level of parents/guardian	Mother	No read *write	5	6.6%
		Read *write	13	17.1%
		Elementary complete	13	17.1%
		High school complete	26	34.2%
		Diploma	10	13.2%
		1st degree	7	9.2%
		2nd degree	2	2.6%
	Father	No read *write	4	5.3%
		Read *write	10	13.2%
		Elementary complete	11	14.5%

Question items			Frequency	Percentage
		High school complete	16	21.1%
		Diploma	12	15.8%
		1st degree	16	21.1%
		2nd degree	7	9.2%
Occupation of parents/guardian	Mother	Health professional	4	5.3%
		Teacher	8	10.5%
		Others	64	84.2%
	Father	Health professional	13	17.1%
		Teacher	2	2.6%
		Others	61	80.3%
TB diagnosed before		Yes	3	3.9%
		No	66	86.8%
		Don't know	7	9.2%
Have any family TB patient know or before		Yes	3	3.9%
		No	63	82.9%
		Don't know	10	13.2%
What is your monthly income?		<1000ETB	54	71.1%
		1001-2000	7	9.2%
		2001-3000	5	6.6%
		3001-5000	0	0%
		>5000ETB	10	13.2%

4.2. Knowledge about TB data Analysis

Among 76 respondents 84.2% of them have information about TB before but there was a limitation of knowledge on causing agent of TB, symptoms, the way of identifying TB from the body, methods of transmission, such as coughing and sneezing and closing window on public transportation. As a result, Knowledge about TB causing agent only 57.95% of respondents' answered correctly identifying is bacteria and the remaining lack knowledge. In the case of knowledge about TB disease's symptom; 47.4% answer as it's always show symptom.

Knowledge of respondents about the method that used to identify from the body were only 28.9% there were also the gaps of knowledge instead of TB transmission methods as a result 14.5% believes as transmitted by mosquito bite,13.2% believe TB transmitted by sharing toilet,5.3% by eating a meal with someone who is infected TB,17.1% by shaking hands with an

infected person,27.6% by using infected or unscreened blood for transfusion, 19.7% by sharing unsterile sharp instrument and15.8% by doing unsafe sexual intercourse. This finding suggest that there is lack of TB knowledge regarding transmission and prevention of the disease hinders the fight against the control disease. This is also having a negative impact upon the country aspiration to come out of high TB burden countries according to WHO ,2005.

In addition to this 86.8% of respondent students had willing to learn about TB in the future and Source of information about TB before were most from T.V and Radio (23.7%), parents/family (14.5%), health workers (11.8%), teachers (10.5%), school club/co-curricula activities (6.6%) and 2.6% from text book. From all of those the most dominant one is T.V and Radio. Radio and TV were the major source of information regarding the disease were reported in other studies (Familus ,2014). We suggest that in Ethiopian schools exist various co-curricular activities such as Anti-HIV and Drug and Mass Media clubs, these clubs would have been used for raising the knowledge of TB regarding transmission and prevention methods. The study also identified there exist gabs in this clubs in raising of knowledge about the disease. Presented in Table 2.

Table 2. The knowledge about TB

Question items	**Alternatives**	**Frequency**	**Percentage**
Have you heard about TB?	Yes	64	84.2%
	No	12	15.8%
Co-curricular activity, TB&HIV	Yes	26	34.2%
	No	50	65.%8
Who can get TB?	Children	0	0%
	Adult	7	9.2%
	Any body	56	73.7%
	I don't know	13	17.1%
	Others	0	0.0%
TB causing agents	Bacteria	44	57.9%
	Virus	26	34.2%
	Fungus	0	0.0%
	I don't know	6	7.9%
	Others	0	0.0%
Infected person always show symptom	Yes	36	47.4%
	No	19	25%
	I don't know	21	27.6%
How can TB identified from the	Sputum	22	28.9%

