

Awareness of tuberculosis among general patients of a tertiary-care hospital in Kollam, Kerala

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Abstract

Background: Tuberculosis (TB) is a major public health problem in India since centuries. The general public do not have adequate knowledge about TB. The patients also conceal the disease from family, relatives, and friends owing to the stigma attached to it.

Objective: To identify the knowledge and awareness regarding various variables of TB among patients attending general medicine outpatient department of a tertiary-care hospital in Kollam, Kerala, and to associate the awareness level with their literacy status.

Materials and Methods: A cross-sectional study done among patients attending general medicine outpatient department of a tertiary-care hospital in Kollam, Kerala. The study tool was a predesigned and pretested schedule, containing close-ended questions. The sample size was calculated as 400. The sampling technique was systematic random sampling. Informed verbal consent was taken. The study technique was exit interview. Data were entered in MS Excel and analyzed by the statistical package SPSS software, version 16.0. The χ^2 -test was applied.

Result: About 80% of the study population was aware of the infectious etiology of TB. About 43.75% thought it affects all ages. The source of knowledge was mostly from the family (49.5%). Around 60% considered cough as an important symptom. Only 13.75% subjects knew about directly observed treatment, short-course (DOTS) center. The literacy status showed a significant influence on awareness level of TB.

Conclusion: The awareness about TB among general patients was average. A lot of health education and awareness drive is necessary to impart knowledge regarding diagnosis, treatment, prevention, and control of TB, which is necessary for curbing the menace of TB from the society.

KEY WORDS: Awareness, general patients, literacy, tuberculosis, Kollam

Introduction

Tuberculosis (TB) is an old age infectious disease caused by *Mycobacterium tuberculosis*. It is spread through droplets in air by patients, and a single patient can infect 10 or more

people in a year. Every year, nearly 2 million people develop TB. It is a major barrier to the social and economic developments of a country.^[1]

In 2012, the global annual incidence of TB was 8.6 million cases. Nearly, one-fourth (2.3 million) of these cases occurred in India. The good news is that the prevalence of TB has reduced from 40 lakhs in 1990 to 28 lakhs in 2012, annually. Moreover, mortality also got reduced from 3.3 lakhs to 2.7 lakhs annually in the same period.^[2]

Revised National Tuberculosis Program (RNTCP) will require additional development of focused strategies to address the socioeconomic-related barriers to care for TB patients. It will expand to use innovative communication strategies to generate awareness for TB control.^[3]

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Various studies have been done in India to know the awareness about TB.^[4–6] Lack of awareness has been identified as a challenge impeding the progress toward TB control. In India, there is a lot of social stigma attached to TB. The WHO has identified the need for advocacy, communication, and social mobilization (ACSM) framework for TB control.^[7] ACSM activities are very important to elicit greater awareness and engagement in TB control.^[8] So, community participation, by way of creating awareness about the cause, symptoms, spread, and so on, is necessary to remove the fear among population, including general patients about TB.

With this background in mind, we conducted a study with the objective to identify the knowledge and awareness regarding various variables of TB among patients attending general medicine outpatient department of a tertiary-care hospital in Kollam, Kerala, and to associate the awareness level with their literacy status.

Materials and Methods

An observational, descriptive, epidemiological study was conducted. The study design was cross-sectional in nature. The study setting was a general medicine outpatient department (OPD) of a tertiary-care hospital in Kollam, Kerala, from February 1 to 20, 2014. The study population included patients of age >20 years attending general medicine OPD of the hospital. The study tool was a predesigned and pre-tested schedule, containing close-ended questions, although multiple responses were allowed in some questions. These were used to take data from patients and were administered by medical undergraduate students as part of their research project with the knowledge of TB and fluent in local language. Study variables were age, sex, religion, education, type of family, socioeconomic status (SES), different questions related to TB knowledge such as burden, cause, causative agent, vulnerable age group, affected gender, contagiousity, source of information, symptoms, diagnosis, curability, prevention, and treatment.

