



Assessment of knowledge, attitude and practice about pulmonary tuberculosis among the community in Bahil Adarsh sub city of Adare Kebele, southern Ethiopia Hawassa city, 2019

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Abstract

Background: pulmonary Tuberculosis is a common health problem among the community in the world although in Ethiopia treatment outcomes with TB are poor. Furthermore, care seeking for the community contacts of TB patients is poor. Interventions to address this situation may rely on community knowledge, attitude and practice of the problem.

The main aim of this study was to assess knowledge, attitude and practices about pulmonary tuberculosis among the community in bahil adarash sub-city of Adare kebele, southern Ethiopia hawassa, June 2019

Methods: a community based cross-sectional study was conducted Pre-tested and interview administered questionnaire was used. Data entry and analysis were performed by using SPSS version 16 software. Descriptive statistics were done. Ethical clearance for the study was granted by the Ethical Review of Rift Valley University Department of Public Health. The final sample was 257 households. The study was done on June 2019

Results: The results showed that from the total 600 household of the 257 questioner 200 questionnaires was felid properly from the two hundreds 113 (56.5%) were male and 87(43,5 %) female Almost 94% of the participants knew that TB is caused by a germ. With regard to symptoms, knowledge was low in relation to fever with night sweats (95%) and enlargement of neck glands (80%). The study also revealed knowledge gaps regarding the real cause of the disease and the prescribed duration of anti-TB treatment with 25 % of the participants not knowing the correct duration.

Conclusions: The knowledge of community was very high regarding about pulmonary tuberculosis cause, way of transmission, and associated risk factors. The, study, show that 98% said that TB is curable, most participants said that anyone can get TB while only 2% that only with HIV can get TB.in line with the finding of these study the regional health bureau should conduct health education on TB in the community to complement the knowledge, practice and attitudes of the community.

Keywords: knowledge, attitude, practices, pulmonary tuberculosis, Ethiopia

Introduction

Tuberculosis affects all ages and both sexes within the every socio-economic group among the population. The age group mainly affected is between 15 and 45 years, which leads to grave socio-economic consequences in a country with high prevalence of the disease ^[1, 2]. According to World Health Organization (WHO) Global TB Report 2012, there were an estimated 8.7 million incident cases and 12 million prevalent cases of TB globally, in 2011, of which 1.1 million (13%) were among people living with Human Immunodeficiency Virus (HIV).

According to the same report, there were an estimated 630,000 Multi Drug Resistance Tuberculosis (MDR-TB) cases among the World's 12 million prevalent cases of TB in 2012 ^[3]. Ethiopia is one of the countries with high burden of TB WHO declared TB global health emergency and the stop TB partnership proposed a global plan to stop TB. This plan aims at saving 14 million lives between 2006 -2015 ^[4].

Lack of knowledge makes TB serious public health problem. Throughout the individual's onset of symptoms, through

diagnosis, treatment and cure, his family and community play a key role.

They can be source of advice, information, money and other help to facilitate and encourage to seek treatment ^[5].

Knowledge among the community regarding TB is therefore key in determining health care seeking behavior ^[6].

Although Ethiopia is one of the 22 HBCs, ranking 7th; the national population based TB prevalence survey conducted in 2010/11 revealed that the prevalence of TB in Ethiopia were estimated to be 240/100,000 populations. According to the same report there were an estimated 1700 and 550 MDR TB cases among notified new and re-treatment TB cases respectively in Ethiopia ^[7].

Moreover, in a community with low levels of awareness about the causes, mode of transmission and preventive methods, the spreading of TB could be high ^[8].