Question items	Alternatives	Frequency	Percentage
body?	examination		
	Blood examination	3	3.9%
	Physical appearance	23	30.3%
	I don't know	28	36.8%
Is TB serious problem?	Yes	70	92.1%
	No	0	0.0%
	I don't know	6	7.9%
Is TB transmittable disease?	Yes	71	93.4%
	No	4	5.3%
	I don't know	1	1.3%
Can TB prevented?	Yes	65	85.5%
	No	3	3.9%
	I don't know	8	10.5%
Does TB cure by taking medicine?	Yes	65	85.5%
	No	3	3.9%
	I don't know	8	10.5%
Does TB have vaccine?	Yes	48	63.2%
	No	13	17.1%
	I don't know	15	19.7%
Source of information about TB	Peer group	0	0.0%
	School club	5	6.6%
	Parent/family	11	14.5%
	Teacher	8	10.5%
	Brothers/sisters	0	0.0%
	T.V& Radio	18	23.7%
	Health workers	9	11.8%
	Text book	2	2.6%
	All of the above	23	30.3%
Are you willing to learn about TB in future?	Yes	66	86.8%
	No	10	13.2%
How do you prefer information related to TB in future?	Song	6	7.9%
	Drama	14	18.4%
	Lecture	10	13.2%
	Discussion	26	34.2%
	Leaflet	0	0%
	Poster	0	0%
	Others	20	26.3%

4.3. Knowledge on TB transmission data Analysis

Instead of transmission of TB, 85.5% of respondents answer correctly as TB can be transmitted by coughing and sneezing but 48.7% of the students answer that closing window in public transport reduce the risk of TB transmission but its increase the risk of transmission, this implies that there is a gap of knowledge on identifying the way of transmission of TB among Abiotkirs Preparatory School Students. In addition, 14(14.5%) says Can people get TB from mosquito bite, 50(65.8%) say not transmitted by mosquito bite and15(19.7%) don't know.15(19.7%) of respondents say that TB can transmitted by sharing unsterile sharp instruments,44(57.9%) say not and 17(22.4%) of the respondents don't know ,15.8% of respondents answers as TB can be transmitted by doing unsafe sexual intercourse; Presented in Table 3.

Table 3. Knowledge about TB transmission

Question items	**Alternatives**	**Frequency**	**Percentage**
Can people get TB from mosquito bite?	Yes	11	14.5%
	No	50	65.8%
	I don't know	15	19.7%
Can a people get TB from sharing toilet?	Yes	10	13.2%
	No	62	81.6%
	I don't know	4	5.3%
Closing window in public transport reduce the risk of TB?	Yes	37	48.7%
	No	35	46.1%
	I don't know	4	5.3%
Can a person get TB by eating a meal with someone who is infected TB?	Yes	11	14.5%
	No	57	75%
	I don't know	8	10.5%
Can people get TB by shaking hands with an infected person?	Yes	13	17.1%
	No	58	76.3%
	I don't know	5	6.6%
Can TB be transmitted by coughing and sneezing?	Yes	65	85.5%
	No	5	6.6%
	I don't know	6	7.9%
Can TB be transmitted by using	Yes	21	27.6%
	No	30	39.5%

Question items	Alternatives	Frequency	Percentage
infected or unscreened blood for transfusion?	I don't know	25	32.9%
Can TB be transmitted by sharing unsterile sharp instrument?	Yes	15	19.7%
	No	44	57.9%
	I don't know	17	22.4%
Can a person get TB by doing un safe sexual intercourse?	Yes	12	15.8%
	No	53	69.7%
	I don't know	11	14.5%
Are people with HIV more likely developing TB than people who don't have HIV?	Yes	59	77.6%
	No	5	6.6%
	I don't know	12	15.8%
If people have TB latent TB infection, that is sleeping TB germs, can they give TB to other people?	Yes	23	30.3%
	No	5	6.6%
	I don't know	48	63.2%

4.4. Practice about prevention methods of TB

From 76 of participants 73.7% of students have good practice that reducing coughing and sneezing in public transport for preventing themselves from TB, others practice up to avoiding public gathering and swimming,47.4% and 21.1% respectively, this shows as the activities or practice of respondents is not prevent them from TB. In addition, 55(72.4%) of them say that can protect themselves from TB by avoiding mosquito bite,17(22.4%) say TB not Transmitted through and 4(5.3%) don't know 56(73.7%) say can reduce the risk of TB transmission by opening windows of public transport,12(15.8%)say not and 8(10.5%) don't know (Table.4.).

Table 4. How do people practice to prevent TB?

