

Awareness About Tuberculosis Among the Rural Population of Kannur, North Kerala, India: A Community Based Cross Sectional Study

Thilak S.A.

Assistant Professor, Department of Community Medicine, Kannur Medical College, Kannur, Kerala 670612, India.

Sarada A.K.

Professor and Head, Department of Community Medicine, Kannur Medical College, Kannur, Kerala 670612, India.

Satheesh B.C.

Professor, Department of Community Medicine, Kannur Medical College, Kannur, Kerala 670612, India.

Abstract

Background: In India, Tuberculosis (TB) is a major public health problem since ages. Awareness about the disease and transmission, its diagnosis and treatment among community will help in controlling the notorious disease. So, periodic assessment of the awareness regarding TB will help in control of disease. *Objectives:* To assess awareness regarding symptoms, causes, spread, and treatment of TB in a rural area of North Kerala. *Materials and Methods:* A community based cross sectional study was conducted in rural field practice area of a medical college in North Kerala. The sample size calculated was 240. Convenient sampling method was used for the sampling. By visiting homes, data was collected from the adults aged >18 years by using pretested semi-structured self-administered questionnaire in local language. The descriptive statistics and chi-square test were used for analysis. *Results:* Out of 240 people, almost all heard about TB. About 90% were aware that cough is a symptom of TB, 90% know that TB can spread from one person to another and 87% said cough as one of the important mode of spread. Regarding, diagnosis of TB, 84% said availability of test and 77% of the subjects were aware of the free treatment in government health centres. About 74% were willing to share the status of TB to family and friends. Around 90% told they will dispose the sputum safely. *Conclusion:* Knowledge, attitude and practice about TB among study population was good. Awareness about availability of diagnostic test, usage of hand kerchief or cloth during coughing and free treatment has to stressed during health education activities.

Keywords: Awareness; Tuberculosis; Rural Population; North Kerala.

Introduction

From ages, bacteria *Mycobacterium tuberculosis* is affecting mankind by causing Tuberculosis (TB) and TB is one of the top ten causes of deaths worldwide. In 2015, globally 10.4 million people were affected with TB and 1.8 million died from the disease (including 0.4 million among people with HIV). Almost 95% of TB deaths occur in low- and middle-income countries [1].

In 2015, India accounts for one fourth of the global TB burden with an estimated 28 lakh cases and 4.8lakh people died due to TB [1,2]. Also, the new cases of TB has reduced from 289 per lakh per year in 2000 to 217 per lakh per year in 2015 and the deaths due to TB has reduced from 56 per lakh per year in 2000 to 36 per lakh per year in 2015 [2].

Revised National Tuberculosis Control Programme (RNTCP) is the national programme, aiming to decrease mortality and morbidity due to TB and cut transmission of infection until TB ceases to be a major public health problem in India. The Government of India having a vision for a "TB- Free India" in its 12th Five Year plan (2012-2017) with a new objective of achieving 'Universal access' for quality diagnosis and treatment for all TB patients under RNTCP [2]. One of the strategies adopted to achieve this was to improve the communication and outreach and social

Corresponding Author: Thilak S.A., Assistant Professor, Department of Community Medicine, Kannur Medical College, Kannur, Kerala 670612, India.
E-mail: tilak1226@gmail.com

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mobilisation to address the socio-economic barriers to TB care [3].

Studies have been done to assess the awareness about TB among the different groups and different parts of India which showed poor to average awareness about TB [4-9]. Lack of awareness has been identified as one of the challenge in impeding the progress of TB control in India and also there is lot of social stigma attached to TB [10]. According to World Health Organisation (WHO) advocacy, communication and social mobilization (ACSM) framework for TB control, communication and social mobilization are important in TB control by improving the awareness [11]. Creating awareness about TB, its mode of transmission and availability of free treatment plays an important role in removing the fear and stigma about TB in the community.

So, with this background, we conducted this study with the objective to assess awareness regarding symptoms, causes, spread, and treatment of TB in a rural area of North Kerala.

Material and Methods

Study Design

It was a community based cross sectional study.

Study Setting

Study was conducted in Pinarayi grama panchayath under the rural field practice area of Community Medicine Department, Kannur Medical College, Kannur.

Study Population

The people aged above 18 years from Pinarayi grama panchayath of rural field practice area of Department of Community Medicine, Kannur Medical College were included in the study.

Inclusion Criteria

The people who were aged above 18 years and those who were willing to participate were included in the study.

Exclusion Criteria

The people with any known neuropsychiatric problems, memory problems or mentally challenged were excluded from the study

Study Duration

2 Months (February – March 2016).

Sample Size

Assuming the knowledge of general health awareness among the population at 15% with the absolute precision at 5%, alpha 5% with design effect of 1, a sample size of 196 was calculated using the OpenEpi (Version 3.03). However, we increased the sample size to 240 by considering the non-response rate of 20%.