Care seeking for child contacts of TB patients is poor ^[9]. Interventions to address this situation may rely on community knowledge of the problem. Evidence is, however, lacking on how

much the community knows about TB and how accurate their knowledge is in Ethiopia. In the absence of a well-developed tuberculosis service and information system, tuberculin surveys are helpful in estimating incidence. This study provides valuable information that could be used to help strengthen the teaching on the mode of transmission and prevention of TB in community. The findings can also inform the development of complementary educational programs targeting this population group. In addition, the findings form a basis for future research to explore factors that may be responsible for the knowledge gaps and misconceptions about the disease. This paper aims to assess the KAP about pulmonary tuberculosis among the community in Hawassa Bahil Adarash sub-city of Adare Kebele, Hawassa, southern Ethiopia.

Method

Study Area and Period

Hawassa is the capital city of SNNP which is located 275 km from Addis Ababa and consisting of eight sub-cities, urban and rural Kebele. The sub-city are named as Addis Ketema Bahil Adarash, Hayki Dar, Misrak, Menahreya, Tabor, Mehal Kifleketema and Tula. But our study area is bounded only among the community in Bahil Adarash sub-city of Adare Kebeles. The total population of Bahil Adarash sub-cities of Adare Kebele is 22,576 Male 13,279 and Female 9,297. The total household number from the total population of Adare Kebele is 600. In these sub-city of Bahil Adarash the five largest ethnic groups reported are Sidama, Wolaita, Tigre, Amhara and Kambata from largest to smallest. Amharic is the commonest language in the community and there are different religions, like Catholic, Orthodox, Protestant, Muslims and others. Finally, the study was carried out on June 2019 G.C.

Study design

A community based cross-sectional study was used to assess the knowledge attitude and practice about pulmonary tuberculosis among the community in Bahil Adarash sub-city of Adare Kebele, Hawassa southern Ethiopia Hawassa city June 2019 G.C.

Source Population: households of Bahil Adarash sub-city of Adare Kebele.

Study population: households selected, by Systematic random sampling technique and meet inclusion criteria,

Inclusion and Exclusion criteria

Inclusion criteria

Families who had permanent residence in the town for at least six months

Exclusion criteria

Those households who refused to participate critically ill or suffering individuals or care givers of the index child, since it is unethical to take routine information from a suffering person or it is difficult to obtain complete information. They may not had clear information on some explanatory variables

Sample size determination and sampling technique

The required sample size was determined by using single population formula considering the following assumptions: 50% was taken due to absence of reliable previous study that shows KAP study on Community towards pulmonary TB infection control.

Level of significance = 0.05

Marginal error (d) = 5%

Non-response rate = 10%, the formula for calculating the sample size (n) was:

$n = \frac{(Z_{\alpha/2})^2 P \times (1-P)}{d^2}$ Where: n= sample size $Z_{\alpha/2}$ = Z-score at 95% confidence interval = 1.96 P= positive prevalence (assuming that 50 % of the KAP study on community towards pulmonary TB).

1-P=Q= negative prevalence/proportion

d= marginal error=0.05 (5%)

Therefore n becomes: $n = \frac{(1.96)^2 \times 0.5 \times 0.5}{(0.05)^2}$, n=384

$n_f = \frac{n_i}{1+n_i/N}$, $\frac{384}{1+384/600} = 234$ Then, Adding 10% non-respondent rate, the total sample size $234 \times 10/100 = 23.4$ then, the final sample size was 257. Therefore, Systematic random sampling technique was used to select the study house hold. To get the sampling interval (k) we were divide source population to our sample size accordingly $k = 600/257 = 2.33$. The first household was selected by lottery method. Finally, every 2nd households was selected by using systematic random sampling techniques.

Data Collection Procedure

We used structured questionnaires through direct interview & observational check list to solicit information from the households. The questionnaire was written in English and translated into Amharic and translated back into English to ensure its accuracy. The respondents were households but in the absence of the household, the next household were interviewed.

Dependent Variables

Knowledge attitudes and practice of community about pulmonary tuberculosis.