Question items	Alternatives	Frequency	Percentage
People Protect themselves from TB by avoiding mosquito bite?	Yes	55	72.4%
	No	17	22.4%
	I don't know	4	5.3%
Avoiding meal with TB patients?	Yes	44	57.9%
	No	26	34.2%
	I don't know	6	7.9%
Avoiding sharing toilet?	Yes	15	19.7%
	No	44	57.9%
	I don't know	17	22.4%
Avoiding public swimming?	Yes	16	21.1%
	No	47	61.8%
	I don't know	13	17.1%
Avoiding public gathering?	Yes	36	47.4%
	No	26	34.2%
	I don't know	14	18.4%
Reducing coughing &sneezing at public gathering area	Yes	56	73.7%
	No	13	17.1%
	I don't know	7	9.2%
TB prevented by using condom?	Yes	11	14.5%
	No	58	76.3%
	I don't know	7	9.2%
TB prevented by Avoiding unsterile instrument	Yes	13	17.1%
	No	44	57.9%
	I don't know	19	25%
TB prevented by Avoiding transfusion of unscreened blood	Yes	14	18.4%
	No	37	48.7%
	I don't know	25	32.9%
Is TB vaccination that reduce	Yes	39	51.3%
	No	17	22.4%
	I don't know	20	26.3%

4.5. Attitude about TB

Of 76 respondents77.6% of respondents advise a person on medication of TB to continue the medication persistently, but 14.5% don't advice and don't care and 9.2% of respondents think people get TB because they have bad luck as well as 35.5% also associate person on TB treatment with HIV and stigmatize. 28.9% feel ashamed if they have TB disease,46.1% not feel ashamed if they have TB disease and 25% of them don't know their feeling.

In other study also discussed in unpublished study among Mexican immigrant in California. hhps://www.jstor.org>stable. Rubel reported that the fear of social stigma strongly figured Mexican immigrants‟ patient's perceptions of their illness and its implications. spatially Male patients had not discussed to those with whom they lived with the nature of their illness, others reduced contacts with family and friends with whom they had enjoyed extensive relationships, and still others expressed fear that a spouse would discover their illness, refuse to eat or sleep with them, and even break the relationship. The finding suggest that more work was remaining in raising the knowledge of the student to circumvent the social stigma prevail. (Table 5).

Table 5. The Attitude of respondents about TB

Question items	**Alternatives**	**Frequency**	**Percentage**
You feel ashamed if you to have TB?	Yes	22	28.9%
	No	35	46.1%
	I don't know	19	25%
TB medication would cause health problem?	Yes	32	42.1%
	No	25	32.9%
	I don't know	19	25%
Do you advise a person on medication of TB to continue the medicationpersistently?	Yes	59	77.6%
	No	11	14.5%
	I don't know	6	7.9%
You care what people close to you think of on TB treatment?	Yes	49	64.5%
	No	19	25%
	I don't know	8	10.5%
Do you think people get TB because they have bad luck?	Yes	7	9.2%
	No	56	73.7%
	I don't know	13	17.1%
TB is something you can talk about it with others?	Yes	50	65.8%
	No	16	21.1%
	I don't know	10	13.2%
Do you associate a person on TB treatment with HIV and stigmatize?	Yes	27	35.5%
	No	23	30.3%
	I don't know	26	34.2%
Do think TB can be cured by holy water?	Yes	27	35.5%
	No	23	30.3%
	I don't know	26	34.2%
Do you believe that a person with TB greatly affected his life?	Yes	49	64.5%
	No	15	19.7%
	I don't know	12	15.8%

5. CONCLUSION AND RECOMMENDATION

5.1. Conclusion

In terms of knowledge the students demonstrated a good understanding of contagiousness of TB and the risk factors of contracting TB. However, some students were unaware about the cause of TB and the key routes of its transmission. With regards to attitudes towards TB, students regarded TB to be series and demonstrated positive attitudes towards treatment and care. Many of them got information about TB through TV and Radio. In conclusion the KAP study showed that there is a need to raise the knowledge, attitude and practice of the students about TB as a public health problem and need attention by concerned bodies' school teachers, principals, health workers, mass media and Ministry of health (s).

5.2. Recommendation

The following recommendations were forwarded based on the findings of the study:

1. The AbiotKirs Preparatory School students, continuous training on transmission and prevention methods of TB infectious disease, providers to upgrade their scientific knowledge is vital for educating students and community then developed their attitude and practices.

2. The school co-curricular club coordinator to inform the students about TB during the participation of the students in different way such as discussion, drama, song, lectures.

3. The school mini media has to dedicate a program raising the knowledge, attitude and practice regarding infectious disease such as TB.

4. The family or guardian having discussion about transmission and prevention methods of TB between the family good idea to share information and to develop the student's attitude and decrease feeling ashamed if the students gate TB.

