

# Knowledge, attitude, and practice regarding tuberculosis among rural population in Tamil Nadu

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## Abstract

**Background:** Tuberculosis is a major public health problem globally, and India has the largest number of TB patients throughout the world. Correct knowledge, attitude, and practices regarding tuberculosis in the community are essential for the effective functioning of control programs.

**Objective:** To assess the knowledge, attitude, and practice regarding tuberculosis among the rural population in Kancheepuram district of Tamil Nadu, as tuberculosis is more prevalent in rural areas.

**Materials and Methods:** A community-based, cross-sectional study was carried out in Chunampet, a rural area in Kancheepuram district of Tamil Nadu in February 2013. All adult population (2013) aged older than 18 years who were permanent residents of the study area were included in the study. A predesigned and pretested questionnaire was used as a study tool. Data collection was done by house-to-house survey. Data analysis was done by using SPSS software, version 16.0. Informed oral consent was obtained from all the participants.

**Result:** Knowledge regarding the cause and mode of transmission of TB was inadequate. Attitude regarding the diagnosis and treatment of TB was good. Practice regarding BCG vaccination was poor in the study population.

**Conclusion:** Intervention measures in the form of IEC activities should be carried out in rural areas to increase the awareness regarding tuberculosis.

**KEY WORDS:** Knowledge, attitude, practice, tuberculosis

## Introduction

Tuberculosis (TB) is a chronic communicable bacterial disease caused by *Mycobacterium tuberculosis*. It is a major public health problem worldwide with India having the

highest prevalence of TB in the world.<sup>[1]</sup> In our country, every year, there are more than 2 million incident TB cases, which is more than one-fifth of the global burden.<sup>[2]</sup> TB poses as a main causative factor of mortality, causing death in two people for every 3 min in our country. In 2011, globally, 1.4 million people died of TB of which nearly 1 million were HIV-negative individuals and 43,000 were HIV-positive cases. In 2011, it was found that TB was mainly responsible for causing deaths in 300,000 HIV-negative women and 200,000 HIV-positive women.<sup>[3]</sup> In order to combat TB, the National Tuberculosis Program of India was started in 1962, which was renamed to Revised National Tuberculosis Control Program (RNTCP). The goal of this program is to decrease the mortality and morbidity owing to TB and reduce the transmission of infection until it ceases to be a major public health problem.<sup>[4]</sup> The program uses DOTS (Directly Observed Treatment, Short-course) to achieve this goal. For the program to be a success,

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it is important that the basic and correct knowledge of the disease and the availability of the treatment should exist in the community. It is equally important to assess the existence of any incorrect practices regarding TB in the community. TB being more prevalent in rural areas, we planned to conduct this study to assess the knowledge, attitude, and practice (KAP) regarding TB among the rural population in Kancheepuram district, Tamil Nadu, India.

## Materials and Methods

This study was conducted as a part of Reoriented Medical Education (ROME) training for third-year MBBS students. A community-based, cross-sectional study was carried out during February 2013, among the 11 villages surrounding Chunampet Rural Health and Training Center run by the Department of Community Medicine, Pondicherry Institute of Medical Sciences (PIMS). The 11 villages were Illedu, Melvasalai, Porur, Puthirankottai, Vedal, Vellangadu, Chunampet, Neerpair, Nukumbal, and Kavanur. From these 11 villages, 2,030 individuals were interviewed using a predesigned and pretested questionnaire. The questionnaire contained details regarding sociodemographic variables, personal habits, family history of TB, environment details, chest symptoms, and KAP regarding TB. Modified BG Prasad's classification, 2012, was used to determine the socioeconomic status of the participants. Data were collected by house-to-house survey in all the above-mentioned villages in local language (Tamil). All the available persons aged older than 18 years at the time of interview were included in the study. Data collection was done by third-year MBBS students under the guidance of faculty, postgraduates, and interns. Before data collection, all the students attended a training class on survey methods and statistical methods. All the questionnaires were checked and signed by faculty every day for data validity. Data were entered in Microsoft Excel and analyzed using SPSS software, version 16.0. Simple proportions were calculated. Oral consent was obtained from all the participants before collecting data. As no invasive procedures were involved, chances for study-related harm were minimal. After collecting the data, the IEC materials containing information regarding TB were displayed to all the participants in the form of flip charts, videos (laptops or mobile phone), and pictures. Free medical camps were conducted in all villages in parallel with data collection by interns and medical officers of Chunampet RHTC, PIMS. Persons who required further investigations and treatment were referred properly.

## Result

Of 2,030 persons who were interviewed, 861 (42.4%) were male subjects and 1,169 (57.6%) were female subjects. About 731 (36%) persons were illiterates, and 630 (31%) persons belonged to socioeconomic class 4. Fifty-six persons (2.8%) showed family history of TB, and 25 persons (1.2%) had taken medications for TB in their lifetime [Table 1].

Regarding the knowledge about TB, only 10.6% of subjects were aware that TB is caused by microorganisms and 26.1% that it is transmitted by cough. Only 34.4% of the participants knew at least one of the symptoms of TB, while 65.6% did not know about any of the symptoms [Table 2].