Independent Variables

- Socio-demographic factors:** Age, Sex, Parental occupation, Parental education, Religion, Number of children, marital status, Income
- Environmental factors:** Source of drinking water, Type of water source, Availability of hand washing facility, Livestock in house, Type of floor and roof of the house, and Waste disposal method
- Behavioral factors:** Health knowledge Child immunization status feeding practices, Hand washing practice, Home based water treatment Duration of breast-feeding, Breast feeding status, Time of introducing supplementary feeding.

Data Quality Control

The survey questionnaire was pre-tested to ensure that questions are properly understood by the local communities and to ensure appropriateness of the questionnaire about content, consistency and the language was checked and modified after the pretest. In the pilot study, ten households were interviewed and any observed shortcomings in the instruments were corrected before the start of data collection. The pre-test also had provide crucial

information on the validity and usefulness of the data collected. Each questionnaire filled was checked for completeness of the information on daily basis during the data collection period. The data collectors were go into the community and conducted face to face interview through standard questionnaire and observational check list. The data collectors was trained how to collect the data by principal investigators after data collection, data had been stored in a secured place to maintain confidentiality and backup of the data was stored in different areas not to lose the data. Each questionnaire was coded separately before analysis.

Data Processing and Analysis

Data entry and analysis were performed by using SPSS version 16 software. Descriptive statistics were done

Operational Definitions

Tuberculosis; is a bacterial disease caused by Mycobacterium tuberculosis and occasionally by Mycobacterium bovis and Mycobacterium africanum. These organisms are also known as tubercle bacilli or acid fast bacilli (AFB). The source of infection is a person with TB of the lungs who is coughing. Infection with TB occurs by inhalation of Mycobacterium tuberculosis in respiratory droplets from an infectious case of pulmonary TB. About 5% of infected individuals develop active disease within 5 years of primary infection while 95% develop a latent infection that can later progress to disease depending on the immune status and the risk of progression is higher in children (WHO, 2008).

Knowledge: awareness of someone concerning a particular disease, mode of Transmission and control knowledge of TB is awareness of the etiology, transmission, symptoms, duration of TB treatment,

Good Knowledge: the level of knowledge was categorized as good for those who scored >5

Poor/insufficient Knowledge: the level of knowledge was categorized as poor/insufficient for those who scored <5

Attitude: the feelings of someone towards a disease condition is the study subject's opinion, outlook, feelings or idea towards TB as a major public health problem, infection prevention, control methods, decrease transmission of TB, social and cultural factors contribute TB treatment barrier, educating patients help to increase quality of sputum microscopy and training increase competency of lab on TB AFB microscopy.

Positive Attitude: for those who score >3

Negative Attitude: for those who score <3

Practice: what the population does to prevent themselves from contracting TB is overt behavior, habit or customs of laboratory professionals follow up or carry out in his/her daily activities to prevent and control transmission of TB infection, maintain quality of sputum microscopy.

Good Practice: for those who scores that fall >5

Poor Practice: for those who scores that fall <5

Ethical Consideration

Ethical clearance for the study was granted by the Ethical Review of Rift Valley University, Department of Public Health. A formal letter was taken from Rift Valley University to bahil adarash sub-city administration office then to Adare kebele administration. Permission letter were asked from rift valley university department head of public health and to be taken to the Keble leaders of bahil adarash sub-city of hawassa town for the study. Then informed verbal consent was taken from the household after the necessary explanation about the purpose, benefits and risks of the study and also their right on decision of participating in the study. Finally, Confidentiality and privacy was maintained during data collection, analysis and reporting in which the information obtained from the respondents were not shared with anyone other than the data collectors.

Dissemination of the Result

The result of this study was disseminated to regional health bureau, hawassa town health

Bureau and Rift valley university department of public Health and bahil adarash sub city .The findings also was disseminated to different concerned body that were have contributions to improve the health condition of the community through presentation and publication of the paper.