Sample size was calculated by using Epi Info (version 6) software, freely available online. With an expected frequency of awareness about TB of 10%, a worst acceptable awareness of 6%, and an alpha (α) value of 0.05, a sample size of 213 was found sufficient to represent patients seeking hospital facilities in an urban setting. However, we increased our sample size to 400 for better validity.^[9]

Sampling technique was systematic random sampling (every fifth patient), with a random start of all attending patients from February 1 to 20, 2014 was taken. If any patient refused to be a part of study, we moved to next patient in order. Patients were informed about the purpose of the study, and their informed verbal consent was taken. They were assured about their confidentiality and anonymity. Study technique was exit interview. Before actual study, a pro forma was designed with three experts from medicine, pulmonology, and community medicine departments; pretesting was done to assure its validity. We did necessary corrections and modification in the pro forma for smooth operation in data collection.

We used updated Prasad's SES classification of 2013 to find SES of our study population. Data were entered in MS Excel and analyzed by the statistical package SPSS software, version 16.0. Descriptive and inferential statistics were applied (percentages and Z test). The χ^2 -test was applied. The values of p were kept significant at the level 0.05.

Result

We analyzed the data collected from 400 patients. Table 1 shows the sociodemographic profile of patients. The maximum percentage (30.75%) of patients was in the age group 21–30 years, followed by 31–40 years (26.50%). The female population was more (60.25%) among the study subjects when compared with male subjects (39.75%). Regarding religion, the Hindus were maximum (53.50%), followed by the Muslims (33.75%) and Christians (12.75%). As per residence, equal participation was there from rural and urban areas. The distribution of study subjects according to education showed the predominance of people who studied till 12th standard (65.26%), followed by those who studied beyond 12th standard (35.75%). The family framework showed dominance of nuclear families with 74.25% study subjects living in nuclear families. The SES division showed a good percentage of study subjects belonging to well-off families and, hence, classified as high SES of BG Prasad's classification, class I (36.75%). Class V denoting very low status were least with 10.50%.

Table 2 analyzes the knowledge of study subjects. About 76.75% of the study subjects knew that India is having a high burden of TB. When asked about the causes of TB, 80% cited infection, while 11.75% believed food to be the culprit. Nearly 2% also thought stress as a cause, while 5.75% did not know the answer. Among those who told infection as a cause, 66% knew the role of bacteria in its etiology, while 16% related it to virus. Even fungi were answered as a causative agent, while 16.5% were not aware of the cause. When inquired about the most vulnerable age group, 43.75% thought it affects all ages, while 37.25% believed old age being more vulnerable. About 34.5% of study subjects were of the view that TB affects male and female subjects equally, while 54.75% related it more with male subjects. Nearly 85% knew about the contagiousity of TB. The sources of knowledge were family (49.5%), friends (15.75%), health personnel (12.75%), and mass media (22%).

Knowledge of symptoms of TB contained options for multiple responses and shown in a bar chart [Figure 1]. The maximum knowledge was for cough (60.5%) as an important symptom. About 30.75% gave other options as symptoms, particularly, weight loss, breathlessness, and weakness.

Table 3 explains about the knowledge among study subjects for diagnosis, prevention, treatment, and control of TB. About 23% subjects believed that diagnosis of TB is difficult. Nearly 9% subjects thought that TB is incurable. When asked about whether TB can be prevented, 73.75% believed it can be prevented. Only 13.75% subjects knew about directly observed treatment, short-course (DOTS) center. When asked about the cost of treatment, only 47.75% knew about

Table 1: Sociodemographic profile of patients (*N* = 400)

Characters	<i>N</i> (%)
Age (years)	
21–30	123 (30.75)
31–40	106 (26.50)
41–50	103 (25.75)
>50	68 (17)
Sex	
Men	159 (39.75)
Women	241 (60.25)
Religion	
Hindu	214 (53.50)
Muslim	135 (33.75)
Christian	51 (12.75)
Residence	
Urban	195 (48.75)
Rural	205 (51.25)
Education	
Till 12th std.	261 (65.26)
>12th std.	139 (34.75)
Type of family	
Nuclear	297 (74.25)
Joint	103 (25.75)
Socioeconomic status	
Class I	147 (36.75)
Class II	97 (24.25)
Class III	67 (16.75)
Class IV	47 (11.75)
Class V	42 (10.50)

the free treatment facility. An alarming knowledge among subjects was about stopping treatment. About 62.75% told that treatment should be stopped if the patient becomes symptoms free.