5. It is high time to conduct similar study at all Addis Ababa city preparatory school level to get the general picture about the knowledge, aptitude and behavior of students about the disease transmission and prevention.

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APPENDIX (I)

ADDIS ABABA UNIVERSITY SCHOOL OF GRADUATE STUDIES COLLEGE OF NATURAL AND COMPUTATIONAL SCIENCES DEPARTMENT OF ZOOLOGY

QUESTIONNAIRE TO ASSESS KNOWLEDGE, AND ATTITUDES OF STUDENTSON TUBERCULOSIS (TB) AT ABIYOT KIRS COMPREHENSIVE SCHOOL IN ADDIS ABABA

Information Sheet

Thank you for agreeing to take this survey. The survey is being done by Addis Ababa University for partial fulfillment of MSc. research. The purpose of the survey is to collect opinions from Preparatory students of AbiyotKirs comprehensive school in Addis Ababa, Ethiopia.

All of the answers you provide in this survey will be kept confidential. No identifying information will be provided to anyone else. The survey data will be reported in a summary fashion only and will not identify any individual person.

This survey will take about 20 minutes to complete.

Part I : Socio- demographic characteristics

S.N	Question	Alternative choice for response
1	Sex	1. Female 2. Male
2	Age (in years)	_____years.
3	What is your level of education?(Grade)	1. 11 2. 12
4	Educational level of mother?	1. No read and write 2. Read and write 3. Elementary (6-8) 4. High school completed

S.N	Question	Alternative choice for response
		5. Diploma 6. First Degree 7. Second Degree or above
5	Educational level of father?	1. No read and write (illiterate) 2. Read and write 3. Elementary (6-8) 4. High school completed 5. Diploma 6. First Degree 7. Second Degree or above
6	Occupation of mother	1. Health professional 2. Teacher 3. Others(specify)_____
7	Occupation of father	1. Health professional 2. Teacher 3. Others(specify)_____
8	What is your monthly income?	1. <1,000 ETB 2. 1001-2000 3. 2001-3000 4. 3001-5000 5. >5000
9	Have you diagnosed with TB before	1. Yes 2. No 3. I don't know
10	Do you have any family member TB patient now and/or before?	1. Yes 2. No 3. I don't know

Part II: Knowledge about TB

S.N	Question	Alternative choice for response
1	Have you heard TB?	1. Yes 2. No
2	Is there co-curricular activity dealing with communicable disease like TB and HIV in your school	1. Yes 2. No
3	Who can get TB? (more than one answer is possible)	1.Children 2. adults 3. Any body

S.N	Question	Alternative choice for response
		4. I don't know 5. Other (specify) _____
4	The disease causing agent of TB is belongs to	1. Bacteria 2. Virus 3.Fungus 4. I don't know 5. Other (specify) _____
5	Do you think that a person infected with TB always shows symptoms or look healthy?	1.Always show symptoms 2. Can look healthy 3. I don't know
6	How can you identify a person who had TB in his body /her body?	1. Sputum examination 2. blood examination 3. Physical appearance 4. I don't know
7	Is TB a dangerous / serious problem?	1. Yes 2. No 3. I don't know
8	If yes , why it is dangerous/ Serious (more than one answers is possible)	1.Because there is no medicine 2. Because, those who get it die 3. Because , it cannot be cared
9	Is TB transmittable disease?	1. Yes 2. No 3. I don't know
10	Can TB be prevented?	1. Yes 2. No 3. I don't know

S.N	Question	Alternative choice for response
11	Does TB cure by taking medicines?	1. Yes 2. No 3. I don't know
12	Does TB have a vaccine?	1. Yes 2. No 3. I don't know
13	What are your source of information about TB (more than one answer is possible)	1. Peer group 2. School Club 3. Parent /Family 4. Teacher 5. Brother/Sister 6. T.V. Radio 7. Health worker 8. Text book 9. Other (specify)_____
14	Have you ever been learning about TB in school or elsewhere?	1. Yes 2. No 3. I did not remember
15	Are you willing to learn about TB in the future?	1. Yes 2. No
16	How do you prefer information related to TB be communicated to you in the future? (more than one answer is possible le)	1. Song 2. Drama 3. Lecture 4. Discussion 5. Leaflet 6. Poster 7. Other (specify)_____

