

# Knowledge, Attitude and Practice towards Transmission and Deterrence of Tuberculosis among the Societies in Holeta Town

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Received date: Mar 02, 2018; Accepted date: July 11, 2018; Published date: July 20, 2018

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## Abstract

**Background:** Though tuberculosis is an avoidable and treatable, still it is a problem in the globe, including Ethiopia. Limited knowledge about the disease could have an effect on the patients who seek health care services and continue the TB spread within the community. Hence, the study was conducted in Holeta town to assess knowledge, attitude and practice towards the cause, spread and deterrence of tuberculosis.

**Methods:** Community based cross-sectional survey; involving 385 randomly selected individuals were employed in Holeta town from February to May, 2017. SPSS software version 20.0 was used to enter, clean and analyze the collected data.

**Results:** Three hundred thirty nine (90.2%) study participants were reported that they ever heard about tuberculosis. Thirty four percent of them thought that tuberculosis is caused by bacteria. The knowledge level of the respondents about tuberculosis spread from TB patient to new susceptible person were 75% and thirty nine percent be familiar with spread of TB can be avoidable. Persistent cough (34.2%) was the often affirmed sign and symptom of the disease.

**Conclusion:** Basic knowledge about tuberculosis in the study area is universal, which is not converted into the knowledge about tuberculosis cause. Therefore, emphasis needs to be intended for bringing a considerable change in the knowledge about tuberculosis.

**Keywords:** KAP; Tuberculosis; Society; Holeta town

## Introduction

Tuberculosis (TB) remains a major global problem [1]. The disease is caused by Mycobacterium tuberculosis complex, which is an infectious disease. The disease mainly affects the lung, but can also attack other parts of the body. The transmission route is through air from infected person to others during coughing, sneezing, singing or talking. Many TB infections do not show apparent sign and symptoms, which termed as latent tuberculosis [2,3]. Tuberculosis is also more common among men than women, and affects mostly adults in the economically productive age groups. The probability of developing tuberculosis among individuals with HIV is much greater.

Globally 9.4 million new cases and fourteen million old cases happened in a year 2010. In Africa, particularly sub-Saharan Africa faces the challenge of tuberculosis outbreak [4]. Among the world's 22 high burden countries, Ethiopia ranks 7th, which have 300 and 470 new cases and old cases per 100,000 populations, respectively [5]. Tuberculosis is the common cause of mortality and morbidity in Ethiopia [6].

Ethiopia as multi-cultural country, tuberculosis knowledge has been mentioned to demonstrate considerable spatial changes [7]. Moreover, through the electronic media and health education campaigns, information about healthcare can attain many public rapidly and boost the knowledge level among individuals [8].

Different studies demonstrated that limited knowledge was found to be observed among the uneducated, women, countryside residences, poor, and youngsters. Additionally, lower than half of the study subjects were conscious about the tuberculosis treatment and diagnosis, which could act as factor to diagnosing tuberculosis and considerably have an effect on the case notification rate [9-12].

Factors contributed to the disease acquiring, epidemiological burden, and disease development includes low income, HIV, inadequate nutrition, cigarette smoking, low access health services infrastructure, lack of consciousness and information about the cause, transmission mode, and sign-symptoms of the disease, demographic features, poor health education, and tradition or culture related beliefs. The above mentioned factors considered to have crucial impact on the patients' health seeking behaviors which delay in diagnosis, treatment [13,14].

In addition, the social relationships and ethical identity of people afflicted by the disease affected if they have negative concept of the disease and also it has impact on control efforts in general [15]. Because of these, enhancing awareness about tuberculosis and involving the people in the disease control considered to be WHO basic component of the "stop tuberculosis strategy" [16].

Of over 94 million population of Ethiopia, rural area residents are accounted 85% that are far away from health facilities, media, consequently knowledge, attitude, and practice assessment among people toward the disease were incredibly essential to collect data for

identification of the problem, program planning and intervention. Therefore, the aim is to assess individuals' knowledge, attitude, and practice toward the disease.

## Method

### Study area

The study was carried out in Holeta town which is situated at 40 km west of capital Addis Ababa Ethiopia. It was established in 1902 during Minilik II regime. According to central Statistics of Ethiopia (CSE) 2007 total human population of Holeta town was estimated 25,593. Based on the information obtained from municipality, the town is categorized into eight administrative kebeles.

The source population was all individuals whose age 20 years and above residing in the randomly selected four kebeles. Mentally ill and guest individuals were excluded.