Sampling Method

A convenient sampling method was used to collect data. The data was collected by visiting houses with the help of health workers. If there are more than one person in home at the time of data collection, head of the family or the mother was chosen for the study.

Data Collection

The study was conducted after taking ethical clearance from the Institutional Ethics Committee, Kannur Medical College. After explaining the purpose of the study and after taking informed written consent from study participants the data was collected from those who were willing to participate in the study. The data was collected by administering a pretested, semi structured questionnaire in local language (Malayalam) to the participants which had questions related to basic socio-demographic details and causation, modes of transmission, symptoms, treatment of TB, attitude towards a TB patient and disposal of sputum.

Data Analysis

Data was entered in Microsoft Excel and descriptive statistics in the form frequencies, proportions, mean and standard deviations were analysed using Epi Data Analysis V2.2.2.182. Also, to check the association, Chi square test was used and p value of <0.05 was considered statistically significant.

Results

Socio-Demographic Details

A total of 240 persons were participated in the study and the mean age of the study population was

42.83±15.31 years. About 48.8% (117) males and 51.2% (123) females were participated in the study. About 30% (72) of the study population were house makers and 36% (87) were studied up to high school. All of them were living in pucca house and 92% (220) were living in their own houses. About 25% (59) of the study population had an overcrowded home but almost all the houses were having proper cross ventilation (Table 1).

Awareness about Tuberculosis and its Symptoms

All participants had heard about TB and about 61% (146) of the respondents considered TB as a serious disease. About 90% (215) were aware that cough is one of the symptom of TB, followed by fever (28%), weight loss (28%) and headache (7%). However, around 9% (22) were not aware of any symptoms of TB. There was no difference in the knowledge about symptoms of TB between males and females and educational status (Table 2 and 3).

Awareness about Causative Agent, Modes of Spread and Diagnosis of TB

Around 32% (78) told bacteria as the causative

agent for TB followed by virus (14%), fungus (3%) and also, 2% reported that it is caused by evil eye or witchcraft. However, 50% (120) were not aware about the causative agent. About 90% (216) aware that TB can spread from one person to another. Although, majority of the respondents were aware that TB is a contagious disease, but females had better knowledge compared to males (P= 0.012) [Table 2]. Regarding the modes of spread, 87% (208) knew that TB transmits through cough. Also, 16% said that it can come by hereditary, 13% think contaminated food and water can spread TB and 6% perceive that sexual contact with TB patient can transmit the disease. Among the study population, 84% (174) said that there are tests to diagnose TB and this awareness was better among the participants who were educated high school and above (P=0.021) [Table 3].

Awareness about Treatment and Prevention of TB:

About 82% (197) think that TB is a curable disease and 77% (184) know about the availability of free treatment for TB in government health centers. Males were having better knowledge about the availability of free treatment for TB compared to females (P=0.038)[Table 2]. Around 69% (166) reported that

Table 1: Sociodemographic characteristics of study participants

Sociodemographic Variables	Values (n=240) (%)
Age (in years)	
Mean ± SD	42.83±15.31
Median	41.00
Gender	
Male	117 (48.8)
Female	123 (51.2)
Education	
Illiterate	06 (02.5)
Primary	40 (16.6)
High School	87 (36.3)
Higher Secondary	29 (12.1)
Diploma	07 (02.9)
Degree	61 (25.5)
Post Graduate	10 (04.1)
Occupation	
Unemployed	48 (20.0)
House Maker	72 (30.0)
Unskilled Worker	15 (06.3)
Semiskilled Worker	40 (16.7)
Skilled Worker	58 (24.1)
Professional	07 (02.9)
Housing- ownership	
Own house	220 (91.7)
Rented	020 (08.3)
Overcrowding*	
Yes	059 (24.6)
No	181 (75.4)

*Overcrowding was calculated based on number of persons per room. The accepted standards are 1 room for 2 persons, 2 rooms for 3 persons, 3 rooms for 5 persons, and 4 rooms for 7 persons

TB can be prevented, 64% (153) believe that TB spread can be prevented by using hand kerchief or cloth while coughing and 50% aware about availability of any vaccine (BCG) to prevent TB. Awareness about vaccine and prevention of spread of TB by using hand kerchief or cloth while coughing was higher among the participants who have studied high school and above ($P= 0.037$ & 0.0009 respectively) [Table 3].