S.N	Question	Alternative choice for response
17	Do you think that you are in risk of getting TB?	1. Yes 2. No
18	Is there a TB day commemorated?	1. Yes 2. No 3. I don't know

PART III: - Knowledge on Transmission of TB

S.N	Question	Alternative choice for response
1	Can a person get TB from mosquito bites?	1. Yes 2. No 3. I don't know
2	Can a person get TB from sharing toilet?	1. Yes 2. No 3. I don't know
3	Do you think closing windows of public transport reduce the risk of TB transmission to people?	1. Yes 2. No 3. I don't know
4	Can a person get TB by eating a meal with someone who is infected with TB?	1. Yes 2. No 3. I don't know
5	Can a person get TB by shaking hands with an infected person?	1. Yes 2. No 3. I don't know
6	Can TB be transmitted by Coughing and sneezing?	1. Yes 2. No 3. I don't know

7	Can TB be transmitted by using infected or un screened blood for transfusion?	1. Yes 2. No 3. I don't know
8	Can TB be transmitted by sharing un sterile sharp instrument?	1. Yes 2. No 3. I don't know
9	Can a person get the TB by doing un safe sexual intercourse?	1. Yes 2. No 3. I don't know
10	Are people with HIV more likely develop TB than people who do not have HIV?	1. Yes 2. No 3. I don't know
11	If people have latent TB infection, that is, sleeping TB germs, can they give TB to other people?	1. Yes 2. No 3. I don't know

PART V: Knowledge about prevention method of TB

S.N	Question	Alternative choice for response
1	Can people protect themselves from avoiding mosquito bite?	1. Yes 2. No 3. I don't know
2	Can people protect themselves from TB by avoiding sharing a meal with an infect person of HIV/AIDS?	1. Yes 2. No 3. I don't know

3	Can people protectthemselves from TB by opening windows of public transport as well as reduce the risk of TB transmission to people?	1. Yes 2. No 3. I don't know
4	Can people protect themselves from TB by a voiding sharing toilet?	1. Yes 2. No 3. I don't know
5	Can people protect themselves from TB by avoiding public swimming?	1. Yes 2. No 3. I don't know
6	Can people protect themselves from TB by avoiding public gathering?	1. Yes 2. No 3. I don't know
7	Can TB be prevented by preventing/reducing coughing and sneezing at public gathering area?	1. Yes 2. No 3. I don't know
8	Can TB be prevented by using condom?	1. Yes 2. No 3. I don't know
9	Can people protect themselves from TB by avoiding sharing un sterile instrument like blade, needle and syringe?	1. Yes 2. No 3. I don't know
10	Can people protect themselves from TB by avoiding using un screened blood for transfusion?	1. Yes 2. No 3. I don't know
11	Is TB there a vaccination that can reduce the chance of acquiring TB?	1. Yes 2. No 3. I don't know

IV) Attitude and beliefs about TB, thick (✓) your answers in the boxes in front of the questions

S.N	Question	Alternative choice for response
1	You feel ashamed if you to have TB	1. Yes 2. No 3. I don't know
2	TB medication would cause health problem	1. Yes 2. No 3. I don't know
3	Do you advise a person on medication of TB to continue the medication persistently	1. Yes 2. No 3. I don't know
4	You care what people close to you think of on TB treatment	1. Yes 2. No 3. I don't know
5	Do you think people get TB because they have bad luck	1. Yes 2. No 3. I don't know
6	TB is something you can talk about it with others	1. Yes 2. No 3. I don't know
7	Do you associate a person on TB treatment with HIV and stigmatize?	1. Yes 2. No 3. I don't know

8	TB medicine will cause health problem	1. Yes 2. No 3. I don't know
9	Do think TB can be cured by holy water?	1. Yes 2. No 3. I don't know
10	Do you believe that a person with TB greatly affected his life?	1. Yes 2. No 3. I don't know

APPENDIX (II)

አዲስአበባዩኒቨርስቲየተፈጥሮሳይንስክፍል

ዲፓርትመንትማይክሮቢአል፣ሴሉላርእናሞላኩለርባይሎጂ

የአብዮትቅርስፕሪፓራቶሪት/ቤትተማሪዎችንስለቲቪ (TB) በሽታያላቸውንእውቀት፣አመለካከትናተግባራትየሚጠይቅመጠየቅ፡፡

መረጃ

- እሺታችሁንሥላገኘውአመሰግናለሁ፡፡ይህመጠይቅበአዲስአበባዩኒቨርስቲየማስተርስትምህርቴንለማጠናቀቅለምሰራውጥናታዊፅሁፍመረጃነትብቻነው፡፡
- የምትመልሱትንመልሶችለጥናቴትክክለኝነትዋስትናነውእንጂ፣በምትመልሱትመልሶችአትፈረጁም፡፡ይሄንለምንአላችሁብሎማን ምአይጠይቃችሁም፡፡
- በ20 ደቂቃትጨርሳላችሁ፡፡