To determine the sample size, a single population proportion formula was used. Assuming that 50% of the respondents had TB knowledge and with further assumption of 95% confidence level, 5% margin of error, and 10% non-respondent rate, a total sample of 385 study subjects were required. During sampling, four kebeles were selected using random sampling technique and the calculated sample was proportionally distributed to the selected kebeles according to the number of households. From each selected kebele, households were chosen using systematic random sampling technique. Finally, from all the eligible study participants in the households, only a single individual was selected randomly. In the absence of suitable participant in the given household, a replacement was made by an individual in the next household.

A standardized questionnaire was utilized. The data collection tool was first prepared in English. It was translated to Oromiffa, which is a local language and back to English again in order to maintain the instrument validity. Nine data collectors and one supervisor who were public health students from Ambo University, department of Public health were recruited. For data collectors and supervisors, a one day intensive training was given before the pretest had been undertaken. The supervisor and principal investigator had closely followed the day-to-day data collection process and ensure completeness and consistency daily. Structured and pretested questionnaires were utilized to collect the data from the respondents by face to face interview.

The statistical analysis was done using SPSS software version 20.0. After the data entry, it was edited and cleaned before analysis. Frequency, percentage and descriptive summaries were utilized to explain the study variables.

Ethical clearance was obtained from Ambo University, College of Medicine and Health Sciences Institutional Review Board. Supportive letter was taken to Holeta town Municipality office. Informed verbal consent was obtained from each respondent.

## Results

### Socio-demographic characteristics

Three hundred seventy six respondents with a response rate of (97.6%) were participated. The respondents' mean age was 22.7 (+1.67 SD years). Female respondents constituted (56.9%), 44.7% were

between the age group of 35 to 44 years and their age ranged between 18-65 years, 72.1% were Oromo ethnic, 46.5% were Orthodox Christian followers, 76.1% were married, 42.3% were attended primary school, 36.7% were private worker by occupation (Table 1).

Variables	Frequency (n)	Percent (%)
<b>Sex</b>		
Male	162	43.1
Female	214	56.9
<b>Age</b>		
15-24	59	15.7
25-34	118	31.4
35-44	168	44.7
>45-54	31	8.2
<b>Ethnicity</b>		
Oromo	271	72.1
Amhara	57	15.15
Gurage	40	10.6
Tigre	6	1.6
<b>Religion</b>		
Orthodox	175	46.5
Protestant	145	38.5
Muslim	28	7.4
Others	20	5.6
<b>Marital status</b>		
Unmarried	90	23.9
Married	286	76.1
<b>Level of education</b>		
Illiterate	130	34.6
Primary school	159	42.3
Secondary school	39	10.4
College/university	48	12.8
<b>Current occupational status</b>		
Gov't employed	103	27.4
Private	138	36.7
Daily worker	37	9.8
Housewife	98	26.1

**Table 1:** Socio-demographic characteristics of respondents in in Holeta town, Oromia Regional State, Ethiopia, May 2017.

### Knowledge related characteristic of respondents

An overwhelming majority (90.2%) had heard of the disease without a substantial sexual category. In the study area, the major sources of information were media, and health workers (Table 2).

Variables	Frequency (n)	Percent (%)
<b>Heard of TB</b>		
Yes	339	90.2
No	37	9.8
<b>Sources of information</b>		
Media (radio, TV)	304	33.9
Health institutions	118	13.2
Health professionals	293	32.7
Teachers	114	12.7
Friends	67	7.5

**Table 2:** Communities' source of information about Tuberculosis in Holeta town, Oromia Regional State, Ethiopia, May 2017.

Thirty five percent of the respondents were responded that cold air is a cause for the disease, while others response was 34.0% "*M. Tuberculosis* or Bacteria", 21.8% poor hygiene and 8.8% smoking. Regarding to respondents' knowledge about TB spread, coughing droplet (75.4%) was the mainly reported mode of spread for the disease. Sharing dish (14.2%) and shaking hands (10.4%) were the other mentioned possible means of transmission. Concerning knowledge of sign and symptom, continual cough for two weeks or above (34.2%) was the frequently responded answer, followed by weight loss (33.6%). Respondents were also mentioned other sign and symptom such as persistent fever (17.5%) and an ongoing fatigue (14.7%).