Table 2: Knowledge, attitude, and practice regarding tuberculosis by gender in the study population

Knowledge, Attitude and Practice	Gender		P value
	Male (n=117)	Female (n=123)	
Knowledge			
Is TB a serious disease?	065 (55.6)	081 (65.9)	0.133
"Cough" as symptom of TB	106 (90.6)	109 (88.6)	0.676
"Fever" as symptom of TB	039 (33.3)	029 (23.6)	0.115
"Weight loss" as symptom of TB	035 (29.9)	032 (26.0)	0.565
TB can spread from one person to other	099 (84.6)	117 (95.1)	0.012
Any test available to diagnose TB?	084 (71.8)	090 (73.2)	0.925
Is TB preventable?	082 (70.1)	084 (68.3)	0.872
Is TB curable?	099 (84.6)	098 (79.7)	0.407
Any free treatment available for TB?	097 (82.9)	087 (70.7)	0.038
TB can be prevented by using hand kerchief or using cloth while coughing?	068 (58.1)	085 (69.1)	0.102
Any vaccine available to prevent TB?	062 (53.0)	058 (47.2)	0.438
Attitude			
Status of TB can be shared with family and friends	087 (74.4)	091 (74.0)	0.947
Practice			
Safe method of disposal of sputum	109 (93.2)	107 (87.0)	0.168

Table 3: Knowledge, attitude, and practice regarding tuberculosis by educational status in the study population

Knowledge, Attitude and Practice	Educational Status		P value
	Up to High school (n=133)	High school and above (n=107)	
	Yes N (%)	Yes N (%)	
Knowledge			
Is TB a serious disease?	077 (57.9)	069 (64.5)	0.364
"Cough" as symptom of TB	115 (86.5)	100 (93.5)	0.091
"Fever" as symptom of TB	035 (26.3)	033 (30.8)	0.473
"Weight loss" as symptom of TB	034 (25.6)	033 (30.8)	0.388
TB can spread from one person to other	116 (87.2)	100 (93.5)	0.166
Any test available to diagnose TB?	088 (66.2)	086 (80.4)	0.021
Is TB preventable?	081 (60.9)	085 (79.4)	0.003
Is TB curable?	111 (83.5)	086 (80.4)	0.652
Any free treatment available for TB?	099 (74.4)	085 (79.4)	0.448
TB can be prevented by using hand kerchief or using cloth while coughing?	072 (54.1)	081 (75.7)	0.0009
Any vaccine available to prevent TB?	058 (43.6)	062 (57.9)	0.037
Attitude			
Status of TB can be shared with family and friends	098 (73.7)	080 (74.8)	0.9665
Practice			
Safe method of disposal of sputum	116 (87.2)	100 (93.5)	0.166

Attitude and Practice about TB

About 74% (178) participants reported that they would share the status of TB to the family members or friends if the person gets TB in future. When asked about the reaction of the participants if any of their family member or friends suffers from TB, 83% (199) replied that they will help in taking and complete the

treatment with safety precautions whereas 14% said that they will isolate the affected the person. About 90% (216) persons told that they will dispose of the sputum of TB patient safely whereas 5% felt that there is no need for safe disposal of sputum and 5% told that they will spit in open space.