Result

Of the two hundred fifty seven questionnaires 200 were returned after properly filled by the participants, (response rate, 77.8 %). In this study, majority of the study participants were males 113(56.5%) and 87(43.5) were female. from the age distribution the maximum age is 67 and minimum age is 22. the five largest ethnic groups reported are Sidama (36.5), Wolaita(29.5 %), Tigre (10.5 %), Amhara (10%) and Kambata (7.5 %) from largest to smallest. Amharic is the commonest language in the community and there are different religions, like Catholic (9%), Orthodox (34.5%), Protestant (41.5 %), Muslims (15 %) and also of the two hundred participants most of are married (59 %), unmarried (35 %), windowed (6 %), in addition to that from those 50% are complete secondary school and the others are complete primary school and bachelor degree of this 39 % were government employer.

Table1: Sociodemographic characteristics of community in bahil adarash sub-city of Adare kebele, southern Ethiopia hawassa, June 2019

Socio-Demographic Factors	N (%)
SEX	
Male	113 (56.5%)
Female	87 (43.5%)
Ethnicity	
Sidama	73 (36.5%)
Woliya	59 (29.5%)

Tigray	33 (16.5%)
Amhara	20 (10%)
Kambata	15 (7.5%)
Age category	
15-25	40 (20%)
26-35	68 (34%)
>37	92 (46%)
Marital status	
Married	118 (59%)
unmarried	70 (35%)
Windowed	12 (6%)
Religion	
orthodox	69 (34.5%)
Protestant	83 (41.5%)
Catholic	18 (9%)
Muslim	30 (15%)
Occupation	
Farmer	29 (14.5%)
Business man	51 (25.5%)
Government employer	79 (39.5%)
NGO ,privet sector	8 (4%)
House wife	33 (16.5%)
Educational Status	
Primary	37 (18.5%)
Secondary	100 (50%)
Bachelors, degree	63 (31.5%)
N	200

Most of the participants have sufficient knowledge on tuberculosis transmission, from those 18% participants ever received treatment for pulmonary tuberculosis in tertiary health facility center .all of the participants know tuberculosis is communicable disease and only 2 % Saied tuberculosis is hereditary disease , but 88 % of the participants know tuberculosis caused by germ (mycobacterium tuberculosis)even they know

the spread of tuberculosis droplet cough and sneezing ,96 % know effective treatment for tuberculosis but only 40 % know the duration for anti TB also the know what happen if the patient may skip anti TB for a days or weeks of these 49 % Saied the patient may not get well ,16 % Saied the patient may die but only 35 % Saied the germ can develop resistance

Table2: Knowledge of participants on pulmonary tuberculosis

Knowledge on pulmonary tuberculosis	N (%)
Have you ever heard about a disease called tuberculosis	
yes	200 (100%)
Where did you heard about tuberculosis	
I learned at school	98 (49%)
From health worker	33 (16.5%)
From radio	68 (34%)
From relative	1 (0.5%)
Have you ever received treatment for TB	
yes	36 (18%)
no	164 (82%)
If you have what type of health facility did you attend	
Tertiary	155 (27.5%)
District	45 (22.5%)
If you have received treatment for TB, what types of TB was it?	
Pulmonary	36 (18%)
Is TB hereditary disease?	
YES	4 (2%)
NO	96 (48%)
Is TB caused by sprit?	
YES	7 (3.5%)
NO	93 (46.5%)
Is TB caused by witch craft?	
YES	3 (1.5%)
NO	97 (48.5%)
Is TB caused by germ?	

YES	188 (94%)
NO	12 (6%)
Is TB spread by droplet through cough and sneezing?	
YES	187 (93.5%)
NO	12 (6%)
Is TB curable?	
YES	196 (98%)
no	4 (2%)
Are effective drugs against TB available	
YES	192 (96%)
NO	8 (4%)
For how long should a TB patient take anti TB?	
For 2 to 3 months	50 (25%)
For 4 to 5 months	70 (35%)
For 6 to 8 months	80 (40%)
What would be the problem if TB patient skips treatment for days to two?	
May not get well	98 (49%)
TB Germs can develop resistance	70 (35%)
The patient can die	32 (16%)
Can TB cause death?	
yes	199 (99.5%)
yes	1 (0.5%)
N	200