The literacy status [Table 4] imposed a significant influence on the awareness level of TB. It was evident that study subjects who had completed 12th standard were significantly more aware rather than those who studied till the same, regarding the spread, curability, symptoms, prevention, and awareness of DOTS center.

Discussion

TB has always been a major public health issue in India. Knowledge and awareness regarding TB among masses is very important to control it. A mass survey carried out by Central TB Division in 2007 reported poor level of awareness among the general population.^[10] We have tried through this study to know about the awareness of TB among general patients in a hospital.

Table 2: Distribution of patients according to knowledge about tuberculosis (*N* = 400)

Characters	<i>N</i> (%)
India is having high burden of TB	
Yes	307 (76.75)
No	93 (23.25)
Cause of TB	
Infection	321 (80.25)
Food	47 (11.75)
Stress	9 (2.25)
Do not know	23 (5.75)
Causative agent (<i>n</i> = 321)	
Bacteria	211 (65.73)
Virus	51 (15.88)
Fungi	6 (1.87)
Do not know	53 (16.51)
Vulnerable age group	
All ages	175 (43.75)
Children (<10 years)	27 (6.75)
Adolescents (11–19 years)	25 (6.25)
Old age (>60 years)	149 (37.25)
Do not know	24 (6)
Gender affected most	
Men	219 (54.75)
Women	15 (3.75)
Equally affected	138 (34.5)
Do not know	28 (7)
TB is contagious	
Yes	339 (84.75)
No	37 (9.25)
Do not know	24 (6)
Source of knowledge	
Family	198 (49.5)
Friends	63 (15.75)
Health personnel	51 (12.75)
Mass media	88 (22)
Symptoms ^a	
Cough	242 (60.5)
Fever	107 (26.75)
Hemoptysis	110 (27.5)
Chest pain	21 (5.25)
Others	123 (30.75)

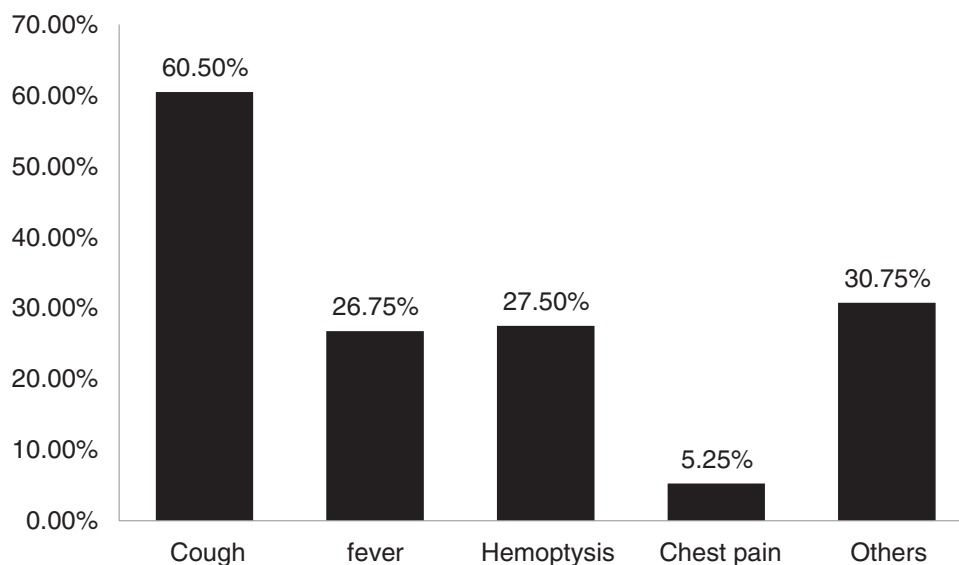
^aMultiple responses.

In our study, 80% of the subjects were aware of the fact that TB is an infectious disease. A study done by Sharma *et al.*^[11] in Delhi showed that 89% of the study subjects also perceived it to be an infectious disease. However, Devay^[12] in Bihar showed that only 14% knew about infectious etiology of TB.