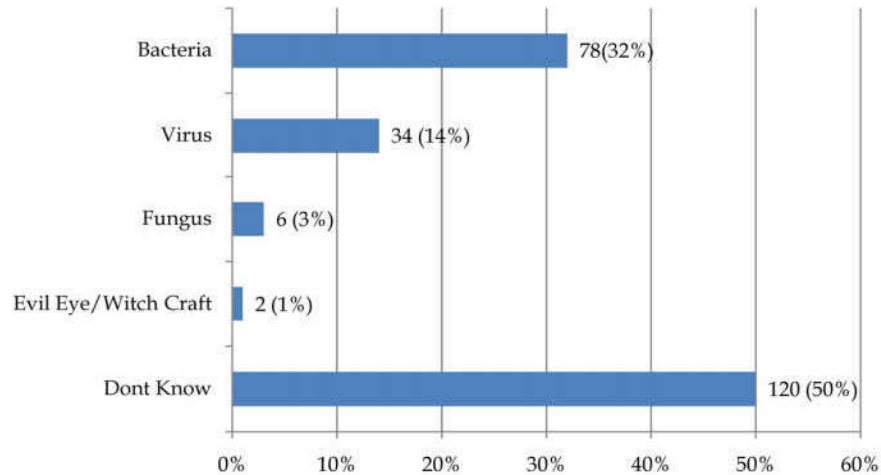


Fig. 1: Awareness about causative agent of TB among the study population

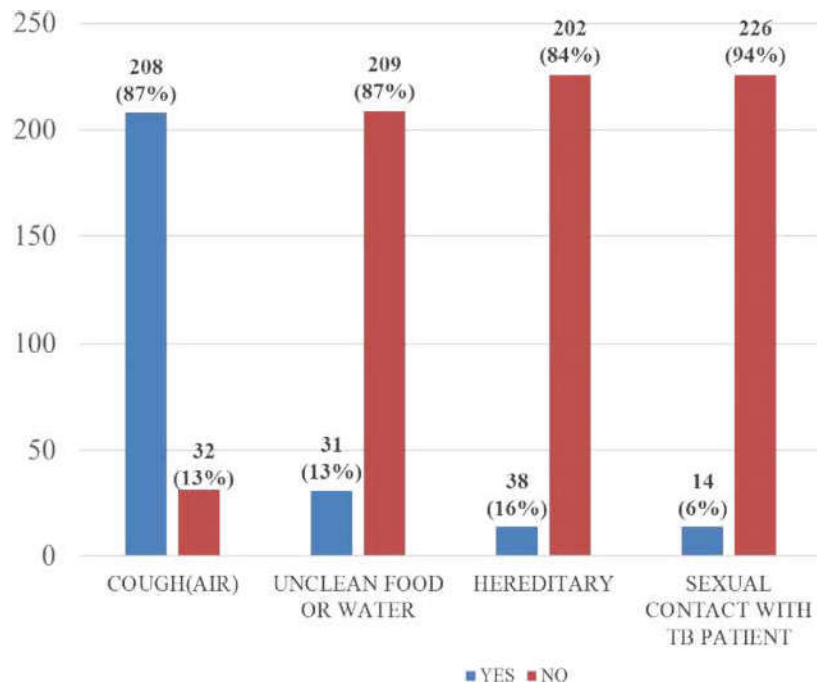


Fig. 2: Awareness about mode of TB transmission among the study population

Discussion

Awareness about Tuberculosis and its Symptoms

In India, tuberculosis is always major public health issue. Awareness about TB among the community is an important way to control it.

In 2007, Central TB Division carried out a community based survey and it reported a poor level of awareness among the general population [12].

In our study, the awareness about TB was good except for few variables of diagnosis and treatment

and this is may be due to high rate of literacy in Kerala. Around two third of the participants considered TB as a serious disease, an important determinantal factor in health care seeking behavior among the community. A study done by Chinnakali P et al at Puducherry showed that three fourth of study subjects consider TB as a serious disease which was slightly higher compared to our study [5].

Almost 90% know that cough as one of the symptom of TB and this finding was simliar to studies done by Chinnakali P et al at Puducherry and Sharma N et al where as studies done by Das et al and Aslami et al shows only 62% [4-6,8].

Awareness about Causative Agent, Modes of Spread and Diagnosis of TB

About 90% of them aware that TB is a infectious disease and this was similar to studies done in South India except Delhi but this was more compared to studies in rest of India [4-8]. Majority were aware of cough as a mode of transmission of TB and this was good compared to other studies [5-8]. Most of the participants aware about availability of test to diagnose TB which was similar to study done by Chinnakali P et al at Puducherry and higher compared to Sharma et al study [5-8].

Awareness about Treatment and Prevention of TB

Majority of the respondents think that TB is a curable disease and which was similar to studies done by Chinnakali P et al, Aslami A et al, Das P et al and Sreeramareddy C et al [4-6,9]. But, this was low in the study done by Rami K et al in Gujarat which showed only 60% [7]. About three fourth were aware about availability of free treatment which was similar to study done by Chinnakali P et al, but, higher than the study done in Kerala by Aslami A et al [4,5]. Unaware people may take private treatment, because of long duration and cost, patients may terminate the treatment once they feel good or may stop just to avoid financial burden. Knowledge about of prevention of TB transmission was around 70% which was similar to other studies [4,5,7]. About two third participants feel that using handkerchief or cloth while coughing and sneezing will prevent transmission of TB to others and people studied upto or above highschool were having better knowledge which was similar to study done by Chinnakali P et al [5].

Attitude and Practice about TB

Regarding sharing of TB status with family and friends, three fourth were ready to share and almost similar to study done Sreeramareddy et al but higher compared to study done Chinnakali P et al [5,9]. Also, only few people told they will isolate TB affected person which was similar to study done by Khalid FA et al in Sudan but stigma was more in study done by Sagili KD et al [10,13]. This may be due to good literacy status of Kerala state. Most of the respondents told that they will do safe sputum disposal and this was better than other study done in Puducherry [5].

Eventhough knowledge, attitude and practices were good but in few areas regarding transmission and prevention exist a knowledge gap, so carrying out periodic health education programmes along with continuous monitoring will improve this knowledge

gap which in turn helps in having good practices regarding TB control and prevention. Thereby, decreasing the burden of TB in community.

Limitations of The Study

Eventhough study was conducted in community, usage of convenient sampling deters the full extrapolation of results to the general population.

Conclusion

Knowledge, attitude and practice about TB among study population was good. Awareness about availability of diagnostic test, usage of handkerchief or cloth during coughing and free treatment has to stressed during health education activities. The level of literacy is also important factor for awareness about TB.

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Declarations:

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