Knowledge on Symptoms of Pulmonary Tuberculosis

Knowledge was assessed on nine symptoms: cough with sputum longer than 2 weeks, coughing out blood, fever with night sweats, general weakness, weight loss, loss of appetite, chest pain, shortness of breath and enlarged neck glands. Knowledge was high on cough with sputum for >14 days (87%), coughing out blood and shortness of breath (70 %). Knowledge was, however, low regarding enlargement of neck glands (20%) and fever with night sweats (5 %). The low knowledge regarding fever and night sweats appears surprising taking into consideration that almost all the participants had heard about TB. This situation may mean that it is difficult for the participants to relate fever with night sweats with TB because of other conditions that may present with this symptom, for example, malaria.

Knowledge about Pulmonary Tuberculosis and Its Transmission

Of the two hundred participants most of them know the mode of transmission of pulmonary Tuberculosis of these 95% know not all HIV/AIDS are infected with tuberculosis 93 % of the Participants know that tuberculosis is transmission of tuberculosis through droplet of sneezing and Cough from infected person to healthy one and also 95.5 % know about overcrowding is risk factor for pulmonary tuberculosis and also they know the causative agent of pulmonary tuberculosis is Mycobacterium tuberculosis. Most of the participants has awareness on tuberculosis is not transmitted from infected mother to Child during pregnancy and breast milking, by sharing toilet together, by eating meal together

Practice for prevention of pulmonary tuberculosis

Knowledge about prevention of TB was generally high with regard to measures such as vaccination with BCG, avoiding contact and taking prophylactic drugs. Knowledge was, however, low with regard to isolation of a TB patient. During the study, however, it was noted that, 'avoiding contact' and 'isolation' was

possibly confused with discrimination in the local language. The confusion on these terms may have contributed to the result. These terms therefore need to be properly explained to participants to convey the accurate meanings.

Table3: Practice for prevention of pulmonary tuberculosis of participants

Practice for prevention of pulmonary tuberculosis	N (%)
Do you know BCG vaccination	
Yes	175(87.5%)
No	25(12.5%)
Avoiding contact with TB patient	
Yes	197(98.2%)
No	3(1.5%)
Isolation of TB patient	
Yes	48(24%)
No	152(76%)
N	200

Attitudes about pulmonary tuberculosis

Most participants said that anyone can get tuberculosis while 2 % said that only people with HIV can get the disease. This finding shows that the information about TB which the participants received contained aspects concerning their risk of getting the disease. From a different perspective, however, 4 participants could view the low numbers of participants which indicated that only people with HIV can get TB as a reflection of lack of knowledge of the association between TB and HIV. The study also found that TB is highly stigmatizing. This was evident from the finding that 97.5 % of the participants said that people in their community feel negative about a person suffering from tuberculosis. This situation is worrisome because stigma can cause TB patients to seek treatment and care from inappropriate providers. The study also found that most of the participants would talk to their parents or health workers about their condition if they suspected to have TB. Only 0.5 %, however, said they would talk to their teacher. This finding suggests that participants

are generally not free to their teachers concerning their health related matters. Participants ought to regard teachers as their confidants on health issues. To address this problem, there has to be a deliberate effort to include improving the teacher/participants relationship on health matters. Despite that all participants indicated that one should seek care for TB at a health facility and that 98 % said the disease is curable, 99 % indicated that they would consult a health worker if they suspected having TB.