ክፍል 1 ማህበራዊተፅዕኖዎችንየሚገልፁ፣ (መልሶቻችሁንከአማራችውስጥበማክበርግለፁ!

ተ/ቁ	**ጥያቄዎች**	**አማጮራች**
1	*ፆታ*	1. ወንድ 2. ሴት
2	እድሜሽ/ክስንትነው?	…… ዓመት
3	ስንተኛክፍልተማሪነክ/ሽ?	1. 11ኛ 2. 12ኛ
4	የእናትሽ/ክየትምህርትደረጃ?	ማንበብናመፃፍአትችልም ማንበብናመፃፍትችላለች ኤሌመንተሪክ (6-8) ክፍልየተማረች ሁለተኛደረጃጨርሳለች ዲፕሎማአላት የመጀመሪያዲግሪአላት ሁለተኛዲግሪናከዚያበላይናት
5	የእናትሽ/ክሥራ	1. የጤናባለሙያ 2. *መምህር*

		3. ሌላ (ምን) ……
6	የአባትሽ/ክየትምህረትደረጃ?	1. ማንበብናመፃፍአይችልም 2. ማንበብናመፃፍይችላል 3. ኤሌመንተሪከ (6-8) ክፍልየተማረ 4. ሁለተኛደረጃጨርሳለች 5. ዲፕሎማአለው 6. የመጀመሪያዲግሪአለው 7. ሁለተኛዲግሪናከዚያበላይ
7	የአባትክ/ሽሥራ	1. የጤናባለሙያ 2. መምህር 3. ሌላከሆነ፤ምን? …….
8	የቤተሰባችሁብዛትስንትይሆናል?	1. 3 2. 3-5 3. 6 ወይምከዚያበላይ
9	የቤተሰቦችህ/ሽየወርገቢበግምትስንትይሆናል?	1. ከ1000 በታች 2. 1001-2000 3. 2001-3000 4. 3001-5000 5. ከ5000 በላይ
10	አሁንወይምከዚህበፊትከቤተሰቦችህ/ሽመካከልየTB ህመምተኛአለ?	1. አዎ 2. የለም 3. አላውቅም

ክፍል 2 ሥለ TB በሽታተማሪዎችያላቸውአውቀት

ተ/ቁ	**ጥያቄ**	**አማራጮች**
1	ስለ TB ስምተሃል/ስምተሻል?	1. አዎን 2. አልሰማሁም
2	በተለያዩየት/ቤትክበባትስልጠናዎችላይስለ TB እና HIV/AIDS	1. አዎ

	ሰልጥነሻል/ ሰልጥነሃል?	2. አልሰለጠንኩም
3	TB ማንንሊይዝይችላል? (ከአንድበላይመመለስይቻላል	1. ህፃናትን 2. ትልልቅሰዎች 3. ሁሉምሰው 4. አላውቅም 5. ሌላ (ይጠቀስ) ……
4	TB በሽታበየትኛውየበሽታአምጪጀርምይመጣል?	1. ባክቴሪያ 2. ቫይረስ 3. ፈንገስ 4. አላውቅም 5. ሌላ (ይጠቀስ) ……
5	TB በሽታየተያዘሰውሁሌምምልክቶችንያሳያሉ፤ወይስጤነኛይመስላሉ?	1. ሁሌምምልክትያሳያል 2. ጤነኛይመስላል 3. አላውቅም
6	የ TB በሽታበምንምርመራሊታወቅይችላል?	1. የአክታምርመራ 2. የደምምርመራ 3. የፊትገፅታ/አቋምበማየተት 4. አላውቅም
7	የ TB በሽታከባድናአስፈሪበሽታነው?	1. አዎ 2. አይደለም 3. አላውቅም
8	መልሶአዎ፣ከሆነለምን? (ከአንድበላይመልስሊመልሱይችላሉ)	1. ምክንያቱምመድሃኒትስላልተገኘላት 2. ምክንያቱምገዳይበሽታስለሆነ 3. ምክንያቱምህመምተኛውንማከምስለማይቻል፡፡
9	TB በሽታተላላፊበሽታነው?	1. አዎ 2. አይደለም 3. አላውቅም
10	TB በሽታንመከላከልእንችላለን?	1. አዎ