Table 3: Awareness of patients about diagnosis, prevention, and control of TB (*N* = 400)

Characters	<i>N</i> (%)
Diagnosis of TB	
Easy	297 (74.25)
Difficult	91 (22.75)
Never diagnosed	12 (3)
Curability of TB	
Curable	357 (89.25)
Incurable	35 (8.75)
Do not know	8 (2)
TB can be prevented	
Yes	295 (73.75)
No	70 (17.5)
Do not know	35 (8.75)
Do you know about DOTS centers	
Yes	55 (13.75)
No	345 (86.25)
TB treatment can be free of cost	
Yes	191 (47.75)
No	209 (52.25)
Stop treatment if patient becomes symptom free	
Yes	251 (62.75)
No	149 (37.25)

Regarding the vulnerable age group, 43.75% our study subjects believed that all age groups are affected, and nearly 38% thought that old age is affected more. Sherkhane and Sherkhane^[13] also found similar results in their study.

**Figure 1:** Knowledge of symptoms of TB among patients (*N* = 400). Note: Multiple responses

Almost two-third of the respondents of our study exhibited their knowledge about TB from interpersonal contacts such as family, friends, and neighbors. This finding was quite similar in studies done in Ethiopia, Bihar, and slums of Delhi.^[12,14,15]

In our study, majority of the participants perceived cough as the most common symptom of TB, followed by hemoptysis and fever. There were multiple responses by participants. A study done in Split, Croatia, reported that 92% participants were able to identify cough and hemoptysis as principal symptoms.^[16]

Three-fourth of the study subjects believed that diagnosis of TB is easy. In a large survey done in Orissa among patients of various clinics showed that they were aware of various aspects of diagnosis, prevention, and control of TB. They knew that diagnosis of TB can be done easily at DOTS center.^[17]

Nearly 89% subjects believed that TB is curable. In a study done in Serbia, 86% of the general population thought that TB is curable.^[18] In a study done in Rajasthan, 90% were of the view that TB is curable.^[19]

Only 13.75% subjects knew about DOTS center. So, there is a need to increase the awareness activities among general population, so that they can go to the nearest DOTS center for free treatment. A study done in Bengal revealed that only 2% of the general patients in a hospital knew about DOTS.^[20]

The awareness level about TB was shown to be directly associated with the literacy level. The more the literacy, the higher is the awareness. Many studies have proved this fact earlier.^[20,21]

Limitations of The Study

The findings are limited to only one hospital. So, the results cannot be fully extrapolated for general population in general and patients in other hospitals, in particular. Moreover, patients attending a tertiary-care hospital are expected to have a relatively greater awareness about common health issues.

Table 4: Awareness level about TB according to literacy status (*N* = 400)

Awareness	>12th std. (<i>n</i> = 139)	Till 12th std. (<i>n</i> = 261)	Total (<i>N</i> = 400)	Z	P
Is TB infectious	120 (86.33)	201 (77.01)	321 (80.25)	2.23	0.025 ^a
Is it spread by droplet	72 (51.79)	125 (47.89)	197 (49.25)	0.74	0.459 ^b
Is it curable	125 (89.92)	232 (88.89)	357 (89.25)	0.32	0.748 ^b
Symptoms (multiple responses)					
Cough	97 (69.78)	145 (55.56)	242 (60.5)	2.77	0.005 ^a
Fever	36 (25.90)	71 (27.20)	107 (26.75)	-0.28	0.779 ^b
Hemoptysis	49 (35.25)	61 (23.37)	110 (27.5)	2.53	0.011 ^a
Chest pain ^c	10 (7.19)	11 (4.21)	21 (5.25)	1.27	0.204 ^b
TB can be prevented	111 (79.85)	184 (70.50)	295 (73.75)	2.02	0.042 ^a
Do you know about DOTS centers	28 (20.14)	27 (10.34)	55 (13.75)	2.70	0.006 ^a

^aSignificant.

^bNot significant.

^cSmall sample.

Conclusion

Knowledge and awareness about TB among general patients in our hospital was average. A major part of study population is unaware of the various symptoms of TB. Many of them do not know about DOTS centers. The level of literacy is an important factor for awareness.

Recommendations

We have to utilize mass media more for proper dissemination of knowledge about TB among general population. A television monitor can be installed in various places in hospitals and awareness videos can be run on them. Health education activities have to be carried out in various institutions about TB.

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