Socioeconomic Factors for Pulmonary Tuberculosis

Of the participants the main source of cooking is electric city (63 %) and also they have own television and radio to having different information regarding pulmonary tuberculosis but there is no significant relation with socio economic factors for pulmonary tuberculosis rather than as a risk factor is overcrowding

Discussion

The study was aimed to assess the knowledge and attitudes and practice regarding of pulmonary tuberculosis among the community in bahil adarash subcity of Adare kebele .Based on a sample size of 200 participants. The study found that knowledge of community regarding pulmonary TB was generally high compare to the other study. This means that the community have access to pulmonary TB information. The study, however, found that there are gaps with regard to knowledge on specific aspects related to symptoms, cause, cure, as well as attitudes towards the disease. The study found that not all community knew that fever with night sweats and enlargement of neck glands are symptoms of TB. The study also revealed knowledge gaps regarding the real cause of the disease whereby participants indicated that one can get the disease through spirits, from parents (hereditary) and bad luck. Knowledge on how long anti-TB treatment should be taken was also low. Furthermore, the findings suggest that TB is stigmatizing which may result in poor uptake of care and support.

Knowledge on Cause of Tb

Knowledge on the cause of TB varied despite the fact that almost all the participants had heard about the disease. Even though the majority of the participants indicated that TB is caused by germs, others said that TB is a sign of bad luck or inherited from parents or caused by spirits. This variation in the knowledge on causes of TB could be due to the prevailing beliefs on TB in the communities.

Knowledge on Spread of Tb

Knowledge on how TB spreads was high among the participants with the majority of them indicating that it is communicable and spreads through droplets when a patient coughs or sneezes. This finding could be an indication that the information which the participants got about TB had good coverage on how the disease is spread. Knowledge on how the disease is spread can help the community take the necessary precautions to protect themselves from getting it. The participants were also aware that overcrowding influences the spread of the disease. It is important to ensure consistency in the content of TB messages both in schools, radio messages as well as during health talks in health facilities and communities.

Knowledge of symptoms of TB

Knowledge was assessed on nine symptoms: cough with sputum longer than 2 weeks, coughing out blood, fever with night sweats, general weakness, weight loss, loss of appetite, chest pain, shortness of breath and enlarged neck glands. Knowledge was high on cough with sputum for >14 days, coughing out blood and shortness of breath. Knowledge was, however, low regarding enlargement of neck glands and fever with night sweats. The low knowledge regarding fever and night sweats appears surprising taking into consideration that almost all the participants had heard about TB. This situation may mean that it is difficult for the participants to relate fever with night sweats with TB because of other conditions that may present with this symptom, for example, malaria.

Knowledge on Cure of TB

Consistent with knowledge on how TB is caused and spread, the majority of the participants indicated that TB is curable. Variations were, however, observed on the duration required for taking anti-TB treatment with only 32% of the participants knowing the correct duration. Found that less than 50% knew the correct duration of anti-TB treatment. Therefore, reveals a major gap in knowledge on TB treatment not only among participants but also in the community. This situation implies that the information shared on TB is deficient of the prescribed duration for TB treatment. None of the socioeconomic factors was associated with lack of knowledge that TB can cause death.

Knowledge of Practice (Preventive) Measures against Tb

Knowledge about prevention of TB was generally high with regard to measures such as vaccination with BCG, avoiding contact and taking prophylactic drugs. Knowledge was, however, low with regard to isolation of a TB patient. During the study, however, it was noted that, 'avoiding contact' and 'isolation' was possibly confused with discrimination in the local language. The confusion on these terms may have contributed to the result. These terms therefore need to be properly explained to participants to convey the accurate meanings. In this study, none of socioeconomic factors was associated with knowledge of preventive measures. The high proportion of participants who were able to indicate the preventive measures against the spread of TB may be an indication that they are well informed about TB prevention. Knowing preventive measures can help participants take the necessary precautions to protect themselves and others from contracting the disease. None of the socioeconomic factors was associated with neither knowledge of BCG vaccination or isolation of patient as preventive measures. There was also no association between any of the socioeconomic factors with knowledge of the kind of people that get TB.