Majority (93.4%) of the respondents responded that tuberculosis spread would be avoidable. When asked about the protective measures for tuberculosis, response included cover mouth when sneezing or coughing (38.5%), avoiding hand shaking (13.7%), washing hands (12.3%), isolating TB patients (10.4%), avoiding sharing dishes, vaccination (8.8%) and having sufficient ventilation (7.2%) (Table 3).

Variables	Frequency (n)	Percent (%)
<b>Cause of tuberculosis</b>		
Cold wind	133	35.4
Bacteria	128	34
Smoking	33	8.8
Poor hygiene	82	21.8
<b>Mode of spread</b>		
Through coughing droplet	312	75.4
Through sharing dish	59	14.2
Through shaking hands	43	10.4

<b>Signs and symptom</b>		
Cough for 2 weeks or above	223	34.2
Weight loss	219	33.6
Ongoing fatigue	96	14.7
Persistent fever	114	17.5
<b>Possible to avoid TB</b>		
Yes	351	93.4
No	25	6.6
<b>Means of Prevention</b>		
Cover mouth when coughing/sneezing	359	38.5
Washing hands	115	12.3
Avoiding handshakes	128	13.7
Isolating TB patients	97	10.4
Avoid sharing dishes	85	9.1
Vaccination	82	8.8
Sufficient ventilation	67	7.2

**Table 3:** Knowledge of respondents about TB in Holeta town, Oromia Regional State, Ethiopia, May 2017.

### Attitudinal related characteristic

Majority (79.1%) of the respondents disagree that tuberculosis is ordered by God as a punishment, while sixteen percent agreed. Fifty four percent of the respondents agree that regular sputum examination is useful, while others disagreed (13.3%), and neutral (33.0%). Fifty four percent of respondents think that the disease has relationship with other diseases. In contrary, 13.3% considered, it has no relationship with other diseases and 33% did not know whether it has relation with other diseases or not. High proportion (75.5%) of the respondents, considered that overcrowding has contribution to the disease. Concerning to the respondents' feeling towards tuberculosis, (24.7%) agree that the disease can be controlled by holly water and traditional medicine, 53.7% disagree, and 21.5% neither agreed nor disagreed (Table 4).

Variables	Frequency (n)	Percent (%)
<b>TB ordered by God as punishment</b>		
Agree	59	15.6
Neutral	20	5.3
Disagree	297	79.1
<b>Regular sputum examination is useful</b>		
Agree	202	53.7
Neutral	124	33
Disagree	50	13.3
<b>TB &amp; other disease</b>		

Has relationship	202	53.7
Has no relationship	50	13.3
I don't know	124	33
<b>Overcrowding has contribution to TB transmission</b>		
Agree	284	75.5
Neutral	244	64.8
Disagree	67	17.8
<b>Holly water &amp; traditional medicine avoid Tuberculosis</b>		
Agree	93	24.7
Neutral	81	21.5
Disagree	202	53.7

**Table 4:** Communities' attitude about TB in Holeta town, Oromia regional state, Ethiopia May, 2017.

### Practice related characteristic of respondents

One hundred seventy eight (47.3%) responded that they cover their mouth during coughing to prevent the disease transmission. Majority (86.2%) responded that they were opened window when they were in house. Only three (0.8%) of the respondents were used traditional methods to be prevented from the disease, but 99.02% didn't know about the methods. Furthermore, 32.7% of the respondents dispose sputum in prepared objects, 39.6% disposes inside the hole and 27.6% dispose anywhere. The majority (43.6%) were indicated that they attend health facilities as soon as coughing started.

### Discussion

This finding indicated that tuberculosis is recognizable to the entire community in the study area, as the largest part (90.2%) of the respondents had showed that they have heard of the disease, which is comparable to earlier studies (92.8%) conducted in Somalia region, Ethiopia [17] and in Afar region (95.6%), Ethiopia [18], of the respondents were conscious of the disease. Though, in line with earlier studies southwest Ethiopia [19] as well as in Afar region, the respondents had inadequate information about *M. bacterium* tuberculosis as a cause of the disease. Instead, majority of the respondents supposed mostly either cold air or smoking as a cause, which is in conformity with other findings.

According to this finding, the respondents had basic knowledge about the general sign and/or symptom of tuberculosis and its means of spread, which conform with previously conducted studies [18,19]. Incidentally, it was mentioned that cough persisted for two or more weeks, weight loss were the frequent sign/symptom of the disease. When an individual cough/sneezes, share dishes, shakes hands with the patients were the common supposed mode of transmission in different studies [19].