		2. አይቻልም 3. አላውቅም
11	የ TB በሽታመድሃኒትበመውሰድመዳንይቻላል?	1. አዎ 2. አይቻልም 3. አላውቅም
12	የ TB በሽታከትባትአለው?	1. አዎ 2. አይቻልም 3. አላውቅም
13	ስለ TB መረጃከየትሰምተሽ/ከታውቃለህ? (ከአንድበላይመምረጥይቻላል	1. ከጓደኞቹ 2. ከት/ቤትከበባት 3. ከቤተሰቦቹ 4. ከመምህራን 5. ከወንድሜ/ ከእህቴ 6. ከቴሌቪዢን /ከሬዲዮ 7. ከጤናባለሙያዎች 8. ከመፅሃፍ 9. ሌላ (ይገልፅ) …….
14	ስለ TB መረጃበትምህርትቤትውስጥ (ወይምበሌላአጋጣሚ) ተምረህ/ሽታውቅያለሽ?	1. አዎ 2. አልተማርኩም 3. አላስታውስም
15	ስለ TB በሽታወደፊትመማርትፈልጋለህ/ ትፈልጊያለሽ?	1. አዎ 2. አልፈልግም
16	ወደፊትስለ TB መረጃዎችበምንአይነትመልኩቢቀርብልህ/ ቢቀርብልሽይመችሃል/ ይመችሻል?	1. ሙዚቃ 2. ደራማ 3. ገለፃ 4. በውይይት 5. ብሮሸር 6. ፓስተር

		7. ሌሎች (ይገለፅ) ……
17	በ TB በሽታልያዝእችላለውየሚልስጋትአለብህ/ አለብሽ	1. አዎ 2. የለብኝም
18	የ TB ቀንበአለማችንይከበራል	1. አዎ 2. የለም 3. አላውቅም

ከፍል 3 ስለየ TB በሽታመተላለፍያዘዴዎችእውቀትየሚለካ (በመልሰላይምልክትአስቀይጡ ✓

ተ/ቁ	ጥያቄዎች	አማራጮች		
		1 አዎ	2 አይችሉም	3 አላውቅም
1	የወባትንኝብትናከስ TB በሽታታስተላልፋለች?			
2	ሽንትቤትበጋራበመጠቀም TB በሽታያስተላልፋል			
3	ባስወይምሌሎችየጋራትራንስፖርቶችላይመስኮትመዝጋት TB በሽታንእንዲተላለፍእድልይፈጥራል?			
4	ምግብ TB በሽተኛከሆነሰውጋርመመገብበሽታውንያስተላልፋል?			
5	ከ TB በሽተኛጋርእጅበመጨባበጥበሽታውይተላለፋል?			
6	TB በሽተኛበሳልናበማስነጠስበሽታውይተላለፋል?			
7	TB በሽተኛከሆነሰውደምበሽታውለሌለበትቢሰጥበሽታውይተላለፋል?			
8	ያልተቀቀለስለታማነገሮችንከTB በሽተኛሰውጋርበጋራበመጠቀምበሽታውይተላለፋል?			
9	ልቅየግብረስጋግንኙነት TB በሽታውንያስተላልፋል?			
10	የ HIV ተጋላጮቹ TB የመያዝእድላቸውከፍተኛነው?			
11	ዘገምተኛየሆነየTB ጀርሞችከአንድሰውወደሌላውሰውይተላለፋል?			