Attitudes Regarding Tb

Most participants said that anyone can get tuberculosis while 2 % said that only people with HIV can get the disease. This finding shows that the information about TB which the participants received contained aspects concerning their risk of getting the disease. From a different perspective, however, 4 could view the low numbers of participants which indicated that only people with HIV can get TB as a reflection of lack of knowledge of the association between TB and HIV. The study also found that TB

is highly stigmatizing. This was evident from the finding that 97.5 % of the participants said that people in their community feel negative about a person suffering from tuberculosis. This situation is worrisome because stigma can cause TB patients to seek treatment and care from inappropriate providers.

The study also found that most of the participants would talk to their parents or health workers about their condition if they suspected to have TB. Only 0.5 %, however, said they would talk to their teacher. This finding suggests that participants are generally not free to their teachers concerning their health related matters. Participants ought to regard teachers as their confidants on health issues. To address this problem, there has to be a deliberate effort to include improving the teacher/participants relationship on health matters. Despite that all participants indicated that one should seek care for TB at a health facility and that 98 % said the disease is curable, only 99 % indicated that they would consult a health worker if they suspected having TB.

Socioeconomic Factors Associated With Knowledge and Perceptions

There was significant difference between participants knowledge of TB and guardians occupation. This may imply that more people in formal employment discuss health related matters with their children at home. Participants perception of TB was not associated with any of the socioeconomic factors tested, showing that none of the socioeconomic factors investigated influences the participant's perception about pulmonary tuberculosis

Conclusions

The knowledge of community was very high regarding about pulmonary tuberculosis cause, way of transmission, and associated risk factors and preventive measures. The community had taken practice as preventive measure of pulmonary tuberculosis like isolation of Tb patient, taking anti Tb drugs as prophylaxis (BCG), avoid overcrowding and advising patient if he develop constitutional symptoms of pulmonary tuberculosis. From the finding show that 98% said that TB is curable, most participants said that anyone can get TB while only 2% said that only with HIV can get TB. The study also found that most of the participants would talk to their parents or health workers about their condition if they suspected to have TB. Only 0.5 %, however, said they would talk to their teacher. This finding suggests that participants are generally not free to their teachers concerning their health related matters. Participants ought to regard teachers as their confidants on health issues. To address this problem, there has to be a deliberate effort to include improving the teacher/participants relationship on health matters. Despite that all participants indicated that one should seek care for TB at a health facility and that 98 % said the disease is curable, only 99 % indicated that they would consult a health worker if they suspected having TB.

Abbreviations

AFB: Acid fast bacilli; ARI: annual risk infection; DOTS: directly observed short course therapy; G.C: Gregorian calendar; HIV: human immune virus; HBCs: high burden countries; HIV/AIDS: Human immune virus acquired deficiency syndrome KAP: knowledge attitude practice: M.TB; mycobacterium tuberculosis: MDR; multi drug resistance: MOH; minster of

health: NTLCP; national tuberculosis leprosy control program: PTB; pulmonary tuberculosis: SNNP: south nation nationality of people; SPSS: statcal package for social science; TB: tuberculosis; WHO: world health organization

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Availability of Data and Materials

The data is available in SPSS file and, will, be presented, on request with legitimate reasons

Authors' Contributions

KTT, ETT, and MKT were involved in formatting the research question. KTT performed the analysis with assistance from ETT and MKT. All authors prepared the initial draft of the manuscript. All critically revised the manuscript for intellectual content. All authors approved the final version of the manuscript.

Ethics Approval and Consent to Participate

Ethical clearance for the study was granted by the Ethical Review of Rift Valley University and department of Public health. A formal letter was taken from Rift Valley University to bahil adarash sub-city administration office then to Adare kebele administration. Permission letter were asked from rift valley university department head of public health and to be taken to the Keble leaders of bahil adarash sub-city of hawassa town for the study. Then informed verbal consent was taken from the household after the necessary explanation about the purpose, benefits and risks of the study and also their right on decision of participating in the study. Finally, Confidentiality and privacy was maintained during data collection, analysis and reporting in which the information obtained from the respondents were not shared with anyone other than the data collectors.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

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