Another very crucial feature well-known in this particular study was that significant portion of the respondents was aware of the prevention, which is comparable to a study conducted in southwest Ethiopia. Accordingly, covering mouths and nose when a patient sneezes, isolating the patient, avoiding sharing dishes with the patients,

and good nourishment as a good prevention measures were likewise mentioned by previous studies from Ethiopia [18,19].

### Limitation

Only a quantitative method was used, but lacks qualitative which is crucial to discover in-deepness view about the contributing factors. Absence of information on HIV, lack of questions about MDR, and the cross-sectional nature of the study, which is unable to correctly demonstrate the way of relationship or association.

### Conclusion

The findings indicated that the individuals in the study area had basic knowledge about the disease. However, information about the disease causing agent among community members was not sufficient. Therefore, health information aimed at bringing a considerable change in their awareness particularly about the primary agent that cause the disease, means of spread and control mechanism is significant.

### Acknowledgment

Ambo University, College of Medicine and Health Sciences should be acknowledged for supporting financially to carry out this research. We are also acknowledging the respondents who participated in this study.

### References

1. World Health Organization (2010) Global Tuberculosis Control. WHO report, Geneva.
2. Cole E, Cook C (1998) Characterization of infectious aerosols in health care facilities: an aid to effective engineering controls and preventive strategies. *Am J Infect Control* 26: 453-464.
3. Nicas M, Nazaroff WW, Hubbard A (2005) Toward understanding the risk of secondary airborne infection: emission of reparable pathogens. *J Occup Environ Hyg* 2: 143-154.
4. Mathema B, Kurepina NE, Bifani PJ, Kreiswirth BN (2006) Molecular epidemiology of tuberculosis: current insights. *Clin Microbiol Rev* 19: 658-685.
5. WHO (2010) Tuberculosis Profile. World health Organisation.
6. Ministry of Health (2008) TB, Leprosy and TB/HIV prevention and control program manual. Addis Ababa: Ministry of Health.
7. Amo-Adjei J, Kumi-Kyereme A (2013) Myths and misconceptions about tuberculosis transmission in Ghana. *BMC Int Health Hum Rights* 13: 1.
8. Baker L, Wagner TH, Singer S, Bundorf MK (2003) Use of the Internet and e-mail for health care information: results from a national survey. *JAMA* 289: 2400-2406.
9. Hoa NP, Chuc NT, Thorson A (2009) KAP about tuberculosis and choice of communication channels. *Health Policy* 90: 8-12.
10. Mushtaq MU, Majrooh MA, Ahmad W, Rizwan M, Luqman MQ, et al. (2010) KAP regarding tuberculosis. *Int J Tuberc Lung Dis* 14: 303-310.
11. Mushtaq MU, Shahid U, Abdullah HM, Saeed A, Omer F, et al. (2011) Urban-rural inequities in KAP regarding tuberculosis. *Int J Equity Health* 10: 8.
12. Storla DG, Yimer S, Bjune GA (2008) A systematic review of delay in the diagnosis and treatment of tuberculosis. *BMC Public Health* 8: 15.
13. Lawn SD, Afful B, Acheampong JW (2006) Pulmonary tuberculosis: diagnostic delay. *Int J Tuberc Lung Dis* 4: 1190-1191.
14. Hassmiller KM (2006) The association between smoking and tuberculosis. *Salud Publica Mex* 48: S201-S216.
15. Shimao T (1989) Drug resistance in tuberculosis control. *Tubrcle* 68: 5-15.

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16. World Health Organization (2006) The global plan to stop TB, 2006-2015: in actions for life-towards a world free of tuberculosis. Geneva: World Health Organization.
  17. Melaku S, Sharma HR, Alemie GA (2013) Pastoralist community's perception of Tuberculosis. A quantitative study from shinile area of Ethiopia. Hindawi publishing corporation *Tuberc res treat* 2013: 475605.
  18. Legesse M, Ameni G, Mamo G, Medhin G, Shawel D, et al. (2010) Knowledge and perception of pulmonary tuberculosis in pastoral communities in the middle and lower Awash valley Afar region, Ethiopia. *BMC Public Health* 10: 187.
  19. Abebe G, Deribew A, Apers L, Woldemichael K, Shiffa J, et al. (2010) Knowledge, health seeking behavior and perceived stigma towards tuberculosis among tuberculosis suspects in a rural community in southwest Ethiopia. *Plos One* 5: e13339.