ከፈል 4 እውቀትእናየTB በሽታመከላከያመንገዶችናየሚመለከት

ተ/ቁ	ጥያቄዎች	አማራጮች		
		1 አዎ	2 አይችሉም	3 አላውቅም

1	ሰዎችየ TB በሽታንከወባትንኝንክሻራሳቸውንበመጠበቅመከላከልይችላሉ?			
2	ሰዎችከ TB ህመማንጋራበጋራባለመመገብበሽታውንመከላከልይችላሉ?			
3	የባስናየተለያዩየጋራትራንስፖርትመኪናዎችንመስኮትበመክፋፈትየ TB በሽታንየመተላለፍመጠንመቀነስይቻላል?			
4	በጋራመፀዳጃቤቶችባለመጠቀም TB መከላከልይቻላል?			
5	የጋራመዋኛገንዳዎችውስጥባለመዋኘትየ TB ስርጭትንመቀነስይቻላል?			
6	የጋራትራንስፖርቶችንባለመጠቀምየTB በሽታንመከላከልእንችላለን?			
7	ሰዎችበብዛትበተሰበሰቡበትባለማሳልናባለማስነጠስየTB በሽታንስርጭትመከላከልይቻላል?			
8	ኮንዶምበመጠቀምየመከላከልይችላል?			
9	ያልተቀቀለስለታማእቃዎችን (ምላጭናመርፌየመሳሰሉትንበሽታንእንዳይተላለፍማድረግይቻላል?			
10	ያልተመረመደምለሰዎችበመለገስ TB ይተላለፋል?			
11	TB በሽታክትባትአለው?			

ክፍልአምስት

ስነእምነትናተግባራትበ TB በሽታዙሪየሚጠይቅ

ተ/ቁ	ጥያቄዎች	አማራጮች		
		1 አዎ	2 አይደለም	3 አላውቅም
1	በሳንባነቀርሳበሽታብትያዝ/ዥያሳፍርሃል/ሻል?			
2	የሳንባነቀርሳበሽታመድሀኒትየጐንዮሽየጤናችግርያመጣል?			
3	የሳንባነቀርባበሽታመድሀኒትእየወሰዱላሉህመምተኞችመድሀኒቱንወስደውእንዲጨርሱት መክራለህ/ሽ?			
4	ሌሎችስለሳንባነቀርሳህክምናእንዲያውቁታደርጋለህ/ሽ?			
5	በመጥፎእድልየሳንባነቀርባበሽተኛሊኮንይቻላልብለህታምናለህ/ሽ?			
6	ስለሳንባነቀርሳበሽታከሌሎችጋርትወያያለህ/ሽ?			
7	የሳንባነቀርሳህክምናየሚከታተልሰውንከኤድስበሽታናማግለልጋርታያይዘዋለህ/ሽ?			
8	የሳንባነቀርሳበሽታበፀበልይድናልብለህታምናለህ/ሽ?			
9	የሳንባነቀርሳህመምተኛበከፍተኛሁኔታሕይወቱአደጋላይነውብለህታስባለህ/ሽ?			
10	የ TB በሽታመድሃኒቶችንበአግባቡናእንደሀኪሙትእዛዝከተወሰደ፣ሙሉበሙሉመዳንይቻላል?			

APPENDIX (III)

LETTER OF INFORMED CONSENT

Dear Parent/Guardian/Adult-in-Life

Study Addis Ababa University: Department of Zoological Sciences.

Title of Research Project: ----------

Name of principal investigator: ----------

Phone Number of principal investigator: ----------

We are very excited to inform you that your youth will have the opportunity to participate in the questioner entitled: KNOWLEDGE, ATTITUDE AND PRACTICE OF ABIOT KIRS PREPARATORY SCHOOL STUDENTS ABOUT TUBERCULOSIS (TB) IN ADDIS ABABA, which is a research for partial fulfillment of MSc.

CONFIDENTIALITY: the records from this study will be kept as confidential as possible. No individual identities will be used in any report or publications resulting from the study.

If you have any questions about the study, please contact Ms. Sewinet Wogari by calling [0938752955]. you can also contact school principal: Mr,Debebe, with any questions about the rights of research participants or research related concerns.

CONSENT YOU ARE MAKING A DECISION WHETHER OR NOT TO PARTICIPATE YOUR YOUTH IN RESEARCH STUDY. YOUR SIGNATURE BELOW INDICATES THAT YOU HAVE DECIDED TO YOUR YOUTH TO PARTICIPATE IN THE STUDY AFTER READING ALL OF THE INFORMATION ABOVE AND YOU UNDERSTAND THE INFORMATION IN THIS FORM, HAVE HAD ANY QUESTIONS ANSWERED AND HAVE RECEIVED A COPY OF THIS FOR YOU TO KEEP.

We are asking permission for your youth to participate in this program. Please complete the attached consent form and and indicate whether you do or do not want your youth to participate in the survey.

Name of Parent/Guardian/Adult-in-Life: ---------- Signature----------Date-------
Name of the students: ----------

Signature----------Date----------