Regarding the attitude about TB, 86.9% of subjects agreed that BCG immunization is required, while more than three-fourth of the participants agreed that cough for more than 2 weeks should be tested and treatment should be started if diagnosed with TB. Overall, the attitude regarding the diagnosis and treatment regarding TB was good, but 68.8% of subjects had agreed that TB patients should be isolated [Table 3].

Only 45.1% of the participants told that their children were immunized with BCG. We also found that 18.3% of the male participants were smokers, and 30.7% of them were alcohol consumers [Table 4].

**Table 1:** Sociodemographic characteristics of the study respondents

|                      | Frequency (%) |
|----------------------|---------------|
| Age group            |               |
| 21–30                | 641 (31.5)    |
| 31–40                | 477 (23.5)    |
| 41–50                | 353 (17.4)    |
| 51–60                | 300 (14.8)    |
| >60                  | 259 (12.8)    |
| Educational status   |               |
| Graduate and above   | 142 (6.9)     |
| Higher secondary     | 183 (9.1)     |
| High school          | 406 (20.0)    |
| Middle               | 385 (18.8)    |
| Primary              | 183 (9.1)     |
| Illiterate           | 731 (36.1)    |
| Socioeconomic status |               |
| Class 1              | 142 (6.9)     |
| Class 2              | 406 (20.0)    |
| Class 3              | 284 (13.9)    |
| Class 4              | 630 (31.1)    |
| Class 5              | 568 (27.9)    |

**Table 2:** Knowledge regarding tuberculosis (*n* = 2,030)

| Knowledge                 | Number of respondents (%) |
|---------------------------|---------------------------|
| Caused by microorganisms  | 215 (10.6)                |
| Transmitted by cough      | 530 (26.1)                |
| Symptoms of TB            | 699 (34.4)                |
| TB affects lungs          | 463 (22.8)                |
| Sputum as diagnostic test | 371 (18.3)                |

**Table 3:** Attitude regarding tuberculosis (n = 2,030)

| Attitude                                  | Number of respondents who agreed (%) |
|---|--------------------------------------|
| BCG immunization is required              | 1,766 (86.9)                         |
| Test sputum if cough >2 weeks             | 1,563 (76.9)                         |
| Start treatment if diagnosed with TB      | 1,583 (77.9)                         |
| Continue treatment till advised by doctor | 1,628 (80.1)                         |
| Untreated TB can lead to death            | 1,398 (68.8)                         |
| Isolation is necessary for TB patients    | 996 (49.1)                           |

**Table 4:** Practice regarding tuberculosis (n = 2,030)

| Practice                                  | Number of respondents (%) |
|---|---------------------------|
| Immunized the child with BCG <sup>a</sup> | 512 (45.1)                |
| Regular physical activity                 | 826 (40.7)                |
| Adequately ventilated houses              | 879 (43.3)                |
| Smoking <sup>b</sup>                      | 159 (18.3)                |
| Alcohol consumption <sup>b</sup>          | 265 (30.7)                |

<sup>a</sup>Persons with children (n = 1,134).

<sup>b</sup>Only among male subjects (n = 861).

## Discussion

Our study found that only 10.6% of the participants knew that a microorganism causes TB and 26% knew that cough is the mode of transmission for TB. In a study done by Sabir et al.<sup>[5]</sup> in Rawalpindi, it was found that 21% of the participants possessed knowledge regarding the cause of TB and 60% knew the mode of transmission. The reason for this wide difference may be that our study was conducted in a rural area, and their study was in an urban area. However, another study in a rural area of Sudan by Mohamed et al.<sup>[6]</sup> showed that only 1.9% of the participants were aware about the cause of TB.

In this study, 34.4% of the participants presented knowledge regarding at least one symptom of TB. In a study done by Croft and Croft<sup>[7]</sup> in Bangladesh, it was reported that 44% of the participants were aware that cough is a symptom of TB. Another study by Koay<sup>[8]</sup> in Malaysia found that 46.2% of the participants responded hemoptysis and 37.1% cough as symptoms of TB. Our study found that more than three-fourth of the participants possessed correct attitude regarding TB. Similarly, a study done by Mweemba et al.<sup>[9]</sup> in Zambia found that 89.4% of the participants showed positive attitude regarding TB. Our study also found that 49.1% of the participants agreed for isolation of TB patients. This shows that still TB patients are discriminated in our society. Although the attitude regarding immunization was good, only 45.1% had their children immunized with BCG. This wide gap in attitude and practice can be decreased by proper interventional measures and equitable distribution of health services to all areas.

Several studies had shown that knowledge regarding TB increases after awareness programs.<sup>[10-12]</sup> Hence, we believe that the IEC activities carried out by our team would have increased the knowledge regarding TB in the community.

## Limitations

Majority of the study participants were female subjects, because, during the time of data collection, most of the male subjects had gone to work. As the study was carried out as a part of undergraduate teaching program, no sampling method was applied for the selection of study participants.

## Conclusion

Intervention measures in the form of IEC activities should be carried out in rural areas to increase the awareness regarding TB.

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